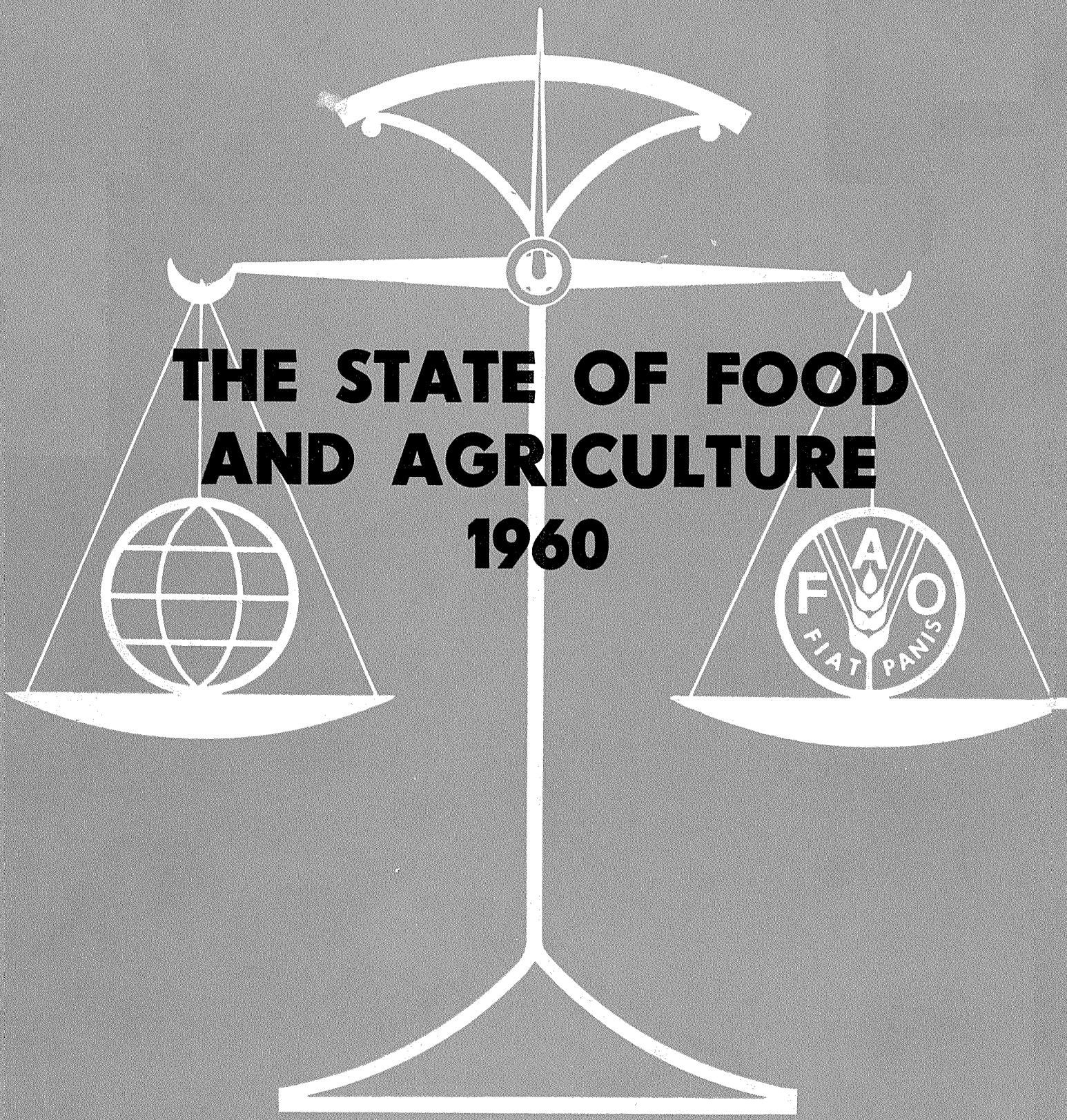

THE STATE OF FOOD AND AGRICULTURE 1960

FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS

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ROME 1960

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FOREWORD

Although world agricultural production increased less in 1959/60 than in 1958/59 when the expansion was unusually large, the rise of about 2 percent in 1959/60 remained somewhat ahead of the annual rate of growth of the world's population. International trade in agricultural products recovered in 1959 and early 1960 from the setback resulting from the economic recession of 1957-58 in the industrialized countries. This recovery was only partial, however, for although the volume of trade reached a new high level, prices of agricultural products as a whole continued to decline so that the value of world trade remained appreciably less than in 1957.

An encouraging feature of the recent situation is the renewed steady expansion of production in the Far East, which with over 40 percent of the world's population remains as always the central focus of want and malnutrition. As recently as 1948-52 per caput food production in the region was some 15 percent less than before the war. It is now estimated to have improved to within 3 percent of the prewar level, while, because of larger imports and reduced exports of food, per caput food supplies are now slightly greater than before the war.

Of the other less developed regions, per caput supplies in Africa since the war appear to have remained close to the prewar level. In Latin America and the Near East there has been some increase over this level, partly because of smaller net exports of food, especially in the Near East. In these regions food production has expanded fairly rapidly, but with a slight decline in 1959/60.

Food and population are two of the crucial determinants of the future of mankind. Freedom from hunger in the less developed countries of the world, however, is not simply a matter of regaining or maintaining prewar levels of per caput production and consumption. For most of the people of these countries these levels were far too low, both in quantity and dietary value. Much greater increases in food production in these regions are needed before any real progress can be made in stamping out hunger and malnutrition. But increased food production must go hand in hand with general economic development so that consumers can afford the additional food and the better quality food they need. Without higher levels of income, indeed, this increased food production is unlikely ever to materialize.

A first analysis in this report suggests that in general the impact of the striking advances in agricultural science in this century has so far been largely confined to North America, Europe, and Australia and New Zealand. In these regions agricultural yields and productivity have risen rapidly since the war, in some countries so fast as to have led to the accumulation of surplus stocks. In the less developed regions, on the other hand, the increased production so far achieved has come primarily from an enlargement of the cultivated area, and for most products the potential contribution from higher yields and productivity has as yet scarcely been tapped. To release this immense potential is the central task, not only of FAO, but also of the agricultural departments and ministries of every one of the less developed countries.

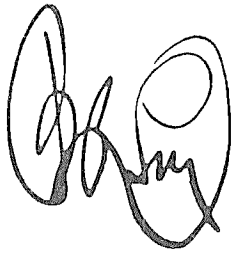
A special chapter in last year's issue of this report examined some of the preconditions for agricultural progress, largely from the point of view of the farmers in less developed countries. It was emphasized that all too frequently extreme rural poverty and lack of credit, except at usurious rates of interest, prevent the great majority of farmers from adopting improved practices, even if they are aware of them. Insecurity of tenure often leaves them no real inducement to improve their holdings, while in many cases the conditions of tenure are such that the farmer

himself can count on only a fraction of any additional return from an increase in output. Moreover, inadequate and sometimes inequitable marketing systems, together with uncertain and sharply fluctuating farm prices, often make it hazardous for a farmer to increase his production for sale. Until these disabilities are remedied, or at least alleviated, it seems clear that the teachings of the agricultural research and extension services are likely to go largely unheeded, and that government investment in agricultural development will seldom yield its full potential return.

The final chapter of this report, "Programing for Agricultural Development," takes up the same theme, this time from the standpoint of governments. Since the war programing for agricultural and general economic development has extended to all parts of the world, and particularly to the less developed regions. This chapter reviews progress during this period, drawing extensively on the experience of FAO in assisting its Member Governments both in formulating and in implementing their agricultural programs.

Agricultural programing is little more than an academic exercise unless there are good prospects that the plans can be translated into reality within something like the period covered by the plan. The establishment of targets, the allocation of investment resources, or even the working out of detailed schemes for land reclamation, for irrigation, or for the provision of increased supplies of improved planting material, fertilizers and other aids to increased production, are essential, but by themselves they are not enough. They will have only a fraction of their potential effect unless means are found of enlisting the co-operation of thousands, often millions, of farmers. This in turn implies building up an effective administrative apparatus, official and nonofficial, reaching down to the farmers themselves, for the proper implementation of projects of extension, farm credit, marketing and so forth. It implies also that in many less developed countries economic and social measures are necessary to give farmers greater incentives to increase food production for the market. As man's oldest settled occupation, agriculture, perhaps more than any other major industry, is hampered by the outgrown customs and traditions of past ages.

Unless these organizational and institutional aspects receive adequate attention, and unless full account is taken of the day-to-day problems of farmers arising from the environment in which they live and work, in spite of all agricultural programing, development is likely to be slow. Today, with an accelerating growth of population and an increasingly insistent demand for higher living standards, no country can afford any longer to be content with such slow progress.



B. R. SEN

Director-General

Chapter I - SUMMARY

Chapter II - World review and outlook

Agricultural production

Preliminary estimates indicate that the increase of 5 percent in world agricultural production (excluding Mainland China) in 1958/59 was followed in 1959/60 by a rise of about 2 percent, or a little more than the estimated annual population growth of 1.6 percent. Such indications as are available at the end of June 1960 are for a larger world production of most commodities in 1960/61.

The biggest increases in agricultural production in 1959/60 were in Western Europe and the Far East. There were smaller increases in Eastern Europe and the U.S.S.R., North America, and Latin America, but in Oceania and the Near East production was at about the same level as in 1958/59, while in the African region there appears to have been a slight decline. In contrast to total agricultural production, food production was lower than in 1958/59 in Oceania, Latin America and the Near East, as well as in Africa. In Mainland China another substantial rise in agricultural production was reported in 1959/60.

The world catch of fish showed a further large increase in 1959, chiefly because of the continued rapid expansion in Peru and Mainland China. The effects of economic recovery on the demand for forest products became more marked in 1959, and total removals of industrial roundwood are estimated to have risen by about 4 percent.

Per caput food production in the Far East (excluding Mainland China) now appears to have improved to within 3 percent of the prewar level, compared with a deficit of 7 percent as recently as 1957/58. In Latin America, on the other hand, where revised data indicate that the prewar level had been approximately regained for the previous three years, food production per caput fell in 1959/60. Per caput food production also appears to have decreased in the Near East and in Africa in 1959/60. Of the 48 countries for which FAO indices of agricultural production are published, production in 15 countries is estimated to have failed to keep up with the growth of population between 1952-53 and 1957-58. In 14 countries the production increase equaled population growth or exceeded it by up to 0.9 percent per annum; in a further 14 countries the margin was from 1.0 to 3.9 percent. Finally, in 5 countries the increase in production has exceeded population growth by an average of between 4 and 6 percent a year.

Production trends over the past 12 seasons indicate that in the more developed countries livestock production has expanded appreciably more rapidly than crop production, reflecting the rise in the demand for livestock products at higher income levels. In less developed countries livestock production appears to have grown more slowly than crop production, though in many of these countries statistics of livestock production are still very rudimentary. Among the different crops, the production of basic food crops (grains and starchy roots) has tended to expand more slowly than other crops. Especially in the less developed regions the latter include a high proportion of crops grown primarily for export and also of crops such as sugar and oilseeds which are among the first for which demand increases in response to rising incomes.

A preliminary analysis has been made of the extent of annual variations in agricultural production. Adverse weather can have a severe effect on the level of agricultural production, and it seems that declines of 5 to 10 percent in a single year are quite common in a large number of countries. Bigger fluctuations, with drops in production of up to about 20 percent in one year, appear to occur mainly in a few areas where the rainfall is particularly uncertain, including Northwest Africa, parts of the Near East, and certain rice-growing countries in Southeast Asia.

The contribution of advances in agricultural technology to the postwar expansion of agricultural production appears to have been largely confined

to the more developed regions. In these regions there has been a substantial rise in the yield per hectare of most of the major crops, while crop areas have increased more slowly, and in many cases production has expanded in spite of a decline in the area. Farmers in less developed countries, however, still generally lack the means to adopt the improved methods that will lead to higher yields. While there has been some limited increase in yields in the less developed regions, the larger part of recent increases in production in these regions has resulted from the extension of the cultivated area.

An examination of wheat yields indicates that the average level of yields and their rate of increase differ widely both among and within countries. While it might be expected that yields would rise fastest where their actual level is lowest, it seems that the most rapid increase in wheat yields has been in countries where they are already fairly high. At very high levels of yields, such as are obtained in some countries of Northwestern Europe, the rate of increase begins to tail off. In the United States, however, where wheat yields are much lower than in most European countries, they are still increasing with considerable momentum. This is in large part the origin of the accumulation of surplus stocks in that country, as well as the chief reason why it has not so far proved possible to check their expansion by means of measures designed to reduce acreage.

Changes in stocks

During 1959/60 further major increases in the over-all level of stocks appear to have occurred only for coarse grains and coffee. Cotton stocks were again reduced; those of wheat showed little change, and for most other major agricultural commodities also the expansion of stocks seems to have been halted at least temporarily. The level of stocks remains high, however, especially those of grains, which in the major exporting countries now stand at 126 million tons, or almost four times as much as in 1952, approximately the first year of the postwar accumulation of surpluses. United States government stocks of dried skim milk, which have proved of great value in milk distribution schemes, were depleted in September 1959, but by April 1960 they had been rebuilt and disposals resumed.

Economic activity and the demand for agricultural products

Recovery from the 1957-58 recession in economic activity in the industrialized countries turned into renewed expansion during 1959/60. The agricultural exporting countries have begun to benefit from this upswing in economic activity, but only to a limited degree and after the usual time-lag.

In general the level of economic activity in the industrialized countries seems likely to remain high, at least during the remainder of 1960. The recent slackening in the rate of expansion in the United States and some European countries has caused earlier expectations of a boom to be scaled down, however, and has made the outlook for 1961 somewhat uncertain. Although the recent deficit in the United States balance of payments is expected to be reduced, preoccupation with the position of the U.S. dollar on international markets continues to influence that country's trade policy. While favorable business conditions in the industrialized countries have already led to some increase in the demand for agricultural products exported by the less developed countries, especially for rubber and fibers, any further increases may be limited. The supply of many foodstuffs and of some raw materials continues to be more than ample, and little improvement in export prices is therefore to be expected as a result of increased economic activity.

Food supplies and consumption

The indices of per caput food production discussed earlier are only a rough indication of the progress of supplies in relation to population, for they do not take into consideration the sharp changes that have occurred in the imports and exports of some regions. Few accurate data are available, especially for the less developed countries, to indicate the trends that have occurred in actual food supplies and levels of consumption, but some general conclusions can be drawn from approximate estimates of per caput availabilities of food in the main regions.

From these data it appears that in the Far East (excluding Mainland China) per caput food supplies, in contrast to per caput food production, have for some years now approximately regained the prewar level. In Africa per caput supplies seem

to have remained close to this level throughout the postwar period, and in Latin America and especially the Near East there has been some increase over the prewar level. There has been a slow expansion of per caput supplies since 1948-52 in the less developed regions except Africa, where they appear to have declined somewhat in recent years.

On the whole, the gap between food supplies in the more and less developed regions has tended to widen rather than narrow in recent years. It also appears that per caput supplies of livestock products in the less developed regions have generally not increased and in some cases have declined, so that they probably now represent an even smaller proportion of total consumption in these regions than before the war. These general trends are confirmed by the available food balance sheets, which show actual average food consumption levels in individual countries.

International trade in agricultural products

Both the volume and, to a lesser extent, the value of international trade in agricultural products recovered in 1959 from the setback resulting from the recession of 1957-58. The volume of world exports rose by 6 percent compared with the year before, as against a rise of 7 percent in exports of manufactured goods. Average prices on world markets for agricultural products as a whole, however, continued to decline and the value of exports rose by only 3 percent and remained well below the 1957 level.

Raw materials had been most severely affected by the recession and staged the strongest recovery. Exports of this commodity group in 1959 were 11 percent larger in volume than the year before, mainly because of larger shipments of wool and rubber, and 10 percent higher in value. Increased prices for rubber and sisal were offset by a continuing fall in the prices of most other commodities, notably cotton. Forest products fared even better and both the volume and value of exports in 1959 nearly regained the 1957 level. An increase of 8 percent in the volume of exports of beverages and tobacco, however, was accompanied by a fall of some 7 percent in value, compared with 1958, as a result of generally lower prices. The slow rise in the volume of exports of food and feedingstuffs continued, but of the major groups only oilseeds and vegetable oils, meat and dairy products exceeded in 1959 the value of world exports in 1957.

The largest increase in earnings from agricultural exports in 1959 (24 percent) occurred in Oceania, after the particularly unfavorable results of 1958, while smaller increases were achieved in the Far East and Near East regions. The agricultural export earnings of all other regions declined in comparison with the preceding year, in Western Europe because of a smaller volume of trade, in North America, Latin America and Africa because of lower prices.

Rather over 40 percent of the increase in the volume of shipments were directed to Western Europe, but there was also a substantial increase in North American imports, which reached a record level. These increases, however, were reflected to only a limited extent in the value of trade.

The more rapid growth of agricultural imports into the less developed regions, as compared with the more developed regions, was resumed in 1959 after a decline in 1958, though in total they still amount to only about one third of the agricultural imports of the more developed regions. In contrast, agricultural exports in recent years have expanded more rapidly from the more developed regions, partly because of surplus disposal operations. By 1959 net exports of foodstuffs from the less developed regions as a whole had fallen to about one quarter of their prewar volume. Net exports of nonfood agricultural products, however, had increased substantially.

Prices (average unit values) of agricultural exports as a whole in international trade averaged about 2 percent less in 1959 than the year before, almost the whole decline occurring in the beverages and tobacco group. Prices steadied and even recovered somewhat in the latter part of 1959, but preliminary indications suggest that the decline was resumed in early 1960. Raw materials were an exception, rubber prices in particular continuing to rise. Grain prices remained fairly steady in early 1960, and those of beef and mutton continued to rise, but there were sharp falls in prices of dairy products and certain oilseeds. Coffee prices were somewhat firmer, while those of cocoa declined appreciably.

Surplus disposal operations, mainly by the United States, remained large in 1959, though at an appreciably lower level than at the peak period in 1956/57. Shipments under government programs accounted for 34 percent of total United States agricultural exports in 1958/59 and 26 percent in

the second half of 1959, compared with 42 percent in 1956/57. The largest single agreement under Public Law 480 was signed in May 1960 for the shipment of 16 million tons of wheat and 1 million tons of rice to India over a period of four years.

The trade in agricultural products of Eastern Europe and the U.S.S.R. with the rest of the world continued to expand, though it remained relatively small in relation to their total trade. In 1958 trade with other members of this group accounted for nearly 80 percent of the agricultural exports and over 50 percent of the agricultural imports of the U.S.S.R. Imports into this group from the less developed regions have increased sharply, notably of rubber (mainly from the Federation of Malaya) and cotton (mainly from the United Arab Republic). Imports of beverages, spices and other products are also rising, though the total volume of trade remains small. In contrast to the general trend, imports of sugar and oilseeds have been reduced because of greatly increased domestic production.

Farm prices and incomes

In most of the relatively few countries for which data are available on trends of prices received and paid by farmers, price relationships appear to have moved slightly in favor of farmers in 1959. The most important exceptions were the United States and Canada, in which net farm incomes also fell sharply by about 16 percent and 7 percent respectively in spite of an increase in output. In the United States part of the fall reflected smaller government payments, e.g., under the Acreage Reserve Program. Farm incomes appear to have risen sharply in Australia and New Zealand in 1959/60, mainly because of higher prices for wool and dairy products. In Europe trends were irregular. Farm incomes rose in 1959 in the United Kingdom, Denmark, the Netherlands and Norway, but in other countries, including Western Germany, France and Italy, they showed little improvement or even a slight decline, in some cases partly because of the widespread drought of 1959.

Consumer prices and sales

In some countries surpluses and the downward trend of agricultural prices on world markets appear at last to have had some influence on retail prices. While the trend was still upward in a majority of the countries for which data are available, the rise was less widespread than in the last few years. In North and Central America, and in some parts of Europe, considerable stability of retail food prices was achieved in 1959, while some countries which showed strong inflationary pressures in 1958 and early 1959 appeared to be attaining greater price stability in 1959/60. In the few countries with statistics of retail food sales the recession of 1957-58 scarcely influenced their steady rise, and this continued in 1959 though usually at a slightly slower rate than national incomes.

Agricultural policies and development plans

Agricultural policies continue to reflect the sharp contrast between the agricultural demand and supply situation in the industrialized countries and that in the less developed parts of the world. Because of the availability of adequate technical knowledge and capital, supplies are generally capable of fairly rapid expansion in the more developed countries, but at the high levels of food consumption that have been reached in these countries the larger demand resulting from increased incomes goes predominantly to nonagricultural products. In the less developed countries, in contrast, it is less easy to achieve a high rate of increase in production, but demand is rising rapidly with the faster growth of population in these countries, and a large part of any increase in income is spent on food. These divergent situations also react on one another. Markets in the industrialized countries for most of the agricultural exports of the less developed regions are growing relatively slowly. At the same time surplus stocks of some commodities have accumulated, mainly in the more developed regions, and these are unsalable at normal commercial terms in the less developed regions.

The principal aims of agricultural policies in the more developed group of countries are to adjust the level and pattern of their agricultural production as closely as possible to effective demand on domestic and export markets, while at the same time endeavoring to narrow the gap between agricultural and other incomes. As price support systems, which are generally very costly, have often failed to achieve these objectives, there has been for some time a tendency in Western Europe to seek improvements in farm incomes increasingly through measures to raise efficiency and improve farm

structures. This has been reflected in modifications to support policies in some countries in 1959/60, sometimes strongly opposed by farmers, as well as in the agricultural policy proposals of the Commission of the European Economic Community.

In Japan, too, the costly price supports for wheat and barley may be gradually replaced by assistance in raising the quality and efficiency of production. In Australia and New Zealand measures to improve efficiency are receiving still further emphasis, and in Canada the guarantees for two products have recently been limited by the introduction of deficiency payments with the novel feature of a fairly low ceiling on payments to any individual farmer. In the United States, where the problem of surpluses is most acute, attempts to reduce them by restricting acreage have largely been offset by rising yields. Many different solutions are being proposed for these problems, but no new measures have been passed so far in 1960.

Most of the less developed countries are unable to afford high levels of supports, and their agricultural price policies are aimed mainly at the protection of consumers and the avoidance of inflation. The question of incentive producer prices is receiving increased attention in some of these countries, however, and a few new schemes have been introduced for certain products in 1959/60, especially in the Far East. In the majority of the less developed countries the economic development plan remains the principal expression of agricultural policy, and 1959/60 has seen a large number of new plans and modifications to earlier ones. New development plans in preparation include India's third five-year plan, due to begin in April 1961, of which a draft outline has been published.

Measures to improve the efficiency of production are also becoming an increasingly important part of the agricultural policies of some of the less developed countries. For example, the general trend toward greater emphasis on the improvement of the institutional environment of agriculture appears to have continued in 1959/60, especially in some countries of the Near East. Most agricultural exporting countries, including those in the more developed regions, are paying more attention to measures for the promotion of exports and for widening their markets for agricultural products. In Latin America the gradual abandonment of multiple exchange rate systems has continued in 1959/60, in combination with domestic stabilization measures designed to combat inflation.

In the centrally-planned economies, modifications in the structure of the collective farm have continued in the U.S.S.R. Similar changes have been undertaken in several of the Eastern European countries, where there has been a renewed spurt in the pace of collectivization in late 1959 and early 1960. In Mainland China there was some reorganization of the rural commune system in August 1959.

The tendency toward regional co-ordination has again been a marked feature of the year under review. In Western Europe, the proposals of the Commission of the European Economic Community for a common agricultural policy have been published, and seven countries have established the European Free Trade Association. In Latin America seven countries have joined in a Free Trade Association, and three Central American countries have also set up an economic association.

In respect of fishery policies, recent events indicate that international agreement on the principal aspects of these policies is still a long way off, although the urgency of obtaining co-ordinated action is increasingly recognized. In forest policy, a clearer awareness of certain problems is apparent, and this has led in 1959/60 to a more concrete orientation of these policies and related production programs in some countries.

Commodity survey and outlook

The final section of the chapter presents the usual short notes on the situation and outlook for each of the main agricultural, fishery and forest commodities. As they are already highly condensed, they are not further summarized here.

Chapter III - Programing for agricultural development

Procedures and methods of programing used by governments to promote agricultural development in recent years are reviewed, primarily from the point of view of less developed countries. In many of these countries an inadequate growth of agricultural production, and especially of food

production, has slowed the pace of general economic development. Emphasis is laid on a close integration of agricultural development plans with those for the economy as a whole.

The chapter draws extensively on FAO experience in assisting Member Governments in many parts of the world in formulating and implementing agricultural development programs. The general approach is that programing is a barren exercise unless there is a reasonable expectation that the goals set can be reached. A large part of the chapter is therefore concerned with the choice of measures and projects to implement agricultural development programs, and with the economic and institutional conditions necessary for their success.

Programing is considered as much more than the establishment of targets of production, inputs and consumption, the allocation of public funds for investment, or the preparation of schemes for land reclamation and settlement, for irrigation, or for the increased distribution of fertilizers, improved planting material and other aids to production. Important though these things are, by themselves they are seldom enough to ensure that the planned increases in output will be obtained.

To a considerable extent the prospects for carrying through a development program depend on enlisting the co-operation of thousands, even millions of farmers, whose individual decisions largely determine how far the additional output planned will in fact be produced. Farmers, like other entrepreneurs, are not likely to make the additional efforts and to incur the additional risks called for in increasing their output for the market unless they expect to benefit by doing so. In many less developed countries, however, conditions of marketing, of land tenure, of farm credit, etc., are such as to give farmers little incentive to expand their marketable production, or may even largely preclude any substantial development. Measures to ameliorate these conditions are often essential if projects of investment are to yield anything approaching their potential return.

Throughout the chapter, stress is therefore laid on the importance in agricultural programing of taking fully into account the economic, social and institutional environment in which the farmers of the country live and work. Also stressed is the importance of choosing development projects and measures which can be effectively carried through with the organizational structures already at hand, or which could be built up in the time available. This applies especially to the local organization in day-to-day contact with the farmers.

Scope, objectives and special problems of programing for agricultural development

This section briefly reviews the recent extension of agricultural programing, and the nature of the plans and policies in countries at different stages of agricultural development. In more developed countries increasing emphasis is being laid on reducing disparities between rural and urban incomes, notably by raising agricultural productivity; increased production is seldom a primary objective. In economically less developed countries, on the other hand, a main objective is usually to expand production in line with the rapid growth of urban demand and to improve nutritional levels. Strengthening the balance of foreign payments by reducing agricultural imports or increasing exports is also a major objective in nearly all less developed countries.

Consideration is given to some special problems and difficulties of agricultural programing, which do not arise to the same degree in other sectors. Finally the various types of organization that have been set up for the preparation of agricultural programs are briefly reviewed. Stress is laid on the need for close co-ordination with plans for other sectors of the economy, and between the agencies preparing agricultural programs and those responsible for carrying them out.

The establishment of agricultural targets

A wide range of targets of varying degrees of complexity and comprehensiveness are used in agricultural programing. Their value and limitations are discussed. Methods of establishing projections of requirements for food and other agricultural products are considered, both for their own usefulness and as one approach to establishing production targets. Other approaches based on technical and local possibilities and on input programing are also considered, including methods suitable for countries with little basic economic and statistical information and with little experience of planning. Emphasis is laid on the value of following more than one approach and of gradually ironing out in the process of planning any incon-

sistencies between them which may emerge. Because of the special problems of agricultural programing and the importance, especially in less developed countries, of adjusting agricultural production as nearly as possible to requirements, it is suggested that it is usually preferable to start with estimates of the required output. Ultimately, however, it will be necessary to estimate the investment and inputs required, and to adjust the output targets to the resources available. Consideration is given to some of the special difficulties in agriculture of relating inputs to output.

The choice of means to implement production targets

Broadly, there are three ways in which governments can influence the pace and direction of agricultural development: by direct investment, for example in large-scale projects of irrigation or land settlement; by measures and policies to increase the farmer's incentives to expand production, such as price stabilization, improvement of the agrarian structure, or the provision of farm credit; and by the provision of improved services to agriculture, including research and extension services, and services for the control of diseases and pests. The choice and combination of measures will depend among other things on the objectives sought, on the financial and other resources available, on the skills and limitations of the farmers, on the economic, social and institutional environment in which they have to work, and on a balancing of the interests of consumers with those of producers. It is difficult to find objective criteria to choose among the various alternative means of implementing agricultural development.

If agricultural development is thought of primarily in terms of investment and cost/benefit ratios, there may be some overemphasis on new projects which can be evaluated easily in monetary terms, with inadequate provision for the full use and maintenance of facilities already in existence, or insufficient attention to less easily measurable projects such as education and extension, the provision of economic incentives, or the reduction of institutional obstacles to development.

Stress is placed on the importance for programing of obtaining objective information on the day-to-day problems of farmers, e.g., on the prices farmers actually receive and pay, the extent of their indebtedness, the availability of credit and the effective interest rates, land tenure arrangements including rents, and the extent of rural underemployment. Examples are cited of some conditions, typical of less developed countries, which leave farmers little incentive to produce more, and of programs which have been successful in ameliorating these conditions.

Finally emphasis is given to the importance of building up adequate organizations, official and nonofficial, reaching down to the farmers. Organizational weaknesses, especially at the local level, are often a main cause for projects and measures of agricultural development yielding only a fraction of their expected benefits. This applies especially to the provision of improved services for extension, farm credit, price stabilization and marketing, to the full utilization of irrigation facilities, and to the distribution of fertilizers, improved planting material and other requisites for increased production.

The area of choice

The final section of the chapter considers the relationship between direct government investment on the one hand, and on the other the provision of economic incentives and improved services to farmers. The latter measures do not obviate the need for investment for increased production; they may indeed lead to a considerably increased level of private investment in agriculture, including particularly nonmonetary investment from the unpaid labor of cultivators on their own holdings. Such measures may therefore appreciably increase the total investment in agriculture. Moreover, without incentive measures and improved services, direct government investment may yield only a fraction of its potential return.

The different types of measure are thus essentially complementary. They are also, however, competitive in their demands for the limited funds available for investment and for current budgetary expenditures, as well as for the usually scarce administrative and organizational resources of a country.

Some suggestions are made for determining an appropriate balance between the various projects and measures. In some cases more rapid progress may be made by concentrating a large share of resources into limited areas, or alternatively for

the production of certain key commodities. This makes possible a more integrated approach to development than would be possible if the resources available were spread thinly over the whole agricultural sector. It can also provide an opportunity to try out on a limited scale measures which, if successful, can later be applied more widely.

The chapter offers no rules of thumb for finding a rapid and smooth path to agricultural expansion, for the situation in each country is different. It is hoped, however, that this exploration of the problems involved, and of the interrelations between them, will provide some perspective and perhaps suggest some new approaches to those with the heavy and complex responsibility of charting a country's agricultural development.

Chapter II - WORLD REVIEW AND OUTLOOK

Agricultural production

Following the large expansion in 1958/59, when production was more than 5 percent higher than in each of the two preceding seasons, the volume of world agricultural production increased more slowly in 1959/60. According to preliminary estimates for the world (excluding Mainland China), production rose by about 2 percent. This increase is a little less than the average for recent years, but it slightly exceeds the estimated annual population growth of 1.6 percent.

The biggest increases in 1959/60 were in Western Europe and the Far East (Table 1). In the Far East (excluding Mainland China) production has now increased by more than 3 percent for two successive seasons. In the regions where the expansion had been particularly large in 1958/59, there were further small increases in 1959/60 in North America and in Eastern Europe and the U.S.S.R., but in Oceania the previous season's high level of production was only just maintained. The steady rise in production continued in Latin America, though more slowly than in most recent years. In the Near East renewed droughts in some countries limited production to the same level as the year before, and in the African region there appears to have been a slight decline. For Mainland China, data on which are not included in the over-all index, another substantial rise in production was announced for 1959/60, despite reports of widespread drought.

TABLE 1. – INDICES OF AGRICULTURAL PRODUCTION

	Prewar average	Average 1948/49-1952/53	1953/54	1954/55	1955/56	1956/57	1957/58	1958/59	1959/60 (Preliminary)
	Indices, average 1952/53-1956/57 = 100								
ALL AGRICULTURAL PRODUCTS									
Western Europe	82	87	100	101	103	103	107	109	113
Eastern Europe and U. S. S. R.	82	86	95	95	104	115	118	129	131
North America	70	93	99	97	101	103	98	106	109
Oceania	78	90	98	98	104	105	102	116	116
Latin America	73	89	96	100	102	106	112	115	117
Far East (excluding Mainland China)	86	87	98	100	104	107	105	109	113
Near East	72	84	100	97	100	109	112	116	116
Africa	70	88	98	100	102	106	103	107	106
ALL ABOVE REGIONS	77	88	98	98	103	107	107	113	115
FOOD PRODUCTS ONLY									
Western Europe	82	86	100	101	103	103	107	109	113
Eastern Europe and U. S. S. R.	83	86	95	95	104	115	119	130	131
North America	68	92	98	97	101	104	102	110	111
Oceania	83	93	100	99	104	99	98	115	111
Latin America	70	88	96	101	101	108	111	114	112
Far East (excluding Mainland China)	85	86	99	100	103	107	105	109	113
Near East	72	84	101	97	100	109	112	115	114
Africa	73	89	99	100	101	105	102	105	103
ALL ABOVE REGIONS	77	88	98	98	102	107	108	114	115

NOTE: These indices have been calculated by applying regional weights, based on 1952-56 farm price relationships, to the production figures, which are adjusted to allow for quantities used for feed and seed. For Mainland China no estimates are included until more complete data are available. The indices for food products exclude coffee, tea, tobacco, inedible oilseeds, animal and vegetable fibers, and rubber.

There were divergent movements in some regions in 1959/60 in the indices of food production and of total agricultural production. Except for Oceania, where wool weighs very heavily in total production, these two indices generally move closely together. In 1959/60, however, while total production was lower than the year before in one region of the world, food production declined in no less than four. In Africa the decline in food production was greater than in production as a whole. Food production also decreased in Latin America, where there was a small increase in total production, and in the Near East and Oceania, where total production was unchanged. In North America the trends of the two indices have diverged somewhat erratically for the past three or four seasons, though this is probably mainly a reflection of changes in the various production controls in the United States.

Production in relation to population

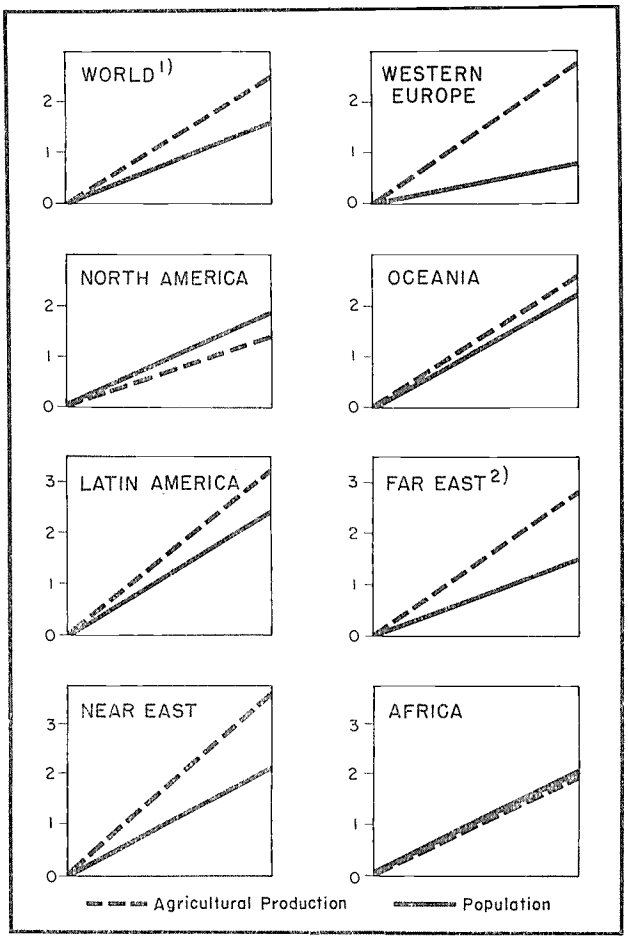
Figure 1 compares the average annual rates of growth of agricultural production and of population over the 12 year period 1948/49-1959/60. World production (excluding the U.S.S.R., Eastern Europe and Mainland China) is estimated to have increased at an average rate nearly 1 percent ahead of population growth during this period. In the less developed regions, the average annual margin of production over population is estimated as rather over 1 percent in the Far East (excluding Mainland China) and the Near East, and slightly less than 1 percent in Latin America, where population is increasing especially fast. In Africa, however, it appears that agricultural production has only just kept up with population growth since 1948/49. In the more developed regions, the relationships between the trends in production and population reflect mainly the slow growth of population in Western Europe, its rapid growth in Oceania partly as a result of immigration, and in North America the efforts of the United States government to restrain the expansion of production in order to check the accumulation of surplus stocks.

In 1959/60 there was no significant increase in world agricultural production on a per caput basis (Table 2). The 1958/59 level of production represented a considerable advance, however, and it was hardly to be expected that this rate of expansion would be maintained. An encouraging feature is that in 1959/60, in contrast to some recent years, much of the increase in world production was in the densely populated Far East, where levels of nutrition are probably the lowest of all. Per caput food production in the Far East (excluding Mainland China) now appears to be only about 3 percent less than before the war. While the prewar level was itself very low (about half the already small world average), the 1959/60 position is a substantial improvement over 1957/58, when the deficit as compared with the prewar period was about 7 percent and there had been no permanent increase in per caput food production since 1953/54.

In Latin America, on the other hand, where revised data indicate that the prewar level of per

Figure 1. - Trends in regional agricultural production in relation to population growth, 1948/49-1959/60

(Average annual increase on trend line as percentage of average production and population)



1 Excluding U.S.S.R., Eastern Europe and Mainland China - 2 Excluding Mainland China.

TABLE 2. – INDICES OF PER CAPUT AGRICULTURAL PRODUCTION

	Prewar average	Average 1948/49-1952/53	1953/54	1954/55	1955/56	1956/57	1957/58	1958/59	1959/60 (Preliminary)
	Indices, average 1952/53-1956/57 = 100								
ALL AGRICULTURAL PRODUCTS									
Western Europe	93	89	101	101	102	102	105	105	109
Eastern Europe and U. S. S. R.	84	91	97	95	103	111	113	122	122
North America	89	100	101	97	99	100	93	99	99
Oceania	104	99	100	98	101	100	95	106	104
Latin America	108	98	98	100	100	101	104	105	104
Far East (excluding Mainland China)	110	92	99	100	102	104	101	103	105
Near East	95	92	102	97	98	104	105	106	104
Africa	93	95	100	100	100	102	97	98	95
ALL ABOVE REGIONS	96	94	99	98	101	103	102	106	106
FOOD PRODUCTS ONLY									
Western Europe	93	89	101	101	102	102	105	106	109
Eastern Europe and U. S. S. R.	85	91	97	95	103	112	114	123	122
North America	87	99	100	97	99	101	96	102	101
Oceania	110	102	103	99	101	95	92	105	99
Latin America	103	97	99	101	99	103	103	103	100
Far East (excluding Mainland China)	108	92	100	100	102	104	100	103	105
Near East	95	91	103	97	98	105	105	105	103
Africa	96	96	101	100	99	101	96	96	92
ALL ABOVE REGIONS	95	94	100	98	101	104	103	107	107

NOTE: See explanatory note to Table 1.

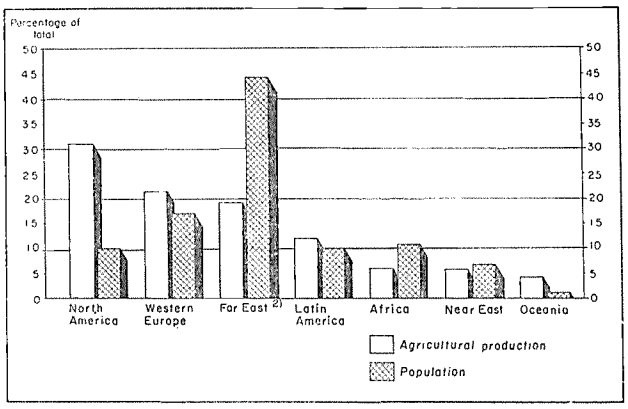
caput food production had been approximately regained for the previous three years, production per caput fell back sharply in 1959/60 with the decline in total food production. In the other less developed regions, total and per caput food production also decreased in the Near East and Africa in 1959/60, the continuing decline in Africa apparently taking per caput food production below the prewar level for the first time since the immediate postwar years. In both these regions there has recently been a pronounced slackening in the rate of increase of agricultural production.

Thus, while in the Far East agricultural expansion seems now to have regained some of the momentum of the period of recovery immediately after the war, this has been accompanied by a temporary loss of momentum in the Near East and Africa. This does not mean, however, that there has been any real shift in the center of gravity of the world food problem, though naturally the recent deterioration in the latter two regions must give rise to some concern if it is not soon halted. Figure 2 indicates how small a share of world agricultural output is produced in the Far East, in comparison with the large proportion of the world's population that is concentrated there. Although the rate of population growth in this region, estimated at 1.4 percent a year, is comparatively slow, the sheer size of the population translates this into an absolute increase of some 11 million persons annually (excluding Mainland China). The implications of so massive an increase, in terms of additional requirements of food and agricultural products, need no emphasis.

Indices of per caput food production are, of course, only a rough indicator of the progress of supplies in relation to population. As they do not take into consideration the sharp changes that have occurred in the imports and exports of some regions, they cannot give a true picture of the movement of actual food consumption levels. Accurate data on food supplies and consumption are difficult to obtain, but a later section of this chapter makes a tentative analysis of recent changes in the situation.

FIGURE 2. - REGIONAL SHARES OF WORLD [1] POPULATION AND AGRICULTURAL PRODUCTION, AVERAGE 1957-59

(Production data based on price-weighted aggregates)



[1] Excluding U.S.S.R., Eastern Europe and Mainland China. - [2] Excluding Mainland China.

The over-all regional indices discussed so far also average out and conceal the differences among individual countries. The position on a country basis was briefly touched on in *The state of food and agriculture 1959*, but it seems useful to return to it since the FAO country indices of agricultural production have now been recalculated on the same basis as the regional indices and brought up to date, though they are not yet available for 1959/60.

Table 3 compares the recent rates of increase of agricultural production and population in those countries for which FAO indices are published. The indices on which the table is based are also shown in Annex Table 1. From these data it is clear that the degree of success achieved by the different countries in increasing their agricultural production has varied widely.

TABLE 3. - AVERAGE ANNUAL INCREASE IN AGRICULTURAL PRODUCTION COMPARED WITH POPULATION, BY REGIONS AND SELECTED COUNTRIES, AVERAGE 1952-53 TO AVERAGE 1957-58

	Production	Population		Production	Population
	..... *Percentage*			..... *Percentage*	
WESTERN EUROPE	2.3	0.8	Cuba	3.1	2.1
			Chile	2.4	2.5
Yugoslavia	7.3	1.3	Colombia	2.4	2.2
Greece	6.4	0.9	Argentina	1.9	1.9
Austria	3.6	0.2	Peru	–0.2	2.5
Belgium-Luxembourg	2.6	0.6	Uruguay	–1.0	1.3
Ireland	2.5	–0.6			
Spain	2.2	0.8			
United Kingdom	2.0	0.4	FAR EAST (excluding Mainland China)	2.4	1.4
Denmark	1.9	0.7			
Germany, Western	1.9	1.1	Japan	5.2	1.1
Italy	1.9	0.5	Taiwan	3.8	3.6
France	1.7	1.0	Philippines	3.1	2.5
Netherlands	1.5	1.3	Federation of Malaya	3.0	2.7
Switzerland	1.3	1.2	Korea, South	2.5	1.0
Finland	1.2	1.1	Ceylon	2.4	2.5
Portugal	1.1	0.8	India	1.9	[2] 1.3
Norway	0.8	1.0	Indonesia	1.8	1.9
Sweden	–1.3	0.7	Pakistan	0.7	1.3
			Thailand	0.3	1.9
			Burma	–0.1	1.0
NORTH AMERICA	0.6	1.8			
			NEAR EAST	3.3	2.2
United States	1.0	1.7			
Canada	–2.3	2.8	Israel	8.5	3.9
			United Arab Republic: Egyptian Region	4.0	2.4
OCEANIA	2.3	[1] 2.4	Iran	3.9	2.4
			Turkey	1.7	2.7
Australia	2.3	2.2			
New Zealand	2.3	2.2			
			AFRICA	1.7	2.2
LATIN AMERICA	3.5	2.4			
			Tunisia	2.9	1.2
Mexico	7.3	2.9	Union of South Africa	2.9	1.8
Brazil	4.7	2.4	Algeria	0.1	1.8
			Morocco (former French zone)	–1.1	1.8

[1] Includes Pacific territories, as well as Australia and New Zealand. - [2] For more recent years the estimated rate of population growth is higher and has now been revised to 1.9 percent.

In 15 (almost a third) of the countries for which date are available, production is estimated to have failed to keep up with the growth of population between 1952-53 and 1957-58. Most of these countries are in the less developed regions, where efforts to increase agricultural production have been a major preoccupation of governments during this period. Among them, only Ceylon, Chile and Turkey appear to have particularly high rates of population growth, and in the other less developed countries in this group the failure of agricultural expansion must be blamed for the deficit.

In 14 of the countries covered, the production increase equaled population growth or exceeded it by up to 0.9 percent per annum. In a further 14 countries the margin was from 1.0 to 3.9 percent. This group includes, among less developed countries, Brazil, the Egyptian Region of the United Arab Republic, and Iran, where the performance of agricultural production in the face of a very high rate of population increase is especially noteworthy.

Finally, in five countries, Greece, Israel, Japan, Mexico and Yugoslavia, the production increase has exceeded population growth by an average of between 4 and 6 percent each year. Although, except for Israel and Mexico, population growth is fairly moderate, the rate of increase of agricultural production has been so well sustained in these countries that the measures employed by them to encourage and promote agricultural development might well repay careful study by other countries where conditions are similar.

Pattern of agricultural production

Recent changes in the world production of the main agricultural commodities are summarized in Annex Table 2. The production of each commodity is also reviewed in the usual commodity survey at the end of this chapter. In addition, it is of interest to compare production trends for the main groups of agricultural products (Figure 3).

For the world as a whole, there appears to have been no very significant difference over the past 12 seasons in the rate of growth of the main groups of commodities, though it seems that livestock production has expanded a little faster than the other groups. For the individual regions, however, there have been sharp variations, especially in the position of livestock products.

The slightly more rapid increase in livestock production on a world basis appears to be due entirely to the more developed regions of Western Europe, North America and Oceania, where in contrast to the less developed regions livestock products form a large proportion of total agricultural output. In the more developed regions the increased demand resulting from higher incomes goes mainly to the more expensive livestock products, which in each of these regions have expanded more rapidly than total agricultural production. In each of the less developed regions, on the other hand, where, although the nutritional need for increased consumption of livestock products is particularly urgent, purchasing power is insufficient for a high level of effective demand, they have been increasing more slowly than total production. Statistics of livestock production in these regions are too incomplete and unreliable, however, for any very firm conclusions to be drawn.

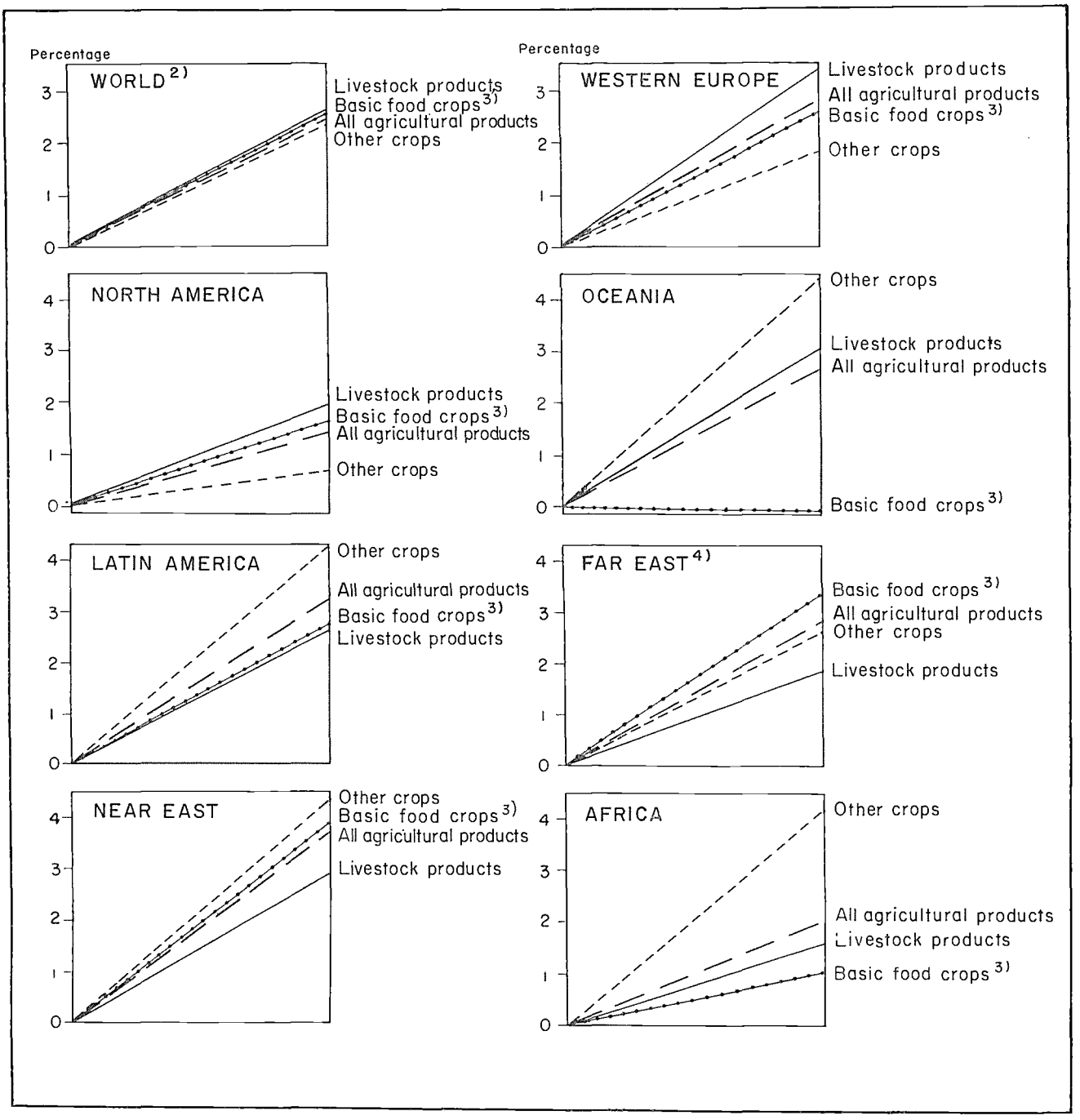
The basic grains and starchy roots, which represent a high proportion of total production in most less developed countries, have been increasing faster than production as a whole in both the Far East and Near East. They have expanded more slowly than total production in Latin America and also in Africa, though it should be noted that in the latter region statistics of basic food crops are especially poor. In Western Europe and North America the increase in basic food crops has been quite close to the trend for total production, but in Oceania the trend in their production has been static. Per caput demand for basic calorie foods in the higher income countries appears generally to have been satiated or even to be declining. A large part of the output in these countries is used for animal feeding, and much of such increases as have occurred has accumulated in surplus stocks.

The residual category of "other crops" in Figure 3 (sugar, pulses, oil crops, fruit, vegetables, beverages, tobacco, fibers) varies greatly in its composition from region to region, and it is therefore not possible to draw very useful conclusions from trends for the group as a whole. It is of interest, however, that this group has increased faster than all the others in Oceania, Latin America, the Near East and especially Africa. In the latter three regions, this commodity group contains a high proportion of crops grown primarily for export.

Many countries, especially in the less developed

FIGURE 3. - TRENDS IN REGIONAL PRODUCTION [1] OF MAIN COMMODITY GROUPS, 1948/49-1959/60

(Average annual increase on trend line as percentage of average production)



[1] Gross production. - [2] Excluding the U.S.S.R., Eastern Europe and Mainland China. - [3] Grains and starchy roots. - [4] Excluding Mainland China.

regions, are attempting to increase the diversity of their agricultural production, both in order to lessen their dependence on a narrow range of exports and to improve the nutritional quality of the diet of their population. The progress of such diversification cannot, of course, be ascertained without a detailed examination of data for individual commodities and countries. The above analysis suggests, however, that the most urgently needed form of diversification, an increase in the proportion of livestock products in production and consumption, is not yet occurring in the less

developed regions. The trend in this respect appears in fact to be toward reduced rather than greater diversity, though this conclusion must be put forward with reserve in view of the statistical inadequacies already noted.

Regional agricultural production in 1959/60

Brief notes follow on changes in agricultural production in the various regions of the world in 1959/60. For fuller details of the regional production of the main commodities, reference should be made to Annex Tables 3-10.

Western Europe

Following a period of relative stability from 1953/54 to 1956/57, agricultural production in Western Europe has expanded substantially over the past three seasons. In 1959/60 the increase amounted to about 4 percent, which was greater than for any other region, and resulted mainly from large harvests of wheat, barley, maize and potatoes.

The production of sugar beet, fodder roots and hay was affected by a severe summer drought in most of the northern and central parts of the region, but the weather in this area proved favorable for grains and there were substantial increases in wheat and barley crops. In the southern parts of the region weather conditions were generally good, and maize production increased by about 30 percent. A record level of production was reached in Yugoslavia, where maize production rose by as much as three quarters and wheat by two thirds over the previous year's crop. In Italy, however, the wheat area was smaller and yields were reduced by heavy rain. After the bumper harvests of 1958/59, the production of apples and pears dropped back sharply to more normal levels, because of late spring frosts as well as the summer droughts. Orange production continued to rise in Italy and Spain.

In many countries the rate of increase of milk production was slowed down by the dry summer of 1959, but the expansion has been resumed in the early months of 1960. Cattle numbers have risen in most countries, especially in Denmark, Ireland and the Netherlands. Pig numbers have also increased substantially in the main exporting countries; pigmeat production was higher in Denmark, the major exporter, but declined cyclically in several other countries. The production of eggs and poultry meat has continued to increase. Specialized broiler chicken production has continued to develop rapidly, especially in the United Kingdom.

Eastern Europe and U.S.S.R.

In 1958/59 exceptionally large harvests in the U.S.S.R. had brought an increase of 9 percent in this region's production, in spite of crop failures in some of the Eastern European countries. Preliminary estimates indicate a further increase of about 1 percent in 1959/60. Crop production was reduced by drought in parts of the U.S.S.R. and in several countries of Eastern Europe, but with a few exceptions the season was generally favorable for livestock production, especially in the U.S.S.R.

Total grain production in the U.S.S.R. is reported to have fallen by 11 percent from the record 1958/59 level of 141 million tons, but stocks carried over from that harvest compensated for the decline in state procurements. Drought in the Ukraine, North Caucasus, Volga and Urals was the main cause of the decline, while in Kazakhstan a million hectares remained unharvested when the winter snows began. Sugar-beet production fell by about 20 percent because of the drought, in spite of a 20 percent increase in area. The production of vegetables and sunflowerseed also declined, but cotton rose by 7 percent to the record level of 4.7 million tons (unginned). The rapid increase in livestock numbers continued, especially in the socialized sector, and with large quantities of feed available from the 1958/59 harvests the production of meat, milk, eggs and wool showed increases ranging from 6 to 16 percent.

Grain production was larger than in 1958/59 in all the Eastern European countries except Eastern Germany, but the increase was marked only in the Danubian countries, where yields had been very low the year before. Maize production increased by about 70 percent in Bulgaria, 25 percent in Hungary and more than 50 percent in Romania, and wheat by 28 percent in Hungary and around 40 percent in Romania. Sugar-beet and sunflowerseed harvests were also large in these countries, but in Czechoslovakia, Eastern Germany and Poland the production of grains, green fod-

der and sugar beet was affected by drought. Livestock production increased in 1959 in most countries of Eastern Europe, but in the northern part of the region the drought caused shortages of forage. Some countries had severe difficulties in pigmeat production, and Poland was obliged to import meat, introduce meatless days, and raise prices sharply.

North America

Revised estimates indicate that in 1958/59 production in North America rose by no less than 8 percent from the low level of the year before. The 1959/60 season was again a record one, with a further expansion estimated at more than 2 percent. Most of the increase was in livestock products, maize and cotton.

Although lower yields than in the 1958/59 record season reduced the wheat crop by some 25 percent, total United States farm output in the 1959 calendar year was slightly above the record level of the year before. There were substantial increases in the acreage and production of maize and cotton, following changes in support policies for these commodities. The production of pork, poultry meat and eggs increased, and beef production also started to rise again in 1959.

In Canada wheat production rose by more than 10 percent from the low 1958/59 level but remained below the 1951-59 average. Coarse grain production was approximately the same as in 1958/59; a decline in barley was more than offset by increased production of maize, mixed grains and oats. Most other crops, except for sunflowerseed and dry peas, were smaller in 1959/60. Marketings of pigs rose steeply, so that the output of livestock products increased in 1959 in spite of a sharp decline in cattle marketings.

Oceania

After a very large increase, now estimated at 14 percent, in 1958/59, agricultural production in Oceania appears to have approximately maintained this high level in 1959/60. A large part of the expansion in 1958/59 had come from grain production, but this fell back to more normal levels in 1959/60.

Australian wheat production fell by about 10 percent from the high 1958/59 level, and barley and oats declined even more sharply. Sugar production was slightly reduced in Australia but increased in Fiji, and the production of copra in the Pacific islands declined further. The production of wool, however, which represents almost 40 percent of the region's total agricultural output, again increased sharply in both Australia and New Zealand. Mutton and lamb production also showed a further substantial increase, but the output of beef in Australia fell by more than 10 percent in 1959/60.

Latin America

Revised data show that the large increases in Latin American agricultural production in 1956/57-1958/59 restored per caput production of food (though not of agricultural products as a whole) to approximately the prewar level in each of these three seasons. The preliminary information at present available for 1959/60 suggests that, while total agricultural production rose by more than 1 percent, food production declined by about the same percentage, so that per caput food production is once again less than before the war.

A decline in grain production in 1959/60 was caused by bad weather conditions in various countries. Beef production also fell, largely because of reduced output in Argentina. Increases of 7 to 8 percent in the production for rice and groundnuts and a recovery of 70 percent in sunflowerseed production were insufficient to bring a rise in total food production. Further expansions of 18 percent for linseed and 36 percent for coffee, however, contributed to a small rise in total agricultural production.

Countries where the production of various crops was affected by bad weather were particularly numerous in 1959/60, and included Argentina, Brazil, Costa Rica, Guatemala, Mexico and Uruguay. In Argentina the wheat and maize crops fell by nearly 20 percent and there was also a big decline in cotton, though the linseed harvest rose by 25 percent. Beef production fell sharply, reflecting lower cattle numbers and the start of a build-up of herds. Agricultural production expanded by nearly 7 percent in Brazil, but this was mainly due to sharp increases in coffee and groundnuts, as droughts and floods caused shortages of beans, potatoes and other staple foods.

Mexico's agricultural production probably increased only slightly in 1959/60; there were substantial gains in sugar and maize, but a sharp reduction in cotton production. In Uruguay agricultural production was severely affected by the floods of 1959; the production of wheat, oats, linseed and meat fell considerably, and imports of wheat and meat were necessary.

Far East

One of the most encouraging features of the agricultural production situation in 1959/60 was that production in the Far East (excluding Mainland China) increased by more than 3 percent for the second consecutive year. As noted earlier, per caput food production now appears to be only about 3 percent less than before the war. According to preliminary estimates, grain production expanded by 5 percent in 1959/60, with an especially large increase for wheat. Pulses also increased sharply, but the production of groundnuts and also of jute declined, while copra production failed to recover completely. The slow expansion of livestock production appears to have continued.

There were favorable weather conditions in most of the region in 1959/60, although bad weather affected production in a few countries. In Ceylon rice yields were maintained, even though some of the crop was destroyed by floods just before harvesting. Drought and floods reduced grain production in some parts of India, but with good yields in other areas the decline in total grain production was probably small. Cotton and jute production declined in that country, partly because of the competition for land with food grains, and the production of groundnuts was also lower. In Indonesia grain production increased, and there was also a substantial increase in rubber, the steady expansion of which continued in the Federation of Malaya as well. Pakistan harvested a record rice crop which was nearly a quarter above the previous year's low level, but there was a slight decline in jute. Copra production in the Philippines was still suffering from the drought of 1958. Rice harvests were large in Japan and South Korea, but were reduced in South Viet-Nam and Taiwan.

In Mainland China, although severe drought is said to have affected one third of the farmland in 1959, agricultural production is officially reported to have increased by a further 17 percent. Production estimates for 1958, the year of "the great leap forward," were substantially reduced in August 1959. Total "grain" production in 1958 (including the grain equivalent of potatoes, sweet potatoes and pulses), was revised from the original estimate of 375 million tons to 250 million tons. The first official estimate for 1959 reports a rise of 8 percent to 270 million tons, or 2 percent short of the year's target, though production figures for the individual grain crops have not yet been published. Cotton production, for which official production estimates were revised from 3.4 to 2.1 million tons for 1958, is reported to have reached 2.4 million tons in 1959. Intensive efforts have been made to increase pig breeding, and pig numbers are reported to have risen from 160 million in 1958 (revised from 250 million) to 180 million in 1959. Transport difficulties appear to have persisted and to have prevented supplies from reaching urban areas in sufficient quantity to relieve the tight food situation.

Near East

After increasing by more than 3 percent in 1958/59, agricultural production is estimated to have remained at about the same level in 1959/60. Food production, however, declined slightly. Grain production fell by a further 860,000 tons from the low level of 1958/59, and increases in other crops were sufficient only to offset this decline.

As in 1958/59, Iraq, Jordan and the Syrian Region of the United Arab Republic suffered from drought and their combined production of wheat and barley in 1959/60 was again about half the 1957/58 level. In Turkey rice production was 20 percent lower and wheat and barley nearly 10 percent lower in 1959/60 than in 1958/59. The rice crop recovered in the Egyptian Region of the United Arab Republic, however, and total grain production also increased substantially in Iran. Tobacco production recovered in Turkey, and there was a further remarkable rise of over 40 percent in sugar production in this country. Cotton production expanded in most countries in 1959/60. The output of livestock products is estimated to have been about the same as the year before.

Africa

Agricultural production in Africa, which recovered by more than 3 percent in 1958/59 from the low 1957/58 level, again fell back slightly in 1959/60. The fall in food production was somewhat sharper, and per caput food production is estimated to have fallen below the prewar level for the first time since the immediate postwar years. Cocoa and coffee were almost the only products to show large increases (about 10 percent) in 1959/60.

Grain production was 1.3 million tons less than in 1958/59. Small increases in wheat production in Algeria and the Union of South Africa were more than offset by lower crops in Morocco and Tunisia. The region's barley production fell by nearly 25 percent, with a decline of half a million tons (about 30 percent) in Morocco alone. Maize production was reduced in the Union of South Africa. Mauritius and Reunion had large sugar harvests, but production was lower in the Union of South Africa. Groundnut production again declined in Nigeria and Senegal. On the other hand, both Ghana and Nigeria had record crops of cocoa, and coffee production increased in all the main producers except Ethiopia and Madagascar. The region's small output of livestock products appears to have remained unchanged.

FISHERY PRODUCTION

The world catch of fish showed a further large increase in 1959 and according to preliminary data probably exceeded 35 million tons (Table 4 and Annex Table 11). This was primarily due to further substantial expansion in Peru and Mainland China. Peru has now jumped to fifth place among the fish producing countries as a result of intensified exploitation of its anchoveta resources. Mainland China's production is reported to have exceeded 5 million tons in 1959, which would make it the second largest fish producer in the world.

Production also increased in most of the other major producing countries, with landings 5 to 10 percent higher in Japan, the United States, Canada and the U.S.S.R. In some of these countries, however, the value of production declined as a result of substantially reduced catches of important higher priced species. In the United States, for example, low priced industrial fish for the first time accounted for a larger proportion of total production than edible fish.

TABLE 4. – ESTIMATED WORLD CATCH OF FISH, CRUSTACEANS, AND MOLLUSKS

	1938	Average 1948-52	1953	1954	1955	1956	1957	1958	1959 (Preliminary)
	Million metric tons, live weight								
Western Europe	5.44	6.19	6.77	7.24	7.35	7.77	7.33	7.18	7.5
Eastern Europe and U. S. S. R.	1.70	1.99	2.28	2.58	2.84	2.99	2.94	3.04	3.2
North America	3.15	3.60	3.62	3.83	3.78	4.12	3.79	3.75	4.0
Oceania	0.09	0.09	0.11	0.11	0.11	0.12	0.13	0.13	0.1
Latin America	0.24	0.50	0.73	0.80	0.97	1.08	1.33	1.83	3.0
Far East	9.10	7.42	9.78	10.46	11.29	11.62	13.06	13.93	15.5
Near East	0.33	0.38	0.43	0.43	0.41	0.44	0.43	0.43	0.4
Africa	0.45	1.03	1.52	1.56	1.60	1.71	1.82	1.81	1.9
WORLD TOTAL	20.50	21.20	25.24	27.01	28.35	29.85	30.83	32.10	35.6

FOREST PRODUCTION

The effects of economic recovery on the demand for forest products became more marked in 1959, and total removals of industrial roundwood are estimated to have increased by nearly 4 percent (Table 5). At the same time total fuelwood removals declined by about the same percentage.

In North America, the total volume of roundwood production was nearly 5 percent higher than in 1958, although still 4 percent below 1956,

TABLE 5. – ESTIMATED REMOVALS OF INDUSTRIAL ROUNDWOOD

	Average 1948-52	1953	1954	1955	1956	1957	1958	1959 (Preliminary)
	Million cubic meters							
Europe	172.6	176.0	188.4	197.7	197.2	196.9	194.2	192
U. S. S. R.	162.8	179.9	205.8	212.1	222.0	237.9	252.0	265
North America	302.1	306.2	329.3	352.2	359.3	332.2	322.1	335
Oceania	10.5	12.6	13.2	14.1	14.4	14.0	14.5	14.6
Latin America	23.2	25.9	26.4	29.1	28.7	28.1	28.1	28.5
Africa	7.4	9.3	10.4	11.1	9.7	10.6	11.0	11.9
Asia	50.6	62.1	63.6	70.6	97.5	99.9	105.2	115
WORLD TOTAL	729.2	772.0	837.1	886.9	928.8	919.6	927.1	962.0

the postwar peak. In the United States, saw logs, veneer logs and pulpwood all increased in 1959, by as much as 16 percent for softwood peeler logs and 8 percent for pulpwood. In Europe, however, the declining trend in the output of industrial wood since 1955 did not change in 1959, in spite of the generally high level of economic activity. Depleted stocks, a buoyant sawnwood market, and sometimes also rising prices, led to an increase in coniferous saw log production in many Western European countries, but in some countries in Eastern Europe reduced felling programs, implementing long-range forest policies, have temporarily lessened the output of coniferous logs. There is no change in the declining trend of European pitprop production, due to the difficulties experienced in most coal-mining industries. In response to the heavy demand for plywood, however, the production of veneer logs increased, and an improved market for pulp and paper products has favored the production of pulpwood in most European countries. The steady increase in timber production in the U.S.S.R. continued in 1959, with a 6 percent increase in removals of industrial wood.

Latin America's roundwood production was only slightly higher than in 1958; the output of saw-logs declined and the production of pulpwood increased. In the Near East, the most noticeable trend in 1959 was the increased fellings in poplar and eucalypt plantations outside the forests, in which the output of industrial wood is relatively high. Improvements in the general economic situation in the Far East, together with measures to improve housing, fostered a greater output of roundwood and in particular logs, and the production of all industrial wood increased by almost 10 percent. Low freight rates, favorable climatic conditions and a good local market led to an increase in the output of roundwood in Africa also.

AGRICULTURAL PRODUCTION OUTLOOK FOR 1960/61

Such indications as are available at the end of June 1960 are for a larger world production of most commodities in 1960/61. The prospects are, however, always liable to alteration as a result of changes in weather conditions later in the season.

In Western Europe grain crops are likely to decline somewhat from the high 1959/60 levels. On the other hand, recovery from the small apple and pear crops appears probable. Livestock production is expected to continue to expand. Cattle numbers are increasing in several countries, while 1960 also started with an upswing in the pig cycle in some countries. The production of poultry meat and milk should rise further, but some decline in mutton and lamb production is likely in the United Kingdom.

In the U.S.S.R. frosts and dust storms in the early spring severely damaged winter wheat sowings in the Ukraine and North Caucasus, part of which were lost and had to be resown. Larger areas are therefore reported to have been sown to spring grain in the eastern regions to make good the losses. The dust storms and spring frosts also damaged crops in parts of Bulgaria, Czechoslovakia, Hungary and Romania.

Agricultural production in North America will probably equal or even exceed the record level of 1959/60. In the United States the winter

wheat crop is expected to be about 10 percent larger and, with spring wheat production forecast as increasing 23 percent, total wheat production may exceed the reduced 1959/60 level by 13 percent. In Canada wheat prospects are favorable because of good soil moisture conditions. Plantings of the four major coarse grains in the United States are slightly less than in 1959/60. Pigmeat production is expected to decline in the United States, but cattle numbers have risen and an increase in marketings is likely. In Canada also, reduced marketings of pigmeat are expected in 1960, and beef marketings will be larger following the expansion of cattle numbers in 1959.

With a normal season, agricultural production in Oceania can be expected to resume its upward trend in 1960/61. The steady expansion of agricultural production in Latin America also appears likely to continue. In Argentina farmers will probably plant more wheat, and more favorable prices may lead to larger coarse grain acreages, while with higher cattle numbers an increased beef output is expected. Policies to encourage cotton production have been discontinued in Mexico and Nicaragua, however, and in Brazil unfavorable weather at the end of 1959 may substantially reduce the coffee harvest from the record 1959/60 level.

In the Far East the large grain crops of the past two seasons have been due, at least in part, to particularly favorable weather, and it is therefore possible that there may be some leveling off in 1960/61. Extended drought early in 1960 in northern India is expected to reduce yields of wheat and pulses. Copra production in the Philippines is recovering from the effects of the drought which had reduced output to low levels in 1958 and 1959. In Mainland China an expansion of the grain area and the further development of the livestock industry are planned, with even greater emphasis on pig breeding than last year.

In the Near East the early forecasts for the 1960/61 winter crops indicated a third successive year of drought in Iraq, Jordan and the Syrian Region of the United Arab Republic and also in Israel and Lebanon. The acreage of cotton and rice has been reduced in the Egyptian Region of the United Arab Republic. Favorable weather conditions are reported from Turkey, however, and Sudan expects a record crop of millet and sorghum.

The North African countries have had better rains than in 1959, and wheat and barley crops are expected to show an increase over the low production of 1959/60. In Southern Rhodesia and South West Africa a period of drought in early 1960 adversely affected the livestock situation and, to a smaller extent, crop production. The cyclone damage in Mauritius and Reunion at the beginning of 1960 will reduce the 1960/61 sugar crops by about 25 percent.

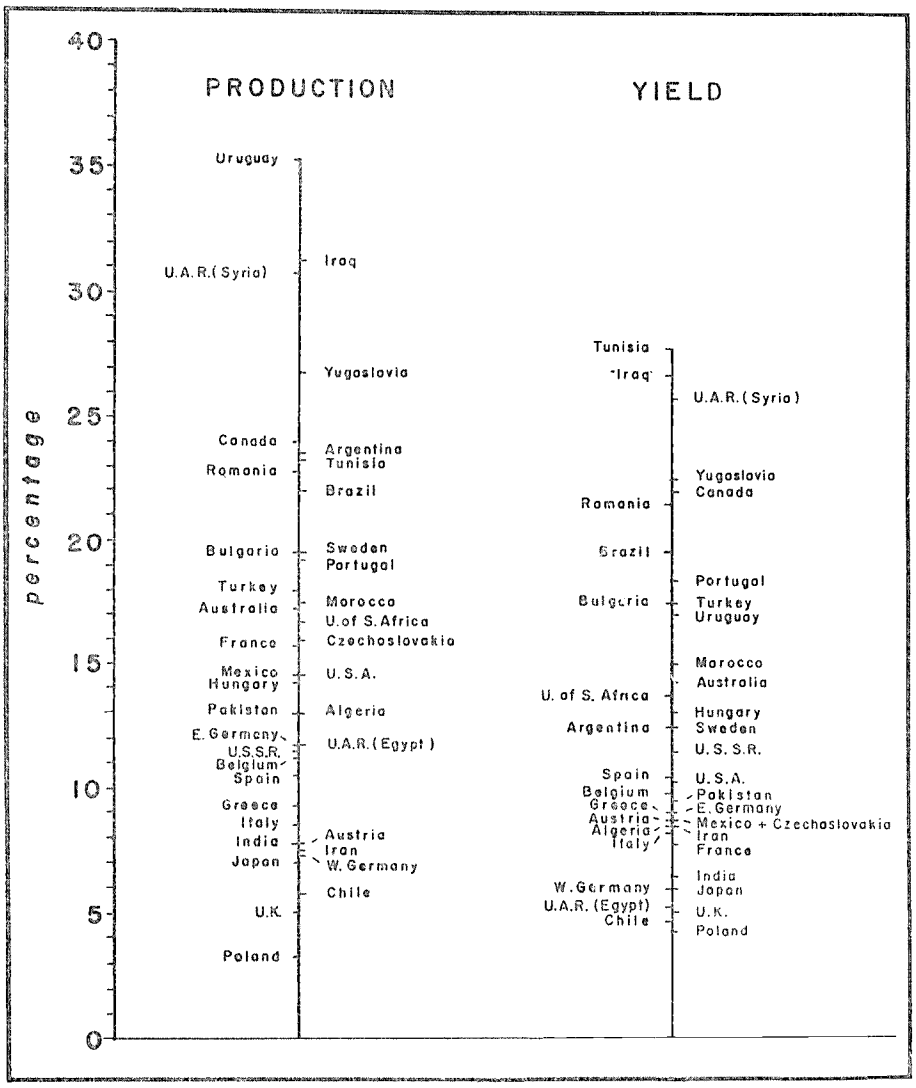
Variability of agricultural production

The above account of current crop prospects emphasizes once again the dependence of agricultural production on the weather. In the postwar period, governments have sought increasingly to influence agricultural production, but the effect of their policies and measures, as also of changes in demand and prices, is chiefly on the longer-term course of production. Even if a maximum or minimum acreage is fixed for a particular crop, the final determinants of the level of production in any given year remain the weather and other natural factors. Technical improvements, including irrigation, the introduction of better seeds and mechanized cultivation to make the best use of available rainfall, flood control measures, and the control of pests and diseases, can lessen the effects of some of these natural factors, but they cannot entirely eliminate them. In any case, the majority of the world's farmers do not yet have the benefit of such improvements and remain as much as ever at the mercy of the weather.

When adverse weather is widespread, it can even have a sharp effect on the production of a whole region of the world, as for example in the Far East in 1957/58, the Near East in 1954/55, and Africa in 1957/58 and 1959/60. For an individual country the fall in production may be much more severe. The indices of production in Annex Table 1 show that declines of 5 to 10 percent in a single year are quite common. Larger fluctuations appear to occur mainly in a few areas where the rainfall is particularly uncertain, including Northwest Africa, parts of the Near East, and certain rice-growing countries in Southeast Asia. Production is estimated to have dropped in Algeria by about 10 percent in both 1955/56 and 1957/58, in Morocco by 15 percent in 1957/58, and in Tunisia by 21 percent in 1955/56 and 13 percent in 1957/58. In Turkey production fell by nearly 20 percent in 1954/55, while it is probable that

FIGURE 4. - VARIABILITY OF WHEAT PRODUCTION AND YIELDS IN SELECTED COUNTRIES, 1948/49-1959/60

(Average annual deviation from trend line as percentage of average annual production or yield)



fluctuations have been even greater in the so-called " fertile crescent " comprising Iraq, Jordan, Lebanon and the Syrian Region of the United Arab Republic, where, as was noted earlier, droughts have now caused crop failures for two successive seasons and appear likely to do the same in 1960/61. In Southeast Asia the failure of the monsoon brought falls of 14 percent in production in Burma in 1957/58, and of about 20 percent in both 1954/55 and 1957/58 in Thailand.

Outside these especially vulnerable areas, large reductions in output have also occurred in Canada, Japan and Yugoslavia in some recent years as a result of bad weather. Certain areas, especially the islands in the Caribbean and in the Indian and Pacific Oceans, are particularly liable to damage from cyclones and hurricanes. There are also specific regions within many countries where droughts or floods are very frequent. Hardly a year goes by without crop failures in some areas of India or Mainland China. Other examples are the " drought polygon " of northeast Brazil and some Andean localities in Bolivia, Ecuador and Peru. In West Africa production is fairly stable in the forest zone, where roots and tubers are the staple foods, but in the arid areas bordering the Sahara the yields of the staple millets and sorghums fluctuate widely and there is sometimes a " hungry season " before the next harvest.

Fluctuations in the output of individual crops

are naturally larger than those in agricultural production as a whole. Indeed, it is noteworthy that in the countries where total production tends to fluctuate most widely it is often rather heavily dominated by one or two crops, as with wheat and barley in Northwest Africa and the "fertile crescent," and rice in Southeast Asia. The existence of a sizeable livestock industry, on the other hand, is often a stabilizing influence on the level of total agricultural output; this may be so even in arid countries, where meat production tends to increase in a drought year as a result of emergency slaughterings.

Figure 4 shows the average annual variability of the production and per hectare yield of wheat in the larger producing countries. It appears that the variability of output results mainly from fluctuations in yields, though in most cases production has fluctuated slightly more than yields, as the weather also affects the area that can be sown or harvested. In a few countries variations in production have been much greater than in yields, and in some of these, notably Argentina, the Egyptian Region of the United Arab Republic, France and the United States, this probably reflects the effect on the sown area not only of the weather but also of changes in price policies and other production incentives and controls.

Wheat yields appear to have fluctuated least in Europe, and also in Chile, in the Egyptian Region of the United Arab Republic, where production is entirely irrigated, in India, where almost half the wheat output is grown under irrigation, and in Japan. The greatest variability has been in the vulnerable Northwest African and Near East countries discussed above, in some countries of Southern Europe, and also in Canada. In the other three major wheat-exporting countries, Argentina, Australia and the United States, yields have been more stable than in Canada, but have nevertheless fluctuated considerably.

Table 6 indicates that even on a regional basis wheat production has fluctuated widely, especially in Oceania, Latin America and North America. The least variability has been in Western Europe and the Far East, where the fluctuations in most individual countries are relatively small, while different trends in the large number of producing countries tend to stabilize the regional total. A comparison of the fluctuations that have occurred in area, yields and production indicates that changes in the area must often have been in the opposite direction to yield changes. An increase in the area may frequently lead to lower yields, and *vice versa*.

TABLE 6. - VARIABILITY OF WHEAT AREA, YIELD AND PRODUCTION, BY REGION, 1948/49 - 1959/60

	Harvested area	Yield per hectare	Production
	Percentage [1]		
Western Europe	2.8	3.5	5.5
North America	8.0	7.8	12.6
Oceania	12.2	16.1	17.2
Latin America	9.2	8.8	15.3
Far East (excluding Mainland China)	4.5	4.2	5.9
Near East	3.8	7.5	8.3
Africa	5.3	7.9	8.6

[1] Average annual deviation (standard error of estimates) from trend line, expressed as percentage of average annual area, yield and production.

Space does not permit a similar analysis for other products, but regional data for some of the main crops are summarized in Annex Table 12. Generally speaking, fluctuations in the yields of other crops appear to have been smaller than for wheat. Among livestock products, for which no data are shown, yields of milk and wool often fluctuate sharply with the weather, especially in Oceania. The shortage of fodder and drinking water in drought years, and also outbreaks of diseases, may cause severe reductions in livestock numbers, though in most countries fluctuations in numbers result mainly from such other factors as changes in prices.

The examples quoted are sufficient to indicate the seriousness of the problem that a country can face in a season when its agricultural production is badly affected by the weather. Such fluctuations were, in the past, the chief cause of the famines that have been recorded since biblical times. There was a major famine in Bengal as recently as 1943, when 1.5 million people perished, but improved storage and, above all, transport have contributed greatly to the avoidance of further disasters of such magnitude. Such famines as have occurred more recently have usually been confined to limited areas within a country and have quickly been overcome by moving in supplies from other parts of the country or from abroad. The availability of surplus stocks of foodstuffs, as gifts or on special terms, has been an important new factor in the avoidance of famine.

Even though it is much easier than in the past

to avert a major famine, crop failures can nevertheless have serious effects on food consumption levels, especially among subsistence farmers and the poorer groups of the urban population. Shortages of basic foods cause steep rises in retail prices. Exports, too, are often sharply affected, and at the same time as export earnings are reduced it is necessary to make additional food imports, to the detriment of the balance of payments and the import of the capital goods needed for the execution of economic development plans.

Trends in crop production, areas and yields

Although in any single year the weather can vitiate plans and intentions to expand or reduce the production of a particular crop, the trend of production over a period of years depends to a greater extent on the reactions of farmers to price and demand factors and to government measures to encourage or discourage production. These are the main determinants of the longer-term trend, from which in a given year the weather may cause the deviations discussed above. Farmers can influence the level of their production by varying either the area planted or the intensity of application of such inputs as labor, machinery, seeds, fertilizers, pesticides and irrigation water, which affect the yield per unit of area. It is therefore of interest to examine the relative contributions of increases in crop areas and yields to the postwar expansion of agricultural production.

Figure 5 brings out a striking contrast in this respect between the more and less developed regions of the world. In the less developed regions, while there has been some limited increase in yields per hectare during the period 1948/49-1959/60, the larger part of the increase in output of the major crops has clearly resulted from the extension of the cultivated area (including double cropping). In Western Europe, North America and Oceania, on the other hand, the rise in yields has been much more marked. Crop areas have increased more slowly, and in many cases production has expanded in spite of a decline in the area.

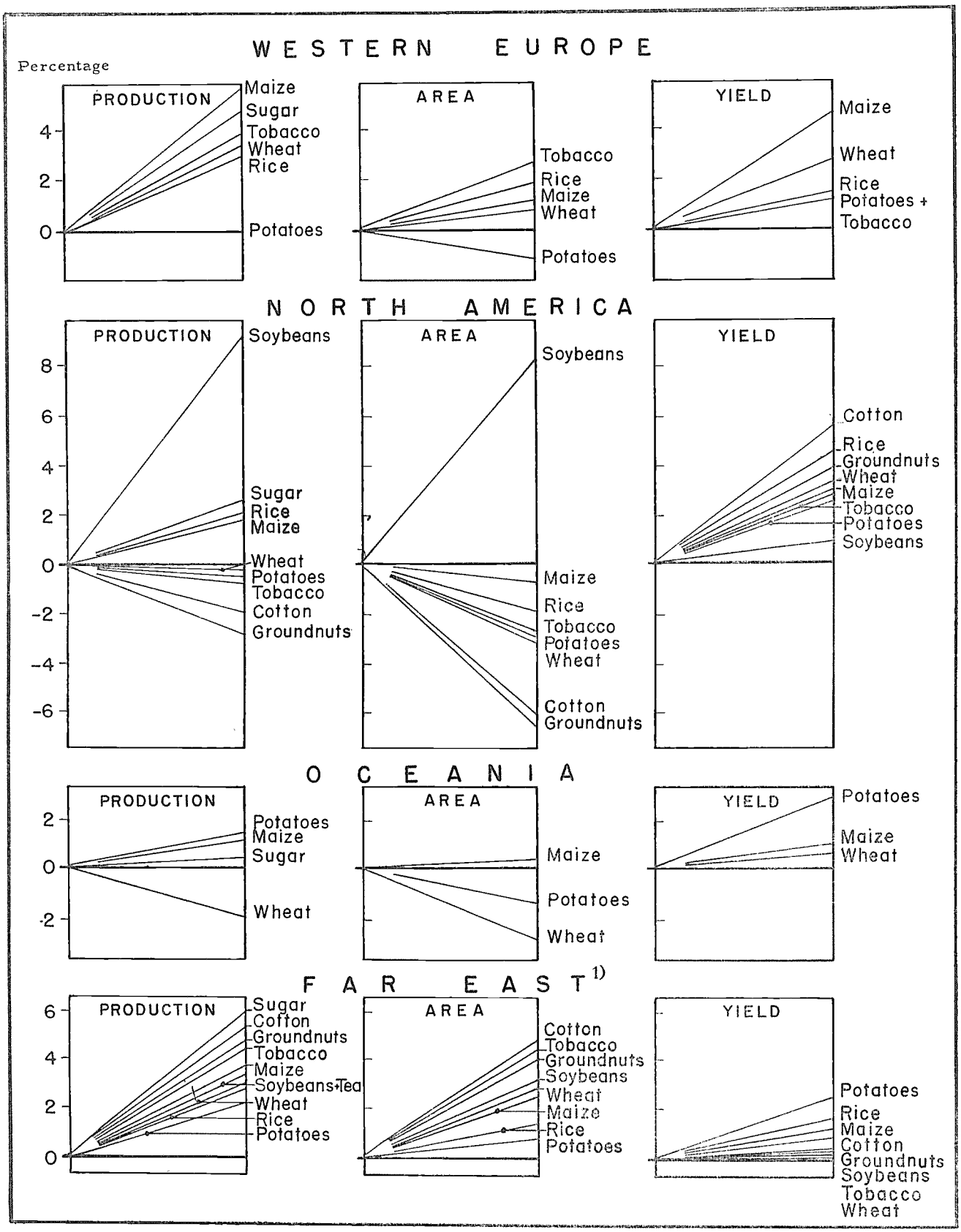
There have of course been exceptions to this general rule, and some notable increases in yields have occurred in the less developed regions. Except for Latin America, rice yields are estimated to have increased faster than area in each of these regions, including the Far East, where rice is the predominant crop. Among the other main crops covered in Figure 5, the increase in yields has also exceeded that in area for cotton in Latin America, potatoes in the Far East, and maize in Africa. Large increases in production have also been obtained for sugar and for tropical tree crops, such as cocoa, coffee and tea. The statistical data are generally inadequate to show the relative contributions of new planting and improved yields, but in many countries recent new planting and replanting have mainly been with much higher-yielding strains. Measures for the control of pests and diseases have also been greatly improved, while there is a rather widespread tendency for higher standards of cultivation to be applied to these export crops than to the basic food crops, especially when grown on a plantation scale.

Nevertheless, for most crops increased production in the less developed countries has come chiefly from the expansion of the cultivated area. In fact, the expansion of the rice area in Latin America, of cotton and tobacco in the Near East, and of wheat in Africa appears to have been accompanied by declining yields per hectare, probably in part because of the extension of cultivation to less suitable land.

In the more developed regions, however, average annual yield increases ranging from 2 to 5 percent have been obtained for almost all the main crops during the past 12 seasons. In Western Europe the increase in area has been less than in yield for each of the main crops except tobacco, and for potatoes the area shows a declining trend. Maize yields in Western Europe have risen particularly rapidly with the increasing use of hybrid varieties. In North America, the area has declined sharply for nearly all major crops. Soybeans are an exception, however, with an average annual increase of 8 percent in area but hardly any change in yield. In Oceania the area of both potatoes and wheat has fallen.

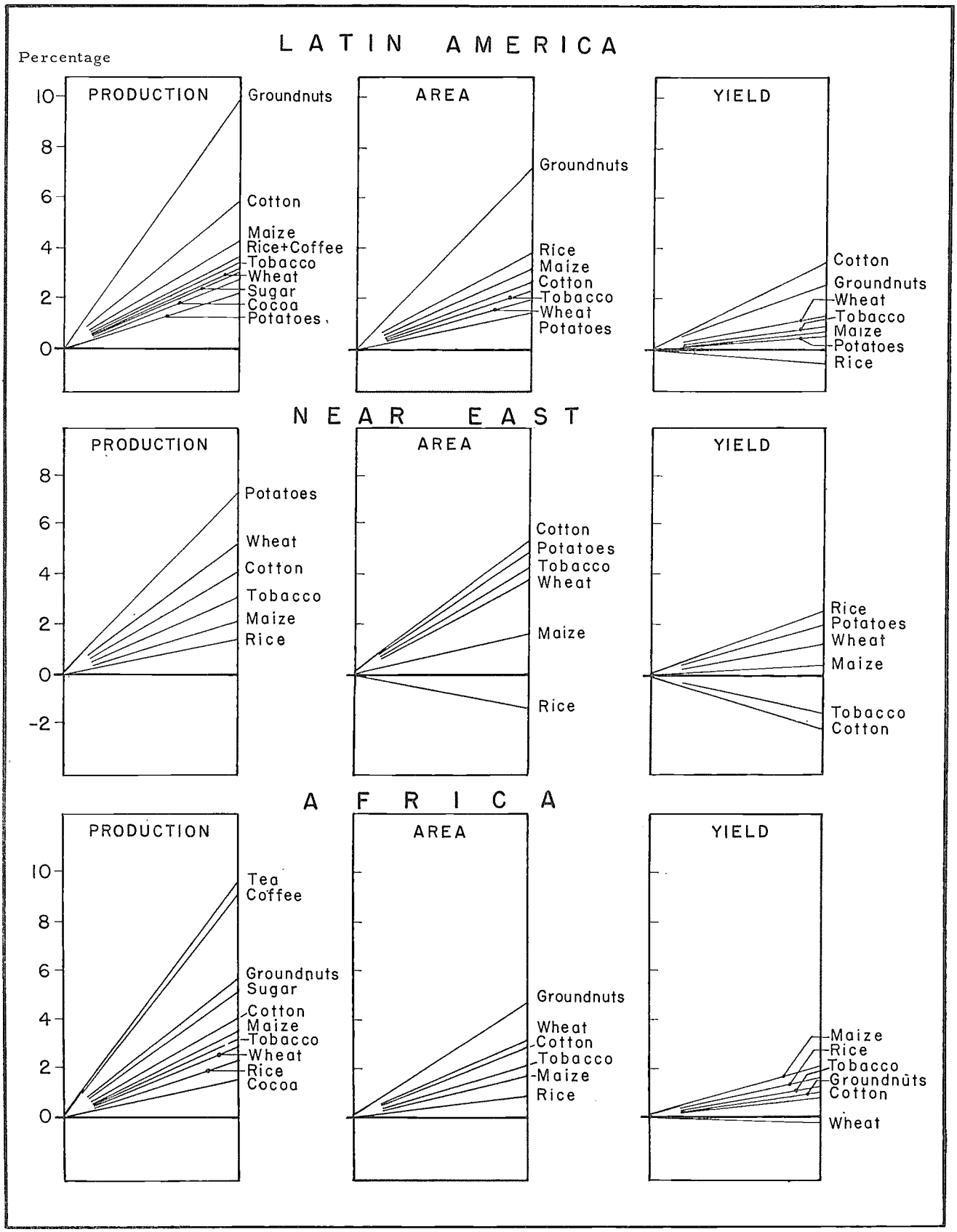
Farmers in more developed countries are generally in a much better position than those in less developed countries to adopt improved practices that will lead to higher yields. Moreover, agricultural policies in most of the more developed countries have for some time been designed to encourage increased productivity per hectare and per man. Where there has been a marked expansion in the more developed countries in the area under a particular crop, this has often been accompanied by a reduction in area for another

FIGURE 5. - TRENDS IN REGIONAL PRODUCTION, AREA AND YIELD OF MAIN CROPS, 1948/49-1959/60
(Average annual increase on trend line as percentage of average production, area and yield)



1 Excluding Mainland China.

FIGURE 5. - TRENDS IN REGIONAL PRODUCTION, AREA AND YIELD OF MAIN CROPS, 1948/49-1959/60 (*concluded*)
(Average annual increase on trend line as percentage of average production, area and yield)



crop, in response to shifts in demand and price relationships.

Trends in crop areas and yields in North America show the influence of the efforts of the United States government to check the accumulation of surplus stocks of certain commodities, particularly wheat, coarse grains, cotton and tobacco. As a result of the Soil Bank measures, designed to take a considerable area of land temporarily out of cultivation, as well as changes in price supports, acreage restrictions and other controls on specific products, crop areas have declined substantially, especially for cotton and groundnuts. Production, however, has either continued to increase or has fallen much less than the area, because of a concentration on the better land and because the reduced area has been more intensively cultivated. At the same time, some of the area has been transferred to soybeans and other crops that were not controlled.

For wheat, the yield variability of which was discussed earlier, some aspects of the trend in yields may also be examined in more detail. Figure 6A classifies all the countries for which data are available and where the average wheat production exceeds 20,000 tons a year, according to the average annual change in wheat yields during the period 1948/49-1959/60.[1] In 25 of these countries there has been an increase in yields ranging from 0.1 to 2 percent per year, in 29 countries the increase has exceeded 2 percent, and in 9 countries yields have declined. Countries where the increase was 2.1 to 3.0 percent include a number of European countries, together with Iran, Japan and Lebanon. Apart from European countries, increases of 3.1 to 4.0 percent are recorded for Colombia, Ecuador, the Egyptian Region of the United Arab Republic, the United States and the U.S.S.R. Increases of more than 4 percent a year are found mainly in those countries mentioned earlier in this chapter as having achieved an outstandingly rapid expansion of total agricultural production. At the other extreme, countries showing a declining trend include Jordan, the Syrian Region of the United Arab Republic and Tunisia (in these areas the recent succession of bad seasons has probably greatly affected the 12-year trend), as well as Brazil and Pakistan among the larger producers.

Yield trends have also varied sharply within countries. In Argentina, for example, the average annual increase in wheat yields has ranged from 0.9 percent in Santa Fe to 6.2 percent in La Pampa; in India from 0.4 percent in Bombay to 4.9 percent in Rajasthan; in Italy from 0.3 percent in Sicily to 4.6 percent in Latium and Tuscany; and in the United States from 2.1 percent in Colorado to 5.8 percent in Texas. In the U.S.S.R. the average annual increase has been 2.9 percent in Kazakhstan, where there have been very large increases in the area under wheat, and 5.9 percent in the Ukraine, where the area has declined.

The absolute level of yields also covers a very wide range. Figure 6B compares average wheat yields in 1948/49-1959/60 in the same countries as shown in the map illustrating trends in yields. The extremes among these countries are 4.7 quintals per hectare in Tunisia and 37.8 quintals, or eight times as much, in Denmark. The world average for the same period is around 10 quintals per hectare, and the great majority of countries fall between 5 and 15 quintals. Most of the less developed countries, and also Portugal, Spain and the U.S.S.R., have yields of 5 to 10 quintals. Yields are between 10 and 15 quintals in the four major exporting countries, in the countries of Southeastern Europe, and in a few less developed countries, including Kenya (where wheat is produced mainly by European farmers in the temperate highlands), Mexico, Taiwan and Turkey. By far the highest wheat yields are in Europe, and outside this continent yields above 15 quintals per hectare are found only in the Egyptian Region of the United Arab Republic, where production is entirely irrigated, and in Japan and New Zealand.

Within Europe the influence of climate on the level of wheat yields is very apparent. Yields are above 25 quintals only in a contiguous group of countries in Northwestern Europe, 20 to 25 quintals in Norway, Sweden and also France, and 15 to 20 quintals in a zone stretching from Czechoslovakia in the north to Italy in the south, as well as in Finland. A wide zone where yields average 10 to 15 quintals extends from Poland through all the countries of Southeastern Europe and across to Turkey. Finally, in Portugal and Spain yields are almost as low as in Algeria and Morocco on the other side of the Mediterranean.

As noted above in the case of the trends in

[1] It should be noted, however, that the 12-year trend line on which these data are based is subject to a very considerable margin of error for countries where yields have fluctuated greatly from year to year.

yields, the average levels of yields also differ widely within countries. In Argentina, for instance, they ranged in 1948/49-1959/60 from 8.2 quintals per hectare in La Pampa to 14.2 quintals in Santa Fe, in India from 4.8 quintals in Bombay to 10.3 quintals in Punjab, and in the United States from 8.3 quintals in South Dakota and Texas to 20.2 quintals in Washington. In the U.S.S.R. yields averaged 7.2 quintals in Kazakhstan, a new wheat-growing region, as compared with 13.6 quintals in the older producing region of Ukraine. Even in some smaller countries the differences may be large, as in Italy, where yields ranged from 10.6 quintals in Sicily to 29.6 quintals in Lombardy.

like wheat, which is grown so widely throughout the world. It seems probable, however, that the rate of increase in yields may also be related to some extent to the level of economic development of a country, or of an area within a country. Apart from climatic and physical factors, there may well be a certain threshold of general economic development that has to be reached before sustained and substantial improvements in yields can be obtained. This threshold is likely to be closely associated with such factors as the availability of adequate capital and of suitable organizations for the provision of easily accessible agricultural credit, the adquacy of extension and educational services

TABLE 7. - TRENDS AND LEVELS OF WHEAT AREA, YIELD AND PRODUCTION, BY REGION, 1948/49-1959/60

	Harvested area		Yield per hectare		Production	
	1 000 ha. [1]	Average annual percentage change [2]	100 kg./ha. [1]	Average annual percentage change [2]	1 000 m.t. [1]	Average annual percentage change [2]
Western Europe	20 285	+0.8	17.0	+2.6	34 545	+3.4
North America	33 897	-3.4	12.9	+3.1	43 201	-0.3
Oceania	4 455	-2.8	11.2	+0.6	4 956	-1.9
Latin America	8 216	+2.1	11.3	+1.4	9 391	+3.3
Far East (excl. Mainland China)	16 071	+2.9	7.9	+0.02	12 716	+3.0
Near East	14 147	+4.0	9.6	+1.3	13 675	+5.2
Africa	5 885	+3.1	6.2	-0.2	3 619	+2.9

[1] Average 1948/49-1959/60. - [2] Average annual change as percentage of 1948/49-1959/60 average.

A comparison of the two maps reveals some significant relationships. It might be expected that wheat yields would rise fastest where their actual levels are lowest, but this appears to be far from the case. In fact the most rapid increase in yields seems to have been in countries where they are already fairly high. This relationship also appears to apply on a regional basis (Table 7), and to areas within a country, as for example in India, Italy and the U.S.S.R. Wheat yields have shown a declining trend only in countries where they are less than the world average. Even more significant, however, is that in almost all those countries where wheat yields have declined, there has been a very substantial expansion in the area devoted to the crop, presumably into places where the climate and soil are less suitable.

Clearly, climatic and soil factors have a very important influence not only on the current levels of yields but also on the increase that it is possible to obtain, especially in the case of a crop

for imparting knowledge of improved methods, and the availability of fertilizers and other necessary inputs at prices which are favorable relative to the prices received for agricultural products; the latter in turn depend largely on the adequacy of the marketing services and often on the system of land tenure. Once this point has been reached the rate of increase in yields may be expected to be accelerated through the demonstration effect.

As was indicated earlier, changes in the crop area may also have an important influence on the trend in yields per hectare. Table 7 suggests that the large increases in wheat area that have occurred in the less developed regions, involving an extension on to less suitable land, have retarded the improvement of yields. On the other hand, where the wheat area has declined, as in North America, the concentration of production on the better land has contributed to the increase in yields.

It also appears, as indeed would be expected, that when yields reach a very high level the rate

FIGURE 6A. - TRENDS IN WHEAT YIELDS IN SELECTED COUNTRIES, 1948/49-1959/60

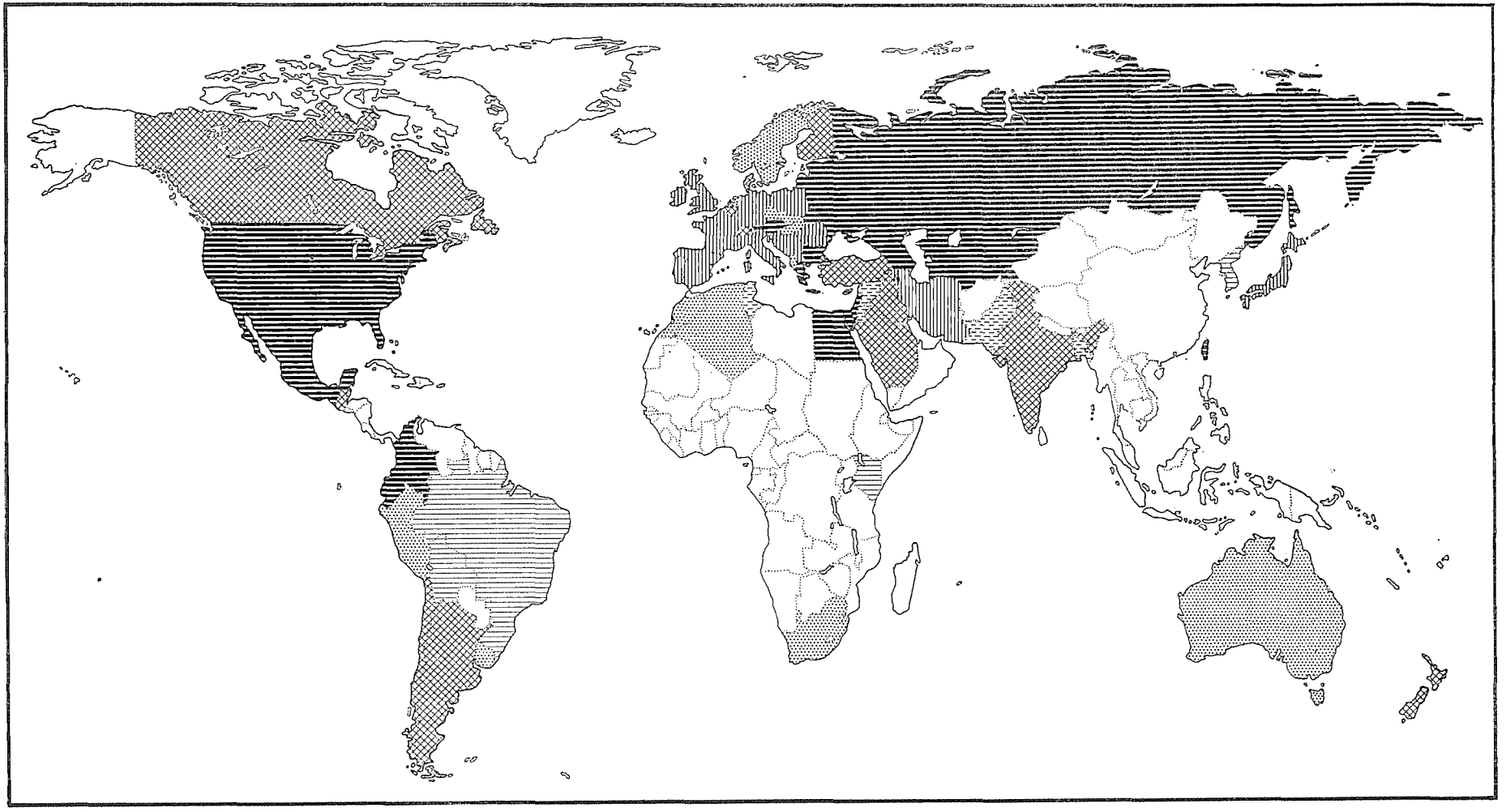
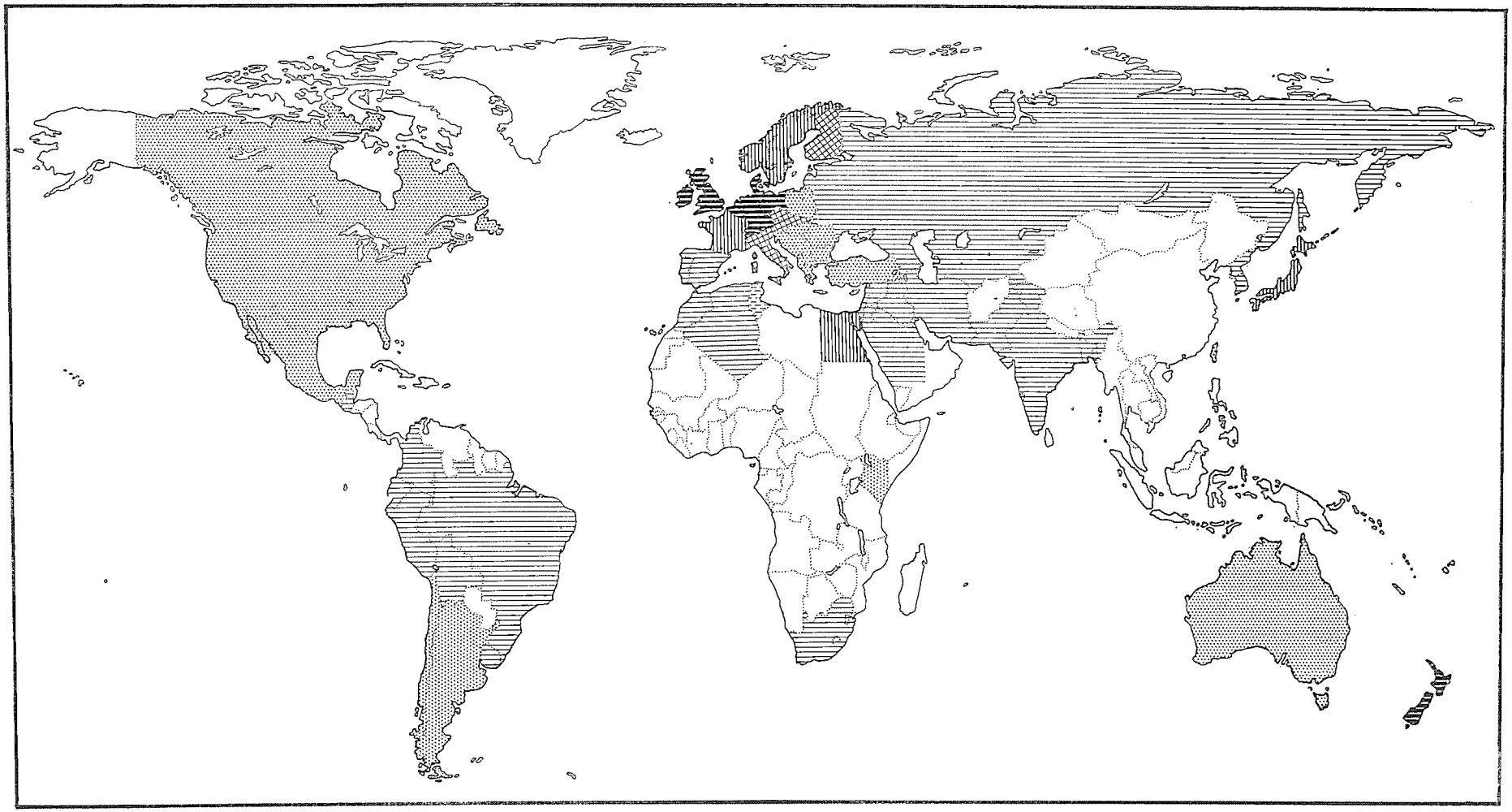


FIGURE 6B. - LEVELS OF WHEAT YIELDS IN SELECTED COUNTRIES, AVERAGE 1948/49-1959/60



of increase begins to tail off.[2] This does not mean that a physical limit is being approached but is the result of diminishing financial returns from additional inputs. So far, however, it is almost only in certain countries of Northwestern Europe that this effect is apparent to any substantial degree in respect of the average yield of a whole country. In the United States, for example, where wheat yields are much lower than in most European countries, they are still increasing with considerable momentum. This is in large part the origin of the accumulation of surplus stocks in that country, as well as being, as noted above, the chief reason why it has not so far proved possible to check their expansion by means of measures designed to reduce acreage. Over the period 1948/49-1959/60 a 4 percent average annual decline in wheat area in the United States has been almost exactly counterbalanced by the average annual increase in yields, so that the trend in production has been only slightly downward. That price supports have played a large part in stimulating this rise in yields is suggested by the fact that in Canada, where the level of yields is approximately the same as in the United States, their rate of increase has been much less rapid.

Changes in stocks

During 1959/60 further major increases in the over-all level of stocks appear to have occurred only for coarse grains and coffee. Cotton stocks were again reduced. Stocks of wheat showed little change, and for sugar and most other major agricultural commodities also the expansion of stocks seems to have been halted at least temporarily (Table 8).

Although production fell by nearly 25 percent, United States wheat stocks increased slightly in 1959/60, partly offsetting declines in both Argentina and Canada. Stocks of coarse grains fell in Canada, but in the United States, where the maize crop was again very large, the rapid accumulation continued and a further 8 million tons were added to stocks of coarse grains in that country.

Total grain stocks in the major exporting countries, including normal carry-overs, now amount to the unprecedented figure of 126 million tons, or almost four times as much as in 1952, which was approximately the beginning of the postwar accumulation of surplus stocks. In terms of the current level of world production (excluding the U.S.S.R., Eastern Europe and Mainland China), these stocks represent about 40 percent of the total crop for wheat and 25 percent for coarse grains. Relative to the level of commercial exports, the stocks would cover almost two years of world wheat exports and almost four years of exports of coarse grains, of which a much smaller proportion moves in world trade.

Latin American coffee stocks have also risen steeply during the last few years. Coffee stocks in Brazil are likely to have climbed by more than three quarters by the end of June 1960. At 2.6 million tons they would be approximately equal to the record Brazilian crop of 1959/60 and well over the total annual exports (excluding those to the U.S.S.R., Eastern Europe and Mainland China) permitted to the participating countries in the new International Coffee Agreement.

Cuban sugar stocks, which had also risen sharply in 1959, are expected to be more than 30 percent larger by the end of 1960, though the world total is likely to remain almost unchanged. Cotton stocks have continued the gradual decline that began in 1956/57, with a further fall of about 10 percent expected in the United States. World stocks of cotton (excluding the U.S.S.R., Eastern Europe and Mainland China) have been reduced by a quarter since 1956, but they still amount to about half of total annual production.

Stocks of most other agricultural products appear to have changed little during 1959/60, though there were some spectacular developments for dried skim milk. United States government stocks of this commodity were depleted by September 1959 and new disposal commitments were halted. This situation gave rise to some concern in those countries that depend on such stocks for milk distribution schemes, but the stocks had been rebuilt by April 1960 and disposals resumed.

[2] This slackening is less marked in absolute terms, however, for a 4 percent rate of increase on a yield of 10 quintals is equivalent to an increase of only 1.3 percent on a yield of 30 quintals.

TABLE 8. - ESTIMATED STOCKS OF MAJOR AGRICULTURAL AND FOREST PRODUCTS

	Month	1952	1953	1954	1955	1956	1957	1958	1959	1960 (Forecast)
		Million metric tons								
WHEAT										
United States	1 July	7.0	16.5	25.4	28.2	28.1	24.7	24.0	34.9	35.8
Canada	1 Aug.	5.9	10.4	16.8	14.6	15.8	19.9	17.4	14.9	13.8
Argentina	1 Dec.	0.1	2.0	1.6	2.4	1.2	1.6	1.5	1.6	1.1
Australia	1 Dec.	0.5	1.0	2.6	2.6	2.4	1.1	0.4	1.8	2.0
Total 4 major exporters		13.5	29.9	46.4	47.8	47.5	47.3	43.3	53.2	52.7
RICE (milled equivalent)										
Asian exporters [1]	31 Dec.	0.7	1.4	1.3	0.5	0 5	0.4	0.3	0.4	...
United States	31 July	0.1	—	0.4	1.4	1.0	0.6	0.6	0.5	0.4
Total of above		0.8	1.4	1.7	1.9	1.5	1.0	0.9	0.9	...
COARSE GRAINS [2]										
United States	1 July [3]	18.5	24.7	29.4	37.3	39.3	44.4	53.5	61.4	69.5
Canada	1 Aug.	3.6	5.1	5.6	3.7	4.3	6.6	5.0	6.5	4.2
Total 2 major exporters		22.1	29.8	35.0	41.0	43.6	51.0	58.5	67.9	73 7
BUTTER										
United States		0.03	0.13	0.17	0.07	0 01	0.04	0.03	0.01	...
Canada		0.02	0.03	0.04	0.05	0.04	0.03	0.04	0.05	...
European countries [4]		0.04	0.06	0.05	0.04	0.09	0.09	0.06	0.05	...
Australia and New Zealand		0.05	0.05	0.06	0.06	0.05	0.06	0.06	0.05	...
Total of above	31 Dec.	0.14	0.27	0.32	0.22	0.19	0.22	0.19	0.16	...
CHEESE										
United States	31 Dec.	0.11	0 20	0 25	0.24	0 20	0.19	0.13	0.14	...
CONDENSED AND EVAPORATED MILK										
United States	31 Dec.	0.18	0.12	0.10	0.10	0 11	0.10	0 09	0.10	...
DRIED SKIM MILK										
United States	31 Dec.	0.06	0 03	0 02	0.04	0 03	0.04	0.04	0.04	...
LINSEED AND OIL (oil equivalent)										
United States	1 July	0.41	0.37	0.28	0.16	0.10	0 22	0.12	0.17	...
Argentina	1 Dec.	0.30	0.23	0.08	0 03	0 06	0 06	0 07	...	...
Total of above		0.71	0.60	0 36	0.19	0.16	0 28	0.19	...	...
LIQUID EDIBLE VEGETABLE OILS AND OILSEEDS (oil equivalent)										
United States [5]	1 Oct.	0 24	0.58	0.56	0 34	0 29	0 28	0 34	0 57	0.55
SUGAR (raw value)										
United States	31 Aug.	0.8	0.9	1.0	0.9	0.9	0.9	0.8	1.0	...
Cuba	31 Dec.	2 2	1.5	1.9	1.6	0 7	0.7	0.5	1.2	1.6
WORLD TOTAL	31 Aug.	10.9	10 3	11.8	11.4	10.4	10 3	10.1	12.2	12.0
COFFEE										
Brazil		0.18	9.20	0 20	0 20	0 63	0.44	0 84	1.44	2.64
of which government-held		(—)	(—)	(—)	(—)	(0 22)	(0 22)	(0.72)	(1.26)	(2.46)
United States		0.22	0 21	0.21	0.08	0.17	0.16	0.15	0.14	0.17
Total of above	30 June	0.40	0.41	0.41	0.28	0.80	0.60	0 99	1.58	2 81

(Continued in following page).

TABLE 8. - ESTIMATED STOCKS OF MAJOR AGRICULTURAL AND FOREST PRODUCTS (*concluded*)

	Month	1952	1953	1954	1955	1956	1957	1958	1959	1960 (Forecast)
		Million metric tons								
TOBACCO (farm weight)										
United States	1 Oct. [6]	1.56	1.66	1.69	1.83	1.89	2.00	1.89	1.81	1.80
COTTON (lint)										
United States		0.60	1.22	2.11	2.43	3.14	2.47	1.89	1.93	1.71
Other net exporters		1.00	1.08	0.78	0.80	0.56	0.65	0.84	0.73	0.63
Importers		1.34	1.21	1.26	1.26	1.08	1.30	1.32	1.13	1.24
WORLD TOTAL [7]	31 July	2.94	3.51	4.15	4.49	4.78	4.42	4.05	3.79	3.58
NATURAL RUBBER										
WORLD TOTAL [8]	31 Dec.	0.73	0.72	0.73	0.76	0.74	0.76	0.75	0.69	...
NEWSPRINT										
North America [9]	31 Dec.	0.89	0.80	0.77	0.69	0.92	0.92	0.99	0.98	...
		Million cubic meters								
SAWN SOFTWOOD										
European importers [10]	31 Dec.	5.74	6.19	5.56	6.12	5.27	5.65	5.41	5.00	...
European exporters [11]	31 Dec.	4.31	3.63	4.05	4.50	4.06	3.79	4.41	3.90	...
North America	31 Dec.	14.25	16.05	14.60	14.84	16.96	16.70	15.66	16.28	...
SAWN HARDWOOD										
European importers [12]	31 Dec.	1.29	1.15	1.06	1.22	1.21	1.20	1.25	1.17	...
European exporters [13]	31 Dec.	0.31	0.28	0.27	0.32	0.47	0.45	0.41	0.39	...
North America	31 Dec.	7.90	7.90	9.54	7.86	8.74	8.66	8.53	9.21	...

NOTE: Quantities shown include normal carry-over stocks.

[1] Excluding Mainland China. - [2] Barley, oats, maize, sorghum. - [3] Maize and sorghum, 1 October. - [4] Austria, Belgium, Finland, Western Germany, Ireland, Netherlands, Norway, Sweden, Switzerland, United Kingdom. - [5] Cottonseed, 1 August. - [6] Flue-cured types, 1 July. - [7] Excluding the U. S. S. R., Eastern Europe and Mainland China, and including estimates of cotton afloat. - [8] Including estimates of rubber afloat, but excluding strategic stockpiles. - [9] United States and Canadian mills and United States consumers. - [10] Belgium-Luxembourg, Denmark, Western Germany, Netherlands, Switzerland, United Kingdom. - [11] Austria, Norway, Sweden, Yugoslavia. - [12] Belgium-Luxembourg, Western Germany, United Kingdom. - [13] Austria and Yugoslavia.

With the improvement in demand, stocks of most forest products had declined slightly by the end of 1959. The main exceptions were sawn softwood and sawn hardwood in North America. The main reason for the rise in stocks of these commodities appears to be that the demand for building materials in the United S ates did not rise as much as had been anticipated in the early stages of the recovery. It should be noted, however, that North American stocks of sawnwood in 1959 were below their postwar peak levels, while stocks of all forest products are much lower than before the war.

The price-weighted index of all the stocks (except forest products) included in Table 8 indicates that there was again some increase in total stocks in 1959/60. Total stocks increased by two thirds between 1952/53 and 1954/55, but the expansion was subsequently much slower and there was a slight decline in 1957/58. In 1958/59 there was a renewed increase of about 10 percent, and this appears to have been followed by a further rise of about 4 percent in 1959/60, caused mainly by the sharp increases in stocks of coarse grains and coffee. The proportion of total stocks located in North America is now about three quarters. After declining slightly in the previous two years, the total value of the stocks held by the United States Commodity Credit Corporation rose by more than 20 percent in 1958/59 and remained at about the same level in 1959/60 (Annex Table 13).

Economic activity and the demand for agricultural products

Recovery from the 1957-58 recession in economic activity in the industrialized countries turned into renewed expansion during 1959/60, although in some countries the rate of growth has recently slowed down. The agricultural exporting countries have begun to benefit from this recovery, after the usual time-lag. While most of them were able to increase the volume of their exports in 1959, the recovery in prices has generally been slow and for some products prices have declined further. Heavy supplies of most commodities have continued to exert pressure on world markets. Retail food sales in the industrialized countries, which had been barely affected by the recession, have continued to expand.

Industrial production in the United States started to rise again in November 1959, after a three-month decline resulting from the steel strike. The employment situation has improved, though in the first half of 1960 unemployment was still about 5 percent of the labor force. Gross national product at constant prices increased by nearly 7 percent in 1959 and a rise of more than 6 percent in total personal consumption expenditures at current prices brought a 3 percent increase in expenditure on food. With lower retail prices, per caput food expenditure also increased by about 3 percent, but, as in most high income countries, much of this rise probably represented a shift to more expensive items and increased packaging and other marketing services. In Canada, too, industrial production and national income rose sharply in 1959 but unemployment was still about 9 percent of the total labor force in early 1960. Consumer expenditures increased and the domestic demand for agricultural products remained strong.

In 1959 there was growing concern in the United States at the deficit in the balance of payments, which rose by 9 percent to reach U.S.$3,700 million. This occurred in spite of lower private overseas investment, lower government grants and credits, increased foreign investment in the United States, and accelerated repayments of government loans. In Canada the foreign trade deficit nearly trebled in 1959, as imports increased much faster than exports.

In Western Europe the increase in industrial production in 1959 ranged from 4 percent in a number of countries to as much as 11 percent in Italy. Further improvements in foreign trade and payments and the absence of sharp rises in prices contributed to the over-all expansion of economic activity and to increased consumers' incomes, especially in the countries of the European Economic Community. Gross national product at constant prices rose by 9.7 percent in Western Germany, 6.6 percent in Italy, 5.6 percent in the Netherlands, 4.3 percent in France and 2.8 percent in the United Kingdom. The demand for agricultural products thus remained high, and import demand for some products increased appreciably as a result of the effect of the dry summer of 1959 on domestic supplies. The progressive liberalization of imports from hard currency areas also caused increased purchases from dollar countries. Consumers' food expenditures at current prices rose by 0.9 percent in France, 2.7 percent in the United Kingdom, and 2.5 percent (including beverages and tobacco) in the Netherlands.

The upswing in economic activity was sharpest of all in Japan, where industrial production (including mining) was more than one quarter greater in 1959 than the year before. Gross national product rose by as much as 15 percent at constant prices. With an increase of about 5 percent in agricultural production, imports of foodstuffs and beverages (mainly rice, barley and sugar) fell by 7 percent, though imports of agricultural raw materials climbed by about 40 percent. The foreign trade surplus was smaller in 1959, but the continuing inflow of capital caused a further sharp increase in foreign exchange reserves.

Among the more developed agricultural exporting countries, economic conditions improved in Australia, New Zealand and the Union of South Africa in 1959 and early 1960, and these countries appear to have been the major contributors together with the Federation of Malaya to a rise of over £300 million in overseas sterling holdings between March 1959 and March 1960. In Australia the volume of exports has risen, export prices have improved, and manufacturing employment has increased steadily. Rising prices, however, have necessitated a series of anti-inflationary measures. Notwithstanding the almost complete freeing of imports, a sharp rise in export values turned the trade deficit in 1958/59 into a substantial surplus in 1959/60. Similarly in New Zealand industrial production recovered almost completely in 1959, export volumes were main-

tained and prices rose, while gold and foreign exchange reserves increased sharply. In the Union of South Africa there was also a substantial increase in the value of exports and in foreign exchange reserves in 1959, though more recently the latter have declined again.

In the less developed regions, improvements in the economic situation in Latin America were only partly caused by the recovery in the industrialized countries and resulted mainly from domestic stabilization programs. Stabilization measures had some success in Argentina, Bolivia, Chile, Colombia, Paraguay and Peru. In Brazil, however, where deficit financing was extensively employed, there was a further inflationary rise of some 45 percent in retail food prices in 1959. In Argentina domestic demand receded under the pressure of the austerity measures adopted to stop inflation.

There seems also to have been an improvement in general economic conditions in most other less developed countries in 1959. In India, for example, industrial production increased by about 8 percent and, together with expanded agricultural output, contributed to a rise of some 7 percent in national income in 1958/59. Pakistan's foreign exchange reserves increased sharply and, with reduced government expenditures and less money in circulation, inflationary trends slowed down in 1959, though more recently price increases have become more rapid and new measures for stabilizing domestic markets are in preparation. The Federation of Malaya benefited substantially from the rubber boom.

On the whole, however, the improved economic situation in the industrialized countries appears to have had only a limited effect on the agricultural exporting countries. Apart from the time-lag mentioned earlier, a large part of the agricultural imports of Western Europe come from North America, rather than from the less developed regions. Although the total volume of imports of the industrialized countries increased by 10 percent in 1959, it seems that there was a further slight decrease in the imports of capital goods into the agricultural exporting countries.

In the centrally-planned economies the main development in the demand situation appears to have been in Mainland China, where incentive wages tied to productivity have been restored, while at the same time food grains are being distributed on the basis of ration quotas for each individual in the communes. This suggests that, in spite of the substantial increases reported in agricultural production, there is a large latent demand for foodstuffs which has to be restrained in order not to overtax the available supplies.

Short-term outlook

In general the level of economic activity in the industrialized countries seems likely to remain high, at least during the remainder of 1960. The recent slackening in the rate of expansion in some countries has caused earlier expectations of a boom to be scaled down, however, and has made the outlook for 1961 somewhat uncertain.

The official outlook in the United States for the rest of 1960 is still optimistic, though the anticipated boom conditions after the settlement of the steel strike have failed to materialize, and by May 1960 industrial production was at about the same level as a year before. Gross national product is expected to increase in 1960/61 by more than 6 percent at constant prices. Higher exports, a smaller increase in imports, together with increased revenues from tourism and from overseas investment, are expected to reduce the balance of payments deficit by over 20 percent. Nevertheless, preoccupation with the position of the U.S. dollar on international markets continues to influence the country's trade policy. In Canada, too, a continuation of the more favorable situation of 1959 and early 1960 is anticipated, provided that costs and prices retain their recent relative stability. There is some possibility, however, of a reduced inflow of foreign capital, which up to now has more than covered the foreign trade deficit.

Official outlook information so far available for Western European countries also points to a continuing upward trend in economic activity in the rest of 1960. Increases of 6 to 8 percent in national income are expected in France, Western Germany and the Netherlands. In the United Kingdom, however, fears of "overheating" the boom have led in June 1960 to further credit restrictions and other monetary measures designed to reduce the rate of economic expansion. Similar measures have also been adopted by Western Germany and Japan.

As in the past, however, the sharp increases in national income in the industrialized countries

will have only a small effect on the demand for foodstuffs in these countries. In the Netherlands for example, the 5.6 percent rise projected in net national product is associated with an expected increase of 3 percent in food expenditures (including beverages and tobacco).

Similarly, recent experience suggests that the demand for imports of agricultural raw materials is likely to increase much more slowly than industrial activity in these countries. The factors influencing this relationship have been examined in several recent issues of this report, and include increasing domestic production in the industrialized countries themselves, the development of substitutes, and economies in the use of raw materials in industry.

Therefore, while favorable business conditions in the industrialized countries are likely to lead to some increase in the demand for agricultural products exported by the less developed countries, the magnitude of this increase may be limited. In the shorter run of 12 to 18 months the demand may also be decisively influenced by inventory policies in the importing countries, and government measures to dampen the expansionary forces for fear of inflation or of adverse effects on the balance of payments may discourage purchases of agricultural raw materials, especially for inventory purposes. The supply of many foodstuffs and of some raw materials continues to be more than ample, and no great improvements in export prices are therefore to be expected.

Domestic demand in the less developed countries will continue to expand as populations and incomes increase. This demand may make itself felt more strongly in the future and may reduce exportable supplies of agricultural products. The need of the less developed countries for foreign assistance is likely to remain large, but more of this assistance than hitherto will probably have to come from industrialized countries other than the United States.

Food supplies and consumption

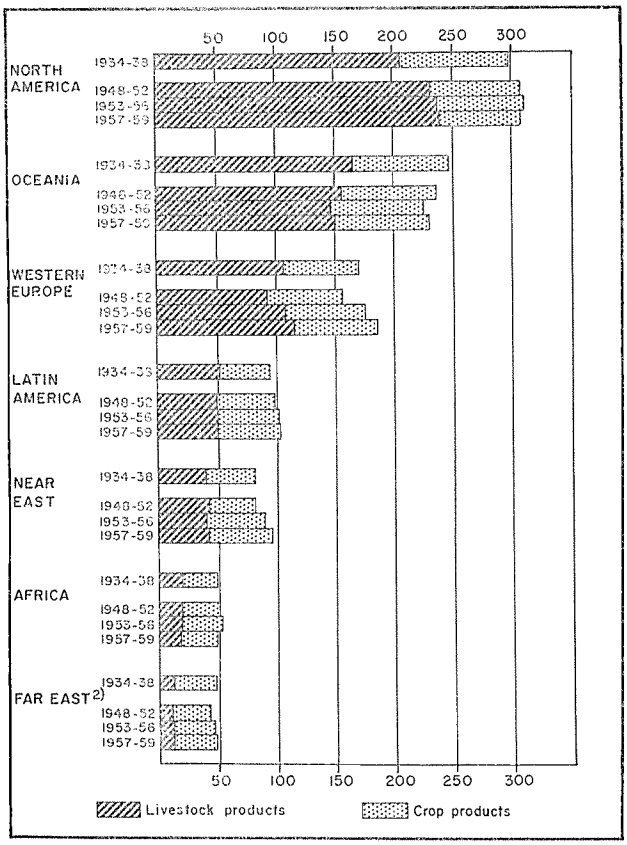
Few accurate data are available, especially for the less developed countries, to indicate the trends that have occurred in food supplies and levels of consumption. As noted earlier, indices of per caput food production may give a misleading impression, as they can take no account of the changes, sometimes quite large, that have taken place in the imports and exports of food.

The calculation of supply indices presents many difficulties, including the matching of production and trade seasons, deductions for feed and seed, and changes in stocks. Some of these difficulties are reduced by considering averages for periods of several years, as has been done for the approximate estimates of per caput availabilities of food in the main regions shown in Figure 7. These indices are based on production data (net of feed, seed and waste), adjusted for imports and exports, and weighted by the same regional price weights as are used for the production indices shown in Tables 1 and 2 at the beginning of this chapter. Allowances for imports of animal feedingstuffs have been possible only for Western Europe, and for changes in stocks only in the case of North America, but these factors are of relatively minor importance in the other regions.

The estimates also naturally suffer from the faults in the basic statistics of food crops and livestock products, particularly in the less developed regions, but they should give as reliable an indication as is possible at the present time of the broad changes in over-all food supplies that have occurred in each region. It appears that in the Far East (excluding Mainland China) per caput food supplies have for some years now approximately regained or slightly exceeded the prewar level. In Africa they seem to have remained close to this level throughout the postwar period, and in Latin America and especially the Near East there has been some increase over the prewar level. There has been some expansion of per caput supplies since 1948-52 in each of the less developed regions except Africa, where they appear now to have declined somewhat from the level of 1953-56. Especially in the Far East and Near East, changes in trade as well as increased production have had an important influence on the trend of food supplies. Both these regions were net exporters of food before the war but,

FIGURE 7. - ESTIMATED PER CAPUT FOOD SUPPLIES, BY REGION

(Price-weighted indices, world [1] average for all food, average 1948-52 = 100)



[1] Excluding U.S.S.R., Eastern Europe and Mainland China. - [2] Excluding Mainland China.

in the postwar years they have had a rapidly growing net import. In Latin America net exports of food declined in the earlier part of the postwar period but have since made some recovery.

Comparisons of the level of supplies in the different regions on the basis of these data are probably less valid than time comparisons for a single region. Nevertheless, it seems clear that on the whole the gap between food supplies in the more and less developed regions has tended to widen rather than narrow in recent years. It also appears that per caput supplies of livestock products in the less developed regions have generally not increased, and in some cases have declined, so that they probably now represent an even smaller proportion of total consumption in these regions than before the war. Statistics of livestock production in these regions, however, are generally less reliablie than those of crop production.

Much of the difference between the more and less developed regions results from the large supply of livestock products and other more expensive foods in the former group. This shows up very sharply in the price-weighted indices used in Figure 7. The regional differences would be much smaller if comparisons were made in calories, which reflect only the quantity of the diet and do not take its quality into account. Although not based on nutritional factors, the price-weighted indices nevertheless give some rough indication of the quality of the diet in that livestock products, fruit and vegetables and other foods important for health are also to a large extent the more expensive. The indices also reflect in some degree the agricultural resources needed to produce the diets of the different regions, since livestock products in particular require considerably more in the way of agricultural resources than grains or other basic crops of equivalent calorie value.

The trends suggested by these supply data are confirmed by the available food balance sheets, which show actual average food consumption levels in individual countries. Annex Table 14 shows the food supplies available for human consumption and their calorie and protein content in those countries for which it is possible to establish food balance sheets. In the more developed countries there have been fairly steady increases in the intake both of calories and of animal protein. In the less developed countries increases in calorie intakes have been more limited, while any improvements that have occurred in the quality of the diet have been small, and in many of these countries average intakes of animal protein hardly reach the prewar level.

Regional and even national averages, however, do not accurately describe the food and nutritional situation. In most of the less developed countries calorie intakes have come closer to requirements in the last few years, but this does not necessarily mean that some groups of the population are not suffering from malnutrition. Even in countries where average consumption levels are in excess of estimated requirements, the food intakes of some of the poorer groups of the population can be far below their minimum needs. Data on the nutritional situation of all groups of the population are very rarely available, and further household surveys of food consumption and expenditure are required to supply the necessary information.

International trade in agricultural products

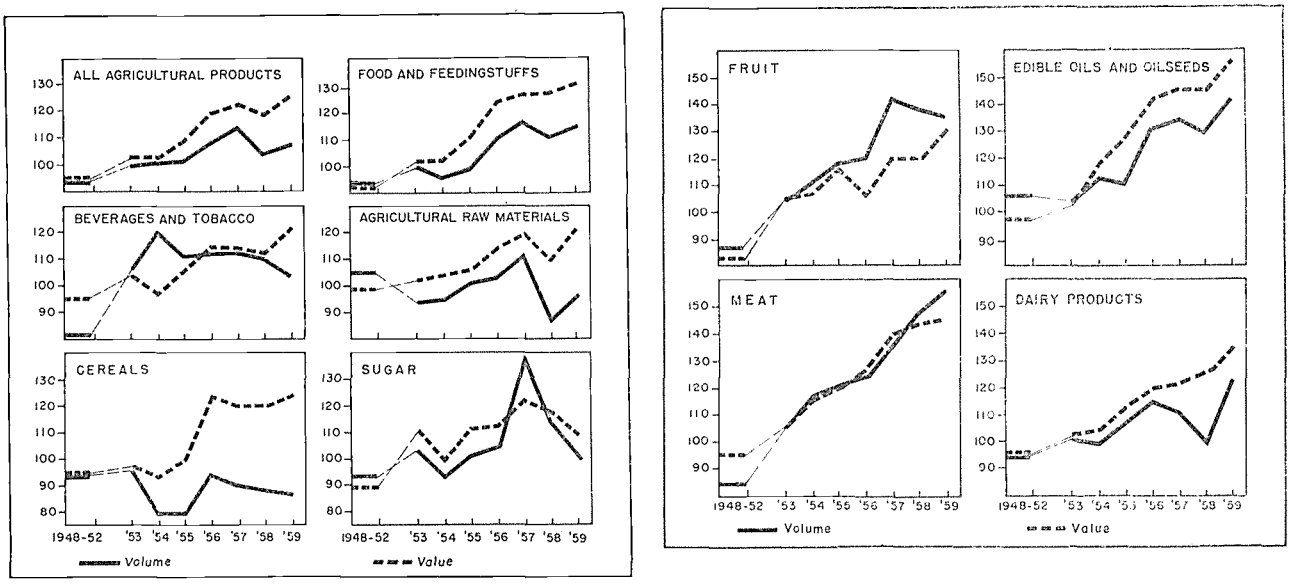
Both the volume and value of international trade in agricultural products recovered somewhat in 1959 from the setback resulting from the recession of 1957-58. Exports of agricultural products as a whole increased in volume by about 6 percent compared with 1958, to reach the highest level so far attained. This compares with an increase of 7 percent in the volume of trade in manufactures. On the other hand, average unit values of agricultural exports as a whole continued to fall, this time by about 3 percent, and the total value of agricultural exports thus rose by only 3 percent (Table 9). As the United Nations index of unit values of exports of manufactured goods remained unchanged from 1958 to 1959, the latter figure probably reflects fairly closely the increase in the real purchasing power of earnings from agricultural exports, except to the extent that they may

TABLE 9. – INDICES OF THE VOLUME AND VALUE OF EXPORTS [1] OF AGRICULTURAL AND FOREST PRODUCTS

	Average 1934-38	Average 1948-52	1953	1954	1955	1956	1957	1958	1959 (Preliminary)
	Indices, average 1952-53 = 100								
FOOD AND FEEDINGSTUFFS									
Volume	97	93	102	103	111	124	127	128	132
Value[2]	33	94	100	96	99	110	116	111	115
CEREALS									
Volume	102	94	97	94	100	124	120	120	124
Value[2]	27	94	96	79	79	94	90	88	87
SUGAR									
Volume	82	89	110	99	111	112	122	118	109
Value[2]	30	93	103	93	101	104	139	113	100
FRUIT (fresh and dried)									
Volume	91	83	105	107	116	106	120	120	131
Value[2]	42	87	104	111	118	121	143	138	136
EDIBLE OILS AND OILSEEDS									
Volume	110	97	103	117	128	142	145	145	157
Value[2]	31	106	104	113	111	131	133	129	142
MEAT									
Volume	103	95	105	116	120	126	139	143	144
Value[2]	43	84	105	117	121	124	136	148	156
DAIRY PRODUCTS									
Volume	90	95	102	104	113	120	122	126	136
Value[2]	40	95	101	99	107	115	111	100	124
BEVERAGES AND TOBACCO									
Volume	86	95	104	97	106	115	114	112	121
Value[2]	25	81	106	120	111	112	113	111	104
AGRICULTURAL RAW MATERIALS									
Volume	109	99	102	104	106	114	119	110	121
Value[2]	35	105	94	95	101	103	111	87	96
FOREST PRODUCTS [3]									
Volume	92	91	102	117	131	128	128	123	127
Value[2]	...	85	95	109	123	122	120	111	119
ALL AGRICULTURAL PRODUCTS									
Volume	98	95	102	102	109	119	122	119	126
Value[2]	31	95	100	101	102	109	114	104	107
Value (in real terms)[4]	63	98	102	105	105	108	109	99	102
Average unit value[2]	32	100	97	99	94	92	94	87	85
Average unit value (in real terms)[4]	64	104	99	103	97	91	89	83	81

[1] Excluding (except for forest products) exports from the U. S. S. R., Eastern Europe and Mainland China. – [2] At current prices. – [3] Not included in index for all agricultural products. – [4] Deflated by the United Nations index of average unit values of manufactured goods in world trade.

FIGURE 8. - INDICES OF THE VOLUME AND VALUE OF AGRICULTURAL EXPORTS, BY MAIN COMMODITY GROUPS [1]
(Indices, average 1952-53 = 100)



[1] Excluding the U.S.S.R., Eastern Europe and Mainland China.

have been affected by the recovery in ocean freight rates.

Raw materials of agricultural origin, the group of commodities most seriously affected by the recession of 1957-58, also showed the strongest recovery in 1959 (Table 9 and Figure 8). The volume of exports rose by 10 percent from the 1958 level, mainly because of heavier shipments of wool and rubber, and exceeded the 1957 peak by 2 percent. Average export unit values of rubber and sisal were appreciably higher in 1959 than in 1958, but those of most other raw materials, notably cotton, were lower, though there was some recovery toward the end of the year. For the group as a whole there was practically no change in average unit values, and the total value of world exports of agricultural raw materials in 1959 thus also increased by about 10 percent from 1958 and remained some 14 percent lower than in 1957.

The commodity group beverages and tobacco also showed a marked increase of some 8 percent in the volume of exports in 1959 compared with the year before and reached a new high level. Increases in the volume of trade in coffee (16 percent) and cocoa (14 percent), following heavy crops in Latin America and West Africa, offset some decline in exports of tea, wine and tobacco. Prices of cocoa, however, fell back somewhat after the recovery of 1958, while average values of coffee exports continued to decline. In consequence, the value of exports for the whole group was some 7 percent lower than in 1958 despite the larger volume of trade.

The slow rise in the volume of exports of food and feedingstuffs as a whole continued, while in value they almost regained the 1957 level. Within this group, however, there were marked differences between commodities. The volume and value of cereal shipments showed no marked change from the level of the last few years, while both the volume and value of sugar exports declined further from the 1957 peak; most of the fall occurred in exports from Cuba. On the other hand, exports of edible oils and oilseeds, dairy products, fruit, and to a less extent meat, continued to increase in volume. The value of exports of the first two groups of commodities recovered sharply from the decline in 1958, while the value of exports of meat, which had not been reduced by the 1958 recession, continued to rise. Export values of fruit declined slightly in 1959, but over the past five or six years fruit and meat are the only major commodity groups for which the value of exports has increased more rapidly than their volume.

The total volume of trade in fresh and frozen fish was not greatly different in 1959 from 1958, although United States imports from Iceland increased because of poor domestic catches of some species. Shipments of salted fish to Latin America continued to decline. Fish meal exports from Peru

in 1959 were two to three times larger than the year before, and together with a larger output in Europe and North America led to a decline in prices toward the latter part of the year.

With the improvement in demand, both the volume and value of world trade in forest products recovered in 1959, though remaining slightly below the level reached in 1957. The increase in world trade extended to all the major groups of forest products. Exports of most categories of roundwood increased, especially from North America and the U.S.S.R., though there was a further sharp decline in exports of pitprops from Western Europe, reflecting the difficulties experienced by the coal-mining industry. The expansion of sawn softwood exports from Europe, North America and the U.S.S.R. was particularly marked in 1959. Trade in woodpulp, plywood, newsprint and other paper and board also recovered, though newsprint exports remained below the record level of 1956.

Average export unit values of forest products returned to their 1957 level. Prices of most products were stable or increased, though there were price declines in 1959 for pitprops and some hardwoods from temperate regions. The general upswing in the volume and value of trade in forest products appears to have continued in 1960.

Regional trends

Only three regions recorded some gain in their earnings from agricultural exports in 1959 (Table 10). The largest increase was that of Oceania, which thus recovered from its unfavorable position in 1958. Export earnings of this region increased by 24 percent, mainly as a result of much larger shipments of wool, meat, dairy products and grains, but even so they did not regain the level of 1957. Export earnings of the Far East region also rose substantially in 1959 (about 14 percent) although in this case the gain was largely due to the improvement of export prices (particularly of rubber), as the volume of exports went up by only some 3 percent. The value of exports from the Near East also rose by around 7 percent owing to an increase of some 20 percent in the volume of exports. Record shipments of cotton, the major agricultural export of the region, some 40 percent above the 1958 level in volume, more than offset a sharp decline in cotton prices. All other regions included in Table 10 had lower agricultural export earnings in 1959 than the year before. In Western Europe this was due to a smaller volume of exports, in spite of a slight improvement in their average value. In North America, Latin America and Africa, on the other hand, the smaller value of agricultural exports resulted from lower prices of the main export commodities, and the volume of agricultural exports from each region increased substantially. The estimates for North America take into account the value of exports under special terms.

In North America, the recovery from 1958 was not enough to regain the high level of exports attained in 1957. Exports of oils and oilseeds, animal fats and grains rose substantially in volume (29, 42 and 7 percent, respectively), while those of cotton declined by some 20 percent. The record volume achieved by Latin America was mainly due to very large exports of coffee, cotton, wool and grains, which offset decreases of 8 percent in exports of sugar and 13 percent in exports of meat. In Africa, increases were recorded in exports of cocoa, coffee, wine, cotton and wool, but there were smaller shipments of grains (especially maize and wheat), sugar and bananas. Fuller details of regional exports and imports by commodities are set out in Annex Tables 3-10.

Over 40 percent of the increase in the volume of shipments in 1959 was directed to Western Europe and over 30 percent to North America, where the volume of agricultural imports for the first time exceeded the average for 1948-52, a period when they were influenced by stockpiling operations. The remainder represented increased shipments to the less developed regions, including shipments under special terms, and to a smaller extent increased shipments to Eastern Europe, the U.S.S.R. and Mainland China. However, official import statistics for the latter group of countries in 1959 are still very incomplete.

Changes in the volume of agricultural imports by regions from 1958 to 1959 were not closely reflected by changes in values. For example, imports into Western Europe increased in volume by about 5 percent, but in value by only 1 percent, while their total value remained some 10 percent less than in 1957. Because of their different commodity composition, the rise in the volume of North American imports of agricultural products from 1958 to 1959 was rather more closely paralleled by the rise in value; in comparison with 1957, however, their volume in 1959 was up by 13 percent and

TABLE 10. – INDICES OF THE VOLUME AND VALUE OF AGRICULTURAL EXPORTS AND IMPORTS, BY REGIONS

	Average 1934-38	Average 1948-52	1953	1954	1955	1956	1957	1958	1959 (Preliminary)
	Indices, average 1952-53 = 100								
GROSS EXPORTS									
Western Europe									
Volume	106	81	103	114	125	126	138	142	138
Value[1]	44	84	100	106	115	119	133	126	124
North America									
Volume	61	101	92	89	91	126	137	123	128
Value[1]	24	102	90	84	83	110	117	104	102
Oceania									
Volume	79	97	103	93	105	111	113	104	126
Value[1]	29	95	107	93	98	102	113	87	108
Latin America									
Volume	105	100	109	103	108	117	110	116	125
Value[1]	25	92	108	110	102	105	104	98	95
Far East (excluding Mainland China)									
Volume	160	96	100	102	112	112	112	108	111
Value[1]	48	103	94	96	113	106	105	96	110
Near East									
Volume	83	87	114	108	104	103	113	106	127
Value[1]	30	97	102	104	98	103	116	98	104
Africa									
Volume	76	90	103	113	121	127	129	130	137
Value[1]	23	85	100	117	113	113	117	121	116
GROSS IMPORTS									
Western Europe									
Volume	113	95	104	106	112	122	126	122	129
Value[1]	42	96	100	102	107	115	122	109	110
North America									
Volume	80	100	99	86	94	97	97	97	109
Value[1]	24	91	96	94	94	94	93	88	96
Oceania									
Volume	66	99	104	122	127	123	129	137	130
Value[1]	24	102	98	124	136	116	126	118	121
Latin America									
Volume	58	91	102	106	106	102	120	119	110
Value[1]	18	88	99	100	97	88	103	97	90
Far East (excluding Mainland China)									
Volume	106	81	99	98	99	119	128	122	128
Value[1]	28	81	95	87	85	99	108	97	95
Near East									
Volume	50	91	99	95	116	132	142	145	162
Value[1]	15	90	94	87	100	107	123	110	119
Africa									
Volume	66	86	103	108	118	130	134	128	143
Value[1]	22	86	98	106	111	117	123	116	113

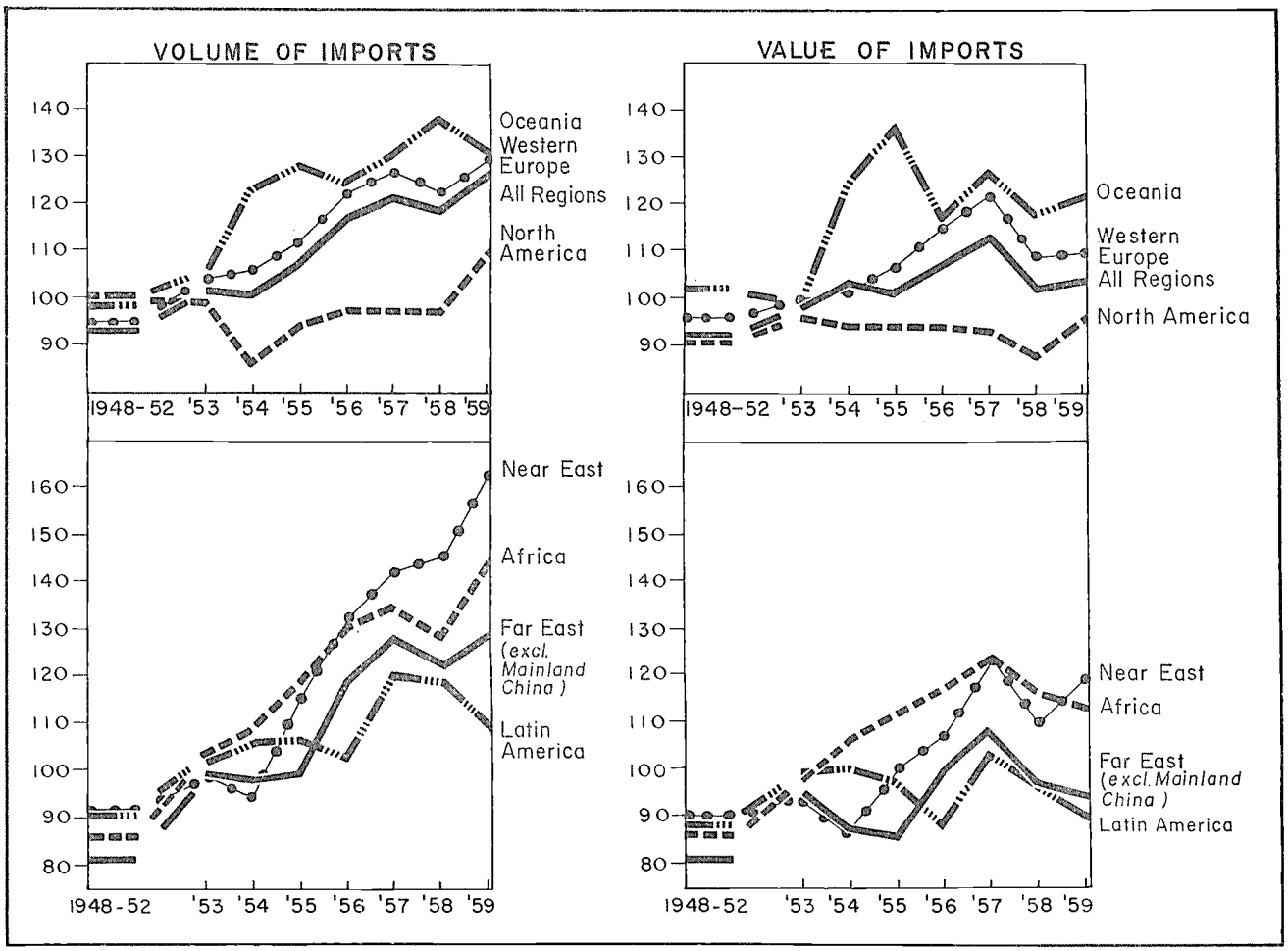
[1] At current prices.

their value by only 2 percent. The same trend was evident in the less developed regions. Imports into these regions as a whole in 1959 increased in volume by 4 percent, but decreased in value by 2 percent; in comparison with 1957 the volume of imports was almost the same, but the value had fallen by about 10 percent.

In the last decade imports of agricultural prod-

FIGURE 9. - VOLUME AND VALUE OF AGRICULTURAL IMPORTS INTO MORE AND LESS ECONOMICALLY DEVELOPED COUNTRIES

(Indices, average 1952-53 = 100)



ucts into the economically less developed regions have increased more quickly than imports into the more developed regions, partly because of shipments under special terms (Figure 9). The recession of 1958 led to some decline in agricultural imports into all the less developed regions except the Near East, where grain production was affected by drought, but the rise was resumed in 1959 in each of these regions except Latin America. In 1959 agricultural imports into the less developed regions as a whole had increased in volume by 55 percent over the 1948-52 average, while the comparable figure for the more developed regions was only 28 percent. Even so, imports into the less developed regions in 1959 amounted to only about one third of those into the more developed regions.

In contrast to imports, the volume of agricultural exports has tended to grow more rapidly in the case of the more developed regions. By 1959 the volume of exports of all agricultural products had increased by some 38 percent over the 1948-52 average in the more developed regions and by only 29 percent in the less developed ones. For food and feedingstuffs, the difference was still more marked, exports of the more developed regions rising by 50 percent and those of the less developed by 30 percent in the same period. The less developed regions accounted in 1959 for about 56 percent of world exports of agricultural products as a whole (excluding exports of the U.S.S.R., Eastern Europe and Mainland China), but only 38 percent of world exports of food and feedingstuffs.

Thus, the trend to which attention has been drawn in earlier issues of this report continued. Exports of agricultural products from the less developed regions, in particular exports of foodstuffs, tend to lag behind those in the more de-

TABLE 11. – INDICES OF THE VOLUME OF NET EXPORTS OF AGRICULTURAL PRODUCTS FROM THE LESS DEVELOPED REGIONS [1] AS A WHOLE

	Average 1934-38	Average 1948-52	1953	1954	1955	1956	1957	1958	1959 (Preliminary)
	Indices, average 1952-53 = 100								
All agricultural products	132	104	110	109	117	115	105	110	119
Food and feedingstuffs	488	168	137	204	195	172	141	161	123
Beverages and tobacco	87	95	104	95	104	114	113	109	123
Agricultural raw materials	99	99	110	102	116	101	85	97	112

[1] Latin America, Far East (excluding Mainland China), Near East, Africa.

veloped regions, while their imports race ahead. In consequence, their net exports of foodstuffs have fallen sharply, while their net exports of agricultural products as a whole have done little more than hold their own, though there was some recovery in 1959 (Table 11). Food and feedingstuffs accounted for about 37 percent of the net agricultural exports of the less developed regions as a whole in 1934-38, but only 16 percent in 1948-52 and 13 percent in 1958-59. This trend reflects the failure of production of foodstuffs in these regions to keep pace with their growing requirements. While the decline in net exports of food has made possible some improvement in nutritional levels, it runs counter to the need of the less developed countries to increase their earnings of foreign exchange.

The indices in Tables 10 and 11 and in Figure 9 do not, of course, give any indication of the relative magnitude of the trade of the different regions and groups of regions. This is shown in Figure 10, which compares (in U.S. dollars at 1952-53 prices) the growth of exports and imports from each of the more developed regions and for the less developed regions as a whole. The difference between each pair of columns represents the net exports or net imports of the region, as the case may be. Food and nonfood products are shown separately to bring out the different trends. The chart brings out clearly the dominating position still held by Western Europe as a market for agricultural exports, whether of food or nonfood products. In general, Western European imports, especially of foodstuffs, appear to have shown considerably more capacity for growth than those of North America, the other main import market.

Estimates are also included in Figure 10 for the exports and imports of agricultural products of Eastern Europe and the U.S.S.R., including intratrade within this group of countries, for the single period 1955-58 in order to show the approximate magnitude of this trade in relation to the agricultural trade of other regions. These data are not yet available for other periods and cannot therefore be included in the indices shown elsewhere in this report. The recent growth of trade in agricultural products in Eastern Europe and the U.S.S.R. is discussed more fully below.

Further indications of the changing pattern of trade in agricultural products between the different regions of the world are to be found in the statistics of the network of trade in the two years 1953 and 1958 set out in Annex Table 15. This table, based on United Nations statistics, does not, however, include raw materials of agricultural origin; nor can all the regions customarily used in FAO statistics be duplicated because of a different geographical breakdown of the original data. A striking feature of the table is the sharp rise in agricultural imports into Eastern Europe and the U.S.S.R. from the rest of the world between these two years. Another is the large share of total world agricultural trade represented by exchanges between the more developed regions. In both 1953 and 1958 about one third of the imports of North America came from within that region or from Western Europe. About one third of the agricultural imports of Western Europe were accounted for by intraregional trade, while only about 40 percent came from less developed regions. The inclusion of raw materials of agricultural origin would, however, appreciably

FIGURE 10. - GROSS IMPORTS AND EXPORTS BY REGIONS OF FOODSTUFFS AND NONFOOD AGRICULTURAL PRODUCTS

(Thousand million U.S. dollars at 1952-53 prices)

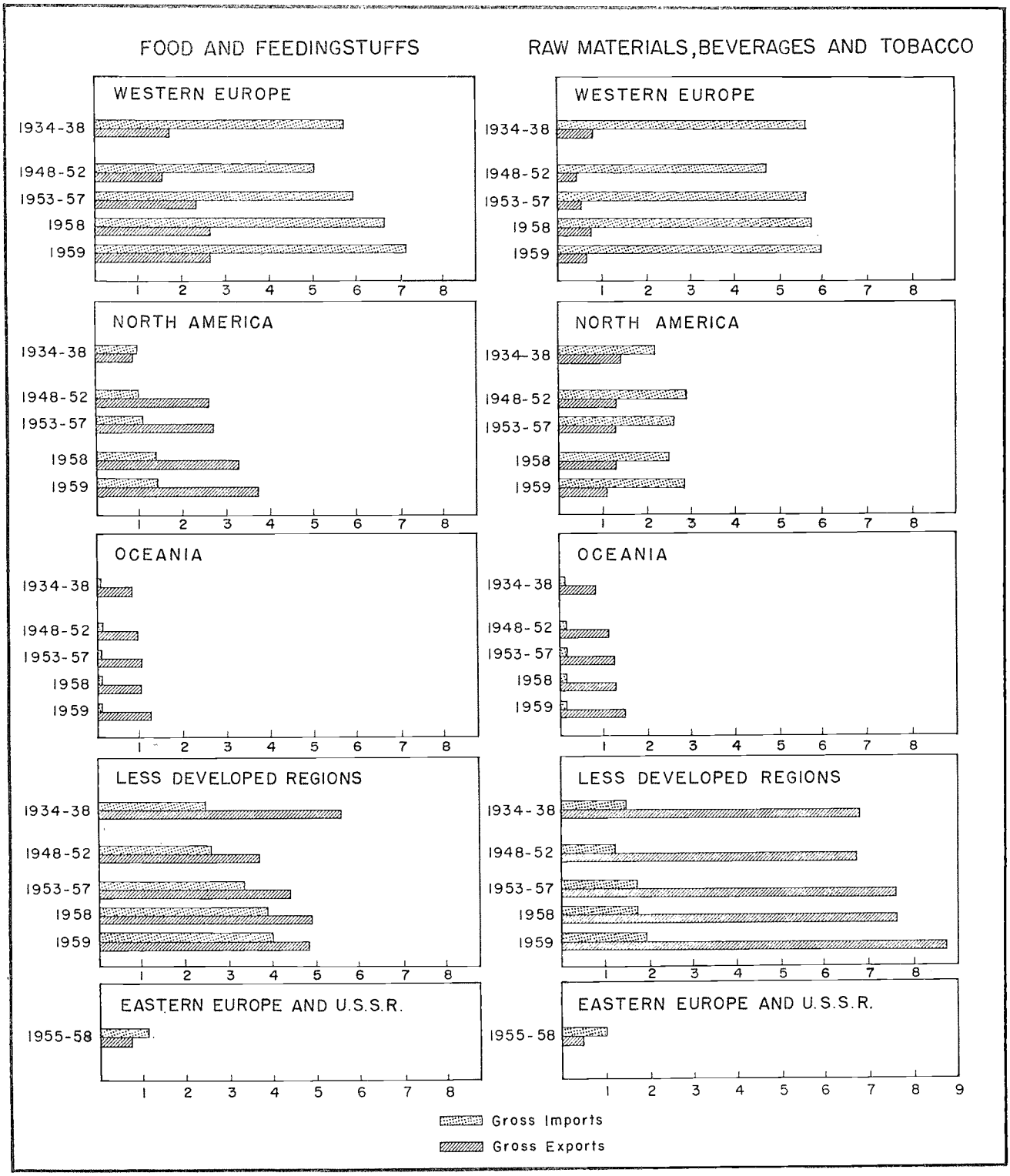
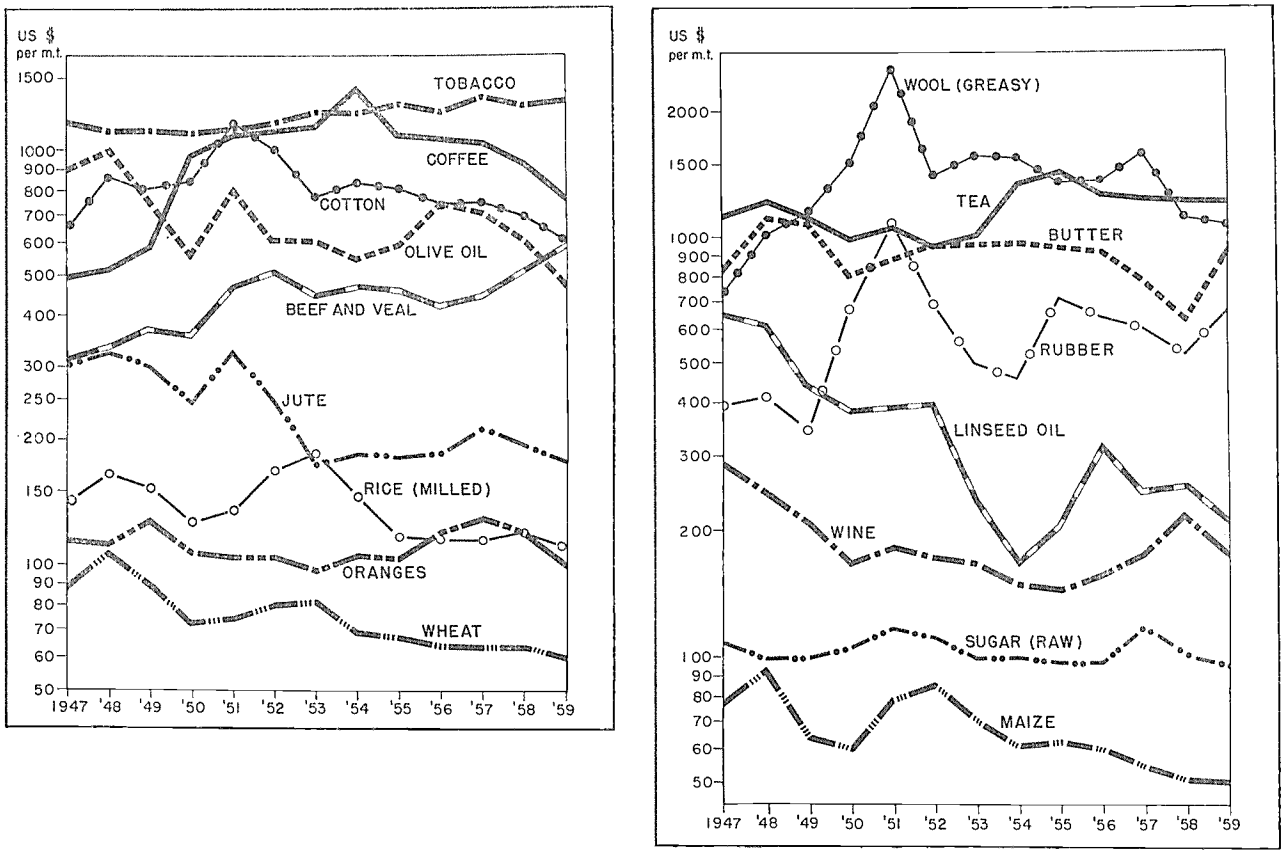


FIGURE 11. - AVERAGE EXPORT UNIT VALUES (AVERAGE PRICES) OF SELECTED AGRICULTURAL PRODUCTS IN WORLD TRADE

(semilogarithmic scale)



raise the latter figure. Trade within the less developed regions appears to have declined during this period. Latin American intraregional trade, for instance, went down by 24 percent between 1953 and 1958, while intraregional trade in the Far East declined by around 17 percent. It should be borne in mind, however, that trade figures for single years may be considerably influenced by short-term changes: for example, the value of Latin American exports, especially to North America, is greatly influenced by the sharp fall in the price of coffee between 1953 and 1958.

CHANGES IN PRICE LEVELS FOR AGRICULTURAL PRODUCTS IN INTERNATIONAL TRADE

As already noted the general level of prices of agricultural products as a whole declined further in 1959, though there were naturally considerable differences between individual products. Price trends for some major export commodities are shown in Figure 11, while more detailed data, including quarterly estimates for the last two calendar years, are to be found in Annex Table 16. Preliminary estimates suggest that export prices (average unit values) of agricultural products as a whole and for each of the main commodity groups, except beverages and tobacco, showed a slight upturn in the last two quarters of 1959, though as there was also a slight increase in those of manufactured goods the recovery may have been more apparent than real. For forest products there was a more marked recovery in 1959, which brought prices back to approximately the 1957 level.

The comparison of export unit values for agricultural products with those of manufactured goods, usually known as the terms of trade of agricultural exports, gives some indication of real price levels and of the real purchasing power of agricultural exports. The further decline in agricultural prices in 1959 reduced these terms of trade to the lowest point since the war (Table 12).

These generalized estimates of the terms of trade for agricultural products as a whole, or for broad groups of commodities, are of significance in bringing out the general situation for agriculture. They do not necessarily correspond closely with the situation for individual agricultural exporting countries. Price trends for different agricultural products vary rather widely, as is evident from Figure 11, so that much depends on the composition of the countries' exports. Moreover, while manufactured goods usually represent a large share of the imports of agricultural exporting countries, they are not the only constituent; as noted earlier they include increasingly a proportion of raw materials and especially foodstuffs. To judge the influence of agricultural price movements on the external payments situation of any individual country it is therefore necessary to take into account the actual composition of both its exports and imports.

Price trends in early 1960

It is not yet possible to carry the indices of average unit values in Annex Table 16 beyond the end of 1959, while the figures for that year are still provisional and subject to revision. Preliminary indications based on price quotations and on trade returns for a few countries, however, suggest that the slight upturn in world prices in late 1959 lost momentum and was probably reversed in the first half of 1960, though on the latter point not all the usual price indices give quite the same result.

An FAO index of the more usual commodity price quotations, weighted to correspond with the indices of average export unit values for all agricultural products in Table 12, fell by about 3 percent from December 1959 to March 1960, but recovered about half the loss by early June. The food and feedingstuffs component of the index fell somewhat irregularly by about 4 percent during the first half of 1960, and that for beverages and tobacco also by about 4 percent. On the other hand, the component for agricultural raw materials rose by about 5 percent, chiefly because of a continuing rise in the price of rubber and to a less extent of jute and sisal. The fall in the case of food and feedingstuffs reflected mainly a rather sharp fall in prices of butter and cheese from the high level of late 1959 and a fall in the oil and oilseed group of copra, coconut oil, palm kernels and palm oil, though in contrast prices of groundnuts were somewhat higher. Prices of grains, except rice, and of sugar remained firm, while export values of beef and mutton continued to rise, though bacon prices were lower. In the beverages group, coffee prices became somewhat firmer in the first half of 1960, but there was a seasonal fall in tea prices and an appreciable decline in the price of cocoa. Future prospects are considered in the section on individual commodities at the end of this chapter.

TABLE 12. – AVERAGE UNIT VALUE OF EXPORTS AND TERMS OF TRADE OF AGRICULTURAL AND FOREST PRODUCTS

	1948	1949	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959 (Preliminary)
	Indices, average 1952-53 = 100											
AVERAGE EXPORT UNIT VALUES (at current prices)												
All agricultural products	99	90	93	117	103	97	99	94	92	94	87	85
Food and feedingstuffs	116	101	90	102	101	99	93	88	89	91	87	87
Beverages and tobacco	76	73	89	99	99	101	124	106	98	99	100	88
Agricultural raw materials	87	83	102	157	109	91	91	95	91	94	79	79
Forest products[1]	93	81	72	114	107	93	93	94	95	94	90	94
Manufactured goods[2]	101	95	84	101	102	98	96	97	101	105	105	105
TERMS OF TRADE [3]												
All agricultural products	98	94	111	116	101	99	103	97	91	89	83	81
Food and feedingstuffs	115	106	107	101	99	101	97	91	88	87	83	83
Beverages and tobacco	76	77	105	98	97	103	129	109	97	94	95	84
Agricultural raw materials	86	87	120	155	107	93	95	98	90	90	76	75
Forest products[1]	92	85	85	113	105	95	97	97	94	90	86	90

[1] Not included in "All agricultural products." – [2] United Nations index of average unit value of manufactured goods adjusted to 1952-53 base. – [3] Indices at current prices deflated by index of average unit values of manufactured goods.

EXPORTS UNDER SPECIAL TERMS

Several countries are exporting agricultural products under special terms. Both Australia and Canada, for example, have exported wheat under the Colombo Plan and the UNRWA, though their total exports under these programs in the period 1954/55 - 1958/59 amounted to only 900,000 tons of wheat. In addition Canada, but also to a smaller extent the United States, have granted long-term credits to a number of countries to import wheat, under which Canada shipped some 1.9 million tons during the same period.

By far the greater part of the agricultural surpluses are held, however, by the United States, and that country has carried out much the largest part of the special disposal operations, notably under the provisions of Public Law 480. Since the inception of that law in 1954/55 until the end of 1959, surpluses valued at $9,330 million (including ocean transport costs financed) at Commodity Credit Corporation cost have been committed, most of which under agreements for sale against importers' currencies. Of this amount, foreign grants and domestic and foreign donations have amounted to $2,380 million and barter agreements to $1,160 million (export market value) over the same period.

Shipments of United States agricultural products under Public Law 480 and other government-financed programs are shown year by year in Table 13, in relation to total export values. They are valued at export market prices, which are substantially lower than CCC costs, as these include the cost of acquiring the produce at domestic support price levels, together with the costs of storage, inland transport and other costs of financing shipments. In the calendar year 1959, shipments under Title I of Public Law 480 accounted for about 59 percent, and shipments under all titles for about 87 percent of all shipments under government programs.

Shipments of all products under government programs have declined since the peak year 1956/57, but the decline has been proportionately greatest for cotton and dairy products. Shipments of grains have also been reduced, but less than those of some other products, and they now account for a considerably larger share of the total program. Wheat and wheat flour represented around 45 percent of the total value of shipments under special terms in both 1958/59 and the second half of 1959, against only 33 percent in 1956/57, while for all cereals, including rice and coarse grains, the share was 53 percent in 1956/57 as against 57 percent in 1958/59 and 64 percent in the second half of 1959.

Shipments under government programs accounted for 41 percent of total United States agricultural exports in 1956/57, but the percentage declined to 34 percent in 1958/59 and 26 percent in the second half of 1959. For wheat and wheat flour, however, such shipments still represent about 70 percent of United States exports.

TABLE 13. – UNITED STATES AGRICULTURAL EXPORTS UNDER GOVERNMENT-FINANCED PROGRAMS IN RELATION TO TOTAL UNITED STATES AGRICULTURAL EXPORTS

	Total shipments under Public Law 480 and Mutual Security Programs [1]						Shipments under special programs as percentage of total U.S. agricultural exports					
	1954/55	1955/56	1956/57	1957/58	1958/59	1959 July-Dec.	1954/55	1955/56	1956/57	1957/58	1958/59	1959 July-Dec.
	Million dollars [2]						*Percentage of total value*					
Wheat and wheat flour	323	426	657	475	554	249	66	72	69	66	72	70
Coarse grains	67	235	237	119	126	79	29	61	66	37	22	26
Rice	4	45	136	45	36	29	7	52	73	47	36	52
Dairy products	138	204	177	159	95	35	71	75	81	79	72	54
Fats and oils	66	134	167	102	113	64	23	37	40	34	39	42
Cotton	221	212	455	288	260	57	32	55	41	34	63	22
Tobacco	15	57	36	26	34	36	5	15	11	8	10	15
Other agricultural products	32	54	93	38	42	11	4	5	8	3	4	1
TOTAL	866	1 367	1 958	1 252	1 260	560	28	39	41	31	34	26

SOURCE: Official United States statistics.

[1] The figures do not include shipments with government-financed credit, certain sales of government-owned commodities at less than market prices, and payments to exporters in cash or kind. – [2] At export market prices (including Title II, P.L. 480 shipments in terms of CCC cost).

Public Law 480 has been extended to 31 December 1961, with new appropriations at the annual rate of $1,500 million for transactions under Title I (exports against foreign currencies) and $300 million under Title II (famine and other emergency relief). Two new programs are provided for under Public Law 480, though they have not yet been implemented; the first a "food stamp program" to increase the domestic consumption of surplus foodstuffs by needy families, and the second a program of long-term credits for exports, whereby agricultural commodities may be delivered over periods of up to 10 years against payments in dollars (including interest) which may by spread over as much as 20 years.

The most important development in surplus disposal operations in the first half of 1960 was the conclusion of an agreement between the United States and India which provides for the sale over a four-year period of 16 million tons of wheat and 1 million tons of rice. For these commodities, together with some ocean freight, India is to pay in rupees the equivalent of $1,276 million under the terms of Title I of Public Law 480. One fourth of the total export market value will be made available at once to finance the first year's shipments of 4 million tons of wheat and 250,000 tons of rice. Further shipments will be decided after the end of 1960. Eighty-four percent of the Indian rupees to be acquired in payment for these cereals will be made available by the United States government to the government of India for economic development projects, one half as loans and one half as grants. Five percent will be made available for loans to United States and Indian private firms, and the remainder will be used to pay United States government expenses in India, including the financing of other United States agency programs. Of total shipments, 4 million tons of wheat and the whole of the rice are earmarked to establish a national food reserve in India.

Although the new agreement does not represent a very large increase in the level of United States wheat shipments to India (in 1958/59 they amounted to 3.3 million tons), this is the first agreement under Public Law 480 to extend over four years, and by far the largest single transaction. It has therefore not unnaturally caused concern to other exporters of wheat and rice. Some economists, mainly in the United States, have also pointed out that the very large amounts of local currency involved may increase the inflationary pressure already evident in a country with a vast development program, and do not in fact increase the country's real capacity for investment. It is too soon to judge how far the various fears expressed are justified. Shipments under the new agreement will cover India's current deficit in food grains, though population growth and improved diets are estimated to raise requirements of food grains by over 3 million tons annually. Moreover, the establishment of a food reserve should be of great value in stabilizing Indian grain prices and allow a breathing space for the further development of production and marketing.

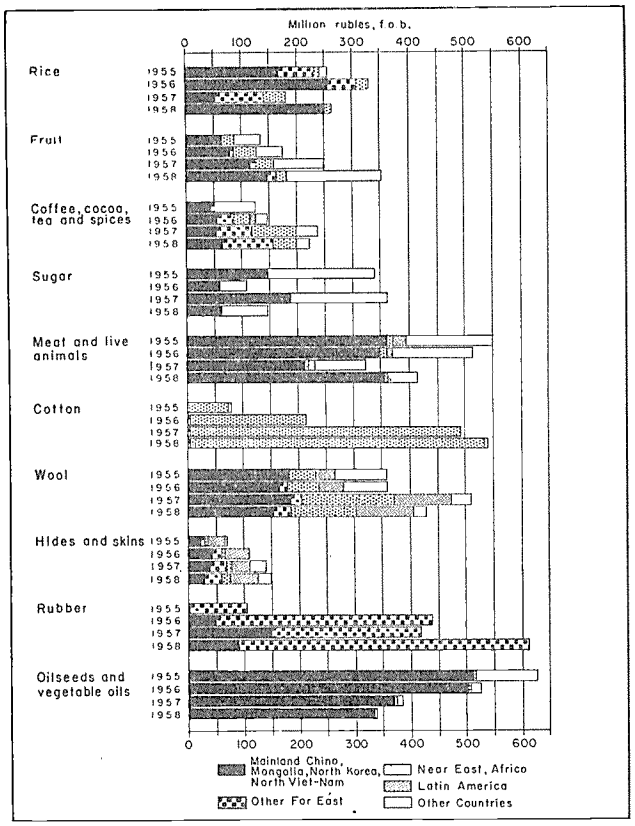
Agricultural trade of Eastern Europe and the U.S.S.R.

More complete information is gradually becoming available on the trade of these countries in agricultural products, but as it is less generally accessible and not always entirely comparable with data for other countries it has been customary in recent issues of this report to discuss it separately.

Trade within this group of countries represents much the largest part of their total trade. Comprehensive figures for the group are not yet available, but for the U.S.S.R. alone imports from outside the group represented only 22 percent of total imports in 1955, rising to 30 percent in 1957 and 27 percent in 1958. For agricultural products the proportion of imports from outside the group was appreciably higher at about 33 percent in 1955, and 48 percent in both 1957 and 1958. About 24 percent of the agricultural exports of the U.S.S.R. were directed to countries outside the group in 1955, 28 percent in 1956, 18 percent in 1957, and 22 percent in 1958. The percentages for trade in agricultural products exclude forest products, and are calculated using the price weights used for the FAO indices of trade in order to avoid any bias due to differences of pricing.

Commercial ties between the countries are reinforced by the activities of the Council of Economic Mutual Assistance, which appears to be playing an increasingly important part in co-ordinating the planning of production and trade between its member countries. Trade with countries of Western Europe has also increased recently, and several long-term trade agreements have been signed, especially by the U.S.S.R. The trade of the U.S.S.R. with the United States has remained at

FIGURE 12. - GROSS IMPORTS OF SELECTED COMMODITIES INTO THE U.S.S.R. FROM LESS DEVELOPED REGIONS, IN RELATION TO TOTAL IMPORTS



a low level, but that of Poland has increased substantially. In 1958, Polish imports from the United States were 40 times higher than in 1955 and included substantial quantities of wheat, cotton and edible oils.

Trade with the less developed countries has also developed rapidly. Recent trends of trade for some of the main agricultural products concerned are shown in Annex Table 4B, and for the U.S.S.R. alone in Figure 12. In particular, imports of rubber, chiefly from the Federation of Malaya, have increased more than three times in the period 1955-58. Imports of cotton have also increased rapidly, mainly from the United Arab Republic whose shipments to the U.S.S.R. rose from 10,000 tons in 1955 to 126,000 tons in 1958. The U.S.S.R. is both an importer and exporter of cotton, more than 80 percent of its exports going to Eastern Europe; its net exports, however, fell steadily from 317,000 tons in 1955 to 169,000 tons in 1958. Rapid increases in imports may also be noted for tea, coffee, cocoa, spices and other agricultural products, though the total volume of trade is still small. A recent trade agreement with Brazil provides for imports of coffee into the U.S.S.R. rising from 20,000 tons in 1960 to 40,000 tons in 1962; this compares with total imports of 4-5,000 tons in recent years. On its side, Brazil will import some 300,000 tons of wheat from the U.S.S.R. Two main exceptions to the general expansion of trade with less developed regions are for sugar and for oilseeds and vegetable oils. Imports of sugar into the U.S.S.R. have fallen irregularly from 933,000 tons in 1955 to 379,000 tons in 1958 and declined further to 317,000 tons in 1959 (from Cuba from 441,000 tons in 1955 to 198,000 tons in 1958 and 133,000 tons in 1959). Larger imports are to be expected in the next few years, however, following the agreement with Cuba signed in 1959. Exports of refined sugar from the U.S.S.R. have remained relatively constant during the same period at around 200,000 tons. Secondly, imports of oilseeds and vegetable oils, chiefly from Mainland China, have declined sharply, oilseed imports into the U.S.S.R. falling from 760,000 to 550,000 tons, and those of vegetable oils from 195,000 to 73,000 tons between 1955 and 1958. Most of the decline was in groundnuts, and imports of soybeans have remained fairly constant. The reduced level of imports may be associated with the sharp rise in the production of oilseeds in the U.S.S.R., which rose from an average of 2.5 million tons in 1949-53 to 5.1 million tons in 1958.

The statistics of gross imports and exports for the Eastern European countries and the U.S.S.R. as a whole given in Annex Table 4B cover only the period 1955-58, but for some commodities more recent figures are available. Thus, wheat exports from the U.S.S.R. increased substantially from 3.7 million tons (3.1 million to Eastern Europe) in the trade year 1957/58 to 5.9 million tons (4.1 million to Eastern Europe) in 1958/59. The last figure represented nearly 8 percent of the total crop. Similarly, imports of wheat by the U.S.S.R. fell in the same two years from 518,000 to 212,000 tons. Polish imports of wheat, however, increased substantially by 35 percent to over 1.3 million tons. Sugar exports of the Eastern European countries, which had doubled in 1958 to reach 810,000 tons, increased further in 1959 to 870,000 tons. Exports of livestock and livestock products by Hungary, Poland and Bulgaria increased sharply in 1958. In 1959 the exports of live pigs and of

butter of the first two countries declined, but exports of meat and especially eggs rose substantially. Imports of livestock products into the U.S.S.R. increased in 1959, Mainland China and Mongolia being the main suppliers.

The data in Figure 12 are in terms of million rubles, and it may be of interest to compare average unit values of the agricultural exports and imports of the U.S.S.R. with the average in world trade outside this group of countries, converting rubles to U.S. dollars at the official exchange rate of 4:1 (Annex Table 17). On this basis, average unit values of imports into the U.S.S.R. appear, with some exceptions, to be fairly closely in line with the general level of prices in world trade. It should be noted, however, that import values for the U.S.S.R. are given on the basis f.o.b. frontier of the exporting country or at the port of shipment, in contrast to the more usual c.i.f. basis (including the cost of freight and insurance) which is used for the world averages. If this difference is allowed for, the average values of imports into the U.S.S.R. appear generally to be somewhat above the world average at official exchange rates. Fairly substantial differences, however, occur if a similar comparison is made of unit values for any individual country with those for the world as a whole, and to a large extent are accounted for by differences of quality, timing, etc. In Annex Table 17, for example, average import unit values for cotton into the U.S.S.R. are substantially above and those for tobacco and tea well below world average values, probably to a large extent because of differences of quality. Other price differences appear to reflect the influence of trade agreements.

Unit values of exports from the U.S.S.R. are usually higher than the average level in world trade. This appears to be mainly because trade exchanges with countries of Eastern Europe are determined by special agreements, in which prices are not closely related to world market prices but are usually at a higher level. Nevertheless, it appears that adjustments have been made when these prices diverge widely from world price levels. Thus, prices of butter exports to Eastern Europe were sharply reduced in 1958 to make them less out of line with world price levels. For exports to countries outside this group, values approximate more closely to the international prices, though even here U.S.S.R. unit values appear to be more often above than below the world average; examples are given in Table 14.

TABLE 14. – UNIT VALUES OF U.S.S.R. EXPORTS[1] TO EASTERN EUROPE AND TO OTHER COUNTRIES IN RELATION TO WORLD AVERAGE UNIT VALUES

	1955	1956	1957	1958
	Indices, world average export unit value = 100[2]			
WHEAT				
To Eastern Europe ..	128	131	127	123
To other countries .	117	114	120	106
MAIZE				
To Eastern Europe ..	119	121	129	136
To other countries .	109	107	120	119
BUTTER				
To Eastern Europe ..	124	126	144	135
To other countries .	—	—	113	—
COTTON				
To Eastern Europe ..	114	123	109	112
To other countries .	97	99	103	105

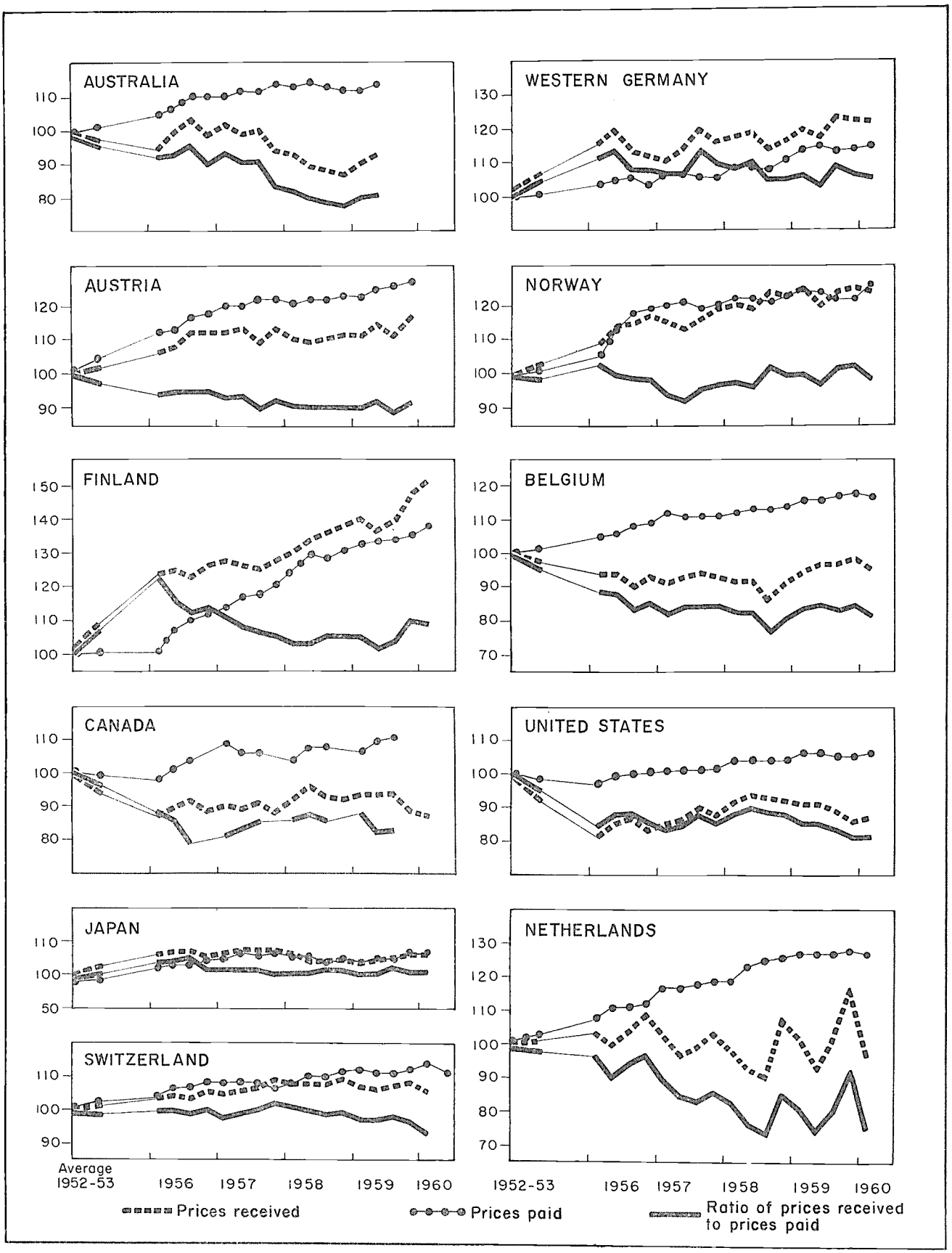
[1] Converted to U.S. dollars at the official exchange rate. – [2] Average for all countries, excluding the U.S.S.R., Eastern Europe and Mainland China.

Farm prices and incomes

There is, as usual, a paucity of data on farm prices and incomes and the little available relate almost entirely to the more developed countries. Indices of prices received and paid by farmers (adjusted to a 1952-53 base) for most of the countries which provide this information are set out in Figure 13, together with the ratio between these indices. The ratio in effect represents the real prices or " terms of trade " for the farmers of a country.

In the last few years the greatest stability of farm prices relative to prices paid by farmers appears to have been achieved in Switzerland and Japan. During the four years 1956-59 the ratio did not diverge by more than a few points in either country from the average for the base period 1952-53. Similar farm price indices for Greece published from 1954 onward (not included in Figure 13) suggest that there, too, the ratio between prices received and paid by farmers has been very

FIGURE 13. - INDICES OF PRICES RECEIVED AND PRICES PAID BY FARMERS AND THEIR INTERRELATIONSHIP, SELECTED COUNTRIES
(Indices, average 1952-53 = 100)



stable. In Switzerland, however, the ratio tended to move against farmers in the latter half of 1959, and in the first quarter of 1960 fell sharply by nearly 4 percent to its lowest point for many years.

In only two countries, Western Germany and Finland, has the general run of price relationships in the four years to early 1960 been consistently higher than in 1952/53, though this base period has of course no special significance. The same was the case in Italy until 1958/59, though in that year the farm price relationship fell sharply by about 11 percent; more recent data are not available.

In Austria the price ratio has been kept rather stable at some 90-100 percent of the 1952-53 average in the past few years, and this applies also to Norway, though here price fluctuations have been somewhat greater. In the remaining countries included in Figure 13, however, the recent level of price relationships has usually been as much as 10 to 20 percent below the 1952-53 average, occasionally more. In Australia there was a steady fall in the ratio until early 1959, when some recovery became apparent. In Canada and the United States, on the other hand, farm price relationships recovered somewhat in late 1957 and early 1958, but again declined in 1959. In Belgium and the Netherlands farm price relationships rose slightly in 1959 from the rather low levels of late 1958, but again fell in early 1960, in the Netherlands very sharply indeed.

Fluctuations in farm prices in the Netherlands have been appreciably wider than in the other countries included in Figure 13; this may partly reflect the important share of horticultural products, notoriously susceptible to sharp price fluctuations, in the country's agricultural output. Nevertheless, it is evident from Figure 13 that in many countries, including Australia, Belgium, Canada, Finland, Western Germany, Norway and the United States, prices received by farmers have fluctuated appreciably more widely than the prices paid by them, despite the stabilizing influence of price support measures. In all these countries it is clear that the shape of the curve showing the price ratio is determined by the movement of prices received by farmers to a much greater extent than by changes in the prices of farm requisites.

The only available data on farm price relationship in economically less developed countries are for some Indian states: Assam, the Punjab and West Bengal. In the last named the price relationship expressed as an annual average has risen year by year from 1955 to 1959, though with marked seasonal fluctuations. In the other two states the trend was less definite. It is not clear, however, how closely the farm price index reflects actual receipts by farmers, which are particularly difficult to estimate in many less developed countries.

Data on farm incomes are restricted to a limited number of more developed countries, and in most of these the general improvement in price relationships appears to have resulted in higher farm incomes in 1959. The chief exceptions were in North America. In the United States the fall in farm incomes from 1958 to 1959 was very considerable. Gross farm income is estimated to have fallen from $38,300 to $37,000 million, and production expenses to have risen from $25,200 to $26,000 million. Thus, net receipts fell from about $13,000 to $11,000 million, or more than 15 percent. As there was a considerable rise in output in 1959, this decline was the net result of lower farm prices, higher costs, and smaller government payments, e.g., under the Acreage Reserve Program. In the first quarter of 1960 net farm receipts were also about 16 percent less than a year earlier, and an official estimate for 1960 as a whole points to a continuing decline in the net farm income. In Canada there was virtually no change in gross income from 1958 to 1959, but the net farm income fell by about 7 percent because of higher operating expenses and depreciation charges.

In contrast, farm incomes in Australia and New Zealand rose in 1959/60. In Australia gross returns rose by 6 percent from £A 1,145 million to £A 1,211 million in 1959/60; an increase of 14 percent in farm prices, mainly for wool, was partly offset by the poor grain harvest. In New Zealand both higher wool prices and some rise in dairy prices must have brought about a substantial increase in gross receipts. Estimates of net farm incomes in these countries in 1959/60, however, are not yet available.

The remaining data on farm incomes relate only to Europe and do not indicate any general movement up or down. In Denmark, the downward trend of incomes in the two preceding years was reversed in 1959 as a result of a rise of 6 percent in output (livestock products 13 percent), combined with higher export prices for butter and beef. The gross value of farm production rose by some 14 percent. Per caput farm incomes will have been increased by a fall of 6 to 7 per-

cent in the labor force permanently engaged in agriculture as a result of further rationalization.

The fall in the numbers of people engaged in agriculture is becoming an increasingly important factor in many of the more developed countries. In Western Germany, for example, the number of farms declined by 10 percent between 1949 and 1959, and by 23,000 or 1.3 percent in one year from 1958 to 1959. Similarly, the number of people employed in agriculture (in terms of units of full-time workers) fell from 3.7 millions in 1950/51 to 2.6 millions in 1958/59. Nevertheless, farm sales have continued to increase, though the cash balance between sales and production expenses is estimated to have declined in 1959/60 as the drought necessitated larger expenditure for feedingstuffs in some parts of the country:

	1957/58	1958/59	1959/60
	Thousand million D. Marks		
Farm sales	17.4	18.5	19.0
Production expenses (excl. investment and taxes)	10.5	11.0	12.0
Net cash receipts	6.9	7.5	7.0

In France, according to official estimates, both the gross farm output and farm sales increased between 1957/58 and 1958/59 by no more than 3 to 4 percent, while the net product rose only from 2,115,000 to 2,140,000 million francs, or little more than 1 percent. Indeed, for a number of years, expenses have grown faster than receipts. If interest on invested capital and remuneration of the farmers' own work is taken into consideration, the same estimates indicate that the moderate profit of the year 1957/58 would have changed into a loss in 1958/59. Investment in agricultural equipment has slowed down and during the last four years agriculture's indebtedness with the mutual credit banks has doubled.

In Italy, too, the net farm product in 1959 fell by 2 percent below that of 1958, although the saleable product increased slightly from 3,400,000 to 3,500,000 million lire. Agricultural credit has played an increasing role in Italian agricultural development during recent years. It has been estimated that the outstanding debt has doubled in the last six years, while income has risen by 10 to 12 percent. Total indebtedness of agricultural enterprises to agrarian credit institutions rose during 1959 by some 13 percent to 446,000 million lire.

In the Netherlands, net farm incomes rose in each of the last three years, and in 1959 the increase amounted to 161 million florins, or about 5 percent. In Norway, too, the net farm income in 1959/60 is estimated at 1,581.9 million kroner compared to 1,521.3 million in the preceding year, an increase of almost 4 percent as compared with a rise of about 1 percent a year earlier.

Farm incomes are also estimated to have increased in the United Kingdom, where the net farm income of £356 million in 1959/60 was higher by £41 million than in the unfavorable year 1958/59 and only £1.5 million less than in the record year 1957/58. Government expenses for subsidies and deficiency payments increased from £241 million in 1958/59 to about £259 million in 1959/60. On the other hand, in Ireland farm incomes declined substantially in both 1958 and 1959 owing to unfavorable weather, a smaller output and higher costs.

Consumer prices and sales

The continuing rise in retail prices during the recession of 1957-58 aroused a good deal of comment at the time. By contrast in 1959 and the early part of 1960, when economic activity was considerably greater, there appeared to be some easing in the upward pressure on retail prices, especially food prices. In some countries at least, it appeared that the persisting surpluses of some agricultural commodities and the downward trend of agricultural prices on international markets were finally beginning to influence retail markets. Thus, of 85 countries for which indices of retail food prices are available there was a fall from 1958 to 1959 in 29 cases, while in 1958 there were only 16 countries where retail food prices were lower than in 1957. On the other hand retail prices continued to rise in 47 countries in 1959, though this was less than in both preceding years, in each of which the com-

parable figure was nearer 70. Falls in retail food prices, however, were rather more widespread than falls in the general index for the cost of living, which fell in only 13 countries in 1959 and rose in about 60.

Taking a longer-term view, both food prices and retail prices as a whole have shown a persistent rising trend in recent years. Thus, comparing 1953 with 1959, there were only 9 countries, out of 84 for which indices are available over the full period, which failed to show some rise in retail food prices, while 33 showed increases of over 20 percent and 13 increases of over 40 percent. Except that all but one of the countries in this last group were in economically less developed regions, there appeared to be no marked difference in inflationary trends between more and less developed countries. The area of greatest retail food price stability was Central America and some of the adjacent countries.

In general, food price indices and price indices for the cost of living as a whole moved fairly closely together. Considerable divergences between the two indices were rather more common in less than in more developed countries, in spite of the fact that in less developed countries food is a large component of the over-all cost-of-living index. Of 83 countries for which comparisons can be made, the difference between the two indices from 1953 to 1959 was less than 2 percent in 31 cases. Of the remainder, food prices rose more than the general cost of living in 24 countries and less than the cost of living in 28 countries. Retail food prices usually showed the largest relative increase over the general index in countries where inflationary pressures had been strong, such as Argentina and Uruguay. In a period of general inflation and falling real incomes, consumers may defer purchases of more durable goods, but cannot defer purchases of food, which thus tends to absorb some of the inflationary strain from other sectors.

In Argentina and Uruguay there was a very steep rise in prices in 1959, which in Argentina followed immediately from the devaluation of the currency at the beginning of that year and the abandonment of a number of consumer subsidies. In the second half of 1959, however, the rate of inflation in Argentina slowed down greatly (rise in retail food prices, December 1958 to June 1959: 85 percent; June 1959 to November 1959: 8 percent) and this development continued into the first half of 1960. It was accompanied by a decline in real earnings and wages, suggesting that some main objectives of the government policy, i.e., reduced consumption to make possible larger exports and higher prices to food producers, had had a measure of success. In Uruguay, too, the rise in prices slowed down in the second half of 1959, though not so much as in Argentina.

Outside the Latin American region there was a sharp increase in retail food prices in 1959 only in Turkey, where prices rose by 8 percent in the first half and by 12 percent in the second half of the year. In Indonesia, and also in Colombia, where retail food prices had risen steeply in recent years, much greater stability has now been achieved. In India the slowly rising trend of retail food prices since 1955 continued in 1959 and early 1960. In Pakistan prices rose by some 12 percent during the year, after a temporary decline in the latter part of 1958, and the rise continued in the first months of 1960. In Japan, too, retail prices were slightly higher.

Turning to the economically more developed regions, the slow rise in retail food prices in the United States was halted, and prices in 1959 and early 1960 were rather stable slightly below peak levels in 1958. Canada and the United Kingdom also achieved a high degree of price stability in 1959. In continental Europe, prices remained very stable in Italy, eased slightly in Switzerland, but continued to climb slowly in other countries, including Western Germany and the Netherlands. A substantial slow down in the rise in the retail price index was achieved in France, despite the reduced supply of milk and butter and the opposition of farmers, by means of consumer ceiling prices, a campaign for the voluntary reduction of retail prices and especially by more liberal import policies. Similarly in Norway, through increased consumer subsidies, and in Sweden, the rise in food prices was slower than the year before.

Data on the value of retail food sales are available for only 16 countries, all except Argentina and Chile in the more developed regions of the world. In none of these countries did the growth of retail sales of food show any check as a result of the recession of 1957-58 and the upward trend of sales continued in 1959. In most countries indices of retail food sales lagged somewhat behind indices of national income and of general retail sales, as would be expected in view of the declining income elasticities of expenditures on foodstuffs with rising incomes. The main exceptions occurred in countries sub-

ject to inflationary pressures, including Argentina and Chile, where the value of retail sales of food in 1959 rose considerably more than general retail sales. Over a longer period, but to a smaller extent, the same is true of France. While these trends partly reflect the rise in food prices, they also appear to confirm the common observation that consumers do not quickly change their dietary pattern in response to rising prices or falling incomes.

Agricultural policies and development plans

Agricultural policies continue to reflect the sharp contrast between the agricultural demand and supply situation in the industrialized countries and that in the less developed parts of the world. These contrasting situations have been discussed in several recent issues of this report, but they must be referred to briefly again, since they form the essential background of such policy changes as have occurred in 1959/60.

With adequate technical knowledge and capital available, supplies are generally capable of fairly rapid expansion in the more developed countries. At the high levels of food consumption that have been reached in these countries, however, the larger demand resulting from increased incomes goes predominantly to nonagricultural products. In the less developed countries this situation is reversed. Many obstacles, especially in the institutional field, have to be overcome in order to achieve a high rate of increase of agricultural production. Demand is rising rapidly, however, with the faster growth of population in these countries, and a large part of any increase in income is spent on food.

These divergent situations also react on one another, which is the origin of many of the most serious and persistent problems that beset the world's food and agricultural economy at the present time. Markets in the industrialized countries for most of the agricultural exports of the less developed regions are growing relatively slowly. This applies not only to foodstuffs, but also to industrial raw materials of agricultural origin, the demand for which has been affected by the development of substitutes and by economies in the use of raw materials. For some products the effects of the slow growth of demand in the industrialized countries have been accentuated by greatly increased domestic production in these countries. At the same time, the surplus stocks that have accumulated since 1952 for some commodities, mainly in the more developed countries, are unsaleable at normal commercial terms in the less developed regions, where, in spite of the vast potential increases in consumption, effective demand is limited by the low level of incomes.

Against this background, the principal aims of agricultural policies in the more developed group of countries are to adjust the level and pattern of their agricultural production as closely as possible to effective demand on domestic and export markets, while at the same time attempting to narrow the gap between agricultural incomes and those in other occupations. Price support systems have been the main instrument in these countries both for maintaining farm incomes and for influencing the output of the different agricultural products. It is becoming increasingly realized, however, that these systems have not only contributed to the excessive expansion of the production of some commodities but have also often failed, in spite of their high and rising cost, to have sufficient effect on farm incomes, and especially on the incomes of the smaller farmers.

There has therefore been for some time a tendency in Western Europe to seek improvements in farm incomes increasingly through raising the efficiency of the farm units, in particular by reducing the agricultural population and increasing the average size of farms. This is reflected to an increasing degree in recent modifications to support policies in some countries, which have sometimes been strongly opposed by farmers. It is also apparent in the agricultural policy proposals of the Commission of the European Economic Community. More far-reaching changes in the near future in some Western European countries are foreshadowed by the rather widespread re-examination of agricultural policies that has been a marked feature of the period under review and has resulted particularly from the implications of the new regional economic groupings. In

Australia and New Zealand also, measures to improve productivity and efficiency are receiving still further emphasis than in the past, and in Japan the costly price supports for wheat and barley may be gradually replaced by assistance in raising the quality and efficiency of production. In Canada a comprehensive system of price supports has only recently been introduced on a permanent basis, but it has already been found necessary to modify the guarantees for some products. The principle has been introduced, so far only for pigs and eggs, of limiting direct support payments to any individual farmer to a relatively low level of output, both to save expense and to lessen the risk of overproduction.

In the United States, where the problem of surpluses is most acute, attempts to reduce them by restricting acreage have largely been offset by rising yields, as discussed earlier in this chapter. So far the chief effective limitation on the further accumulation of surplus stocks has been their large-scale disposal under special terms. Many different solutions are being proposed for these problems. Most of the recent proposals have advocated a reduction in price supports, combined with the relaxation of acreage restrictions and other controls, while others have proposed even tighter acreage restrictions for wheat as well as ceilings on production rather than crop area. So far in 1960, however, no new measures have been passed.

Most of the less developed countries are unable to afford high levels of supports for the improvement of the low incomes of their farming population, and their agricultural price policies are aimed mainly at the protection of consumers and the avoidance of inflation. The question of incentive producer prices is receiving increased attention in some of these countries, however, and a few new schemes have been introduced in 1959/60, especially in the Far East.

In the majority of the less developed countries the economic development plan remains the principal expression of agricultural policy. The year 1959/60 has seen a large number of new plans and modifications to earlier ones, while still more are at present in preparation, including India's third five-year plan, of which a draft outline has been published. In 1958/59 several countries in the Far East and Near East undertook a substantial reorganization of the government machinery for agricultural and general economic planning, but during the year under review there have been few further major changes in this respect. Some countries are now paying more attention to the careful evaluation of the progress of their development programs, but except in its most elementary form this is so far confined to a very small number of countries.

The less developed countries too are attempting to adjust to the buyers' market for agricultural products, and measures to improve efficiency and productivity are becoming an increasingly important part of the agricultural policies of some of them. Agrarian reform measures were a prominent feature of the agricultural policy developments of 1958/59, and although few new measures of this kind have been introduced in 1959/60, the general trend toward greater emphasis on the improvement of the institutional environment of agriculture appears to have continued, especially in some countries of the Near East.

The gradual abandonment of multiple exchange rate systems in Latin America, which has continued in 1959/60 in combination with domestic stabilization measures designed to combat inflation, also represents an adjustment to world market conditions for agricultural products. Similarly, most agricultural exporting countries, including those in the more developed regions, are paying more attention to measures for the promotion of exports and for widening the markets for their agricultural products. For coffee, for example, aggressive export policies are being pursued in the markets not covered under the new International Coffee Agreement.

Changes in agricultural organization and structure have continued rapidly in the centrally-planned economies of Eastern Europe and the U.S.S.R., and in Mainland China there was some reorganization of the rural commune system in August 1959. The structure of the collective farm is undergoing considerable modification in the U.S.S.R., and similar changes are under way in several of the Eastern European countries, where there has been a renewed spurt in the pace of collectivization.

The tendency toward regional economic co-ordination, which has been such a marked feature of the last few years, has continued in 1959/60, though there have been few major developments outside Western Europe and Latin America. In the former region the proposals of the Commission of the European Economic Community for a common agricultural policy have been published.

After the failure of negotiations for the establishment of a wider free trade area, seven OEEC countries established the European Free Trade Association; while this excludes agricultural products, special arrangements are envisaged to facilitate agricultural trade. In Latin America seven countries have established a Free Trade Association, and three Central American countries have set up an economic association as part of the Central American Integration Scheme.

These main agricultural policy developments in 1959/60 are discussed in more detail below on a regional basis. Brief accounts are also given of the principal changes in fishery and forest policies.

North America

United States

There have been no significant changes in agricultural policy in the United States in 1959/60. Various solutions to the problem of surpluses continue to be sought and proposed, but the views on price support policy are still so divergent that it is unlikely that any basic changes will be enacted before the presidential election in November 1960.

The President's Farm Message to Congress in February 1960 stated that any new program must fulfill three main conditions. First, price support levels should be realistically related to production controls, so that the higher the support the stricter the controls and *vice versa*. Secondly, supports should not be so high as to stimulate still more excess production, reduce domestic sales and increase the subsidies required to hold world markets. Thirdly, direct subsidies for crops in surplus should be avoided, as well as programs that would invite countermeasures by other countries or assist one group of farmers at the expense of others.

The Farm Message also reiterated the Administration's preference for a system which would gear supports to the market prices of the immediately preceding years, and which would eliminate acreage allotments and marketing quotas. The response to the two new schemes introduced for the 1959/60 crops of maize and cotton had indicated a preference among some large and efficient farmers for the relaxation of production controls, even though combined with lower prices. The Administration also advocated the gradual expansion of the Conservation Reserve, the remaining part of the Soil Bank Program, up to some 24 million hectares, the main expansion to be directed to the areas of greatest need. Proposals involving a ceiling on production rather than on crop area have also been discussed.

Public Law 480, the principal legislation covering surplus disposal operations, has again been extended. Details are given in an earlier section of this chapter concerning exports on special terms.

Canada

The price support program introduced in Canada from the 1958/59 crop season has resulted in a sharp rise in government-held stocks and in the cost of assistance to farmers. It is feared that the permanent unlimited support system may lead, as in some other countries, to continued excess production, and the government has therefore introduced some modifications of the support measures. Guaranteed prices for pigs were reduced in October 1959 to the legal minimum, and from January 1960 government purchases at support prices were replaced by deficiency payments limited to 100 pigs per producer. Similarly for eggs the former support system was replaced in October 1959 by deficiency payments limited to 4,000 eggs per producer. It is hoped in this way to reduce retail prices and increase consumption, as well as discourage the excessive expansion of production, though it has been suggested that the new system may tend to favor the smaller producer as against the generally more efficient larger producer.

The federal agricultural credit system was extended, and an act was also passed, enabling the government to subsidize any provincial crop insurance schemes that may be introduced.

Australia and New Zealand

Both Australia and New Zealand have further intensified efforts to promote exports. Research on production, processing and marketing is being expanded, and there have been some small changes in guaranteed price levels.

Australia

For 1960/61 the guaranteed price for wheat has been increased slightly. Unless the export price improves, it is likely that this will result in the government's subsidizing wheat exports for

the first time, though the commitment is not an indefinite one but is limited to the duration of the present price stabilization scheme.

A futures market for raw wool was opened in Sydney in May 1960. While such a market has operated in London for some years, Australian producers made very little use of it, and it is possible that the new market may help to smooth out the very large fluctuations in their incomes.

New Zealand

While the guaranteed price for butterfat for butter was left unchanged, the differential for butterfat for cheese was raised in order to induce factories to expand the production of cheese at the expense of butter and casein. At the beginning of the 1959/60 season it was agreed that half of any annual trading surplus in the Dairy Industry Account (in effect, any surplus on export sales) should be retained as reserves and the other half paid out to producers. Because of the high export price over most of the 1959/60 season, this arrangement will result in a rise in the effective producer price for dairy products.

Western Europe

Although there were no major changes in agricultural policies in Western Europe in 1959/60, this period has seen considerable re-examination of these policies and their principles in many countries. This has arisen partly because of the rising cost of support measures, though with little improvement in the incomes of small farmers, and partly because in some countries the production of certain commodities, notably milk, is tending to outgrow demand at present price levels. A still greater impetus to the rethinking of agricultural policies comes from the implications of the new regional economic groupings.

Increasing stress is being laid on problems of farm structure, especially those arising from the small size of farms, both in individual countries and in the agricultural policy proposals of the Commission of the European Economic Community. New measures are being considered to facilitate the transfer of manpower out of agriculture and to create supplementary sources of income for farm families.

Domestic agricultural policies

The Green Plan for 1960 in Western Germany represents a further shift in government outlay from farm income support to measures for the consolidation of farms and the rationalization of production. Increased sums have been allocated to subsidize the old-age indemnity for farmers, which is expected to expedite the improvement of the farm structure. In Italy the Council of Ministers has put forward an agricultural plan for 1960/61 to 1964/65, aiming at the formation and consolidation of efficiently organized farms and the organization of a more rational marketing system.

In the Netherlands new guide lines have been worked out for a revision and improvement of the agricultural support system. The link between price guarantees and costs of production is to be made looser, and in order to encourage the improvement of efficiency and farm structure larger farm units are to be used as the basis for the calculation of support levels. Price guarantees are to be continued for wheat and for a limited quantity of milk. Also in Norway, although the present agreement with the farmers' organizations does not end until June 1961, a committee has already been established to work out a new policy for the future, in particular in regard to structural and social problems. In Switzerland, too, a gradual change is proposed from the present reliance on price supports to greater emphasis on measures to increase productivity, through the development of family farms of adequate size and a reduction in the farm population.

Some of these proposals have been strongly opposed by farmers, as have a number of reductions in guarantees that have already taken place in some countries. Farmers in France asked for a return to the automatic link, abolished at the end of 1958, between agricultural prices and the prices of certain cost-of-living items and means of production. While this was refused because of the danger of inflation, prices of the main products will be adjusted to some extent to production costs, and may also be increased in years when the gap widens between farm incomes and those in other sectors. A draft long-term agricultural development plan, including measures to improve the farm structure and the marketing system, has been prepared in France. In the United Kingdom, too, the 1960 Price Review showed a considerable area of disagreement between the government, which aims to reduce farm subsidies as production

increases, and the farmers organizations. For 1960/61 the fertilizer subsidy has been reduced and small cuts imposed in the price guarantees for a number of products, but guarantees for potatoes and pigs have been increased.

In other countries there have been few changes in price guarantees. In Denmark the producer price of butter was reduced in December 1959 and again in February 1960, in line with the declining prices on world markets. In Sweden, where under the new agricultural agreement that began in September 1959 import duties on certain agricultural products depend on industrial wages, world prices and farm costs, duties on meat, cheese, eggs, potatoes and bread grains have been raised from March 1960.

Under Greece's preliminary economic development program for 1959-63 it is proposed to reduce the area under wheat, which is costing the government large sums in subsidies, to increase production and reduce imports of feed grains, and to increase the production and consumption of livestock products. Sugar beet is to be introduced as a new crop and sugar refineries built. The program counts on larger European outlets for cotton, sultanas, citrus fruit and tobacco, and this was an important factor in the decision to apply for association with the European Economic Community. Greece is also seeking larger markets for agricultural products in the Eastern European countries.

Regional economic co-ordination

Toward the end of 1959 the Commission of the European Economic Community prepared proposals for a common agricultural policy. Its proposals stress the need to create efficient and viable farm units, through new vocational opportunities for part of the farm population, better education for farmers, and the establishment of industries in rural areas. It is proposed to make an annual report on the agricultural situation and to recommend how measures for structural reform can be intensified and financed.

It is also proposed gradually to harmonize the price levels of basic agricultural products in the six countries, and to achieve a unified market within six years. Common marketing organizations are envisaged for grains, sugar and dairy products, while for meat and eggs it is proposed to co-ordinate the existing marketing arrangements. For fruit and vegetables the main emphasis is on common quality standards, with competition governed by certain rules. For all the main commodities, except fruit and vegetables, it is proposed to set up stabilization funds, financed from import levies intended to bring import prices up to certain minimum levels.

These proposals do not aim at self-sufficiency for any agricultural product, but the principle of raising farm incomes to the level of those in other sectors entails farm price supports which are likely to continue to stimulate production and reduce imports.

After the failure of the negotiations between the European Economic Community and the other members of OEEC for the establishment of a wider free trade area, seven countries (Austria, Denmark, Norway, Portugal, Sweden, Switzerland and the United Kingdom) set up the European Free Trade Association. It aims at a progressive abolition of tariffs on goods originating in the area, beginning on 1 July 1960, but there is to be no common outer tariff for products from the rest of the world. Agricultural and fishery products are not included, but a special agreement to facilitate trade in these products between member countries is envisaged. Already the United Kingdom has agreed to waive tariffs on Danish bacon, blue cheese and canned cream. Switzerland has increased imports of Danish butter and promised greater imports of other products from Denmark. Sweden is to grant tariff preference to imports of Danish dairy products, meat and potatoes, and will restore part of the duties collected on foodstuffs imported from Denmark for reimbursement to Danish producers.

Proposals have been made for the reorganization of OEEC; they are concerned mainly with closer participation by Canada and the United States and increased emphasis on the co-ordination of aid to less developed countries.

Eastern Europe and U.S.S.R.

There have been further adjustments to long-term plans and objectives in Eastern Europe and the U.S.S.R. during 1959/60. Modifications in agricultural structure and organization have continued in the U.S.S.R. and also in some countries of Eastern Europe, where there has been a further acceleration of the collectivization drive in most countries.

Development plans

Long-term plans for agriculture in Eastern Europe and the U.S.S.R. are framed on the basis of five or seven-year periods and are fitted into "perspective plans" running until 1975 or 1980. Particularly in the U.S.S.R. flexibility is sought by making adjustments of detail in the seven-year plan on the basis of the progress achieved under the annual plans.

Because of the success achieved in the livestock sector in 1959, the 1965 U.S.S.R. target has been raised from the 16 million tons in the seven-year plan to 20-21 million tons, which corresponds to the objective announced in 1957 to exceed the per caput meat production of the United States. The target for grain production in 1965 is set at 164-180 million tons, and it is now hoped to achieve the higher of these two objectives. Maize production is being especially promoted, and oats and other products are to be replaced by higher-yielding and more nutritious feedingstuffs. Following the campaign for the greater use of artificial fertilizers, the more rational use of organic manures is receiving special emphasis, while in order to reduce losses of stored grains and other products large investments are to be made for the construction of silos.

While it was originally planned to achieve the 1965 grain target almost entirely through higher yields, it is now intended to enlarge the sown area by the productive use of 12 million hectares of fallow and by opening up a further 15 million hectares of virgin land. There have been great difficulties, however, concerning immigration into the newly cultivated areas in the east of the U.S.S.R. where vast numbers of seasonal workers have been transported each year but the number of permanent immigrants has not been sufficient.

Greater regional agricultural specialization is receiving considerable emphasis, and recommendations have been made for each of the 39 agricultural zones of the U.S.S.R. They are to be implemented partly by the abolishment or reduction of deliveries of grain to the state in areas where costs are high. Steps toward greater agricultural specialization have also been proposed for the countries of Eastern Europe. Agricultural collaboration between the U.S.S.R. and the countries of Eastern Europe already covers such matters as the exchange of seeds, technical information and farm machinery, while there is also some co-ordination among the plans of the different countries.

A number of Eastern European countries have revised their long-term plans or have prolonged them so that they finish in 1965, the same year as the U.S.S.R. seven-year plan. During 1959 and 1960 new or modified plans running until 1965 were published in Czechoslovakia, Hungary, Poland and Romania. As in the U.S.S.R., the plans in the Eastern European countries emphasize livestock production and fodder crops (especially maize), and increased yields per hectare and per animal. Also large investments are to be made in means of production, especially chemical fertilizers and machinery. Some countries, especially in Southern Europe, are attempting to increase the cultivable area by means of reclamation, drainage and irrigation.

Agricultural organization

In the U.S.S.R. the proportion of the livestock population in the socialized sector was further reinforced in 1959, and the *kolkhozes* (collective farms) and *sovkhozes* (state farms) are now responsible for nearly half of the total production of meat and milk. This is chiefly due to the reduction of the privately-kept livestock of the sovkhoz workers, who have been invited to dispose of them over two to three years, and to the prohibition of livestock raising in several large towns from October 1959. Kolkhoz members are being encouraged to sell their privately-owned calves for fattening by the kolkhoz, and in some areas the maximum number of livestock that they may own has been reduced.

New sovkhozes are to be established in the U.S.S.R. during 1960. The evolution of the kolkhozes has continued along the lines begun in 1958 and described in last year's issue of this report.[3] At the beginning of 1960 it was announced that the sale of agricultural machinery to the kolkhozes by the Machinery and Tractor Stations (MTS) had been completed. In order to achieve these purchases more easily, about 17,000 collective farms have been amalgamated, and they now number about 60,000. The repair stations (RTS) that replaced the MTS have in some cases passed

[3] See also Alexander N. Sakoff, Current trends in collective farming in the U.S.S.R. *Monthly bulletin of agricultural economics and statistics*, Vol. IX, No. 5, FAO, Rome, May 1960.

to the kolkhozes or to groups of them, and it seems that this system is to become general.

The establishment of uniform prices from 1958 for compulsory deliveries and sales to the state benefited the smaller kolkhozes and enabled some equalization of the revenues of the kolkhozes. At the session of the Communist Party Central Committee in December 1959 it was decided to reduce the prices of certain products (industrial crops, fruit, grapes, tea) to bring them more in line with those of other commodities, and this too will contribute to evening out the revenues of the different kolkhozes. For the remuneration of their members, an increasing number of kolkhozes are replacing the *trudoden* (conventional work day) by a system of fixed wages, but this system entails the possession by the kolkhoz of relatively large financial resources. The kolkhoz is increasingly coming to resemble a commercial agricultural enterprise, with a salaried labor force and realizing variable net profits, and in the U.S.S.R. it is approaching the sovkhoz in structure.

Enterprises for construction, electric power, agricultural processing, etc., organized and financed by interkolkhoz associations, are increasing rapidly, and in some cases the sovkhozes participate in them. It has been proposed that district kolkhoz unions should be set up to control these enterprises and co-ordinate the activities of the kolkhozes. Sovkhoz unions are also to be established. Because of the increasing importance, noted above, of financial problems in the kolkhozes, modifications in the agricultural credit system were introduced in 1959 in order to secure closer control. Formerly long-term credit was obtained from the Agricultural Bank (*Selkhozbank*) and short-term credit from the State Bank (*Gosbank*), which holds the cash balances of the kolkhozes. The former bank has now been abolished and all credit is to be obtained fron the State Bank, except for credit for building, for which a new bank has been set up.

The collectivization drive has been intensified in most of the countries of Eastern Europe, and some of the same structural modifications as in the U.S.S.R. are taking place in these countries. Bulgaria and Czechoslovakia have decided to transfer the agricultural machinery to the collective farms by 1962, and in Czechoslovakia more than half of this machinery had been purchased by the autumn of 1959. In Eastern Germany the machines are to be loaned, rather than sold, to the more advanced type of co-operative. In Bulgaria very large co-operatives associated with irrigation works have been organized since 1958, and 3,290 co-operatives were amalgamated into 640 units averaging more than 6,500 hectares of arable land, or much more than the average of 2,200 hectares in the U.S.S.R. By the end of 1959, however, the number of units had risen again to 950, with an average size of 4,500 hectares.

Collectivization is now almost complete in Bulgaria. In Eastern Germany the collectivization drive was very rapid in 1959 and early 1960, and the proportion of socialized land (co-operatives and state farms) rose from 37 percent in 1958 to more than 85 percent in March 1960. In Albania the socialized sector covers 80 percent and in Czechoslovakia 86 percent of the arable land. In Romania its share rose from 55 percent in 1958 to 81 percent in June 1960, primarily because of the expropriation (against compensation) of all land not cultivated directly by the owner and the abolition of the renting of land and the employment of hired labor. In Hungary the share of arable land in the socialized sector rose from 29 percent at the end of 1958 to 72 percent in March 1960.

The position in Poland remains different from the other countries of Eastern Europe. Collective control of private farming is exercised to some extent through the "agricultural circles," an ancient form of local farmers' association dating from the beginning of the nineteenth century. In mid-1959 about 13 percent of the farms were grouped in 19,000 of these circles. They administer the Special Fund for Agricultural Development, which was established in September 1959 from the difference between market prices and the prices paid for deliveries to the state. They can also undertake the collective cultivation of land sold to them by various organs of the state, and it is likely that about 1 million hectares may be used for this new form of collective enterprise.

Latin America

In Latin America a main feature of 1959/60 has been the success of the stabilization programs pursued in a number of countries to check the inflationary rise in prices that had hitherto been so persistent. Notable progress has also been made in the movement toward regional economic co-ordination.

Price policies

Some progress in reducing inflation and balancing exports and imports was made in Argentina in 1959 and the first half of 1960 under the Stabilization Plan adopted in December 1958. In July 1959 the government sought the co-operation of the retail trade in the stabilization program, and 60,000 retail stores agreed to sell certain essential consumer goods at cost price.

Over the last few years many Latin American countries have abandoned the multiple exchange rate system, and in December 1959 Uruguay replaced it by a single rate involving the devaluation of the currency from 1.5 to 6.5 pesos per U.S. dollar. Exchange retentions up to 50 percent were introduced as a transitional measure for major export commodities, part of which was earmarked for subsidies on imported food. Earlier, in October 1959, the prices of essential consumer goods had been frozen until the end of the year at the level of 31 July and retail price margins limited to 25 percent. In early 1960 a price ceiling was established for retail sales of bread.

In contrast to most other countries in Latin America, Brazil has not embarked on an over-all economic stabilization plan, but *ad hoc* measures are taken as the need arises. Following the crop failures of 1959/60, price controls were imposed on a number of basic food products. The failure to reach the production target for wheat, partly because of unfavorable weather but also because of rising prices for various production requisites and the lack of adequate storage, led to a modification of the wheat price policy, and growers now receive a basic price plus a premium (50 percent of the basic price) which is paid only if it is used for the purchase of production requisites.

A new coffee policy was begun in Brazil in 1959, under which, instead of defending the price, the volume of exports is to be expanded without consideration of the price in new markets such as Eastern Europe, the U.S.S.R. and Japan. On traditional markets prices are supported by the recent International Coffee Agreement. Brazil and also Colombia are seeking to barter coffee, especially with Eastern European countries and the U.S.S.R. Brazil's new coffee policy also resulted in a step toward the simplification of the multiple exchange rate system, as there are now only two instead of three export exchange rates. The export price policy, however, is not reflected in domestic prices. The "coffee dollar" was raised from 76 to 90 cruzeiros in July 1960, which still involves a substantial exchange tax in relation to the free market rate. On the other hand, the government is obliged to purchase all of the export quota which cannot be sold at a minimum price, and finances the entire crop through credits up to 80 percent of this price. The 1959/60 minimum price of 2,100-2,200 cruzeiros per bag is expected to be raised to about 3,000 cruzeiros for the 1960/61 crop. In Colombia also, both the coffee dollar rate and the purchase price of the Federation of Coffee Growers were raised in May 1960.

There have been few price policy changes in the other countries of the region during 1959/60. Mexico introduced an export subsidy for maize in November 1959, in order to check the accumulation of surpluses. In Peru meat subsidies and controls have been abolished in order to stimulate cattle raising.

Development plans

While in the Latin American countries there are few formal economic development plans of the type that is now almost universal in the other less developed regions of the world, agricultural development activities are pursued under sectoral, regional and commodity programs in most countries. In Brazil, for example, a special development agency was created for the drought-ridden northeast of the country in December 1959. Its program includes irrigation works and the development of industries and mining.

Other agricultural programs include the agricultural diversification program in Nicaragua, for which a loan of U.S.$8 million has been obtained from the Export-Import Bank, and the program for the development of the cattle industry in Uruguay, for which the International Bank for Reconstruction and Development granted a loan of U.S.$7 million in April 1960. In Chile a ten-year economic development plan is in preparation. In Guatemala $41 million are to be invested in the development of 40,000 hectares of rubber on the Pacific coast. Measures under way as part of Mexico's Rural Welfare Program include the revision of land tenure legislation, the expansion of the crop and livestock insurance scheme, and the resettlement of excess rural population in new agricultural areas.

In Venezuela recommendations for a long-term development program are being made by a mission of the International Bank for Reconstruction and Development. In February 1960 an agrarian reform law was passed; voluntary donations of land have been abundant, and it appears that expropriation will not be necessary. Peru also plans to undertake agrarian reform measures, and programs of this kind are being studied in Colombia, Ecuador and Uruguay.

Regional economic co-ordination

Further progress has been made with economic co-ordination programs in Latin America. In February 1960 Argentina, Brazil, Chile, Mexico, Paraguay, Peru and Uruguay signed the Montevideo Treaty establishing a Free Trade Association. The treaty provides for the elimination over a 12-year period of all trade restrictions among these countries, while other objectives are the free convertibility of currencies and a thorough review of payment and credit systems to eliminate any discriminatory practices among the member countries. The seven countries are to negotiate, within five years, an Agricultural Development Agreement, designed to achieve a better co-ordination of their agricultural production and trade policies. The Free Trade Association is open to any other Latin American country to join if it wishes, and already Bolivia, Colombia and Ecuador have expressed the desire to do so. It therefore appears to be a substantial first step toward the establishment of the Latin American Common Market that has been under study for some years.

As part of the Central American Integration Scheme, an agreement was signed early in 1960 by Guatemala, Honduras and El Salvador, establishing an economic association. The agreement provides for the free circulation of persons, goods and capital, and for the establishment of a Development and Assistance Fund to finance development projects.

The Inter-American Development Bank officially came into existence on 30 December 1959, after 18 countries had ratified its charter. The bank has a capital of U.S. $1,000 million and will extend loans ($850 million repayable in dollars and $150 million repayable in other currency) for the financing of projects of economic development.

FAR EAST

A number of important new development plans are in preparation in the Far East, including India's third five-year plan, which is due to begin in April 1961. An important new departure in India, which may also have valuable lessons for other less developed countries, is the Intensive Agricultural District Program, under which a wide range of the materials and services needed by farmers to achieve substantial increases in agricultural production are to be concentrated in selected pilot districts. There have also been some further changes in agricultural price policies in several countries of the region. In Mainland China there has been some reorganization of the rural communes.

Development plans

New economic development plans have been announced in Cambodia, Ceylon, Laos, Pakistan, Sarawak and Taiwan, and new plans are being drafted in India and Thailand. Changes in development plans in the centrally-planned economies are discussed in a separate section.

The National Planning Council of Ceylon has made public a 10-year development plan for 1959-68, under which agriculture is expected to provide 89 percent of domestic requirements of agricultural products in 1968 as against 71 percent in 1957. It is planned to increase rice production by 144 percent over the 1957 level, rubber and coconuts by more than a third and tea by nearly a third. The plan is expected to provide an over-all framework for three-year implementation programs in the various sectors. The Planning Council has already appointed a Committee on Export Crops to examine the rehabilitation programs for tea, rubber and coconuts for the period 1961-63, and additional committees are to devise programs for implementing other aspects of the plan.

Most of the targets of Pakistan's first five-year plan had not been achieved on completion of the plan period in June 1960. Although this plan was never formally adopted, it was used by the ministries as a guide in the implementation of projects. Per caput income had failed to increase, and targets for irrigation and drainage, the expansion of the crop area, the use of fertilizers and disease control were not realized. Rural credit was recognized as having been insufficient, and in East Pakistan the number

and membership of co-operative societies had declined. As a result of this situation a Food and Agricultural Commission, assisted by several international experts, is now reviewing the country's agricultural policies. In June 1960 the Economic Council approved the second five-year plan, under which agriculture and irrigation are to receive the highest priority, amounting to 22 percent of all public and private investment, a much larger share than in the first plan. Self-sufficiency in basic foods is aimed at and the production of food grains is to be increased by one fifth. The quality of the diet is to be improved through substantially larger production of protein foods, fruit and vegetables.

In Cambodia's first five-year economic and social development plan for 1960-64 a major aim is to increase the output of rice, rubber and cotton, while the diversification of production is planned through the promotion of jute, sugar cane, coconut, tea, coffee, oil palm and other crops. In Indonesia a three-year agricultural program for 1959/60-1961/62 has been formulated, under which it is planned to achieve self-sufficiency in rice by the end of 1962. Laos has approved a five-year plan (1959/60-1963/64), in which the development of agriculture has an important place. Under Sarawak's new development plan for 1959-63 agriculture is to receive 27 percent of the total planned expenditure. More emphasis is to be given to the development of cash crops, especially rubber and coconut, processing industries are to be set up, and among new crops priority is to be given to the development of oil palm. In Taiwan most of the agricultural production targets for 1959 under the second four-year plan were achieved or exceeded with the exception of rice, which was affected by floods. A third four-year economic plan for 1961-64 has been formulated, and a ten-year agricultural development program to begin this year has also been announced. The latter provides for a 25 percent increase in rice production and the cultivation of 2.5 million hectares of marginal land. In Thailand a short-term plan covering three years is being drafted as the initial phase of a six-year plan which is scheduled to begin in October 1961. It is proposed to bring more paddy land under irrigation and to increase fertilizer supplies, so that rice exports can be maintained at 1.2 million tons a year.

India began the final year of the second five-year plan reasonably confident that the revised expenditure targets of about five sixths of the original proposals would be implemented. Because of reverses in the agricultural sector, however, national income increased by only 5.2 percent during the first three years of the plan, and the sharp upward revision of the estimated annual population growth to 1.9 percent indicates that per caput incomes probably did not increase during this period. Substantially higher production of food grains has been obtained in the past two years, because of favorable weather and some acceleration of schemes such as minor irrigation and seed farms. Only about five sixths of the planned expansion of irrigation is expected to be achieved, however, and the availability of fertilizers has fallen far short of demand.

In addition to the detailed annual reviews of the progress of the plan that are carried out by the Indian Planning Commission itself, a team of experts from the Ford Foundation in 1959 surveyed the progress that had been made in agriculture and studied the country's food needs for the period of the third plan. Following a recommendation of this team, the Ministry of Food and Agriculture is to begin during 1960 the Intensive Agricultural District Program (generally known as the "package program"). In selected districts, covering several thousand hectares each and having a relatively reliable water supply and functioning community development facilities, special attention will be given to assuring the timely availability to farmers of production requisites, credit, marketing and other services. By this concentration of effort it is hoped to achieve substantial increases in agricultural production. The number of districts in the initial program is seven, which may be increased each year until there is at least one in each state. The initial seven projects were to be financed partly by the Ford Foundation and partly under the third plan.

A draft outline of proposals for India's third five-year plan for 1961/62-1965/66 has now been published. A major factor influencing the proposals is the upward revision noted above in the estimated rate of population increase, and it is significant that the draft plan provides for an increase in the number of family planning centers from 1,800 to 8,200. The estimated cost of the plan is 102,000 million rupees, of which about 32,000 million is in foreign exchange; three fifths of the planned investment are in the public sector. The target for food grains is 100-105 million tons, as compared with the figure of 110 million tons recommended by the Ford Foundation team and with the 75 million tons

expected in the last year of the current plan. Exports, including cotton, jute, tea, coffee, tobacco and oilseeds, are to be sharply stepped up. The targets include 8 million hectares of additional irrigation and much greater use of fertilizers. The Planning Commission emphasizes that the present proposals are tentative, partly in order to achieve the necessary flexibility. The proposed program for the development of co-operative farming, for example, is still under examination, but additional finance may later be made available to begin its implementation.

Price policies

There have been important changes in food and agricultural price policies in a number of countries during 1959/60. In India sugar prices were raised in November 1959, and for all production in excess of the average of the last two years a rebate of half the excise duty is to be shared by growers and manufacturers. A permanent Agricultural Commodities Price Advisory Committee is under consideration to advise the government on producer prices and price relationships between competing crops. The Planning Commission, in presenting its proposals for the third five-year plan, emphasized that price stability was an essential prerequisite, and stated that both fiscal and physical controls would be imposed if necessary. It is hoped to achieve greater stability of prices to producers and consumers through the establishment of reserve stocks of food grains from supplies obtained under the recent agreement with the United States, discussed earlier in this chapter in connection with surplus disposal operations.

In Japan a new ten-year program for wheat and barley has been formulated which proposes a gradual shift from price supports to measures designed to improve productivity and quality. Because of its high price and inferior quality the demand for domestically-grown wheat and barley has hitherto remained low.

As a result of the good harvests of 1959/60 it was possible to relax some control measures in Pakistan. In East Pakistan statutory rationing in 16 out of 19 towns and also all nonstatutory rationing was withdrawn in January 1960, together with all restrictions on the free movement and sale of rice and paddy. Similarly, all controls on the distribution of sugar were removed. Prices, however, remain under strict control. Price controls have been maintained for sugar, for instance, and in December 1959 maximum prices were introduced for a number of products, including staple grains, vegetables, meat, milk and fats. From April 1960 all controls on the movement of wheat and also its rationing were abolished in West Pakistan. Wheat prices are to be allowed to fluctuate in a fairly wide range between the guaranteed floor price to producers and the ceiling price to consumers, these prices to be implemented through government purchases and sales on the basis of a reserve stock of 500,000 tons. Monopoly procurement and state trading in the superior varieties of rice was also abandoned in West Pakistan, but restrictions on movement remain in force in order to ensure that the entire output is channeled into exports by the private trade. Floor prices to producers have also been fixed, to be implemented by government purchasing.

In Thailand the rice price stabilization scheme, implemented by a variable tax or premium on rice exports, failed to prevent a fall in domestic prices after the large harvest of 1958/59. It was therefore supplemented early in 1960 by a scheme whereby the government guarantees minimum prices to growers. The Government Warehouse Organization, as well as provincial companies and marketing co-operatives, are to purchase rice at minimum prices corresponding to the average purchasing prices of rice mills in Bangkok in a normal year. In addition, a comprehensive policy for the stabilization of prices of rice and other agricultural products has been announced, involving permanent minimum price guarantees for these crops. It is envisaged that this policy would be implemented by means of buffer stocks.

Mainland China and other centrally-planned economies

In Mainland China increased grain production remains the main objective of agricultural production plans. A ten-year plan for agricultural mechanization, initially in the main zones producing a marketable surplus of grain, has been announced. As in the U.S.S.R. much emphasis is being given to the use of organic manures. While last year it had been planned to reduce the sown area, this year's increase in output is to come from an expansion in area as well as from the further improvement of yields. Last year's emphasis on the expan-

sion of vegetable and pigmeat production in the suburban areas is to be continued, with the addition of oilseeds, fruit, fish and other products. In the frontier areas large-scale irrigation and reclamation are to be continued. In Tibet land redistribution is under way, and the organization of collective farms has begun.

There are now 24,000 rural communes in Mainland China, each grouping a large number of villages and an average of 5,000 families, in place of the 700,000 small co-operatives that existed in 1958. The countryside appears to have been transformed by the elimination of the former tiny plots of land and by the planting of trees. A reorganization of the communes was found necessary in August 1959, as food supplies for the commune kitchens had fallen below the previous year's level, and as overcentralization with the pooling of all income had meant that the more efficient "brigades" were supporting the rest. Small plots were handed back to families for the cultivation of vegetables and the raising of poultry to improve rural food supplies. At the same time the production brigade of 200 to 300 families became the basic unit of ownership of land, animals and equipment. Each brigade is now allowed to distribute most of its revenues among its members, contributing a certain share to the capital funds of the commune. Incentive wages, tied to work performed, were restored; in addition food grains are distributed on a ration basis. A new development reported this year is the organization of urban communes.

North Korea has abandoned the first five-year plan for 1957-61, in which the development of heavy industry was emphasized, because it was recognized that the goals could not be achieved and because insufficient development had been allowed for in other sectors. A new plan is in preparation for 1961-65, in which mechanization is to be the chief factor in raising agricultural productivity. Collectivization is now complete in North Korea. In North Viet-Nam 42 percent of the peasant families were grouped in 26,800 agricultural co-operatives in 1959. 1960 is the final year of the three-year plan, and a new five-year plan is in preparation.

Radical changes are under way in Outer Mongolia. At the beginning of 1960 it was announced that 99.7 of the nomad families and 75 percent of the livestock had been collectivized into 389 rural co-operatives with an average of 475 families and 43,000 head of livestock. One of the objectives of the rapid collectivization is the eradication of nomadism, but this does not appear yet to have been achieved to any great extent. At the same time the small cultivated area was raised from 107,000 hectares in 1958 to 153,000 hectares in 1959, and by 1961 it is planned to open up virgin land in order to bring the total to 300,000 hectares. New processing facilities are being established, especially for hides and skins and wool.

Near East

The main agricultural policy development in the Near East has been the signing of the Nile Waters Agreement for the division of the Nile flow between the United Arab Republic and Sudan. In addition, a number of countries have new and more comprehensive development plans in preparation. There have been further changes in trade policies designed to promote exports, and also a continuation of the tendency to pay more attention to the institutional environment of agriculture. In respect of the proposed Arab Common Market, however, there are no significant new developments to report.

Development plans

Under the Nile Waters Agreement signed in November 1959, Sudan is to receive 14,500 million cubic meters and the Egyptian Region of the United Arab Republic 7,500 million cubic meters of the additional water that will be stored when the High Aswan Dam is completed. This will bring the total shares of the two countries to 18,500 million and 55,500 million cubic meters, respectively. The United Arab Republic has agreed to pay £E15 million toward the resettlement of the Sudanese population of the areas to be inundated as a result of the High Dam. A Joint Permanent Technical Body has been established to study and execute projects in the Sudan to prevent the waste of water in the Nile marshes, the costs and benefits to be shared equally by the two governments.

In the Sudan this agreement paves the way for the construction of the Roseires Dam under the new long-term development plan that is in preparation. Aid is being sought from the International Bank for Reconstruction and Development for

this dam, in addition to the U.S.$15.5 million that have been obtained to help finance the completion of the Managil Irrigation Scheme. Another dam, costing £S20 million, is also under consideration on the Atbara River, to irrigate 100,000 hectares for the resettlement of the population of Wadi Halfa when the town is submerged because of the High Dam.

In the Egyptian Region of the United Arab Republic the construction of the High Aswan Dam was begun in January 1960, with U.S.S.R. assistance. The original two stages of the project have been merged, and it is now to be completed by 1968. The total cost is estimated at £E367 million, plus a further £E180 for ancillary work. When completed it will bring 420,000 hectares of new land under irrigation and transform 300,000 hectares from basin to perennial irrigation, as well as providing very substantial supplies of electricity. New comprehensive development plans for both the Egyptian and Syrian Regions were formerly being worked out with the objective of doubling national income in 20 years; now both regions are preparing plans on the basis of achieving this aim in a 10-year period. An autonomous body, the Major Projects Institute, has been established in the Syrian Region to implement major irrigation works, including those on the Euphrates, which are expected to double the present irrigated area by 1970.

In Afghanistan the first five-year plan is to end in September 1961, and the second plan is already in preparation. An agreement has recently been signed with the U.S.S.R. for the development of the Jalalabad irrigation and power scheme, which will irrigate 25,000 hectares. In Iran the Economic Bureau of the Plan Organization has prepared a comprehensive review of progress under the first half (September 1955-March 1959) of the second seven-year plan. The review indicates that much of the apparent investment in agriculture has actually gone to the construction of dams used largely for the supply of electric power and drinking water. With rising costs and the temporary reduction to 55 percent of the proportion of the oil revenues devoted to development, it appears that the plan is unlikely to be completed in time unless additional foreign loans are obtainable. A loan of U.S.$42 million has recently been granted by the International Bank for Reconstruction and Development to meet the foreign exchange cost of the multipurpose Dez Scheme in Khuzistan. The Economic Bureau is now engaged in the preparation of the third plan.

While development activities in Iraq continue on the lines laid down in the six-year development plan for 1956-61, a new three-year interim plan costing I.D.391 million (including the U.S.S.R. loan of I.D.50 million extended in 1959) has been announced and is to serve as a link between the former plan and a much more comprehensive plan to be launched in 1963. The interim plan gives much less emphasis than in the past to large-scale irrigation projects and more to industrial and social development. Agriculture and irrigation receive only 12 percent of total investments, and proposed new schemes include the control of part of the Euphrates, extensive drainage works, four large state farms specializing in various crops, tractor stations, grain silos and a fertilizer factory.

In Israel a five-year plan has been prepared by the Finance Ministry and the Bank of Israel. The plan envisages an annual investment of £I1,000 to £I1,100 million, which would result in an increase in national income of 8 percent per year. Priority is given to the development of exports and to import savings.

The government of Lebanon has asked a private organization, the International Center for Economic and Social Development, to study the resources of the country with a view to preparing a development plan before the end of 1960. Libya has assigned 70 percent of its future oil revenues to development purposes and is likely to prepare a long-term development program on the basis of the recommendations of the mission of the International Bank for Reconstruction and Development that has recently visited the country. The success of Saudi Arabia's austerity program is also likely to lead to economic planning, and a mission from the International Bank has visited this country too.

In Turkey policy modifications are expected as a result of the recent changes in government. It is proposed to set up an Economic Planning Office in the Prime Minister's Office, and also a unit for agricultural economics and planning in the Ministry of Agriculture.

Other policy changes

Although, as indicated above, large-scale irrigation projects still play a large part in the development plans of the region, the trend noted in 1959

toward increased emphasis on institutional improvements has continued during the period under review. A land reform law has been introduced in Iran. In Iraq a new Law of Farm Societies is designed to facilitate co-operative farming and the provision of production requisites. Co-operative training centers have been established in the Syrian Region of the United Arab Republic, and in Jordan a Co-operative Central Union has been formed to function as a bank for all registered co-operatives, to make bulk purchases of their produce and to facilitate marketing.

Export promotion policies have included the abolition of the export duty on all cotton except shorter-staple Ashmouni in the Egyptian Region of the United Arab Republic. The barter trade in cotton has also been abolished and the discount rate on cotton exports to transferable currency areas has been reduced from 35 to 6 percent. A Federation of Cotton Exporters has been established to regulate exports and avoid violent fluctuations on spot and futures markets, by allocating a quota to each exporter and arranging for its disposal through a state trading concern. In conjunction with the Nile Waters Agreement Sudan and the United Arab Republic signed a trade and payments agreement involving transactions worth £E11 million. Iraq has made several barter agreements for the exchange of dates against various essential imports.

Africa

With the very rapid pace of political evolution in 1959 and especially 1960 it is a little difficult to keep track of recent agricultural policy changes in this region and of the exact status of the various development plans that were under way. During 1959/60 a number of new development plans have been announced and others are in preparation. In respect of the financing of development plans and projects a significant event is that the International Bank for Reconstruction and Development, whose loans to countries in Africa have hitherto been almost entirely for transport, electric power and mining, has granted three loans for African agricultural development.

Development plans

In the Congo the development budget for 1960/61 represents the first instalment of the second ten-year plan. With the recent independence of this country, it is not yet clear whether the plan, which devotes a greatly increased share of total investment to agriculture, will be adopted in its entirety or modified, while the extent of the aid to be furnished by Belgium is not yet known. A loan of U.S.$7 million has been obtained from the International Bank for Reconstruction and Development for the improvement of African agriculture. The Congo has also been allotted B.Fr.1,000 million from the Development Fund of the European Economic Community for 1958-62 for projects additional to those already included in existing development plans. The over-all proportion of this fund to be used for economic as against social projects has been greatly increased, and in the Congo a number of agricultural projects financed in this manner are already under way.

In the French Community the Fonds d'aide et de coopération (FAC) has replaced the former Fonds d'investissement pour le développement économique et social (FIDES) in respect of French aid for the development plans of the members of the Community. For 1960 it is expected that FAC resources will amount to Fr.85,000 million (old francs), of which 50,000 million will be for economic and social development and the remainder for budgetary assistance. The Development Fund of the European Economic Community made grants amounting to Fr.13,000 million to overseas members of the French Community during 1959.

Further details have become available of the Constantine Plan for Algeria, which runs from 1959 to 1963. The agricultural sector of the plan envisages an increase of 75,000 hectares in the irrigated area, the redistribution of 250,000 hectares of land, and the modernization of traditional agriculture through improved methods and through the construction of infrastructure works which will be carried out with the participation of the peasants themselves. Agriculture is to receive Fr.340 million out of the total planned investment (public and private) of Fr.2,500 million. Half of the investment allocated to agriculture will go to irrigation, soil conservation, forestry, agricultural research and land reform; the other half will be devoted to the drive for the modernization of traditional agriculture.

Most of the members of the French Community are still preparing their new development plans, full details of which are not yet known. In the plan for the Congo Republic agricultural production is expected to be doubled by 1965. The new 10-year

plan of Dahomey also provides for the doubling of agricultural production, which is expected to bring a fourfold increase in export availabilities.

Kenya has received a loan of U.S.$5.6 million from the International Bank for Reconstruction and Development for the improvement of African agriculture and for the development of transport. This will enable the continuation of the Swynnerton Plan for African agriculture beyond the five years originally envisaged, in view of the encouraging results obtained so far. It will cover the foreign exchange requirements of an accelerated three-year plan running until June 1963, including land survey, farm consolidation, agricultural extension, pilot farms, schools, and agricultural credit, as well as the further introduction of cash crops and livestock improvement. The International Bank has also loaned Southern Rhodesia U.S.$5.6 million for the development of African agriculture. In the Southern Cameroons a £3 million loan has been obtained from the Colonial Development Corporation for the improvement of the plantations of bananas, rubber, oil palm, cocoa and tea owned by the Cameroons Development Corporation. In Mauritius the development program is being revised to take account of the reconstruction needed as a result of the cyclone damage in early 1960.

The Nigerian Federal Government has adopted a proposal for the construction of multipurpose dams costing £121.5 million on the Niger and Kaduna Rivers. The newly irrigated lands will be used not only for food crops to supply the rapidly increasing populations of Western and Eastern Nigeria but also for cocoa and other cash crops. The new five-year plan for 1960-65 of the Western Region of Nigeria involves a total capital outlay of £68 million, of which £21 million are to be provided by the Marketing Board. Planned expenditure for agriculture amounts to £13.8 million. £5 million are to be devoted to the development of co-operative farm settlements; selected young men will be trained and established on settlements where they will develop their holdings with the assistance of the extension service. Funds have also been allocated for equity participation in new plantations established through foreign investment, the improvement and extension of existing plantation schemes, new planting and replanting of cocoa, rubber, oil palm, etc., and agricultural credit facilities.

Guinea has obtained a loan of 140 million rubles from the U.S.S.R., repayable at 2.5 percent interest over 12 years. The country is also to receive assistance from Mainland China in the improvement of rice production. A three-year plan is in preparation under which the aim will be to double agricultural production.

A draft has been prepared of Morocco's five-year plan for 1960-64. The Development Loan Fund has provided U.S.$23 million for the development of the Oujda and Berkane regions of eastern Morocco, including the irrigation of about 30,000 hectares. In Tunisia a five-year plan for 1960-64 has been drawn up within the framework of a ten-year perspective plan.

Other policy changes

There have been changes in agricultural price and marketing policies in several countries of the region during 1959/60. A fund to support the producer price of cotton was established at the beginning of 1960 by Dahomey, the Ivory Coast, Niger, the Soudanese Republic and Upper Volta, replacing the former Caisse de stabilisation des prix du coton de l'A.-O. F. A Cereals Office has been established in the Soudanese Republic. In Senegal an agricultural marketing organization has been established with the main object of replacing the present barter economy based on groundnuts by a modern and diversified market economy.

After the abolition of Tunisia's customs union with France an agreement was signed in September 1959 covering the foreign exchange reserves of Tunisia, quotas of Tunisian wine on the French market and of hard wheat to be purchased at French support prices.

In Ethiopia a scheme has been announced by which long-term credit on easy terms can be obtained by landless farmers for the acquisition of land.

Fishery policies

The experience of the past year has shown that international agreement on the principal aspects of fishery policy is still a long way off, although the urgency of obtaining co-ordinated action in this field is more and more clearly recognized. The Second United Nations Conference on the Law of the Sea, held in March-April 1960, was, in substance, a failure like its predecessor in 1958.

The Conference was unable to come to an agreement on the breadth of the territorial sea and fishery limits, the principal task for which it was held. The only proposal adopted was one recommending joint international action in providing technical assistance to underdeveloped countries in the development of their fisheries.

Attempts to obtain agreement on improved co-ordination of policies at a working group of OEEC, constituted in 1958 for the purpose of reviewing fisheries policies of member and associated countries, have also been unsuccessful. Several delegations expressed serious objections to proposals contained in the draft report of the working party.

As additional countries have joined Iceland in extending the breadth of the territorial sea and fishery limits, countries whose fisheries are primarily affected have tried to adjust to the new situation. Exploration for new grounds has been extended to make up for the fishing grounds from which they are barred and bilateral negotiations begun to obtain specific concessions in particular fisheries.

Other bilateral negotiations have aimed at reaching agreement on catch quotas in fisheries with special conservation problems. Thus, within the framework of the Northwest Pacific Fisheries Commission, the U.S.S.R. and Japan established new quotas for the Pacific salmon fishery. Bilateral agreements have also been signed under which major fishing powers are to provide technical and/or financial assistance to countries with less developed fisheries.

New fishery development programs have been started in Portugal and Spain. The government of Spain has approved plans to provide a five-year credit of 5,000 million pesetas for the modernization of the fishery and allied industries. Portugal's development plan for 1959-64 envisages a substantial investment in vessels and shore facilities to promote the production of dried salted cod.

Many of the new countries in Africa have a special interest in fishery development because of opportunities to exploit relatively untouched resources and to meet serious protein deficiencies in the diets of their inhabitants. The rapid political evolution has drawn attention to the need for sound national and regional fisheries policies. In response to this need, efforts are at present under way to constitute regional bodies of fisheries experts in this region as well as in Latin America, where problems are not unlike those encountered in Africa, in order to ensure proper co-ordination of national and regional policies.

In respect of government financial assistance to fishery industries, some countries appear to be reaching the conclusion that the time has come to review schemes with a view to the possible reduction or discontinuance of special public assistance. In other countries, in contrast, the grave economic problems faced by fishermen have prompted governments to extend additional assistance. In Norway, for instance, the government was obliged to request the parliament to approve an increase in the subsidies given to cod fishermen. Discussions of fishery policy in this and other countries are trying to establish, among other matters, the relative merits of vertical integration of operations versus functional specialization and flexibility in price determination at the various stages of distribution, and the relationship of preferential treatment to certain groups (e.g., working fishermen) in the determination of ownership rights, allocation of public credits, etc., to the movement of capital into and out of the industry.

Forest policies

A clearer awareness of certain problems of forest policy has become apparent during 1959/60, which has led to a more concrete orientation of these policies and related production programs. In North America and Europe the increased consumption of water, due to industrialization and urbanization, and the development of recreation have led to a new trend in forest policy, which is increasingly concerned on the one hand with the place of the forest in land planning and on the other with the creation of green belts for town-dwellers. In the Mediterranean and the Near East plans and programs for forest development are increasingly being formulated. In the Far East also the forest is considered more and more as an important factor in economic development plans and programs, while its role in providing products for local communities and in erosion control is not overlooked. In Latin America renewed interest is taken in the rational exploitation of forests. This exploitation is sometimes carried out simultaneously with colonization schemes, prescribed forest stands of economic value being maintained in selected areas, while other stands, to be replaced by agricultural crops, are economically exploited. In Africa the

emergence of newly independent states and the increasing pace of social and economic development raise acute problems of forest reservations, shifting cultivation and wildlife management.

This trend toward more concrete policies and the establishment of more detailed plans and programs requires institutional, administrative and technical measures if they are to be effectively implemented, and this aspect still lags behind the formulation of forest policies. In addition, specific problems are raised for which research is necessary.

In Western Europe the need to define the place of the forest in land use has resulted in meetings, some at the international level, between agriculturists and foresters. The establishment of the new regional economic groupings has led to further exchanges of views, and forestry problems are outlined in the agricultural policy proposals of the Commission of the European Economic Community. A joint forestry policy is being formulated, contacts have taken place between producers and consumers, and agreements are taking shape. The continuing rural exodus in both North America and Western Europe is likely to open up new possibilities for the forest. It seems that the new open spaces, once freed from direct utilization, will play an essential part in leisure, recreation and tourism, and that forest production will be increasingly concentrated in the best quality stands and in plantations of quick-growing species, situated near the consumer industries.

In the Mediterranean region (covering Southern Europe, the Near East and North Africa), the planting of quick-growing trees is gaining momentum every year. Through careful selection of planting material, intensive cultivation, increasing use of fertilizers and sometimes irrigation, and precise methods of felling which ensure maximum production, yields are being obtained which are 12 to 20 times higher than those of the natural Mediterranean forests. A total of more than 600,000 hectares has already been planted with eucalypts and poplars, and this area will probably be at least doubled in the near future. In 1960 the growing concern with securing a steady and sufficient supply of exotic seeds of quick-growing species led to proposals for the establishment of a Mediterranean Seed Board, and the technical and economic problems posed by the cultivation and utilization of the new tree planting areas have given rise to proposals for the unification and co-ordination of forestry research and for the joint establishment of timber and pulp industries calling for large investments. The planting of quick-growing trees appears to be the main hope of alleviating the difficult situation which will face the region in the near future as regards timber consumption. Imports of forest products already amount to more than U.S.$300 million a year, and it has been estimated that by 1975 the figure could rise as high as $850 million. As a result of the considerable shortening of the cycle of production in quick-growing tree plantations, the substantial annual investments required and the high yields per hectare obtained, studies of the industrial utilization of forest products and of marketing and distribution problems occupy a much more prominent place than hitherto in the activities of the forest administrations in the region.

One of the gravest problems of silviculture in the region still remains to be solved, however, namely the economic utilization of the traditional Mediterranean forest stands, mainly those composed of various types of oak. While in some parts of the region, notably North Africa and the Near East, the remains of the indigenous forests are being exhaustively exploited to satisfy requirements of fuelwood, in the rest of the region their economic value is steadily declining with the fall in the demand for fuelwood and lower quality hardwood. No special effort has yet been made in this region to apply modern techniques for the utilization of hardwood timber by the pulp industries. Livestock pressure continues to impede the efforts of forest administrations to apply modern criteria to the management and eventual transformation of these forest stands, and together with the scarcity of trained personnel in the Near East and North Africa this remains the major obstacle to better forest utilization in this part of the world. The eventual opening, after many difficulties, of the Regional Rangers School in the Syrian Region of the United Arab Republic should do much to improve the supply of trained personnel.

In the U.S.S.R. current plans provide for a further shift of exploitation and forest industries to the eastern regions. Much attention is being paid to the development of new methods of wood conversion, especially to the production of fibreboards and particle boards, and the output of these wood-based sheet materials will expand rapidly during the coming years. In some countries of Eastern Europe, such as Czechoslovakia, Hungary

and Poland, forest policy is trying to deal with the declining wood balance that is becoming more and more evident as industrial and general economic development proceeds. In these countries also much attention is paid to the partial substitution of wood in the building industry. While there is a surplus of certain special assortments, on the whole extensive action is being taken to economize in wood consumption and to increase the output of modern wood products. The increasing demand for wood and the principle of sustained yield determine forest policy in the Eastern European countries. In Poland and Czechoslovakia, for instance, the annual harvest since the war had been higher than the allowable cut, and this problem is being solved by gradually decreasing the annual cut of wood. At the same time attempts are being made to expand future wood production by increasing the annual growth of existing forest and by planting quick-growing species. Development in the woodworking industry are directed mainly toward increased output of fibreboards, particle boards, and pulp and paper products.

Latin America provides a typical example of the difficult problems facing forestry at present in the less developed regions. As in most of the Southern Hemisphere, the central problem of forestry is to adjust the shape, type and location of the rather low-yielding natural forests to the needs of the various national economies, but until recently, no methodical attempts to deal with this problem have been made. The characteristic lack of planning in forest policy in Latin America leads to great wastage of forest resources and to uncontrolled alienation. The region as a whole remains a net importer of timber. In the past year, however, promising colonization and settlement projects have been undertaken in many countries, aimed at defining the patterns of land use best suited to the economic and social circumstances of fairly extensive regions. In the framework of these projects, the establishment of forest reserves, the transformation of the present natural stands, and eventually the establishment of new plantations would be the outcome of surveys of soil capabilities and forest, water and pasture resources, carried out by agriculturists, foresters and livestock experts working in collaboration. Unless help is forthcoming from international sources, the shortage of forestry technicians and the absence of well-organized forest services will continue to be a major obstacle to the implementation of these projects. In this connection it is significant that a Latin American Advisory Group for Forestry Research and Education has been set up, with the task of assisting governments in formulating programs in forest education and research and of co-ordinating national efforts. Also the Latin American Forest Research Institute has now been established on a permanent basis.

Lack of staff or insufficient funds still hamper the implementation of programs in the Far East, and problems relating to forest administration, especially the training of executive personnel, seem to be given insufficient attention. Increased efforts have been made, however, for a greater integration of forestry and agriculture in the uplands of South and Southeast Asia, where shifting cultivation is widespread. Soil conservation is receiving particular attention, especially in South Asia, where many pilot projects have been set up to demonstrate the extent to which yields may be increased by appropriate conservation measures. Forest improvement works have continued, either directly through the introduction of species of greater economic value, or indirectly through the regulation of shifting cultivation. Forest roads and the mechanization of operations have received considerable attention, especially in Southeast Asia. Forest range management has been started on a large scale in East Asia, especially in Japan, and intensive research work is being carried out.

The improved utilization of forest products has made little progress in the Far East, because of difficult terrain and lack of equipment, trained operators and maintenance facilities, and sometimes because of the need to find employment for rural labor. However, research work is developing at a more satisfactory rate. An important achievement over the past two years has been the establishment of the Asia-Pacific Grading Rules, under which several countries have already started exporting. Most countries in the Far East are considering the expansion of their training facilities, not only for forest administrations, but also in the field of utilization techniques and forest industries.

In Africa there is an increasing tendency to formulate medium- and long-term forest policies and programs, giving due attention to general land use policy and to future needs. Such programs involve adequate knowledge of forest resources and emphasize the importance of forest inventory. In the implementation of these forest policies, impor-

tance is attached to soil and water conservation by means of watershed management, while more intensive silviculture and afforestation with carefully selected species are carried out to alleviate the uneven distribution of forest resources and meet industrial and fuel needs. The concept of combining forestry and agriculture, in a way similar to the so-called *taungya* system, has become more widely accepted, with a view to controlling the encroachment of agriculture on forest reserves. The local approach to economic and social problems through community development underlines the role of forestry in rural life through farm woodlots and direct supply of forest products to the consumer, especially in the arid and semiarid zones of Africa where windbreaks and shelterbelts can increase crop production, while contributing at the same time to the fuelwood and timber needs of the rural population. Wildlife management, either for the provision of additional food or for the development of tourism, is given particular attention by governments, though careful supervision has proved necessary in some countries to ensure adequate protection of agricultural crops. The regional approach to forestry problems in Africa will develop markets and underline the need to valorize secondary species. This approach, however, could impede the economic establishment of forest industries, because of the smallness of markets in the region, and also have an adverse impact on the overseas earnings of certain exporting countries.

Commodity survey and outlook

Again in 1959/60 there were substantial increases in the production of most of the main commodities. The expansion was especially large for maize, cocoa, coffee, cotton, wool, and rubber. World wheat production was lower, however, for the first season since 1956/57. There was a temporary setback in the output of dairy products in the second half of 1959 and butter prices rose steeply for a time. The production of copra and coconut oil remained low, and for apples and pears there was a sharp reduction from the bumper crops of 1958/59. Sugar exports were lower, while prices declined considerably. Jute production also fell.

Present prospects are for larger production of most commodities in 1960/61, though an exception is coffee, which is likely to fall below the very high level of 1959/60. Stocks, especially of coarse grains and coffee, are expected to be larger at the opening of the 1960/61 season. Although a continued high level of demand is likely to prevail in most importing countries, with the continuation of ample supplies of most commodities, prices of raw materials are not likely to show any major general increase, while those of the majority of foodstuffs and beverages will probably remain under pressure.

The following notes also attempt to look beyond the immediate outlook for 1960/61. According to present indications, including special studies that have been conducted by FAO for some commodities, the tendency for the production of a number of commodities to grow somewhat faster than consumption may continue in the next three to five years.

Wheat

World [4] production in 1959/60, at 136 million tons, was above average, but still about 4 million tons less than the previous year's record crop (Table 15). In the Northern Hemisphere, gains in Western Europe (3.5 million tons) and

Table 15. - Wheat: Production

	Average 1952/53-1957/58	1958/59	1959/60 (Preliminary)
	Million metric tons		
Argentina	6.6	6.7	5.6
Australia	4.5	5.9	5.3
Canada	14.3	10.1	11.3
United States	28.8	39.8	30.7
Total	54.2	62.5	52.9
Western Europe	35.6	39.1	42.6
Four importing countries outside Europe [1]	13.6	13.3	16.3
North Africa and Near East [2]	13.2	14.4	13.4
Others [3]	9.2	10.2	10.3
World [3]	125.8	139.5	135.5

[1] Brazil, India, Japan, Pakistan. - [2] Algeria, Iraq, Morocco, Tunisia, Turkey, United Arab Republic. - [3] Excluding the U. S. S. R., Eastern Europe and Mainland China.

[4] Excluding the U.S.S.R., Eastern Europe and Mainland China.

TABLE 16. - WHEAT AND WHEAT FLOUR: EXPORTS BY TRADE SEASON (JULY-JUNE)

	Average 1952/53-1957/58	1958/59	1959/60 (Preliminary)
	..... *Million metric tons (wheat equivalent)*		
Argentina	2.6	2.8	2.1
Australia	2.5	2.0	3.1
Canada	8.3	8.0	8.0
United States	9.6	11.5	13.9
Total	23.0	24.3	27.1
Others[1]	4.6	6.0	...
WORLD[1]	27.6	30.3	...

[1] Including exports from the U. S. S. R., Eastern Europe and Mainland China to the rest of the world, but excluding trade within this group.

Canada (1.2 million tons) were insufficient to offset the 9 million tons decline in the United States output. Production in the Southern Hemisphere also fell, both Australia and Argentina harvesting smaller crops. A heavy crop (12.8 million tons) was reported for Eastern Europe, but the U.S.S.R. failed to maintain the previous year's high level of production.

Despite the larger volume of world wheat trade in 1958/59, stocks in the four main exporting countries rose by 10 million tons to 53.2 million tons at the beginning of the 1959/60 season. A slight decrease is expected in opening stocks for 1960/61.

World trade may prove notably larger in 1959/60 (Table 16). Owing to the very dry summer the crop in Northwest Europe was of unusually high quality, and as a result a smaller quantity of high grade wheat has been imported into the region; the demand for feed wheat, on the other hand, has expanded. Imports into Asia and Latin America increased. Among exporters, shipments from Argentina and the U.S.S.R. were smaller, owing to reduced crops, but those from the United States, Australia and France were larger than in 1958/59.

Prices in international transactions were steady except for feed qualities, which like some coarse grains experienced a short period of higher prices toward the end of 1959 owing to heavy European demand. The spread between low and high quality wheats narrowed temporarily, but returned to normal in the following months. Among countries with lower guaranteed or fixed producer prices for the 1959/60 crop were the United States, Canada, the United Kingdom and Greece; higher prices were reported from Argentina, Australia, Belgium, Chile, Denmark, Finland, France, Japan, the Netherlands and Turkey.

The 1960/61 crops may be slightly higher than those of 1959/60. Six million tons more wheat are expected to be harvested in the United States, despite reduced winter wheat acreages. In Argentina farmers intend to plant a larger acreage. Crops in Western Europe and India, on the other hand, are likely not to exceed their 1959/60 record level. Trade, however, may increase if transactions under special terms are extended. In May 1960 a four-year agreement was concluded between the United States and India for the delivery of 16 million tons of wheat under Public Law 480.

The existence of large stocks seems to preclude an upward movement of international prices, while the export policies in all principal exporting countries will continue to prevent serious price falls. The national support price for wheat in 1960/61 will be slightly lower in the United States and the United Kingdom, and there may also be changes in producer prices in countries of the European Economic Community in order to narrow the price discrepancies among them. Surpluses persist as a chronic feature of the world wheat economy, and measures of surplus disposal are likely to continue to account for a substantial proportion of wheat exports.

COARSE GRAINS

The record crop of coarse grains in 1958/59 was followed by another in 1959/60, when there was a further increase of about 4 percent (Table 17). There was an increase of about 5 percent in the United States owing to a larger acreage under maize, and in Western Europe excellent yields brought an increase of 13 percent. The maize crop was one-fifth smaller in Argentina; the aggregate crop of coarse grains was only about half the previous year's level in Australia. Eastern Europe reported a larger output, mainly of maize, but in the U.S.S.R., production decreased because of unfavorable weather and a decline in acreage.

The exceptional increase of 17 million tons in maize production was the result of the large crop in the United States, where the area had increased

TABLE 17. - COARSE GRAINS [1]: PRODUCTION

	Average 1952/53-1957/58	1958/59	1959/60 (Preliminary)
	Million metric tons		
Argentina	6.0	7.1	6.1
Australia	1.8	3.3	1.7
Canada	13.5	13.4	13.4
United States	115.7	143.0	150.2
Total	137.0	166.8	171.4
Western Europe	43.0	44.8	50 6
North Africa and Near East [2]	11.9	12.3	10.9
Others [3]	68.3	71.1	73.1
WORLD [3]	260.2	295.0	306 0

[1] Barley, oats, maize, sorghums, millets, mixed grains. - [2] Algeria, Iraq, Morocco, Tunisia, Turkey, United Arab Republic. - [3] Excluding the U.S.S.R., Eastern Europe and Mainland China.

by 15 percent after the removal of acreage restrictions. There were also substantial gains in Mexico and Yugoslavia. World production of barley was slightly higher, increases in Western Europe and India offsetting reductions elsewhere. The production of oats, on the other hand, decreased by 13 percent, with the general downward trend in acreage.

World coarse grain production has exceeded the total disappearance each year since 1952, adding to carry-over stocks at an average rate of about 6 million tons annually. The 1959/60 season started with stocks of 69 million tons in the five main exporting countries, and may end with an addition of 7.5 million tons.

World trade increased for the fifth consecutive year (Table 18). In spite of the excellent crops, import requirements in Western Europe were at a record level, owing to the sharply reduced supplies of other domestic feed. Trade in maize showed a marked expansion, with larger exports from the United States, Argentina, Mexico and Yugoslavia. A heavier demand for oats was met mainly by additional shipments from North America.

The heavier demand in Western Europe in the autumn of 1959 resulted in an unusual temporary upswing of import prices for all feed grains except maize. Prices for oats showed exceptional advances, since an increase in demand coincided with smaller supplies. Barley prices exceeded those of maize for the second time since the war, and farmers reacted by switching part of their demand from barley to maize. Prices declined somewhat after November, but as at mid-1960 they have remained above the levels of a year earlier.

Although the minimum support prices were lower, producers in the United States received better prices for barley and oats. Maize and sorghum prices, however, were considerably less. Maize support prices for the 1960 crop were again lowered, but those for all other coarse grains are unchanged. Canadian farmers received less for their 1959 barley and oat crops, while higher prices were paid in Argentina, Brazil, France, the Netherlands, Turkey and Yugoslavia.

In 1960/61 slightly smaller crops can be expected in Western Europe. In the United States an expansion of the Conservation Reserve Program will take an additional 1 to 1.5 million hectares out of cultivation. Raised prices in Argentina, on the other hand, may lead to an extension in acreage, though perhaps not to a higher proportion of the area being harvested for grain.

In contrast to wheat, the consumption of which may be expected to increase only slowly in most of the developed countries, world consumption of livestock products, and thus of coarse grains, is likely to go on growing rapidly. On the other hand, technical advances in production and feeding practices, together with the price policies for coarse grains and livestock products in importing countries, may reduce their dependence on external sources. Unless changes are made in national policies the accumulation of surpluses may therefore be further aggravated in the coming years.

TABLE 18. - COARSE GRAINS [1]: EXPORTS BY TRADE SEASON (JULY-JUNE)

	Average 1952/53-1957/58	1958/59	1959/60 (Preliminary)
	Million metric tons		
Argentina	1.0	2.9	3.6
Australia	0.7	1.1	0.7
Canada	2.5	1.7	1.4
United States	5 6	10.4	10.8
Total	10.8	16.1	16.5
Others [2]	4.3	3.8	...
WORLD [2]	15.1	19.9	...

[1] Barley, oats, maize, sorghums, millets. - [2] Including exports from the U. S. S. R., Eastern Europe and Mainland China to the rest of the world, but excluding trade within this group.

RICE

Following a marked recovery in trade in the second half of the year, world exports of rice in 1959 reached roughly the same level as in 1958, but they still remained considerably less than in the previous two years (Table 19). Since export prices were moderately lower, the value of world trade was less than in 1958. Owing to their larger crops in 1958/59, some major Asian importers, such as India and Japan, were able to reduce imports, while the Philippines ceased importing altogether. However, world import demand was sustained by the continued growth in consumption in some of the principal Asian importing countries as well as by the increased purchases of countries in Africa where crops were below average. Total Asian rice imports declined by about 10 percent (350,000 tons) in 1959, but the rest of the world imported more than in 1958. Similarly, on the export side, while shipments from Burma, Viet-Nam, the United States and Mainland China rose markedly, this was offset by reduced exports from countries with poor crops, particularly the United Arab Republic. Total world exports of domestically produced rice (excluding shipments to the U.S.S.R.) are provisionally estimated at 5.4 million tons in 1959, as compared with the postwar peak of 5.9 million tons in 1956.

Current world supplies are larger and, although demand remains generally strong, international market prices in 1960 are likely to average lower than last year. Paddy production is as high as, or higher than, in 1958/59 in most countries in the Far East, reflecting favorable weather for the second successive season, and crops have generally recovered in Latin America. World production of paddy (excluding Mainland China, North Viet-Nam and North Korea) is above last season's record level and is provisionally estimated at 142 million tons. Import demand is nevertheless at least as high as in 1959, reflecting the steady expansion of consumption in all regions and the desire to build up stocks in some of the major Asian importing countries, notably India and Pakistan. Most exporting countries have more rice available for sale than in 1959, but there is some reason to expect Mainland China's exports to be considerably less (by June 1960 only some 160,000 tons were under government-to-government contract, as against 700,000 tons at the beginning of 1959), and the total increase in world export supplies depends greatly on what the actual size of Chinese sales will be. Some increase in stocks carried over in exporting countries will probably occur, but there seems to be no immediate danger of a serious imbalance developing between world supplies and demand.

The longer-term outlook is more obscure. On the one hand, paddy production is still greatly dependent on uncertain rains. When bad crop years occur, as they are bound to occasionally, world supplies may be inadequate to meet the demand. On the other hand, world rice production shows a marked upward trend, even though the rate of growth has slowed down in recent years.

TABLE 19. - MILLED RICE: INDIGENOUS EXPORTS AND RETAINED IMPORTS IN FAR EAST AND REST OF WORLD

	Average 1952-56	1956	1957	1958	1959 (Preliminary)
	Thousand metric tons, milled equivalent				
EXPORTS [1]					
Far East [2]	3 430	3 950	4 160	3 820	4 140
Rest of world	1 420	1 990	1 540	1 600	1 280
Total	4 850	5 940	5 700	5 420	5 420
IMPORTS [3]					
Far East	3 470	3 950	3 820	3 560	3 250
Rest of world [4]	1 100	1 350	1 580	1 440	1 600
Total	4 570	5 300	5 400	5 000	4 850

[1] Domestically produced rice only. - [2] Including estimates for Mainland China based on returns from importing countries except the U. S. S. R. - [3] Excluding re-exports - [4] Excluding the U. S. S. R. and Eastern Europe.

Since the expansion has been concentrated in food deficit countries, the larger supplies have been easily absorbed, but the increase in output has been accompanied by a persistent decline in rice imports in Asia. Although demand has been well maintained in other regions, in the longer run a continued decline in Asian imports could be a source of concern for countries which are planning to increase production for export.

SUGAR

World production of centrifugal sugar in 1959/60 is currently estimated at 48.4 million tons (excluding Mainland China), slightly less than the record output of 1958/59, but well above the crops of other recent years (Table 20). The smaller figure mainly reflects the effect of the drought in 1959 on the best sugar output of Western Europe, which fell by 12 percent (1 million tons). A substantial increase in North and Central American production was mainly due to higher crops in the United States, Puerto Rico and Mexico. The slight fall in South America's cane output was mainly the result of adverse weather in Argentina and to the limitation of production in Brazil because of large stocks and quota reduction under the International Sugar Agreement. Though bad weather had caused a decline in production in the Union of South Africa, this was compensated in total African production by a record crop in Mauritius. Output was larger in all major Asian producing countries except Taiwan, which suffered flood damage. In Turkey production rose by 43 percent, with increased area and favorable weather. India's larger production of cane sugar was mostly the result of higher domestic prices, following the scarcity of centrifugal sugar early in 1959.

TABLE 20. - CENTRIFUGAL SUGAR: PRODUCTION

	Average 1952/53-1956/57	1957/58	1958/59	1959/60 (Preliminary)
	..... *Million metric tons, raw value*			
Western Europe.....	6 6	7.1	8 2	7 2
North and Central America	11 2	12 5	13.3	13.8
South America	4 4	5 2	6.3	6 0
Asia (excl. Mainland China)	4.9	6.4	6.6	6.7
Africa.....	2 0	2.1	2 2	2 6
Oceania[1]	2.4	2 2	2.5	2 5
Total.....	31.4	35 5	39.1	38.8
Eastern Europe and U. S. S. R.[2]	6.6	8 3	9.5	9.4
WORLD[3].....	38.0	43 8	48.6	48 2

[1] Including Hawaii. - [2] Trade figures. - [3] Excluding Mainland China.

Following the exceptionally good harvest in 1958/59 in many importing countries, world trade in 1959 was substantially reduced. Preliminary figures indicate that world exports amounted to 14.6 million tons, or about 1 million tons less than in 1958. Exports from Cuba in 1959, at 5.0 million tons, were 12 percent less than the year before. Imports into Western Europe were approximately 5 percent below the volume of the previous year.

With ample supplies in the market and uncertainty in trade quarters in regard to Cuba's sugar policy, the world price fell continuously in the first half of 1959 to 2.55 U.S. cents per pound in July, the lowest level since the war. Subsequently prices recovered, partly in response to action taken by the International Sugar Council, but also because of large U.S.S.R. purchases and the prospect of a smaller European beet crop and thus higher import requirements in 1960. By October the average monthly price had risen to 3.10 U.S. cents per pound.

The world price weakened again during the following months, however, in spite of higher imports into Western Europe and substantial sales to Eastern European countries (which appear as exporters in the International Sugar Agreement). The average price in November 1959-March 1960 was 3.00 U.S. cents per pound, as against the minimum price of 3.15 cents of the Sugar Agreement. The International Sugar Council met in March-April 1960, and it was agreed not to raise the export quota from the 85 percent of basic tonnage decided earlier. This was expected to strengthen the market, as supplies and demand appeared to be closely in balance. Owing to various factors, however, including the sales policies of some major producing countries, the rise in prices was only short-lived. These factors, coupled with prospects of a better crop in Western Europe and other areas, brought about a further decline in prices, particularly in futures market positions, during June 1960.

World sugar consumption has expanded rapidly in the postwar period in response to both higher real incomes and a decline in prices of sugar,

relative to other foods, in most countries. Recent FAO studies indicate that consumption will continue to increase substantially in the next decade, especially in low income countries with small per caput consumption. Production, however, will also increase. Protectionist policies, which aim at saving foreign exchange and at diversifying agriculture, or which have been prompted by various political and social reasons, are stimulating a new wave of expansion in sugar production in many countries and the establishment of new sugar industries in countries which until now depended on imports. Unless there are changes in national policies during the next decade, the increase in production may outstrip the growth of consumption.

Meat

World[5] meat production (beef, veal, pigmeat, lamb and mutton) in 1959 was more than 3 percent larger than in the preceding year. A marked reduction in Argentina's output of beef, following heavy slaughterings in 1957 and 1958, was more than offset by a large increase in the production of pigmeat (in North America and Western Europe), beef (in Oceania) and of lamb and mutton (in Oceania and Western Europe). In the U.S.S.R. meat production was more than 10 percent larger than in 1958. World production of poultry meat reached a new record, with an increase of about 4 percent in North America and a continued rapid expansion in a number of other countries, particularly in Western Europe.

In spite of a substantial reduction in shipments from Argentina, world trade in 1959 (including poultry meat) exceeded the record of the previous year. High prices in world markets induced a remarkable increase in Australian cattle slaughter and beef exports. Exports from some other countries, including Denmark, the Netherlands, Yugoslavia, Uruguay and New Zealand, were also larger. United Kingdom meat imports, at 1.42 million tons, were only slightly less than in 1958, a reduction in imports of beef being nearly offset by larger receipts of lamb, mutton, bacon and offal. For the second consecutive year there was a decline in United Kingdom imports of cattle from Ireland. The United States imported 436,000 tons of meat, which is 15 percent more than in 1958 and an all-time record; the increase was entirely in beef. In Western Germany output did not increase and, with rising consumer demand, total meat imports (including the meat equivalent of live cattle and pigs) rose 45 percent above 1958, to about 445,000 tons, of which more than 100,000 tons was poultry meat. Italy imported less, however, mainly because of the progress of domestic production of beef.

Beef and cattle prices in world markets averaged higher in 1959 than a year earlier. Import demand was very strong in the United Kingdom, the United States and Western Germany, whereas the total volume of exportable supplies remained virtually unchanged. In Europe, pig prices were sustained by the large import demand in Western Germany and Austria and a decline in pig marketings in the United Kingdom in the second half of the year. In North America, however, pig prices declined sharply, owing to heavily increased supplies. Prices for lamb and mutton in the United Kingdom market averaged lower than in 1958, as a result of a large increase in domestic production and heavy arrivals from Oceania.

World meat production will expand further in the current year. Increases in beef output are expected in North America and a number of countries in Western Europe. European production of pigmeat and poultry meat, too, will rise. In Australia, on the other hand, beef production may be below the 1959 record owing to reductions in the number of cattle. With larger output in importing countries, beef prices are expected to average below the high 1959 levels, but as the over-all exportable supplies of beef are unlikely to expand, the decline may be moderate. Increasing output of pigmeat, both in the major exporting countries and in Western Germany, which is an important market, will exert pressure on prices of pigs and pig products. Prices for mutton and lamb are expected to average above 1959 owing to an anticipated reduction in United Kingdom production.

The demand for meat will continue to grow in coming years. In high income countries there is a strong consumer preference for beef, but also pork, particularly lean cuts, may continue to be in good demand. Meat production is expected to expand steadily in most countries. United States beef production will rise appreciably in the next few years. In Argentina a build-up of cattle herds

[5] Excluding Mainland China.

has started, and beef production and exports are expected to recover within a few years.

Production of poultry meat will gain in relative importance, especially in Europe. The expansion of world trade in meat will continue, though possibly more slowly than in the 1950's.

Eggs

Egg production rose further in 1959 in most major producing countries. World trade in eggs in the shell was also larger. Western Germany's imports rose 16 percent above 1958, and accounted for well over half of the world total. Imports into Italy, the second largest importer, were about the same as a year earlier. Prices were generally below 1958 levels. Producer prices in the United States averaged almost 20 percent less and were at their lowest level since the early 1940's. Prices in Denmark and the Netherlands were 13 to 14 percent lower than in 1958.

Exportable supplies appear to have remained larger in the first half of 1960, as a further increase in production in the Netherlands is likely to have more than offset a decline in Denmark. Output is expanding also in Western Germany. World prices have therefore remained at low levels in the first half of the current year. Later, however, they may rise, since hatchings in some European producing countries in early 1960 were below the 1959 level. In Canada and the United States the numbers of laying hens have been reduced, and output in the first half of 1960 is likely to have been somewhat smaller. In Canada, the new system of limited deficiency payments, replacing the former method of government purchases at a floor price, is expected to limit further the growth of production.

In the United States, where per caput consumption is highest, the demand for eggs has been declining slowly in recent years. Elsewhere demand is likely to grow further, especially if prices are reduced as a result of rising productivity per hen, large-scale production methods and improved marketing. The volume of world trade is also likely to grow, even if at a slower rate than in recent years. In Western Germany, the largest import market, consumption has reached a relatively high level; as domestic output is likely to expand further the growth of imports may slow down appreciably.

Dairy products

World milk production (excluding the U.S.S.R., Eastern Europe and Mainland China) increased in 1959 only fractionally over the 240 million tons of 1958. Production increased in most European countries, as the effects of the drought in the latter half of the year were mitigated by feeding larger quantities of concentrates and fodder intended for winter feeding. Australia had a favorable season after the drought of 1957/58 but production in New Zealand remained unchanged. In the United States there was a slight decline, reflecting a shift from dairy farming to beef production induced by the high beef prices of recent years. There was also a change in the pattern of milk utilization in 1959, caused not only by the decline in milk output in Europe in the summer and autumn, but also by the low butter prices in 1958, relative to other dairy products. Utilization as fluid milk was maintained, but less was used for butter and skim milk powder, and more for cheese and for condensed and evaporated milk.

With the reduction in butter output after the drought in some European countries, and seasonally low exports from Oceania, butter prices in the international markets increased in the late summer and autumn of 1959 (Table 21). London butter prices reached a peak in November when they were twice as high as at the lowest point in 1958. Subsequently, there were seasonally larger arrivals from Oceania, and butter production in Europe rose rapidly. Wholesale prices fell in London, but from April to June they have been stable, mainly because of the sales policies of Australia, New Zealand and the Netherlands. At the same time, stocks were being accumulated in Europe, and by May 1960 those held in the five main importing countries[6] were nearly twice as large as a year earlier. Stocks in France and Western Germany were especially large, and imports into Continental Europe will be very small in the second half of 1960.

Cheese production increased in 1959 in most major producing countries, and the exports of the 10 main exporters were 5 percent greater. Nevertheless, prices in London generally remained stable with a slight tendency to increase toward the end of the year. Subsequently, they followed the downward tendency of butter prices.

[6] Belgium, Western Germany, Italy, Switzerland, United Kingdom.

TABLE 21 - BUTTER: WHOLESALE PRICES AT SPECIFIED MARKETS, QUARTERLY AVERAGES

	London			Copenhagen [3]	Netherlands [4]	Sweden [5]	Germany, Western [6]	New York [7]	Montreal [8]
	New Zealand [1]	Danish [2]	Dutch [2]						
	U.S. cents per kilogram [9]								
1957									
July-September	86	93	94	77	110	123	150	135	138
October-December	76	90	88	80	110	123	152	134	142
1958									
January-March	67	73	71	72	110	123	150	133	143
April-June	57	62	57	52	88	99	149	129	144
July-September	64	73	70	61	77	84	143	132	144
October-December	73	94	90	82	96	91	148	133	146
1959									
January-March	80	96	98	87	94	102	149	129	148
April-June	85	87	96	85	88	101	147	129	146
July-September	103	112	120	97	115	104	148	135	146
October-December	112	127	—	112	147	117	155	141	146
1960									
January-March	99	101	[10] 121	97	107	117	141	130	147
April	80	81	...	82	92	...	137	130	147
May	80	81	84	77	92	...	134	129	144

[1] Ex store. - [2] Ex quay. - [3] Accounting price. - [4] Ex factory. - [5] Free dairy. - [6] Cologne Markenbutter. - [7] 92 score creamery. - [8] Wholesale solids. - [9] Converted from original units of quotation at official rates of exchange. - [10] January.

The production of condensed and evaporated milk increased in the Netherlands, Western Germany and Canada, but declined in the United States. In the majority of countries where butter production was less, the production of skim milk powder also declined. In the United States, however, the steady decrease in farm use of skim milk was reflected in a slight increase in skim milk powder output, in spite of reduced butter production. Manufacturers' sales of skim milk powder to the government were reduced, while government disposals for domestic donations and export sales increased. New disposal commitments were temporarily halted in October as stocks had been depleted. By April 1960, however, stocks had been rebuilt and disposals, including donations for special feeding programs abroad, were resumed. It is estimated that such donations will be only moderately less in 1960 than in 1957 and 1958.

The situation in butter markets does not appear critical in mid-1960. Stocks are rising, however, and it is possible that they may be substantially larger at the end of 1960 than a year earlier, in which case a heavy output next year could lead to serious difficulties.

Looking further ahead, world output of milk can be expected to increase during the next few years. The upward trend in milk yields per cow will continue, and national dairy policies in most of the major producing countries entail the maintenance of relatively high prices, which encourage production. The consumption of milk and dairy products should increase moderately in industrialized countries as a result of population increase and the expansion of demand among low income groups. Demand for butter, however, will probably continue to be held in check by the competition of low-priced margarine. In the less developed countries, economic progress should bring an increase in demand for dairy products, which may be partly covered by expansion of domestic production. Most probably, however, the increased world output of dairy products will not be matched by the growth of effective demand in the world as a whole, and surpluses of dairy products are likely to be a feature of the next few years.

FISHERY PRODUCTS

Fresh and frozen fish

While some changes in the traditional pattern of trade, which may be only of a temporary character, took place in 1959, the over-all volume of

trade in fresh and frozen fish does not appear to have changed markedly from the level of the preceding year. The trend in exports of frozen products from Denmark and some other countries of Northern Europe has been influenced by the weakening of fish meal markets, which has caused a shift to fishing for edible fish.

Owing to poor catches of some species on the Canadian Atlantic coast, the United States increased its purchases of fish from Europe to make up for the deficit in domestic requirements. Japan stepped up efforts to market greater quantities of frozen tuna in countries other than the United States and was able to expand exports to a number of European countries. Japanese exports of frozen tuna were higher in the fiscal year 1959 than in the preceding year.

Dried, salted and smoked fish

Imports of salted fish from the Northern European countries into South America and the Caribbean area have continued to decrease. There is also a declining tendency in the intraregional trade in dried and salted products in the Far East. On the other hand, countries particularly affected by the fish meal situation, such as Angola, have tended to place increased emphasis on the dried fish trade. The export of salted fish from Newfoundland, which had previously been controlled by the Newfoundland Associated Fish Exporters Limited, was freed as of 1 August 1959 in order to make export practices in this trade conform with those for other Canadian fishery products.

Canned fish

Although Japan, under international agreements, had to restrict its salmon catch, canned production of salmon varieties was not affected, and only production of frozen and salted salmon had to be reduced in volume. The poor summer albacore catch of the Japanese fleet resulted in a drop in the volume of Japanese exports of albacore tuna. Other countries, however, succeeded in filling the gap in the requirements of leading importers. Spain thus boosted its tuna exports to the United States over previous levels. On the other hand, various suppliers of tuna made great efforts to expand sales of this product in European markets.

Fish meal

The main development of 1959 was the great expansion of exports from Peru. Production of meal in Peru was more than double that of the preceding year. As a result, and also because of the increase in production of meal in several countries in Europe and North America, prices, which had held firm in recent years, began to fall in the second half of 1959. This gave rise to concern in those countries where fish meal exports constitute an important source of revenue for the fishing industry.

Fats, oils and oilseeds

World production and trade in fats and oils in 1959 more than recovered from the contraction in 1958 (Table 22). Total output is estimated as 5 percent above the 1957 record. Most of the increase was in the United States and the U.S.S.R., but there was also a substantial improvement (8 percent above 1958) in Asia, reflecting higher output in India and Mainland China and no further deterioration in copra production. African output was unchanged, while West European and Latin American results were not quite as good as in 1958. Primarily because of expansion in the United States, the strong upward trend in world supplies of slaughter fats and soybeans continued, and cottonseed oil supplies finally moved upward from the stationary levels of recent years. World sesame and sunflowerseed crops were also good, and linseed crops recovered from the poor 1957/58 outturn. Olive oil supplies were excellent for an "off-season."

Coconut oil output, estimated at 1.8 million tons, was about the same as in 1958, but still 16 percent below the level of production before widespread drought affected coconut yields at the end of 1957. A further fall in output in the Philippines was offset by a recovery in most other countries in 1959, but since the Philippines are the leading exporter there was a further moderate decline in world copra and coconut oil trade. Larger export supplies of other commodities, however, more than compensated in volume for the scarcity of copra, and world trade in all fats and oils, at 7.8 million tons, was somewhat higher than the 1957 record. Importers substituted liquid edible oils and slaughterfats for coconut oil, and the ample export sup-

TABLE 22. - FATS AND OILS: WORLD PRODUCTION, TRADE AND MARKET PRICES

	Average 1950-54	1957	1958	1959 (Preliminary)	1960 (Forecast)
	Million metric tons				
PRODUCTION					
Total	24.0	29.1	28.9	30.7	31.1
Principally used for:					
Food[1]	16.1	19.8	20.1	21.6	21.7
Food or soap[2]	6.2	7.2	7.0	7.2	7.4
Nonfood[3]	1.7	2.1	1.8	1.9	2.0
INDIGENOUS EXPORTS					
Total	5.7	7.6	7.2	7.8	...
Principally used for:					
Food[1]	2.0	3.2	3.3	3.7	...
Food or soap[2]	3.0	3.5	3.1	3.2	...
Nonfood[3]	0.7	0.9	0.8	0.9	...
	Indices: average 1952-54 = 100				
PRICES					
All fats and oils[4]	114	102	96	99	[5] 96
Food and soap oils and fats[6]	115	101	96	101	[5] 97
Drying and technical oils[7]	114	102	90	85	[5] 90

[1] Includes butter, lard, soybean, groundnut, rapeseed, cottonseed, olive, sesame, sunflowerseed, maize germ, and tea-seed oils. - [2] Includes tallow and greases, whale (excluding sperm), palm, palm-kernel, coconut, babassu, niger-seed, poppyseed, shea nut, rice bran, mowrah, murumuru and tucum-kernel oils. - [3] Includes linseed, castor, tung, oiticica, fish, hempseed, perilla, stillingia, and safflower oils. - [4] Includes fish oil. - [5] January-May. - [6] Includes series for lard, groundnut, soybean, cottonseed, olive, coconut, palm-kernel, whale, and palm oils and tallow. - [7] Includes series for linseed, castor, and tung oils.

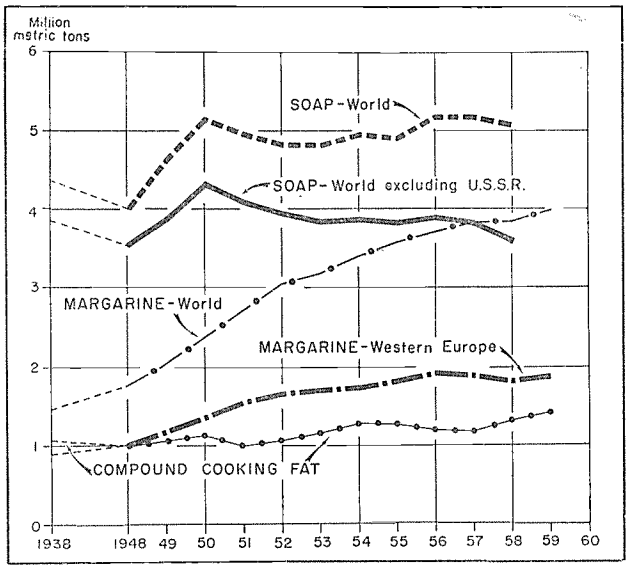
plies of soybeans, cottonseed oil, lard and tallow in the United States allowed that country to increase its fats and oils exports by one third and obtain the largest share of the expansion in world trade. Shipments of soybeans from Mainland China also were higher, and world groundnut expo ts were maintained as Nigerian stocks were available to supplement current production.

Import demand was stronger in 1959, with a disposition to replenish stocks in importing countries, and utilization by the manufacturing industries still rising. Imports into Western Europe rose by 8 percent above 1958 and nearly reached the 1957 volume.

World margarine and shortening manufacture rose, but the expansion took place chiefly in countries not dependent on world markets for raw materials, such as the United States. Western European margarine output recovered part of the decline since 1957, and shortening manufacture remained high, but some further moderate reduction occurred in soapmaking. World soap output apparently reached a peak in 1957 and has declined since, indicating that synthetic detergents are now depressing the global volume of soap consumption (Figure 14).

Growth in both supply and demand affected the general level of prices only slightly, and the FAO price index averaged 99 (1952-54 = 100), as

FIGURE 14. - WORLD PRODUCTION OF MARGARINE, COMPOUND COOKING FAT (SHORTENING)[1] AND SOAP



[1] Data on compound cooking fat (shortening) relate to a limited number of countries.

against 96 in 1958. While the lauric acid oil index rose to 124 (102 in 1958), the prices of most other fats were stable or lower. Prices for the important group of soft oils were on average unchanged, but lard and tallow prices fell to unusually low levels, reflecting large United States supplies. Linseed and castor oil prices averaged lower for the year, but there was a rise toward the end of the year, following expectations of scarcer supplies from the main exporters.

The 1960 situation is similar, but with less strongly emphasized features. World output is expected to rise slightly to a little over 31 million tons. Copra production has improved as a result of better yields following good rainfall in most major coconut areas last year. Supplies of soft oils, lard and tallow are again moderately larger. Reduced supplies of groundnut oil from last autumn's smaller crops in West Africa are more than offset by a further rise in United States output of soft oils and animal fats and by olive oil from the large Mediterranean olive harvest of 1959/60. In the U.S.S.R. the effect of a poor sunflowerseed harvest may be counterbalanced by increases in other oilseeds and animal fats.

World trade in fats and oils in early 1960 was larger than a year earlier and the high level of economic activity in importing countries will maintain the demand. The general atmosphere for trade has been improved through further liberalization measures in several European countries in the last year and through the extension of currency convertibility. United States sales for dollars are expected to be larger. An unusual feature of trade has been the export of about 100,000 tons of olive oil from Spain in the first half of 1960, much more than usual, which went mainly to Italy. A factor tending to restrict the import demand in Europe this year is the increased production and lower price of butter. The United States import demand for coconut oil will be affected by sales from the government stockpile.

Prices of lauric acid oils declined materially in early 1960 as a result of the increase in production. The average level of prices of other oils did not show any major change. The general level of fats and oils prices in 1960 is likely to be moderately lower than in 1959.

The import demand for fats and oils used principally for food or soap is unlikely to benefit in the next few years from the same expanding world market conditions as existed up to 1957. The slackening in the growth of world margarine production, and the downturn in soap output since 1957, probably indicate a new trend for the next few years. Slaughter fat output is expected to increase in North America and Western Europe, and competition with vegetable oils will be strong. Per caput food fat consumption may be close to an upper limit in major European importing countries, while population is rising only slowly in these countries. Butter production in the Common Market countries is forecast to increase significantly, and its disposal would also have to be in competition with vegetable oil products.

Fresh fruit

Apples and pears

The 1959 output of apples in major producing countries (9.3 million tons) was one quarter lower and that of pears (2.5 million tons) one fifth less than the bumper crops harvested in 1958. Nearly all of this reduction occurred in Europe, mainly because of late spring frosts and summer drought. Importing countries suffered most, while exporting countries were on balance able to maintain the 1958 production levels. The level of world production of apples and pears is becoming increasingly determined by the pronounced fluctuations in Europe. Apple production in North America was 7 percent smaller than the very good 1958 crop, while United States pear production recovered from the low level of the previous season. Apart from a substantial increase in apple production in Argentina, relatively small changes occurred in Southern Hemisphere crops.

Owing to the reduced domestic supplies, import demand in Europe was stronger, and some importing countries have temporarily removed import restrictions. Wholesale and retail prices were generally higher than in the previous season without, however, reaching the exceptionally high levels of 1957/58. Import demand is expected to continue strong in the summer of 1960, and non-European exporters should be able to place greater consignments on European markets, especially as there are prospects of good 1960 crops in all Southern Hemisphere countries.

Citrus fruit

World production of citrus fruit expanded further in 1959/60, though much less steeply than in 1958/59, and is likely to have exceeded 20 million tons. The gain was mainly in oranges and tangerines, with only minor changes in the lemon and grapefruit crops. A record output of oranges was forecast in Spain, and the crop in the United States is estimated to have recovered nearly to the level prevailing before the Florida frost of 1957/58. Slight reductions were likely in Israel and Greece. Total average output in major producing countries is estimated as 11.3 million tons, compared with 10.8 million tons in 1958/59.

Citrus exports were larger in 1959/60. In particular, shipments from countries supplying the bulk of winter citrus have risen, with Spain, Morocco and Algeria showing the largest increases. World exports of oranges and tangerines in the 1959/60 marketing year may prove to be 10 percent larger than in 1958/59. Export supplies of lemons were slightly smaller in some countries, but exports of grapefruit are estimated to have increased by about 10 percent. The import demand appears strong enough to absorb the increased supplies. The effects on the pattern of trade of the liberalization measures adopted in 1959 in Denmark, France and the United Kingdom remain to be seen, but the removal of quantitative restrictions for various types of citrus fruit in certain periods of the year will strengthen competition from the dollar area in the future. World market prices of oranges and grapefruit were appreciably lower than in 1958/59, but lemon prices were somewhat higher.

Bananas

International trade in bananas expanded further in 1959. Shipments to major markets in Europe and North America were as much as 10 percent above the figure for 1958. Total world imports can thus be expected to have approached the 4 million tons mark. Prices in importing countries were generally lower throughout 1959. In the first quarter of 1960, shipments into some of the major importing countries continued to rise, and were maintained at the previous year's level in some others. Prices, too, were somewhat higher than a year earlier.

DRIED FRUIT AND WINE

Raisins and currants

World production of raisins in 1959 was 10 percent larger than the low output of 1958. Above average crops were harvested in all producing countries, particularly in the United States, Turkey and Greece. Production of currants, mainly in Greece and Australia, was slightly less than in 1958, but remained above the postwar average. Owing to smaller export supplies in the Northern Hemisphere, trade in raisins was lighter in 1958/59 than in the three previous seasons, despite a sharp increase in Australian shipments. Trade in currants remained at the previous year's level. Because of the reduced export supplies elsewhere, Australian sultanas and raisins were sold at high prices in the summer of 1959, notably in the United Kingdom and Canada. However, with the prospects of ample export supplies, there was a general reduction in prices from August onward.

Exports from Turkey have been facilitated in 1959/60 by the abolition of the minimum export price system in March 1959 and the devaluation in August 1959 of the exchange rate for exports of raisins, dried figs and filberts. Total raisin exports for the season may reach 90,000 tons, which is double the 1958/59 level. The better competitive position of Turkey has been particularly felt in Greece. However, Greek exports to the U. S. S. R. and Eastern Europe were increased through special arrangements in the fourth quarter of 1959, and the total for the season may rise to over 50,000 tons, a third more than in 1958/59. After two years of very small shipments of California raisins, caused by short crops and unprecedentedly high prices, there has been much interest in Natural Thompson raisins on import markets now that supplies are larger and prices lower. In order to support producer prices, marketing regulations have been reintroduced for these raisins. The market is also supported by good export demand, however, and total United States exports are expected to rise significantly this season, especially as France and Western Germany liberalized raisin imports from the dollar area in 1959.

Dried figs and prunes

Output of dried figs in the principal producing countries in 1959 was substantially lower than in

the preceding season, mainly reflecting a light crop in Italy. No major changes are expected in exports, however, as decreases in Italy and Portugal will be offset by larger shipments from Turkey and Greece, where the fruit was reported to be excellent this year, both in quality and size.

After the previous year's decline of one third, the 1959 pack of dried prunes is expected to be the largest in several years. In the United States, the largest producer of dried prunes, output recovered from the unusually low level of 1958, and bumper crops were harvested in Yugoslavia and France. Exports, which had fallen short in 1958/59, owing to a drop of 30,000 tons in United States sales, are expected to rise sharply in the current season, probably exceeding those of preceding years.

Wine

Production in 1959, estimated at more than 220 million hectoliters (excluding the U. S. S. R. and Eastern Europe), was 6 percent more than the previous year and a new record. Nearly all of the increase was due to good yields in France and Algeria, where the vintages in the preceding two seasons had been small. There was a marked decline in Spain, but ony minor changes in other producing countries. Wine imports into France, which had risen sharply in response to the reduced domestic supplies, fell back to more normal levels in 1959, and exports recovered. Otherwise, no great change occurred in the pattern of trade. Prices remained steady through 1959, although at a lower level than in 1958.

Cocoa

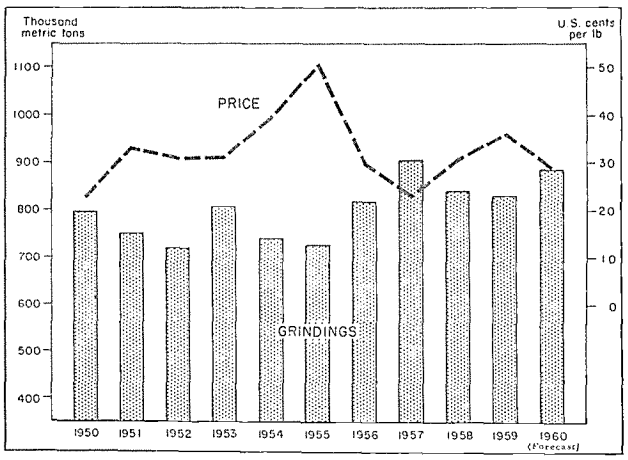
Cocoa production, which fell steeply in 1957/58, rose in 1958/59 and again in 1959/60. The 1959/60 crop is estimated at about a million tons, or around 150,000 tons above the average for the last five years. Favorable weather in most of the major producing countries was probably the dominant factor in the 1959/60 increase. Other factors include the marked improvement in the control of diseases and pests and, in some areas, the coming into bearing of new plantations and improved varieties. Both Ghana and Nigeria harvested record crops (315,000 tons and 150,000 tons, respectively), and production in Brazil is forecast at 190,000 tons, an increase of 9 percent over 1958/59.

The rise in production made possible substantial increases in trade in 1959. Incomplete statistics indicate that exports of cocoa beans in 1959 were about 15 percent higher than in 1958. In addition, Brazil exported cocoa in the form of semifinished products, processed locally during the past two years as part of a price support policy for cocoa. Nearly all consuming countries increased their imports, though in the United Kingdom net imports were 10 percent less than in 1958.

The price of cocoa fell in January 1959 from the 1958 average of 44 U. S. cents a pound (Spot Accra, New York) to about 37 cents, at which level it remained until October-November 1959. However, with the coming to market of the 1959/60 crop, prices fell in December 1959 and during the first three months of 1960, as it became apparent that the crop would exceed all expectations and that there would be a carry-over of perhaps 100,000 tons. A sharp rise at the end of April 1960 proved short-lived and the average price in May was 28.6 cents. Although there has been a considerable fall in prices over the past year, relative to the extent of the increase in supplies, this has been less than might have been expected on the basis of past experience. Among the factors contributing to this moderation in market reaction was the Brazilian price support policy and the tendency of manufacturers to increase their stocks of cocoa beans.

Experience has demonstrated that there is a

FIGURE 15. - WORLD PRICE[1] AND GRINDINGS OF COCOA BEANS



[1] Spot price, Accra, New York, deflated by the United States wholesale price index. Averages of 12 months beginning in April of the previous year.

time lag of six to nine months before changes in wholesale prices of beans are reflected in retail prices and consumption of cocoa products (Figure 15). During 1958 and 1959, moreover, various techniques for economizing cocoa beans were carried forward in many of the major consuming countries. The relatively low prices in the first half of 1960 are, however, expected to stimulate consumption, which should develop with increasing momentum in 1960/61. For the year 1960 the Statistics Committee of the FAO Cocoa Study Group estimated that grindings would be 6.5 percent higher than the 832,000 tons in 1959.

The production of cocoa is rising, but as yet the long-term outlook is difficult to evaluate. It is not yet clear how much of the recent increase in production is due to new planting and how much to measures taken against diseases and pests. There are considerable potentialities for further expansion of cocoa production in South and Central America and parts of Africa and Asia, but the actual course of production will be influenced by the trend of prices. Unless production continues to expand in 1960/61 at the rate of the last two years, which is unlikely, the gap between production and consumption will become narrower in 1961. Lower prices will stimulate the consumption of chocolate products and are likely to reduce the use of substitutes. Rising standards of living in Africa, Asia and Latin America should make possible considerable market expansion in these areas. Consumption may also rise in the U. S. S. R. and Eastern Europe, where it has been depressed by very high retail prices, but the quantities involved would be small relative to world prices.

Coffee

The outstanding events in 1959 were the steep increase in world output from 3.5 to 4.5 million tons in the 1959/60 season, and the substantial rise in world imports from 2.2 to approximately 2.5 million tons (Table 23). More than 80 percent of the increase in world production is due to the record crop in Brazil, unofficially put at around 2.5 million tons. Large crops were also harvested in Colombia, Mexico, the main African growing regions, and India.

Exports from Brazil rose by 45 percent to nearly 1.1 million tons. Colombia exported 385,000 tons, 18 percent more than in 1958. World consumption was stimulated by the general reduction of retail prices, relatively low consumer stocks, and good economic conditions in the main markets. An encouraging feature was the rise in imports into Eastern Europe, which in 1959 took 50 percent more coffee than a year earlier, but even so the imports of these countries are only a little more than 40 percent of the prewar volume.

Trade with Eastern Europe is not regulated under the International Coffee Agreement, which limits exports during the Agreement year to about 2.22 million tons. The total quantity likely to be exported (including that from nonparticipating countries), at 2.55 million tons, is in fairly close balance with present world requirements. The restriction of exports has led, however, to very substantial additions to stocks in producing coun-

TABLE 23. - COFFEE: PRODUCTION, IMPORTS, PRICES AND STOCKS

	1958	1959 (Preliminary)	Percentage change
PRODUCTION [1]	... *Thousand metric tons* ...		*Percentage*
North and Central America	466	575	+ 23
South America	2 276	3 155	+ 39
Africa	593	652	+ 10
Asia and Oceania	144	149	+ 3
WORLD TOTAL	3 479	4 531	+ 30
IMPORTS [2]			
United States	1 210	1 395	+ 15
Other Western Hemisphere	103	90	- 13
Western Europe	789	864	+ 9
Eastern Europe	28	42	+ 50
Africa	58	65	+ 12
Asia	28	33	+ 18
Oceania	8	12	+ 50
WORLD TOTAL	2 224	2 501	+ 12
PRICES (ex dock New York)	... *U.S. cents per pound* ...		
Santos 4	48.4	37.0	- 24
Colombian MAMS	52.3	45.2	- 14
Native Uganda Robusta	37.6	28.7	- 22
Ivory Coast, Robusta courant	36.5	27.0	- 26
STOCKS (at end of season) [3]	... *Thousand metric tons* ...		
Brazil	1 440	2 640	+ 83
Colombia	250	298	+ 19
Ivory Coast	25	40	+ 60
TOTAL ABOVE	1 605	2 978	+ 86
United States	137	170	...
Europe [4]	71	...	...

[1] Crop years 1958/59 and 1959/60. - [2] Excluding imports for re-export. - [3] 30 June 1959 and 30 June 1960. - [4] France, Western Germany, United Kingdom, Netherlands, Italy.

tries; government-held stocks in the three largest producing countries increased by 1.4 million tons, and were on 30 June 1960 equivalent to one year's world consumption. On the other hand, the limitation of exports has effectively prevented a price slump. Between March and June 1960 coffee prices fluctuated by no more than 5 percent. Nevertheless, 1959 average prices were about 20 percent less than in 1958, and lower than in any year since 1949. Owing to greater demand for high quality coffee, prices of milds were relatively better maintained.

Adverse weather during the last months of 1959 is reported to have affected Brazil's 1960/61 crop, now forecast at less than 2 million tons, and world output in the next crop year is likely to be substantially less than the 1959/60 record. However, the size of the 1959/60 crop was only in part due to favorable weather and reflects to a greater extent the coming into bearing of large new areas planted with high-yielding strains. Barring very bad weather, this would suggest a continuation of crops between 4.0 and 4.5 million tons in the years to come. With ample stocks in importing countries, world imports are not likely to show further gains in 1960. United States imports in the first six months of 1960 were 5 percent lower than a year before. However, the limitation of supplies, if economically feasible for producing countries, may effectively stem the price decline in the short run.

Although world imports and domestic consumption of coffee will rise in the coming years, it is unlikely that the annual increase will exceed 5 percent, even at present reduced prices. The proposal has been advanced to extend the International Coffee Agreement for another year and consider in the meantime the conclusion of an export agreement for five years, to provide time for producing countries to enact and carry out measures of production control, at present still at the planning stage. Unless such measures are taken, stocks will continue to accumulate in producing countries and could reach twice their present size three to four years from now.

Tea

Despite adverse weather in early 1959, world tea production was about the same as in 1958. Slight declines in southern India and Indonesia were offset by larger crops in Africa and northern India. The year's output is currently estimated at 750-755,000 tons. World imports were about 30,000 tons below the 560,000 tons recorded in 1958, owing to a 14 percent decline in the net imports of the United Kingdom (216,800 tons) and to smaller offtake in some North African and Near Eastern markets. Other Western European countries, Canada, South Africa and Oceania showed no advance over 1958, whereas slightly higher imports were recorded in the United States and Eastern Europe. Shipments from India fell by about 10 percent, while African exports rose in line with expanding output.

Per caput consumption of tea in the main importing countries is thus likely to have declined in 1959. Although consumption requirements in the United Kingdom were supplemented from stocks, per caput offtake, at 9.- pounds, was about 2 percent below 1958. However, the shortfall in consumption in importing markets was compensated by greater internal demand in producing countries, especially India and Pakistan. World requirements were thus in balance with available supplies, and no large carry-over stocks accumulated in producing countries. Annual average prices at the main auction centers have continued remarkably stable, fluctuating by no more than 5 percent in 1957-59. Larger domestic consumption helped, moreover, to raise the price of plain tea to more profitable levels than in the past few years.

Unfavorable weather reduced the Indian crop in the first half of 1960, but indications are that output will continue to rise elsewhere. Production in Africa is steadily expanding, rehabilitation plans in Ceylon are beginning to be implemented, larger acreages have been planted in Pakistan, and, in general, profitable prices in 1959 will stimulate improvements on existing plantations. World imports in 1960 are likely to recover or surpass the 1958 volume. Relatively low United Kingdom stocks at the turn of the year sustained trade activity in the first four or five months of 1960 and, if domestic demand gains further strength, prices can be expected to fluctuate only seasonally around their present levels. In the longer term, however, the foreseeable expansion of production may overtake the gradual improvement in consumption, especially if Mainland China and Latin America enter world markets on a larger scale.

Tobacco

World production of leaf tobacco (excluding the U. S. S. R. and Mainland China) increased slightly in 1959. The largest increases were in the Federation of Rhodesia and Nyasaland, where a record yield was obtained for flue-cured tobacco, and in the United States, where the acreage expanded by 7 percent following the discontinuance of the Acreage Reserve Program. In Italy, production continued its upward trend, reflecting both rising domestic demand and the expectation of larger exports, especially within the European Economic Community. Production of oriental tobacco fell considerably in Greece following the reduction in area, a consequence of the stock accumulation after the large 1957 crop. In Turkey, however, there was a considerable increase in acreage. Cigar leaf output continued to fall and there are signs of a shift toward Virginia tobacco, particularly in Cuba and Indonesia.

Table 24. - Tobacco: Exports from principal exporting countries

	1956	1957	1958	1959
	..... *Thousand metric tons (dry weight)*			
Major exporters of cigarette leaf (other than oriental)				
United States	231.5	227.2	219.8	211.4
Federation of Rhodesia and Nyasaland	74.9	63.1	65.0	79.8
India	42.3	36.4	48.1	37.7
Canada	13.7	16.9	13.4	18.5
Total	362.4	343 6	346.3	347.4
Major exporters of oriental leaf				
Turkey	60.7	88.5	56.1	66.7
Greece	48.5	69.0	62.4	55.0
Yugoslavia	20.0	16.1	23.1	16.0
Bulgaria	47.1	47.9	43.8	...
Total	176.3	221.5	185.4	...
Major exporters of cigar leaf				
Brazil	31.3	29.4	30.4	28 0
Cuba	21.3	25.2	26.7	26 5
Indonesia	11.3	14.2	22.1	15.5
Dominican Republic	13.5	11.8	11.5	12.2
Philippines	10.4	10.8	14.1	7.7
Total	87.8	91.4	104 8	89.9
Grand Total	626.5	656.5	636.5	...

Exports of unmanufactured tobacco were at about the same level as in 1958 (Table 4). There was a further reduction of 3.5 percent in exports from the United States and shipments from India also fell. Exports from Canada and the Federation of Rhodesia and Nyasaland rose substantially, especially those to the United Kingdom. Exports of oriental tobaccos from Greece dropped, especially those to the United States and Western Germany; both countries, however, increased their purchases of oriental leaf from Turkey.

The large 1959 crop of flue-cured varieties in the Federation of Rhodesia and Nyasaland was of rather low quality and prices dropped, thus continuing the downward trend evident in the last few years. Flue-cured prices in Canada, up to mid-February, averaged higher than in the same period last year, but in the United States these were, at an average of 57.7 cents per pound, slightly below the previous year, thus breaking the trend of the past four years. For the United States Burley crop, prices fell sharply because of the very poor quality of the large harvest. The import unit value of oriental leaf in the United States averaged lower than in the last two years, probably owing to the slight increase in export premiums in Turkey since August 1959. Recently the Turkish government granted a further premium on exports of 1958 stocks and announced that beginning with the 1959 crop the exchange rate would be increased to the level of the general import rate.

World tobacco consumption continues to rise. United States consumption of unmanufactured tobacco, which had decreased owing to raw material saving innovations in manufacturing techniques and changes in taste in favor of products requiring smaller quantities of tobacco per unit (filter-tip cigarettes, small cigars and cigarillos), is once again on the increase. Total United Kingdom consumption of tobacco and tobacco products is estimated to have reached a record figure in 1959/60, one fifth above the consumption of ten years ago.

Cotton

The world supply of cotton increased in 1959/60. Total opening stocks were lower but production increased, the substantially larger United States crop offsetting the reduction in output else-

where. It seems, however, that the increase in supply has been outstripped by the upsurge in mill consumption, and the 1960/61 season may again open with lower stocks (Table 25).

The increase in consumption has been relatively steep in the more developed countries (United States, importing countries of Western Europe, and Japan). It has been accompanied by a marked expansion in the volume of international trade in cotton. United States exports are estimated at well over double last season's volume. While this was accomplished with the aid of a higher rate of export subsidy, the volume moved under special financing does not appear to have been significantly larger. The United Arab Republic, with its relatively large outlets in the U.S.S.R., Eastern Europe and Mainland China, reduced the official currency discount on export sales of Egyptian cotton, and banned the export of certain qualities required for domestic mills. Other exporting countries also appear to have moved their exportable supply with relative ease in 1959/60. Market prices rose for most growths; those for extra long staple increased relatively steeply, and the normal premium which they command over medium staples was restored.

Barring unfavorable weather, the 1960/61 season may see some increase in cotton production. In the United States, farmers again have a choice of either normal acreage allotments with a support price of 75 percent of parity for the cotton marketed, or acreage allotments 40 percent larger with a support price of 60 percent of parity. Last season the response to the larger acreage option was relatively small. This season basic support prices are about 1.5 cents per pound lower and subject to a maximum of U.S.$50,000 per farm. Reports indicate that owners of larger holdings are selecting the option to expand and that permissible acreage will be larger by perhaps 10 percent although actual planting may not increase on this scale. Elsewhere, even though advances in market prices have not everywhere been fully reflected in prices to producers (who, as in the United Arab Republic, may also be subject to limitations on the acreage which may be planted to cotton), the tendency for expansion may reassert itself.

On the other hand, the exceptionally high rate

TABLE 25. - COTTON: WORLD SUPPLY AND DISTRIBUTION

	Average 1954/55-1956/57	1957/58	1958/59	1959/60 (Preliminary)	1960/61 (Estimated)
	Million metric tons				
OPENING STOCKS					
United States	2.56	2.47	1.89	1.93	1.71
U.S.S.R., Eastern Europe and Mainland China	0.39	0.56	0.69	0.76	0.82
Other countries:					
Net exporters	0.72	0.65	0.84	0.73	0.63
Net importers	1.21	1.34	1.32	1.14	1.24
Total	4.88	5.02	4.72	4.56	4.40
PRODUCTION					
United States	2.99	2.38	2.49	3.17	3.25
U.S.S.R. and Mainland China	2.70	3.03	3.40	3.53	3.70
Others	3.47	3.66	3.81	3.57	3.65
Total	9.16	9.07	9.70	10.27	10.60
TOTAL SUPPLY	14.04	14.09	14.42	14.83	15.00
CONSUMPTION					
United States	1.93	1.74	1.89	1.97	...
U.S.S.R., Eastern Europe and Mainland China	2.78	3.19	3.58	3.73	...
Other countries	4.26	4.44	4.43	4.70	...
TOTAL CONSUMPTION	8.97	9.37	9.90	10.40	...

SOURCE: International Cotton Advisory Committee Quarterly.

TABLE 26. - COTTON AND OTHER APPAREL FIBER. PER CAPUT CONSUMPTION

	Cotton			Total apparel fibers [1]		
	Average 1952-54	Average 1956-58	Average annual change	Average 1952-54	Average 1956-58	Average annual change
	..... *Kilograms per caput*		*Percentage*	..... *Kilograms per caput*		*Percentage*
North America	11.2	10.0	– 2.9	16.3	15.1	– 1.9
Western Europe	4.1	4.7	+ 3.5	7.4	8.7	+ 4.1
Eastern Europe	4.6	5.2	+ 3.1	6.2	7.6	+ 5.2
Oceania	4.0	4.3	+ 1.8	7.5	8.0	+ 1.6
Latin America	2.9	3.3	+ 3.3	3.9	4.4	+ 3.1
Near East	2.0	2.2	+ 2.4	2.7	3.0	+ 2.7
Far East	1.9	2.2	+ 3.7	2.2	2.6	+ 4.3
Africa	1.2	1.1	– 2.2	1.7	1.9	+ 2.8
WORLD	3.1	3.4	+ 2.3	4.3	4.8	+ 2.8

SOURCE: FAO Commodity Bulletin No. 31, *Per caput fiber consumption levels, 1948-1958.*
[1] Cotton, wool and man-made fibers.

of expansion in mill consumption and in trade in cotton during the 1959/60 season was partly attributable to stocking up by consumers of raw cotton and cotton textiles. This can scarcely be expected to continue in 1960/61. Nevertheless, the over-all level of consumption should remain high, and in the United States consumption may again increase as the domestic price of cotton moves downward to compete more effectively with man-made fibers. The United States export subsidy is to be lowered from 1 August 1960 (from 8 to 6 cents per pound) and there may be a reduction in exports in 1960/61.

Over the longer term, growing populations with rising standards of living will call for an increasing volume of fiber, especially in the form of apparel, in the less developed regions where low purchasing power at present restricts consumption. While technical factors affecting fiber utilization tend to limit the expansion of consumption in the more developed regions, expansion in the more densely populated less developed regions has more than offset this and should continue to do so (Table 26). With the cost of cotton and its manufacture at competitive levels, and the products available on equal terms to consumers, cotton is more likely to share *pari passu* in the expansion of total fiber consumption.

WOOL

The world wool clip was again larger by about 4 percent in 1959/60 (Table 27). Taking into account opening stocks in producing countries, the total supply also was larger. Among major producing countries sheep numbers increased in Australia, New Zealand, the United States and the U.S.S.R. Losses due to floods, however, were considerable in Argentina, and especially Uruguay, where wool production fell sharply.

Despite slightly larger stocks in importing countries at the beginning of the season, the volume of international trade in wool continued to expand, with increased shipments from Australia, New Zealand and South Africa offsetting reductions from Argentina and Uruguay. The New Zealand and South African Wool Commissions disposed of the greater part of the remaining 1957/58 surpluses in the first half of the 1959/60 season, and the advance in market prices, which had been such a marked feature in the early months of 1959, was replaced by a considerable degree of price stability.

In the first three quarters of the 1959/60 season the level of activity in the world's wool textile industry was considerably higher than during the same period of the previous season. At the same time the proportion of virgin wool in the total materials consumed by the industry was showing a slight improvement. Further expansion in the activity of the industry in the United Kingdom and Japan offset some relaxation in France, Italy and the Netherlands, while the United States and Western Germany showed little change.

While there is as yet little indication of the volume of the 1960/61 clip, it is unlikely that the above average increase of 1959/60 will be repeated. With the protective tariff and incentive price for

TABLE 27. - WOOL: WORLD PRODUCTION AND CONSUMPTION

	Average 1954/55 - 1956/57	1957/58	1958/59	1959/60 (Preliminary)
	Thousand metric tons (clean basis)			
PRODUCTION				
Major exporters				
Australia	367	367	408	438
New Zealand	146	155	169	177
South Africa	73	70	73	75
Argentina	93	100	103	106
Uruguay	54	59	49	45
Total	733	751	802	841
Other countries				
United States	68	65	65	68
U.S.S.R.	117	143	159	174
Others	343	348	352	360
Total	1 261	1 307	1 378	1 443
CONSUMPTION [1]				
United States	172	154	141	179
United Kingdom	214	218	202	231
Other Western Europe	358	413	372	390
Japan	62	85	73	103
Others	414	470	498	545
Total	1 220	1 340	1 286	1 448

SOURCE: Commonwealth Economic Committee.

[1] Calendar year of the first part of split year shown.

wool producers unchanged, production may continue to expand in the United States, and it may also increase in the U. S. S. R. The effects of reduced flocks in South America will continue, and in Australia pasture conditions have not been favorable everywhere. On the other hand, the stocking up of wool goods in the more advanced countries now appears to have run its course, and consumption in wool textile industries as a whole may show little change. In the long run, however, increasing populations and higher standards of living will call for an increased supply of wool goods, especially in countries which can now afford only limited quantities. As in the case of cotton, technical factors may tend to restrict the requirements of most advanced countries, but this should be fully offset by the increase alsewhere.

JUTE

The 1959/60 season opened with larger carryovers of raw jute in Pakistan and India, but crops were significantly smaller in both countries, mainly because of adverse weather (Table 28). As rice prices were relatively favorable at planting time, farmers in Pakistan reduced their jute acreage; also yields were not maintained, and output is estimated as 6 percent less than in 1958/59. In India the total production of jute and mesta fell by about 12 percent, also mainly in rice growing areas. A considerable increase in the production of jute-like fibers was reported from Mainland China.

The reduced supplies in 1959/60 coincided with a much higher demand for raw jute. Pakistan mills were consuming about 25 percent more fiber. The disappointing Indian crop, together with a somewhat higher level of activity in Indian mills, resulted in a threefold increase in imports (of cuttings) from Pakistan. Exports to Europe and other overseas destinations from Pakistan in the first nine months of the season were down by 3 percent. Prices of raw jute advanced steadily from October 1959, after it became apparent that the Indian crop would be much smaller. There was a particularly steep increase in May 1960, and by June prices were 50 percent higher than a year earlier.

TABLE 28. - JUTE AND ALLIED FIBERS: PRODUCTION AND COMMERCIAL DISAPPEARANCE

	Average 1954-56	1957/58	1958/59	1959/60 (Preliminary)
	Million metric tons			
PRODUCTION				
Pakistan	1.10	1.13	1.09	1.03
India	0.91	0.97	1.23	1.07
Total	2.01	2.10	2.32	2.1
Others	0.37	0.47	0.49	0.59
COMMERCIAL DISAPPEARANCE				
Consumption				
Indian mills	1.15	1.19	1.16	1.19
Pakistani mills	0.10	0.17	0.22	0.28
Exports overseas from Pakistan	0.73	0.71	0.77	0.74
Total	1.98	2.07	2.15	2 21
EXPORTS TO INDIA FROM PAKISTAN	0 19	0.12	0.03	0.08

The 1960/61 season will open with stocks in producing countries much reduced, but larger crops may be expected. The advance in jute prices earlier in the season provided an incentive to plant more jute. In Pakistan the authorities have abolished the jute licensing system, except in a few special areas, and are promoting the planting of good qualities. In India the jute mills have agreed to operate a regular price support scheme for raw jute, should prices fall to levels discouraging to the growers. The outlook for consumption is uncertain. In the first nine months of the season Indian mills stepped up their output of jute goods in response to rapidly growing domestic demand, but some slackening in activity was reported toward the end of the season. There was a considerable reduction in mill stocks, the replacement of which would help to maintain Indian raw jute consumption. Reports from Europe suggest that mills have fairly long order books, which will keep them active into the 1960/61 season.

HARD FIBERS

Production of all major types of hard fibers increased again in 1959 (Table 29). Abaca output, however, made only a partial recovery from the setback in the preceding year. In the Philippines production remained at a relatively low level, while the Central American output increased prior to liquidation of the plantations. Indonesian sisal production continued to dwindle, and Haitian output may have leveled off as a result of drought, but production in British East Africa continued to rise and there was a spectacular increase in Brazil. In Mexico, henequen production expanded still more.

By the beginning of the year stocks of fiber in producing countries were already being drawn on, not only to supply the expanding local industry in the Philippines, Brazil and Mexico, but also to meet increasing export demand from the United States, Western Europe and Japan. In these consuming countries a stocking up of fibers appears to have taken place somewhat in advance of the expansion in manufacture which was still gathering momentum in the latter part of the year. Prices climbed sharply in the first half of 1959 and continued firm in the second half; over the year the advance was generally about one third.

A further, although less pronounced, rise in the production of hard fibers seems likely in 1960. Moderate increases may be expected in the sisal output of Africa and Latin America, as well as in Mexican henequen, while abaca output will probably be reduced, owing to the cessation of production in Central Africa. Such over-all increase as may occur in 1960 should not result in an excessive volume in relation to consumption,

TABLE 29. - HARD FIBERS: PRODUCTION AND IMPORTS

	Average 1954-56	1957	1958	1959
	Thousand metric tons			
PRODUCTION				
Abaca	135	141	113	121
Philippines	122	131	106	112
Sisal	468	506	532	558
British East Africa	222	230	247	265
Brazil	86	102	105	119
Henequen	120	130	132	134
Mexico	109	119	123	125
Other hard fibers	33	33	32	32
Total	756	810	809	845
IMPORTS				
Total	613	659	666	697
United States	83	175	168	147
United Kingdom	85	89	87	93
European Economic Community	155	182	189	187
Japan	43	53	47	55

SOURCE: National statistics and Economist Intelligence Unit.

in view of the expanding use of agricultural twines and the larger demand for cordage likely to result from the increasing activity in industry and shipping.

RUBBER

In 1959 there was a further increase of some 5 percent in the output of natural rubber. All major producing countries contributed to the expansion, with the notable exception of Ceylon, where there had been labor difficulties and excessive rainfall. In the Federation of Malaya the steady expansion in estate output continued, while the advance in rubber prices stimulated some increase in production from small holdings. In Indonesia also there was increased marketing by smallholders, but on estates the declining trend continued.

Increasing activity in rubber manufacturing was fairly general in 1959, and was especially marked in the United States. At the beginning of the year commercial stocks of natural rubber in consuming countries were relatively light, and by the end of the year they were reduced by a further 10 percent. The expansion in demand, despite an increase of some 30 percent in the production of synthetic rubber, was quickly reflected in prices for natural rubber, which in spot markets advanced about 40 percent during 1959. The peak was reached in November, when No. 1 RSS at Singapore was quoted at an average of Mal.$1.27 a pound. There was some easing in prices around the turn of the year, with releases from government stockpiles in the United Kingdom and the United States, but a new peak of Mal.$1.29 a pound was reached in May 1960, when the United States stockpile releases were completed and the U.S.S.R. resumed purchases in Singapore.

The monthly sales from the United Kingdom stockpile (which originally consisted of 100,000 tons) vary according to the prices paid. All limits are removed when the price exceeds 30 1/4 pence per pound. Spot prices up to the beginning of June 1960 were continuously above the upper limit, and in January-April unlimited sales had been made to a total of about 45,000 tons. During the same period the United States had sold all of the 50,000 tons scheduled for release before June 1960, and reports suggested that the limit might be raised. The U.S.S.R. also announced a release of 45-50,000 tons for the first quarter of 1960.

The increase in world rubber consumption may be expected to continue in 1960, although at a slower rate, while the supply situation seems likely to become easier. Even if there should be no further gain in natural rubber production in 1960, further stockpile release could add considerably to supply. Moreover, synthetic rubber plants in the United States were still operating well below capacity early in 1960, and considerable new capacity is planned. In Europe also synthetic production is gradually increasing.

There is little doubt that the long-term trend of demand for rubber remains upward. A main factor is the expansion in automobile manufacturing capacity which is taking place in Europe and elsewhere. On the other hand, natural rubber production has for some years been running very close to capacity, without holding its share of the expanding over-all market as against synthetic rubber. While replanting and new planting with high yielding materials has been considerable in some countries, it appears that such further measures during a period of government stockpile release would improve the prospects of holding this share. Legislation authorizing an eight-year program for the disposal of some 500,000 tons of stockpile rubber has been passed in the United States.

Forest products

Roundwood

World roundwood production has remained very stable since 1956 (Table 31). A small increase in 1959 brought the volume of total roundwood removals to a new postwar record of approximately 1,670 million cubic meters. In contrast to previous years, however, fuelwood production declined by about 4 percent, while the expansion in removals of industrial wood, interrupted in 1958 by the recession, was resumed in 1959 with a 4 percent increase, reaching a record total of 962 million cubic meters. This clearly reflects the favorable effects of the general economic recovery on the forest products market, with greatly increased residential and other construction in most parts of the world, and steady growth in other sectors of economic activity, except coal mining and shipbuilding.

As fuelwood barely enters foreign trade, world roundwood trade in 1959 gained more strength than did production, increasing by 2 percent to 26 million cubic meters. In Western Europe exports of coniferous logs showed no change and those of pitprops fell by one fourth to reach the lowest postwar level, but exports of pulpwood

Table 30 - Rubber: Production and consumption

	Average 1954-56	1957	1958	1959 (Preliminary)	1960 (Estimated)
	Thousand metric tons				
Natural rubber					
Production					
Fed. of Malaya: Estates	356	374	397	415	...
Smallholders	271	273	277	294	...
Indonesia: Estates	272	257	242	* 217	...
Smallholders	462	439	436	* 500	...
Others	541	590	637	* 649	...
Total	1 902	1 933	1 989	* 2 075	2 170
Consumption					
United States	607	547	492	564	...
Others	1 275	1 373	1 520	1 575	...
Total	1 882	1 920	2 012	2 139	2 144
Synthetic rubber					
Consumption	994	1 278	1 267	1 582	1 778

Source: International Rubber Study Group * Estimate.

TABLE 31. - FOREST PRODUCTS: WORLD PRODUCTION AND TRADE

	1953	1954	1955	1956	1957	1958	1959 (Preliminary)
	Million cubic meters						
ROUNDWOOD							
Production [1]	1 470	1 552	1 601	1 658	1 663	1 664	1 670
Exports [2]	18.4	21.3	27.0	26.6	27.3	25.5	26.0
SAWNWOOD							
Production	267.0	274.5	296.3	294.2	289.6	295.0	303.0
Exports	28.7	32.1	35.7	31.8	33.9	33.1	34.4
PLYWOOD							
Production	8.3	9.0	10.8	11.3	11.8	13.0	14.1
Exports	0.5	0.8	1.0	0.9	1.1	1.1	1.2
	Million metric tons						
WOOD PULP							
Production	39.1	42.4	46.6	49.8	50.3	50.2	51.7
Exports	6.0	6.9	7.6	7.8	7.8	7.7	7.9
NEWSPRINT							
Production	9.8	10.4	11.2	12.0	12.3	12.1	12.6
Exports	6.0	6.2	6.6	7.0	6.9	6.8	6.9
OTHER PAPER AND PAPER BOARD							
Production	38.6	41.0	45.7	48.0	49.3	50.5	52.0
Exports	2.3	2.8	3.2	3.2	3.6	3.5	3.7

[1] Including fuelwood. - [2] Logs, pulpwood, pitprops, fuelwood, poles, pilings and posts.

increased by one eighth and those of broadleaved logs by as much as 40 percent, although they failed to reach the 1955 peak. North American exports of most roundwood assortments showed an increase of between 5 and 7 percent. The U. S. S. R. also expanded roundwood exports, by 14 percent for pitprops and by nearly 20 percent for pulpwood, while there was a notable increase in U. S. S. R. exports of softwood logs to some Far Eastern countries. African roundwood exports increased in 1959, exports of broadleaved logs expanding by more than 10 percent. Trade in roundwood in the Far East, the Near East and Latin America showed little change as against 1958, although in the latter region the reduced import demand in Argentina affected exports from Brazil, Chile and particularly Paraguay. With the notable exception of pitprops and some medium and low grade temperate hardwoods, prices of most roundwood assortments were firm or even increased in 1959.

The improved economic situation is expected to bring an ever greater demand for forest products in 1960. The medium-term outlook seems to be very favorable, in particular for raw materials for pulping and for wood-based materials (plywood and veneers, fibreboard and particle board). Many forest industries have recently been acquiring their own forest areas in order to ensure the availability of roundwood supplies at low prices to meet the rapidly growing demand for forest products.

Sawnwood

With an additional output of 8 million cubic meters in 1959, the production of sawnwood exceeded the 300 million cubic meters mark for the first time. The increase can be largely traced to increased construction, which absorbs about 70 percent of the sawnwood consumed in North America and Europe.

In North America, where the output of sawnwood had dropped by nearly 10 percent in 1957/58 and not shown any recovery in 1958/59, production rose by about 5 percent for softwood and 7 percent for hardwood in 1959/60. Higher con-

sumption and demand for sawn softwood in 1959 in almost the whole of Europe, however, have not brought about a comparable over-all increase in production, which declined slightly, mainly on account of a fall in Sweden and somewhat reduced production in other Western European exporting countries and in Eastern Europe. Following the decline in demand in 1958, fellings in Finland and Sweden were on a reduced scale, thus preventing mills from expanding production when demand improved in 1959. In Eastern Europe, the reduced felling programs are reflected in soft sawnwood production. In importing European countries, however, production has generally increased in line with the greater demand. For sawn hardwood, there was little change in the Western European market, but in Eastern Europe production increased to compensate for the lower supplies of sawn softwood. In Latin America, Oceania and the Near East, changes in sawnwood production were small in 1959, but production in Africa and the Far East rose by about 10 percent. The rate of expansion of U. S. S. R. sawnwood production slackened somewhat, although there was still an increase of around 5 percent in 1959.

The long-term decline in the per caput consumption of sawnwood continued in North America and Europe, although in North America the changes in price relationship between sawnwood and competing materials have generally favored sawnwood since 1950, except for the year just past. The expansion of 4 percent on international sawnwood trade was slightly higher than in production. The U. S. S. R. increased exports of sawn softwood in 1959 by almost 25 percent and North America and Europe by about 15 percent, though much of the increase in European exports was met by drawing on the substantial stocks held over from 1958. However, Canadian exports to Europe fell in 1959 by 23 percent, partly because of the strike on the West Coast, and partly because of difficulties in competing with lower priced European wood. The prices of sawnwood were generally firm or advanced. In the United States the wholesale price for lumber rose sharply by 12 percent between April 1958 and June 1959, in contrast to most competing materials.

Although sawnwood consumption has not kept pace with population increase, and in some countries there was recently a decline in construction activity, on the whole it appears that 1960 will be no less favorable than 1959.

Woodpulp

The steady postwar increase in woodpulp production, which was halted for the first time in 1958, was resumed in 1959 with a new record production of nearly 52 million tons. In North America, the leading producing region, production increased by about 7 percent in 1959. In Canada, however, the production of dissolving pulp for chemical conversion declined, reflecting the continued weakness of the dissolving pulp market for textiles. In Europe pulp production followed the rise in demand for paper and paperboard; the expansion was most marked for mechanical pulp, as a result of the revival in the consumption of newsprint. Demand for paper pulp was more lively in most importing countries. In the dissolving pulp sector, the recent recovery in the production of artificial fibers brought an improvement. In other regions, although new capacities have been added and existing capacities better used, the increases in production have been relatively small, except in the Far East and the U.S.S.R.

International trade in pulp was brisker in 1959. Shipments from Western Europe, the world's largest exporter, which had remained stationary in 1958, rose sharply, with a striking increase in exports to the United States and Latin America. With further substantial increases expected in the consumption of paper products, pulp production and consumption should continue to expand rapidly in the coming years.

Newsprint

With an output of 12.6 million tons, world newsprint production resumed the upward trend interrupted in 1958 and increased by 4 percent to set an all-time record. The greatest expansion was in North America, where United States production increased by 12 percent. Even this expansion, however, was not enough to keep pace with consumption, and at the end of 1959 North American stocks had declined by 2.3 percent. The production rate, which in Canada, the world's largest producer of newsprint, was only 83.6 percent in July 1959, improved steadily in the latter half of the year, reaching 92 percent of rated capacity in November. Also in Western Europe, where newsprint production had been particularly hard hit in 1958, a very marked recovery was

achieved, although production was somewhat ahead of the increase in consumption. Increases also took place in the other regions of the world, where demand is rising rapidly and many countries are confronted with growing difficulties in meeting it.

Foreign trade in newsprint was higher in 1959 than the previous year. The market situation for newsprint has been favorable in the first half of 1960, and with growing population and great advances in literacy, medium and long-term prospects also appear to be good.

Other paper and board

The increase in 1959 in the production of other paper and board was about 3 percent for the world as a whole. Because these products are widely used, consumption rather closely parallels general economic trends. In the United States production in 1959 was only slightly below the historic long-term trend line. As an indirect effect of the steel strike, production leveled off in 1959, especially for paperboard and coarse paper which are used for packaging the parts and finished products of the steel industries. Because of keen competition, the industry intensified research to improve quality and to develop new products and uses, and the trend toward vertical and horizontal integration continued. Particularly significant has been the integration of pulp and paper mills with sawnwood and plywood firms. Many companies expanded into converting operations, especially in the field of containers and packaging. The United States industry also showed a rapidly growing interest in investment in overseas mills or joint ventures with foreign companies; the Common Market in Europe and similar developments in Central and South America have encouraged this trend.

In Europe, where the slowdown in activity in 1958 was less marked than for newsprint, the production of paper other than newsprint and paper board regained the momentum which had been temporarily checked by the lull in over-all industrial expansion, though the increase in production was also less marked than for newsprint. Stocks are at relatively low levels and merchants rely heavily upon prompt mill deliveries to meet pending market needs. In the other regions of the world also, some advances in production were achieved in 1959.

The renewed expansion of the economy in general and the rise in consumption led naturally to an increase in trade, but smaller Western European purchases were being made from North America, and Western European deliveries also declined except those to the Western Hemisphere (mainly Latin America).

Consumption and demand are likely to continue to grow during 1960, and in North America it is expected that mills will operate at about 95 percent of capacity, as against 90 percent in 1959. In the longer run, the growing product diversification is expected to bring greater operating economies and production stability in times when the demand for specific products may fluctuate. With the development of new products, the inroads made by competing materials in recent years should become less pronounced.

Chapter III - PROGRAMING FOR AGRICULTURAL DEVELOPMENT

This chapter reviews procedures and methods of agricultural programing, in the context of general economic development, mainly as they affect economically less developed countries. In these countries the growth of population is often rapid. Agriculture is usually the mainstay of the economy and also the sector where poverty is most acute. Levels of food consumption are relatively low; there is great need for nutritional improvement, while a small increase in per caput incomes gives rise to a much sharper increase in the demand for food than in wealthier countries. Finally, many less developed countries have a special need to expand agricultural exports or to reduce agricultural imports to increase the foreign exchange available for the import of capital goods. For all these reasons the desirable rate of expansion of the agricultural output, though less than that of the nonfarm sector, is appreciably greater in the less developed than in most of the more industrialized countries. On the other hand, many of the resources needed for agricultural expansion are much less abundant. Agricultural programing, to make full use of the resources available, has thus a particularly important role to play in countries at an early stage of economic development.

The chapter is intended to put into broad perspective the main problems of establishing agricultural development policies and programs. Throughout, it draws extensively on the experience gained by FAO in providing technical assistance to member governments in many parts of the world in formulating and implementing agricultural development plans. It draws also on the extensive exchange of information and experience in many conferences and meetings on the economic and technical problems of agricultural planning and development. It is hoped that the review will be of help to member governments, particularly those in the early stages of agricultural development.

With this in mind, the chapter has been drafted from the severely practical point of view that economic and agricultural planning is a barren exercise unless the plans can be translated from the blueprint into reality. Much of the chapter is therefore concerned with the choice of methods of implementing agricultural development policies and programs which have good prospects of being put into effect. It takes into account not only financial and economic feasibility. The practicability of an agricultural development project or policy depends no less on the capacities of the government and other administrative resources dealing with agriculture, especially the field organization at the local level. Most important of all, it depends on the possibility of enlisting the cooperation of the multitude of farmers, whose actions finally determine the success or failure of any plan of agricultural development. For it is to be stressed that, like other entrepreneurs, the owners and tenant farmers and cultivators who account for the bulk of the agricultural production in most countries, economically developed or otherwise, are unlikely to make the additional efforts or take the risks involved in expanding their output on the lines laid out in a national development program unless they themselves expect to benefit by doing so.

A review of postwar experience in less developed countries suggests, indeed, that the chief hindrances to agricultural development may not always have been the over-all shortage of government financial resources, or the inadequacy of the share of these resources devoted to agriculture. In many cases agricultural programs in less developed countries have not led to the results hoped for because:

(*a*) governments did not have the administrative and field organization needed to make their policies and programs effective at the farm level;

(*b*) a great many of the farmers had no particular incentives to increase their production because of the local economic and institutional conditions with which they were faced.

Much stress has therefore been laid on the importance of having enough objective information on the actual situation of farmers and their day-to-day problems as a basis for judging their probable

reactions to the policies and projects under consideration for implementing agricultural development programs. For in many less developed countries the degree of success achieved often largely depends on finding ways of reducing, or of circumventing, the institutional and other obstacles which prevent farmers from expanding their output more or less in line with the growth of market demand.

Consideration is given equally to the more positive aspect of making widely available to farmers technical services, production requisites and, to the extent possible, economic and other incentives to increased production which will be effective within the agricultural framework of the country. In this respect, however, the possibilities in less developed countries are necessarily limited. Agriculture is usually the largest sector of the economy and must often provide much of the investment and other resources for industrialization. In these circumstances there can be no question of giving the extensive financial and other assistance to agriculture from other sectors of the economy which has become fairly common in industrialized countries.

The general outline of the chapter may be briefly indicated. After a review of the scope and main objective of agricultural plans and policies in countries at different stages of economic development, consideration is given in the next section to some of the special problems of agricultural programing which differentiate it from planning for other sectors of the economy. These problems stem mainly from the biological nature of agricultural production, from the characteristically small-scale and dispersed nature of the productive units, and from the special importance of traditional institutions and customs; they affect considerably the applicability to agriculture of the usual techniques of development planning. This section concludes with a brief review of the types of planning organization which have emerged in different countries.

The third section is concerned with problems of target setting and discusses methods of estimating the growth of demand for agricultural products for domestic consumption and on world markets, means of establishing tentative production targets, and finally of making first estimates of the resources required to implement them.

It is stressed, however, that an estimate of the physical inputs required is not enough since in agriculture, more than in most sectors, there are usually many alternative combinations of measures for securing the output desired. Moreover, the choice of measures must depend largely on natural factors of climate and soil and on the economic and institutional circumstances of the country. In turn, the choice of measures of implementation profoundly affect the nature and magnitude of the resources required. The fourth section of the chapter is therefore devoted mainly to a discussion of institutional and economic factors and their bearing on the most appropriate methods of implementation. Finally, a fifth section discusses the problems of allocating resources for agricultural development in the light of the foregoing discussion.

To conclude this general introduction, a word may be added on the relation of agricultural development in less developed countries to over-all economic development. In nearly all countries, economic development is characterized by a gradual decline in the percentage of the population providing food and raw materials, and a gradual increase in the percentage producing manufactured goods and also services, for both of which there is a rapid increase in demand as levels of living rise. It is in the nature of economic development that the rate of growth of the nonagricultural sector, and consequently of the economy as a whole, is normally greater than that of the agricultural sector. Indeed, the faster growth of the nonagricultural sector, and thus of the urban market, is usually the main stimulus to higher agricultural productivity and incomes. But, as emphasized in *The state of food and agriculture 1959*, any failure of agricultural output to expand rapidly enough to meet growing needs will set up serious stresses in the economy and thus retard the pace of economic development as a whole.

Scope, objectives and special problems of planning for agricultural development

During the past two decades, national planning for general economic development, and for agricultural development as one sector of the over-all plan, has become widespread. Many countries, both economically developed and less developed, established some form of operational planning to mobilize their resources and to mininize civilian hardships during the Second World War. Sub-

sequently this machinery was adapted to the purposes of easing postwar readjustments. Once the initial phase of readjustment was over, however, most countries found it possible to make greater use of market forces and to adopt more flexible methods of planning.

In many of the more developed countries, a current objective of planning is to replace the alternation of depression and prosperity, which had been characteristic of the interwar period, with steadier economic growth more oriented toward the general welfare. Many of these countries now have some form of national resource budgeting, of perspective planning, or of some type of planning for key sectors or particular regions, the latter often concerned with the welfare of the poorer areas in these countries.

In the last decade or so, the promotion of economic development has become a main policy objective in most of the less developed countries, and they have resorted increasingly to some form of planning to this end. Many Asian countries have formulated in recent years economic development plans, some of which are of a more or less comprehensive nature. In Africa, development planning has also been widely adopted, though as a rule it is still in the nature of collections of development projects with perhaps some indications of priorities. Government encouragement of economic development in Latin America has tended to be more piecemeal; however, long-term perspective plans have been established for a number of countries, some of which were formulated in co-operation with, e.g., the United Nations Economic Commission for Latin America or the International Bank for Reconstruction and Development, often with assistance from FAO for the agricultural sector.

The widespread adoption of development planning suggests that it is expected to bring real benefits in terms of maximizing production and general welfare. Wisely publicized, a plan may indeed be helpful in getting public support for the austerities and delayed general benefits that are usually entailed by economic development programs. There have been cases where the formulation of an economic plan has been primarily a pledge to the electorate of better days to come, with little real prospect of implementation in the forseeable future. In a few others, plans appear to have been devised largely in support of requests for external assistance. Even so, where the plan has been coherent, whether adopted officially or published unofficially on the responsibility of, or in agreement with, an agency of the government, it has often been of value in providing guide posts to policies.

The scope and nature of planning naturally varies a good deal from country to country in accordance with the political philosophy of the government and the administrative, physical, financial and other resources available to it. Each country appears to be in a continuous process of learning, usually by trial and error, the type and extent of planning suited to its own circumstances and stage of development. Just what constitutes a development plan, and where the border lies between financial budgeting and economic planning, is not clear-cut and may be endlessly debated.

Some plans consist simply of a bundle of physical projects to be undertaken during a plan period. Others include all projected expenditures by governments on various aspects of development. Still others consist of forecasts of a number of economic aggregates, such as the national product in major sectors, the balance of foreign payments and the distribution of resources between consumption and savings. They usually attempt to give a coherent picture of the economy at the beginning and end of the plan, or in a series of years, and are intended primarily as an indication of intentions or of broad lines of policy. Other plans consist of a more or less detailed series of projected investment inputs and commodity and other outputs. Others again combine aggregate national projections with detailed budgets of public investment. These and other alternatives, singly or in combination, are to be found in different countries.

One recent definition[1] suggests that the " essential components of a development program " are:

(*a*) a statement of the general aims and objectives of the government,

(*b*) a statement of more precise and quantitative targets,

(*c*) a statement of the structure of the economy, recent trends, and broad lines of development,

(*d*) balance sheets and tests of feasibility,

[1] *Problems concerning techniques and development programming in African countries*: United Nations Economic Commission for Africa, December 1959; definition based on earlier suggestions by H. B. Chenery and J. Tinbergen.

(*e*) a public expenditure program,

(*f*) details of major projects,

(*g*) explanation of the policies and measures by which the government proposes to achieve its aims.

Probably few national plans would fulfill all these criteria. For example, many government plans, especially in the economically more advanced countries, do not specify over-all or sectoral targets. Even if established, such targets are often intended only as indications of general aims. In countries at an early stage of economic development, with few experienced administrators, it may be possible to implement little more than a co-ordinated program of public expenditure devised in line with a broad statement of objectives. Many countries have not yet been able to work out physical balance sheets and tests of feasibility, or for that matter statements of the policies and measures proposed to achieve their objectives. The present chapter, however, deals both with relatively detailed development plans and also with less precisely formulated plans, for which a better term might be operational policies for development.

Some further characteristics of national development plans may be briefly noted. The duration of development plans shows less variations than their scope. As a rule, operational plans extend over three to six years, occasionally up to ten years, but these are often combined with annual revisions, and sometimes with long-term "perspective" plans extending over twenty or more years. Problems of timing and of periodic plan revision are discussed later in connexion with plan organization.

In large countries, especially those with a federal structure, it is often considered desirable to develop separate plans for individual states or provinces. Regional plans within the national plan may also be of value for areas with special characteristics, e.g., mountainous areas as in Peru; arid areas as in Tunisia and northern Brazil; natural geographic areas, such as river basins as in the United States; or areas where economic development has lagged behind the rest of the country, as the south of Italy. Where resources are very limited it may be expedient to concentrate a large share on areas where returns are likely to be greatest. Plans for general or for particular forms of development in selected areas of a country, large enough to form an economic unit, may be useful to allow experimentation.

It is sometimes suggested that planning is little more than a meaningless rite in countries lacking basic economic and statistical data on such things as the size, growth and occupational distribution of population, or of the national product and the product of the agricultural and other key sectors. Certainly, such information provides the sinews of planning. But even in countries where such data are incomplete, the co-ordination of public investment projects and the preparation of limited plans of public investment in terms of monetary expenditure, foreign exchange requirements, skilled manpower, raw materials, etc., may prevent some disturbing imbalances and help to obtain greater results from the resources used. Then, as experience and information accumulate, it may be found useful to enlarge the area of planning. Later in this chapter some suggestions are made of economic indicators which can be helpful in countries where more detailed data are lacking. But even in the most developed countries many assumptions and informed guesses must be made in the process of planning. These are useful and justified as long as they are recognized as such, while steps may be taken subsequently to check and revise them on the basis of more complete information. But plans are by their nature tentative, at least to some extent, and almost always are found to need revision in the light of changing circumstances beyond the powers of government to foresee or control. While lack of reasonably complete basic data certainly hampers and restricts the area of planning, this lack alone does not appear to justify an attitude that no planning can be done.

Another objection sometimes raised is that after the technical aspects of planning have been completed, final decisions still depend mainly on judgment and may often be warped by political or other pressures. Even so, comparable data assembled for planning makes possible more informed and objective judgments based more securely on a knowledge of the problems involved, especially if data for alternative projects and measures can be examined side by side. Such information can also be useful in helping the government to resist undue pressure from groups representing special areas or industries. Furthermore, if for social or other reasons one project is selected in preference to another which appears more economic, at least it is done with a fuller knowledge of the economic sacrifice that may be involved.

However simple or elaborate the form of plan-

ning, it can contribute to faster and more orderly progress toward a country's economic and social objectives to the extent that it:

(*a*) provides a clearer picture of the operation of a country's economy;

(*b*) results in greater mutual consistency of development policies and programs;

(*c*) results in greater continuity of effort toward achieving the objectives;

(*d*) gives advance warning of approaching shortages of scarce resources, e.g., foreign exchange, skilled manpower, etc. (or, alternatively, of possible surpluses), in time to permit appropriate adjustments of programs and policies; and

(*e*) results in more efficient use of available resources, including those which would otherwise lie idle.

Broad objectives of agricultural plans and policies

The basic purpose of development planning, sometimes implicit rather than stated, is to promote human welfare and growth. Increase of national income or of the rate of economic growth is the means to this end. Within this broad aim there are always more specific objectives, e.g., to maximize employment, to diversify the economy, or to deal with problems of foreign payments. To these may be added many other objectives which are partly economic, partly social. Thus, the Indian five-year plans have given attention to the social and economic improvement of the "backward" classes, the development plan of Ghana referred specifically to provision of free primary education throughout the country, while the Italian Vanoni plan stipulated a reduction in income disparities between the North and the South as one of its basic objectives. At times there is inevitably some conflict between objectives, although this is more characteristic of the short than the long term. For example, the desire for quick returns may run counter to a policy of conservation of natural resources; a desire to increase investment to permit higher consumption levels in the future limits increases in present consumption.

The shorter the planning period, the more diffuse the objectives are likely to be, and the greater the importance attached to subsidiary conditions which would lead to the attainment of longer-term objectives. For example, the increased utilization of an existing irrigation network and the accelerated training of teachers figured importantly in the two-year interim plan of Morocco, while the main objectives of the first development plans in most African countries were concerned with improving the infrastructure, notably ports and roads. As soon as a longer-term view is taken, however, the isolation of different objectives from each other and any conflicts between them recede in importance, and economic and social policy is determined more by their interdependence.

Agriculture usually bulks large in the national economy of less developed countries. It is not surprising therefore that the objectives of agricultural plans as a rule reflect rather closely the over-all economic and social objectives of national plans. Increased agricultural production, in particular of certain key commodities, often has a prominent place. As a minimum, the aim is to meet the basic needs of a growing population and to avoid inflationary pressures from unsatisfied demand, without an increased dependence on food imports or without having to scale down agricultural exports. But usually the objectives go beyond such a holding operation, and agricultural plans are designed to improve the nutritional status of the population; to produce fibers, forest products and other raw materials for an expanding domestic industry; to attain a greater degree of agricultural self-sufficiency; or to increase and diversify agricultural exports, especially when the country is dangerously dependant on exports of one or two agricultural products.

In more developed countries with relatively high levels of national income, where agriculture is a much smaller sector of the economy, there sometimes appears to be a greater divergence between the objectives of agricultural plans or policies and those for the economy as a whole, usually for social or political motives, including some narrowing of the gap between income levels in agriculture and urban occupations. Since postwar recovery was completed, agricultural expansion has seldom been a primary aim. Indeed, in a number of countries, of which the United States is only the most striking example, much attention has been given to preventing the further expansion or even to reducing the output of certain commodities, e.g., wheat in the United States, milk in the United Kingdom, wine in France.

Leaving aside for the moment the problem of increasing production or adjusting its pattern, some of the specific objectives of agricultural development plans and policies are discussed below.

Balance of foreign payments

Although the situation has generally eased in recent years in the more developed countries, balance-of-payments considerations remain important in the over-all economic policies and plans of most countries of the world. They are often reflected in a country's agricultural plans and policies, particularly those of less developed countries and of countries at higher levels of national income which depend heavily on exports of agricultural products to earn foreign exchange. In more developed countries which import a substantial share of their supplies of foodstuffs, trends toward greater self-sufficiency largely reflect social policies of maintaining domestic farm prices and incomes, but tend to be tempered by the need to expand markets for their manufactured products in primary producing countries.

In the last decade, foreign exchange savings and earnings have played an increasingly dominant role in shaping the agricultural plans and policies of many less developed countries. This reflects both their desire to conserve their foreign exchange receipts for the import of goods required for economic development which they cannot produce themselves, as well as their need for larger and more stable earnings of foreign exchange to foster development.

For example, a primary objective of Pakistan's second five-year plan is self-sufficiency in food grains, and India's third five-year plan will emphasize the same goal. Brazil, Ceylon and the Egyptian Region of the United Arab Republic are still other examples of the large number of countries attaching much importance to reducing their dependence on imported food grains, in some ways the most characteristic case of improving the balance-of-payments situation by substitution of domestic production for imports. Many countries also aim at producing other agricultural products at present largely imported, with the dual objective of import substitution and diversification of their agriculture. These products often include the fibers, forest products and other raw materials needed by an expanding domestic industry. Thus India and Taiwan have made themselves virtually self-sufficient in jute, while Chile, Ethiopia, Iran, Sudan, Thailand and many other countries are promoting the domestic production of sugar.

When the objective is to expand foreign exchange earnings, emphasis may be placed not only on a country's traditional agricultural exports, but also on diversification of the commodities exported. The latter is often given special weight in countries heavily dependent on earnings from only one or two agricultural products, since prices on world markets of these are notoriously unstable and large fluctuations in foreign exchange availabilities make economic development difficult. Examples of expansion of traditional exports include the earlier postwar development plans of Burma, which concentrated largely on rebuilding its rice export trade, while the Federation of Malaya until recently has given attention mainly to improving the efficiency and increasing the scale of its rubber export industry. Argentina is seeking to rebuild exports of a range of commodities from the low level of the late 1940's and early 1950's. Examples of the alternative approach of diversifying agricultural production for export include, e.g., cocoa from the Federation of Malaya, groundnuts and livestock from the Sudan, maize from Thailand.

It is sometimes suggested that the policies of many less developed countries of reducing their agricultural imports and expanding their agricultural exports are mutually incompatible and self defeating. This may be true where the main trade is in a limited range of agricultural commodities between economically less developed countries, e.g., intra-Asian shipments of rice. The agricultural exports of most less developed countries, however, are directed mainly toward industrialized countries, while since the war the imports of less developed countries have come increasingly from more industrialized countries. There appears, therefore, to be no inherent contradiction when less developed countries seek to expand agricultural exports to industrial countries and to reserve what foreign exchange they have to import manufactured and capital goods from these countries rather than the foodstuffs which they could produce at home.

Increasing productivity in agriculture

In industrialized countries much emphasis has been placed in agricultural development policies on increased productivity per man, both to reduce

costs and increase competitive power, and also as a means of raising the level of farm incomes without placing too great a burden on the rest of the community. Increased productivity per man, however, is also important in less developed countries if agriculture is to make its full contribution to economic development. This is not only necessary to maintain or improve the competitive position in regard to other exporters, but even more to meet the rising domestic demand for agricultural products stemming from higher incomes and an increasing population in the face of the steady fall in the percentage of the population engaged in agriculture which is characteristic of economic growth.

In less developed countries with a rapidly rising demand for agricultural products and with little unused land to bring under cultivation, increased productivity per hectare or per livestock unit may be an even more important immediate objective than increased output per man, even when the rural population tends to be underemployed at least part of the year. This appears to explain the emphasis on the increased use of irrigation, of fertilizers, of improved seeds, etc., in the agricultural plans of such countries as Ceylon, India and the United Arab Republic. In actual practice measures to raise output per hectare and per man are often the same, especially in the longer-term.

Some conflict may arise in the case of mechanization, which is naturally more readily justified in countries where labor is expensive relative to the cost of machinery than in those where it is abundant and less expensive. Even in the latter case, however, simple small-scale mechanization of the type being developed in Japan may prove cheaper than the maintenance of draught animals for occasional use, while mechanization may contribute to higher yields by permitting more timely operations when the soil is in the best condition for cultivation or the weather favorable for harvesting. Furthermore, mechanization may result in freeing for other crops land formerly needed to provide livestock feed. For some operations, e.g., land reclamation, the greater efficiency of mechanization may be such as to outweigh other considerations.

Increased employment

Increasing total employment often finds a place in the economic policies and plans of both more and less developed countries, but is a major objective more characteristic of industrial than of agricultural development. However, in less developed countries there is commonly, in rural areas, a large supply of labor which is unemployed or underemployed during at least part of the year and cannot yet be absorbed in industry. A major objective of development plans may then be to use this labor more productively. Measures may be taken to encourage improvements on cultivators' holdings for which the main component is labor, e.g., bunding, the production of compost, or simple types of farm building, for which there appears to be considerable scope. Alternatively, fuller rural employment can be obtained by fostering forms of agriculture requiring larger labor inputs, such as double cropping, livestock raising, or horticultural and other intensive crops. The combination of such activities in mixed farming enterprises can also do much to even out labor requirements over the year. Unused rural labor resources may also be mobilized by community development schemes for agricultural and other projects within the village, for local irrigation or soil conservation schemes, tree planting, construction of access roads, storage facilities, schools, etc. Outside agriculture, village and home industries on a part- or whole time basis may be fostered, an objective which has received much attention in, e.g., India and Japan. Finally, projects requiring large amounts of labor may be undertaken outside the local area for large-scale irrigation projects, road construction, etc., which can draw on any reservoir of unused rural manpower.

Reducing rural and urban income disparities

In most industrialized countries an increasingly important objective of agricultural plans and policies in the last decade has been the social aim of preventing levels of living in agriculture falling too far behind those in other sectors of the economy. This is the case mainly in North American and Western European countries. It applies much less in Australia and New Zealand, which as agricultural exporting countries must maintain a competitive price level. Indeed, national income statistics suggest that a rough parity of incomes already exists in these two countries. Outside these regions, Japan appears to be the only country with an explicit policy of raising farmers' incomes nearer to parity with incomes in other occupations. Apart from some exceptional cases, such an aim would

indeed be out of the question in less developed countries where a large proportion of national output comes from agriculture, and where industrial development at least in the early stages must perforce be largely financed from the agricultural sector. This does not imply a lack of interest in less developed countries in the level of farm incomes, which are expected to rise as the average national income per caput increases. Larger farm incomes are also recognized as important to generate larger markets for developing domestic industries.

Nutrition

Improved nutrition has tended to become a less prominent objective in the more developed countries during the past decade, if only because in these countries malnutrition is now confined to a gradually shrinking section in the lowest income groups. At the other extreme, countries at an early stage of economic development can afford to devote very little expenditure to the improvement of nutritional levels, even though the needs are greatest in these countries. Supplies of surplus grain, dried milk and other foods on concessional terms or as gifts from wealthier countries have made possible some limited feeding programs. Such programs, however, provide only temporary relief until the deficiencies can be more permanently overcome by general economic development. In rural areas a promising approach to raising nutritional levels despite low income levels lies in the dissemination through extension services of popularized information on home economics and nutrition to encourage kitchen-gardening, poultry keeping, etc., for home consumption. Such activities can improve diets with little cash outlay.

On the whole, it is in countries at the midway stage of economic development that nutritional objectives receive the greatest weight, especially in those where governments have a welfare outlook. In such countries there is usually still great need for nutritional improvement in the lower income groups, and at the same time some public funds can be made available for food schemes for vulnerable groups, school feeding, or even consumer subsidies. Equally significant, a large part of the population is at an income level where the consumption of such protective foods as livestock products, fruit and vegetables rises sharply with a small rise in incomes or reductions in price. To encourage the production and improve the distribution of these foods thus becomes an important objective.

Long-term objectives

The objectives so far discussed have been of a short-term or relatively short-term nature. But in agriculture, more than in most sectors, long-term projects are of basic importance. Large-scale projects of irrigation or land reclamation, giving little return for five to ten years, are often essential to realize a country's agricultural potential. Tree crops such as coffee, coconut, rubber or citrus fruit have a long period of gestation before coming into full bearing and plans of planting or rehabilitation must be laid many years ahead. The main return from afforestation projects may not come for decades, though the waiting period is being reduced by the development of fast growing varieties. Above all, a fundamental objective of all agricultural development planning should be to avoid all measures tending to "soil mining," and to conserve the soil and gradually build up its fertility. Such measures as the afforestation of hillsides, the encouragement of contour plowing, methods of cultivation which conserve humus, and the proper allocation of land between arable land, pasture, tree crops and forests, though giving little immediate return, may be essential from this standpoint.

In short a balanced agricultural plan cannot be limited in its objectives to requirements which can be foreseen within the next few years. It must consider also the longer-term needs of a country, sometimes at the cost of immediate benefits. For the soil of a country is its most lasting resource, and if destroyed or depleted over large areas can be restored only at the expense of much money, effort and time.

Special problems of agricultural planning

The difficulties and uncertainties which beset the initial stages of economic development in all underdeveloped countries (the low level of education, the chronic scarcities of skilled labor, managerial ability and capital, administrative weaknesses, institutional obstacles to change, to mention only a few) may be more effectively dealt with, but

are obviously not removed, by the adoption of planning. The wide fluctuations in foreign exchange receipts, characteristic of countries whose earnings come mainly from exports of primary products, have a particularly marked effect on the pace of investment, and they may even be aggravated when investment programs are heavily dependent on foreign aid, usually granted on an annual basis and subject to political changes abroad. The general practice of annual budgets, however necessary for democratic control of the executive, increases further the uncertainties of development programing. Indeed, when planning is first adopted in less developed countries it often takes some years before administrators and the public get used to the idea of long-term action. The practice sometimes adopted of separating development from current budgets can seldom do much to reduce investment uncertainties, since both budgets are ultimately subject to the same economic pressures financial stringencies and administrative control

Such factors are likely to impede the implementation of development programs at least as much, perhaps more, in agriculture as in other sectors of the economy. Agriculture, for example, is an easy target for budget cuts because some agricultural production can always be secured without major investment or other action, because any unfavorable repercussions are likely to be delayed, and because in less developed countries the agricultural sector is difficult to organize to resist a reduction in agricultural development expenditures.

In addition, however, there are a number of problems of programing and its implementation peculiar to agriculture which make development in this sector particularly difficult. Most of these spring from three root causes: the biological nature of agricultural production; relatively static institutions and traditions prevalent in agriculture as man's oldest settled occupation but poorly suited to efficiency in an exchange economy; and the characteristically small scale of agricultural production compared with industrial production. These special difficulties of agriculture are summarized below. Their implications for economic planning and for the implementation of agricultural development plans are discussed in later sections, though necessarily in general terms. To disentangle their relative importance in any concrete case a full country analysis is indispensable.

The biological nature of agricultural production

Because of this there can be little control over or even reliable forward estimates of the level of production, which fluctuates widely from year to year with weather, the incidence of diseases and pests, etc., and is usually highly seasonal. It is difficult to adjust supply quickly to changes in demand, especially for tree crops and other products with a long gestation period. Downward adjustments of production for most products are particularly difficult; few farmers can afford to leave their land idle for long, and shifts to other crops are often difficult. Fluctuations of supply, seasonally and from year to year, also create serious problems of storage, finance and marketing. Coupled with the rather low price elasticities of demand for most agricultural products, they largely account for the characteristically wide swings of agricultural prices on both world and domestic markets, which add yet another impediment to orderly agricultural development.

Planning is complicated also because the intrinsic value of land for producing various crops and livestock products may be variable in even small areas owing to differences in soil texture and composition, the availability of water, the "lie of the land," etc. When larger areas are considered, differences in climate still further complicate the picture.

Traditional institutions and customs

These include forms of land tenure which do not afford the cultivator sufficient security of tenure to encourage him to improve his holding and which often leave him too small a share in any increased production to give him much incentive to make any additional effort. They include also marketing systems long outgrown by rapid urbanization, which may insulate farmers from the stimulus of a rapidly expanding market and return to them only a small part of the price paid by the consumer. These often so attenuate efforts of governments to stabilize farm prices that they lose their intended effect of encouraging greater output. The largely subsistence nature of agriculture in less developed countries, although an insurance at times of economic difficulty, still further insulates farmers from market forces and makes them less responsive to economic incentives. A large element of subsis-

tence farming may also intensify the fluctuations in market supplies and prices, since the quantities offered for sale may vary even more widely than the total output.

Capital is always scarce in less developed countries, but especially so in agriculture, where returns tend to be slow and uncertain and which, as the largest economic sector, must often help to finance investment in others.

The small scale of production

Even in the economically advanced countries of North America, Western Europe and Oceania the typical farm is a family enterprise or one employing only a few hired workers. The small scale of most farms applies still more in economically less developed countries. Even though in such countries there is often a concentration of land ownership in a relatively few hands, this land is usually subdivided into small holdings farmed by tenants who make most of the decisions and expenditures affecting production, with little participation or assistance from the landlord. Apart from the collective and state farms of socialized countries, large-scale centrally managed enterprises in agriculture, employing a substantial labor force, have emerged chiefly for export products, e.g., the *estancias* of Argentina, the rubber plantations of the Federation of Malaya or the tea plantations of India.

The difficulties of agricultural programing and development arising from the dispersion of production over a multitude of small enterprises are easily formulated, though by no means easily overcome. For example, the statistical and other information useful for planning is obviously much harder to obtain for 1 million farms than for 100 mines or a few large steel mills; it takes longer to assemble, is usually less accurate, and can be checked only by its internal consistency or by expensive field observations. Even more important, it is difficult to influence the production of large numbers of independent farmers in the directions envisaged in a plan than that of a much smaller number of mines or factories, or to judge in advance the likely effect of any measures proposed for doing so. Again, the dispersed nature of production means that many measures can be carried through successfully only with the aid of an extensive local organization; where this does not yet exist resort must be had to indirect methods of more doubtful effectiveness.

Some other difficulties arising from the dispersed and small-scale nature of production may be noted. It makes the assembly of agricultural products for the domestic or export market difficult and expensive. Ordinary financial institutions are reluctant to give credit to small farmers. These factors may be partly offset by the greater interest of small entrepreneurs, as compared with wage earners, in maximizing their incomes through higher productivity.

An effective agricultural plan in most less developed countries must either be designed to operate within the limits imposed by these disabilities, or (more hopefully) include measures to overcome them by co-operative or other organization.

Most of the special problems of agricultural programing and its implementation mentioned above occur in nearly all less developed countries. Many apply in economically more advanced countries as well. But they are most acute and their solution is most difficult where the density of the farm population is high in relation to the land available, as for example in many countries of Southeast Asia, in the Egyptian Region of the United Arab Republic and in many Caribbean islands. These are not only the regions where farms are smallest and often highly fragmented, but usually also the areas where the weight of traditional institutions and customs lies heaviest. It is in these circumstances that the worst rural poverty is usually found, especially among tenant farmers, and still more among the landless laborers who earn a precarious livelihood by working for a pittance on neighbors' farms, mainly at times of peak farm activity.

Organization for planning

The type of organization for economic (including agricultural) planning naturally depends on the traditions, the governmental setup, and other special circumstances of the country concerned. But provision normally has to be made, however simple or elaborate the form of planning, for action at three levels:

1. Determination of broad policies, such as the main objectives of development and of the

plan, the over-all level of investment, the balance between different sectors of the economy, etc.

2. The more technical aspects of planning, including the analysis, comparison and co-ordination of proposed development projects and programs, reviews of trends and prospects on world markets for those commodities of importance to the country, formulation of targets of production, etc.

3. After the plan has been finalized, implementation of the individual projects and programs which make up the plan.

The main point for emphasis here is the great importance of close consultation and co-ordination at all stages and levels if economic planning and development is to be coherent and effective. A plan for one sector, such as agriculture, indeed becomes fully meaningful only within the framework of an over-all plan. Most countries now entrust policy direction to a ministerial council, often under the chairmanship of the prime minister (sometimes of the finance minister or a special minister for economic development), in order to secure co-ordination and to resolve departmental differences. Members of the legislature (as in the Philippines) and the chief ministers of provinces (as in India and Pakistan) may also be represented on national planning councils. In countries with a federal structure, similar policy co-ordinating bodies at the state or provincial level have also been found useful.

The policy council is usually serviced by a central planning secretariat or commission,[2] which has the responsibility for elaborating a draft national plan for consideration by the policy council, and for liaison with the agricultural and other functional departments, provincial or local government units, private organizations of farmers and businessmen, the central bank, etc. The draft plan may be drawn up by the central secretariat from plans for the various sectors prepared by these departments and other organizations, usually on the basis of broad policy directives. Alternatively, a first outline of the plan may be worked out centrally and sent to the functional agencies for comment and amplification. Machinery for joint planning, or at least close consultation with state and provincial governments, is often considered desirable in countries with a federal form of government. Day-to-day liaison may be provided through the central planning secretariat, or sometimes (as in India) through both the central planning body and the functional departments. Although they add to the complexity of the planning organization, such arrangements tend to make for more effective planning.

Yet another approach, aimed at making national plans more responsive to the needs, aspirations and abilities of local communities, is for the planning process to be initiated by the preparation of provisional plans at the local level. The first tentative national plan could then be formulated by aggregating the local plans, with such adjustments as are needed to match domestic supplies to demand, to protect the balance of foreign payments, to take into account trends in world markets, etc.

Ultimately it is perhaps less important whether planning starts centrally, functionally or regionally, as long as each of these aspects is taken into account, and adequate co-ordination between them secured. For whatever the administrative setup, experience suggests that a consistent and well-based development plan can best be established as a combined effort of all the agencies and interests involved. Conversely, lack of full consultation appears to be one of the most common causes of ineffective planning. But equally, unless the policy council and the central planning secretariat are in a position to prevent the formulation of the plan from being bogged down in inclusive interdepartmental discussions, there is a danger of delay and a waste of the time of administrative talent, usually a very scarce resource in less developed countries.

To recapitulate, provision for regular consultations seems highly desirable during the process of formulating a development plan:

(*a*) between the policy council and the central planning secretariat, to ensure that time is not lost in elaborating proposals which the government considers politically impracticable;

(*b*) between the central and any regional and local planning bodies so that local conditions and sentiments are taken into account;

[2] The central planning commission is usually located in the prime minister's office, or in the department of another minister who may be chairman of the policy council. In some countries, central banks or other institutions outside the regular machinery of government also play an important part in planning.

(c) between the central planning secretariat and the agencies responsible for developing and implementing plans in agriculture, to ensure so far as possible that proposals are feasible from the financial, technical and organizational points of view.

Some planning organization within the departments dealing with agriculture is also usually desirable for internal co-ordination (e.g., between crop production, livestock production, irrigation, extension services and other divisions) and for a periodic review of progress in implementing the plan. This organization may be no more than an *ad hoc* or standing committee,[3] though as planning becomes more complex a small planning staff within the department is often found useful. A departmental planning committee can arrange for regular consultations with the technical staff of the department and outside experts, e.g., through a system of subcommittees, so that technical possibilities are taken fully into account. These may well include nutritionists and specialists in marketing and processing, no less than specialists in the various aspects of production. Similar consultations with representatives of the processing and distributive trades, of consumers, and of agricultural co-operative organizations where they exist can also be of considerable value.

In most of the more developed countries much importance is attached to consultations with producers' organizations during the establishment and implementation of plans. The usual lack of organization of agricultural producers in less developed countries often makes this difficult or impracticable. As an alternative, representative farmers might be consulted on the provisional development plans and the ways in which it is proposed to implement them. Implementation of an agricultural development plan depends ultimately on the efforts made and risks taken by large numbers of farmers, and unless their co-operation is secured no great degree of success can be expected. (Experience in the last few decades suggests that this is true even in countries with a high degree of detailed planning by the central government for local districts and units.) Methods of obtaining more complete factual information on the situation and day-to-day problems of farmers and cultivators for use in agricultural planning are discussed more fully in a later section of the chapter.

One further type of organization may be mentioned. Because existing ministries had been designed for other purposes and were often hampered by administrative traditions, many less developed countries have established more or less autonomous development commissions during the postwar decade (Iran, Iraq, United Arab Republic, and several Latin American countries). Some were given wide terms of reference to plan and implement development projects over a fairly wide field, while others were established for small subsectors to promote the production and marketing of single commodities. For example, several public and semipublic organizations have been established in African countries to control the marketing of specific crops, primarily of export crops.

While many of these commissions have been effective, in other cases the difficulties of working with parallel and long-established ministries have proved a handicap. In many instances, too, divergencies have arisen between the policies of the development agency and of the government. Where an autonomous development agency is used, adequate consultations are especially important in order to co-ordinate the agencies' policies and measures of implementation with over-all policies, and to maintain harmonious working relations with other organizations working in closely related fields. There appears to have been some tendency in the last few years, however, to return to established ministries for planning and development, especially in Near Eastern countries.

Time elements

In recent years there has been an increasing tendency to plan simultaneously for agricultural development over three different time periods. Some countries have felt the need for a long look ahead to lay out the broad lines of agricultural development for the next two or three decades so that long-term objectives are not lost sight of in formulating shorter-term development plans. Such a period is of course too long for planning action programs, and most countries have chosen a shorter period, usually of from three to six years, for their operational plans. Even during this operational period, however, there are very often unforeseen changes in external or domestic circumstances which

[3] For a better understanding of common problems it is often found helpful for the central planning secretariat to be represented on such a committee.

may call for adjustments in the plan, especially in less developed countries. Some countries try to secure flexibility by a series of " rolling " plans; i.e., a plan is newly established each year or two for the succeeding four- or five-year period. Planning procedures of this type have been used in, e.g., South Korea, the Philippines, Burma, Nyasaland, and Rhodesia. The more common method, however, is to undertake an annual review in order to check the progress achieved in reaching targets and the resources still expected to be available, and to make necessary adjustments for the remainder of the plan period.

In long-term projections or " perspective plans," targets may be only vaguely operational. Though the relevant orders of magnitude are usually given, such projections are meant more as indications of what future trends of output would be called for, given an assumed increase in population and a desirable rise in income per caput. Nevertheless, if they are to have any significance, the various magnitudes must be consistent among themselves and fall within the realm of what seems possible in terms of finance, organization and manpower. While perspective plans need not be very detailed, they should still be detailed enough to permit broad conclusions to be drawn on the relative balance between different sectors of the economy, and to point up the danger of some imbalances and the inevitability, and perhaps the creative impact, of others. They may also show up deficiencies which, though not felt at present, could have a serious impact in years to come, for instance in education. In that case, steps may have to be taken at once to develop the training institutions which will ensure an adequate supply of technicians, administrators and instructors 10 or 20 years hence. To that extent a perspective plan may become operational. The chief value of a perspective plan is in fact that it gives scope for foreseeing and planning for such long-term inputs, or for measures of soil conservation or afforestation which demand a continuing and consistent policy, though yields may come only after a period of years.

The establishment of agricultural targets

Economic objectives under a plan, as distinct from projections of what may be expected under the normal growth of the economy, can be reached only by devising particular policies and measures which will make their achievement possible. The selection of these policies and measures, as an essential part of the planning process, is discussed below in the sections entitled " The Choice of Means to Implement Production Targets " and " The Area of Choice." In many cases, however, a valuable intermediate stage is to establish a consistent series of targets or goals to bring out the interrelationships between the different parts of the plan, as a quantitative expression of the objectives and of what is needed to achieve them, or as yardsticks to estimate the success of particular policies or measures.

Many kinds of targets are used in agricultural planning. At the early stage of planning, targets may be confined to such things as the number of small irrigation wells to be dug, the quantities of improved seeds or fertilizers to be distributed, or the area of land to be reclaimed within the period of the plan, together with estimates of the materials and other inputs required and the estimated expenditure.

Such targets are also established in the more elaborate forms of planning. But they are then more likely to figure as subsidiary targets within a larger plan which might cover targets (or projections) of the expected level of demand for agricultural products, the agricultural output, and the main inputs needed to achieve the output. These targets may be worked out for the main commodities, or for the agricultural sector as a whole (in terms of values and expenditures) or for both. Targets are also often established for some aspects of agriculture of special interest to the country concerned, such as the net farm income, the contribution of agriculture to the balance of payments, the growth of productivity, the establishment of co-operative societies, or the construction of warehouses and other aids to improved marketing. Input targets are sometimes established for things which cannot be easily related to production during the period of the plan, e.g., the provision of farm buildings or farm amenities such as water and electricity; for projects which will be reflected in production at

a later date; a given area of land to be reclaimed, irrigated or afforested, or for the provision of increased facilities for agricultural education, research and extension.

* * *

Economic targets partake more of the nature of objectives if the starting point is an estimate of urgent national needs, whether for economic growth, economic or military security, level of living, social advance, etc. They may be regarded primarily as yardsticks if the rate of development is less critical and more flexibility is permissible. Their value as yardsticks should be qualified, however, for success in reaching a target may mean that the target was too low in relation to what might have been achieved with a more dynamic policy, or alternatively that some physical targets have been achieved at the cost of shortfalls in other economic sectors, or at an undue sacrifice of progress in education, health or other things less easily measurable.

Input targets are often a useful yardstick of progress in economic development, though they need to be used with a good deal of caution, especially when expressed in terms of expenditures. For in addition to the above qualifications, the measurement of progress by input targets may be misleading if they are used on a gross rather than a net basis (e.g., counting the new irrigation channels dug and ignoring those falling into decay), if the input/output relationships originally assumed were faulty, or if the original estimates of expenditure were inaccurate or have been made obsolete by subsequent price changes. Nonetheless, a shortfall, e.g., on expenditure on irrigation, may be a valuable pointer to administrative or organizational weaknesses. Inputs, in any case, are essentially no more than a means to an end, and ultimately output provides the only reliable yardstick of economic development.

In many countries, year-to-year variations in the aggregate agricultural output, and still more in the output of single commodities, may be as large as the whole increase which can be expected in a period of, say, five years. In such cases the production trend is clearly more significant than the output in the final year of the plan or any other single year. This variability, incidentally, underlines the value of reserves of essential foods and of flexibility of foreign trade policies.

Both aggregate and individual commodity targets have their value and their limitations in agricultural and in general economic planning, and ideally a combination of the two is desirable. Aggregates expressed in values at constant prices or in index numbers are of value to central planning authorities in the more elaborate types of planning as a yardstick of over-all progress, to put the different sectors of the economy into perspective, and to ensure the internal consistency of the plan. They are particularly useful for long-term perspective planning. When over-all plans have to be translated into concrete projects and policies, however, a more detailed breakdown of targets of demand, production and especially of inputs is usually necessary. Again, aggregate targets give little guidance to producers. For example, soon after the Second World War, when the agricultural production target of the United Kingdom was stated as an increase of 60 percent over the prewar output, farm organizations frequently pressed for clearer guidance on what emphasis should be given to different products.

There are also limitations to the use of commodity targets and projections. Thus, projections of the aggregate demand for foodstuffs are less liable to error than those for single commodities because of the considerable degree of substitution between foods which occur in response to changes in the level of supplies and prices. The possibility of such substitutions in turn gives a degree of latitude to production targets. Thus, in the first Indian five-year plan the over-all output target for grain was reached because a shortfall in rice production was compensated by an over-fulfilment of the targets for wheat and millets.

In the discussion below on the methods of establishing agricultural targets, consideration is given first to projections of demand. Although such projections, except in a very simple form, can be made only in countries where there is a fairly extensive background of statistical data, they can be of considerable value in themselves, as well as a valuable approach to establishing output targets. This is followed by a brief summary of various approaches to establishing output targets, some of which may be applied in countries where relatively little statistical information is available, and by a review of some of the problems which arise in estimating the resources needed for a given expansion of output. Further consideration of input programing, however, is reserved for a final

section after discussing the choice of methods of implementing agricultural development programs. This arrangement is followed as the nature and magnitude of the inputs required and the methods of implementation adopted are closely interdependent, and as the physical inputs are only some of the means which contribute to reaching the output targets.

The sequence followed below is, of course, only one possible method of presentation. It is also true that the resources available and the input factors potentially available largely determine the course of production and the feasibility of production goals, so that these could be made the starting point. In actual planning, all aspects are usually considered side by side, and successive adjustments made to the various parts of the over-all plan until reasonable balance and consistency is reached.

Projections of demand and their limitations

More is known quantitatively of the factors influencing the demand for agricultural products than of any other aspect of agricultural target setting. Even so a regular scrutiny of any demand projection is advisable, in the light of experience, or of any necessary modifications of the underlying assumptions or improvements in methods. In discussing the steps to be followed in making projections of demand it is convenient to separate requirements for domestic use from those for export, and to distinguish further between foodstuffs and raw materials for industrial use. A further distinction may be convenient between basic calorie foods (mainly food grains and in some countries starchy roots) and other foods.

Food for domestic consumption

The main factors influencing the domestic demand for food are:

The growth of population. For most economically less developed countries this is likely to be much the most important factor in view of their frequently rapid growth of population, often of the order of 2 percent annually and occasionally approaching 3 percent. Even in countries like India, with an advanced statistical apparatus, the underregistration of deaths, and especially of births, makes estimates of growth in intercensus periods somewhat hazardous, and longer-term projections still more so. For projections of, say, five years, however, the liability to error is likely to be within the permissible range for practical working.

Less is known of the relative growth of the agricultural and nonagricultural populations, which greatly influence both the market demand and the quantities of foodstuffs marketed. Although the percentage of the population engaged in agriculture falls in the course of economic development, the absolute number of persons dependent on agriculture usually continues to rise until a fairly advanced stage of economic development is reached.[4] Unless agricultural production rises appreciably faster than the growth of the farm population the quantities of food reaching urban markets may fail to expand.

The growth of the nonagricultural, and especially of the urban, population is commonly much faster than that of the total population. Some measure of its rate of increase is valuable in planning, as it mainly determines the commercial or market demand for food. Rough estimates can sometimes be built up from, e.g., police records of migration or from school and hospital registrations, but in most less developed countries information is scanty.

The growth of per caput incomes. As incomes rise the expenditure on food increases. The effect is most marked in economically less developed countries where a rise of 1 percent in per caput disposable income may lead to an increase of around 0.8 percent in food expenditure, against about 0.4 percent in more developed countries where per caput incomes are higher.[5] It applies particularly to the nonbasic foods. For example, in Japan the "income elasticity" for all foods is about 0.6, for cereals about 0.2, and for such foods as meat nearly 1.0.[6] In North American and Western European coun-

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[4] F. Dovring, The share of agriculture in a growing population, FAO *Monthly Bulletin of Agricultural Economics and Statistics*, Vol. VIII, Nos. 8/9, August/September 1959.

[5] These figures are usually termed elasticities of expenditure with respect to income changes. Recent estimates for representative countries are as follows: Ghana 0.8 - 1.0; U.A.R. (Egyptian Region) 0.9; Ceylon, Puerto Rico 0.8; India 0.75 - 0.85; Greece, Guatemala 0.7; France 0.6; Switzerland, Netherlands, Norway, 0.45 - 0.5; United States, Denmark 0.4; Canada 0.35 - 0.4. L. M. Goreux, *Income elasticity of the demand for food. Household survey analysis.* United Nations Economic Commission for Europe and FAO. (Provisional edition mimeographed, 1960.)

[6] FAO, *The state of food and agriculture 1957*, p. 94.

tries income elasticities for meat may be about 0.6 (less in the highest income group) and negative for cereals: that is to say less cereals are consumed at higher income levels because of the substitution of preferred but more expensive food.

A further point is that while in high income countries a large part of any increased expenditure is absorbed by more elaborate methods of processing or distribution, in less developed countries most of the increased expenditure is for the food itself. It follows that in making estimates of the prospective demand for foodstuffs, especially in rapidly developing economies, some assumptions must be made of the probable growth of disposable incomes. This will usually have been postulated as one of the objectives of the over-all development plan, or some assumption made for use in other sectors as well as agriculture.

Information on income elasticities for foodstuffs are sometimes based on time series of the total consumption of foodstuffs in a country, but are usually derived from household surveys of consumer consumption and expenditure. Such surveys can be of considerable value to less developed countries in enabling a rather comprehensive picture to be established relatively quickly of consumption patterns in different income and social groups. Intercountry comparisons suggest a surprisingly uniform relationship between income and food expenditure,[7] and in countries where no household surveys have been made, income elasticities based on surveys in neighboring countries would seldom be seriously misleading.

The more complete the information available on the above factors, and on past trends of food supplies, the more effectively projections of future demand trends for foodstuffs may be established. The simplest method is by the extrapolation of time series of consumption estimates based on "food balance sheets,"[8] taking into account the expected growth of population and income. Such projections can apply only to the economy as a whole. More elaborate demand projections may also start from food balance sheets, but utilize as well more detailed information of the trends of food expenditure and consumption in different social and income classes, and of the price and income elasticities of different foodstuffs. Account may then be taken of expected developments in, e.g., rural and urban populations, and of the growth and distribution of per caput income, as well as of past trends of production, consumption and foreign trade.

In these ways, first estimates may be obtained of the "normal" demand for current consumption, but to complete the picture allowance may have to be made for some additional requirements. It is well known that the diets of most economically less developed countries, especially the diets of the poorer classes, are usually deficient, sometimes in quantity and nearly always in quality. Deficiencies of protein and of certain vitamins and minerals are often especially important. Measures to remedy serious nutritional deficiencies will therefore influence estimates of future food requirements. Yet, in some respects nutritional needs call for somewhat different treatment than the other factors mentioned. If most consumers cannot afford the additional food, or the different pattern of diet, which from a nutritional point of view they need, it is not likely to be produced. Even if produced it might be unsaleable and result in heavy financial losses to farmers.

Vulnerable groups such as mothers and children may be protected by special feeding schemes, but few less developed countries are in a position to give such protection to a large part of the population, e.g., by consumer subsidies. Again, food habits are not quickly changed, and even apart from rising incomes, improvements in the diet may have to wait on the gradual spread of nutritional knowledge. Nutritional considerations are therefore likely to bulk more largely in longer-term perspective plans than in short-term operational plans.

Provision for building up reserve stocks may also be important in estimating future food requirements. Although the danger of actual famine has

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[7] FAO, *The state of food and agriculture 1957*, Chapter III.

[8] A food balance sheet starts with the production of a commodity, adjusts for exports and imports, and as far as possible for changes in stocks and for quantities used for seed, animal feeding, industrial purposes, wastage, etc.; the residual then represents the quantities available for human consumption. These may be expressed on a per caput basis. The addition of such balances for all main foodstuffs gives a measure of total food consumption; it may then be expressed in terms of individual nutrients and calories. Time series may be constructed if food balance sheets are available for a number of years for the total food supply or for the supply of individual foodstuffs. For information on the construction and use of food balance sheets see: FAO, *Handbook for the preparation of food balance sheets*, April 1949.

receded while surplus stocks of grains are available in exporting countries, national reserves, especially of grains, can be of great value for use as a buffer stock in stabilizing food prices, both to producers and consumers. The establishment of such a reserve is expensive and organizationally difficult; some of the problems are discussed in a later section. In marginally self-sufficient or deficit countries it can usually be accumulated only gradually in years of heavy crops, unless it can be built up from overseas surpluses available on special terms. as may often be possible at the present time. The initial stages may be the most difficult, however. The magnitude of the stock needed (for example, in terms of weeks' supply) can be estimated only in relation to the concrete situation of the country, including the number of grain crops harvested in a year, the size of year-to-year fluctuations in output, the development of communications, and the degree of price stability contemplated.

An important point in food planning and policy is that rather little latitude can be allowed between demand and supply for cereals and other basic foods, particularly in less developed countries where these foods usually provide well over half the total calorie intake. Apart from any danger of hunger, even a rather small shortfall in supplies of the basic foods can lead to a steep rise in prices, with serious inflationary effects, since these foods are much the largest single item of personal expenditure. Unless rising grain prices can be prevented by releases from stocks, grain imports must be increased or grain exports reduced, often at a cost in foreign exchange which less developed countries can ill afford. Conversely, a relatively small oversupply of cereals in relation to effective demand can lead to a disproportionate fall in prices, likely to discourage farmers from expanding production for the market. These considerations underline the value both of a buffer stock and of rather careful projections of the demand for basic foods as a guide to production policies.

For other foodstuffs there is more latitude, and some divergence between the growth of demand and of supplies is likely to be less serious. Nutritionally, the less basic foods form a smaller part of the diet, even though they contain essential elements for a balanced diet. Moreover, their price elasticity is much greater. A small oversupply can be absorbed with a moderate fall in price. A small shortfall does not lead to an excessive rise in prices. In less developed countries they form, at least individually, a relatively small part of the family budget so that the effect of price fluctuations on the general price level is usually rather limited. On the other hand, it may be noted that an important factor in the steady creeping price inflation, which some European countries, e.g., France, experienced in the early 1950's, was the steady rise in the relative price of meat. This has also been an important factor in the inflationary trends in several Latin American countries, where as a result of the developed livestock industry meat is a more important constituent of the diet than is usual in countries at a relatively early stage of economic development.

A special difficulty of projecting prospective demand in less developed countries arises from the large subsistence element in agriculture. The scanty data available, mainly from India, suggest that if the value of the home produced food consumed on farms is taken into account as part of family income, the effect of income changes on food consumption levels in the subsistence sector is much the same as in towns. If farm family incomes rise, farmers tend to eat more and better food and sell less. If prices and farm incomes fall, they must often tighten their belts and sell more to cover essential expenses, however limited these may be. These reactions, for which there is a good deal of scattered evidence, though more complete information is badly needed, must often have an appreciable destabilizing effect on market supplies and prices, including those for cereals and other basic foods. For farm incomes are usually a good deal lower than average incomes in other occupations, and the farm consumption of basic foodstuffs is therefore likely to show a greater response to a small change in income than would result from a corresponding change in nonfarm incomes.

It is in this context that the problem of the "marketable surplus" must be seen. For the so-called "backward sloping supply curve" is in most cases nothing but a reflection of the fact that as farmers' real incomes rise, they become larger consumers of their own products, depending on the extent to which their income elasticity of demand for their own products is higher than their income elasticity for products that they would otherwise purchase. Thus, if rising prices give farmers a sufficient cash income for their needs, gains in production may be entirely consumed on the farm with no increase in the marketable supplies to meet the growing urban demand.

This appears to represent a phase, but a necessary and indeed desirable one, in the progress of agriculture. But once a certain level of rural consumption is attained, the farmer, like his counterpart the townsman, will be able to afford greater variety in his expenditure. In other words his income elasticity of demand for food will decline, a rise in income will have correspondingly less influence on his retentions for family consumption, and he will be more eager to increase his sales so that he can buy more of other products which at present are largely outside his reach.

The effect in less developed countries of measures to increase farm production on the share of the increased output consumed on the farm and the share marketed thus seems likely to depend a good deal on the way in which the increased output is obtained. If efforts tend to be concentrated on relatively few large farms, for instance by channeling credit in their direction, the share of the increased output reaching the market is likely to be rather high. If it results from small improvements spread over a multitude of small farms, the share of the increased output marketed will probably be appreciably lower. Nonetheless, it would seem a short-sighted policy, especially where land is scarce and small farms predominate, to concentrate efforts too narrowly on the larger farms, as this would mean that the time when the smaller producers come effectively into the market economy would be indefinitely delayed.

Raw materials for domestic consumption

Little need be said under this heading, since future requirements for, e.g., fiber must be keyed to plans for industrial development. In most less developed countries the crop area devoted to agricultural raw materials for domestic use, or even for export, is relatively small and does not greatly encroach on the area available for food crops. There are some cases of conflict, though mainly when raw materials are grown for exports. For instance in Egypt the authorities impose a limit on the expansion of cotton to safeguard the production of food grains. In Bengal, in former times of food crises, priority was given to rice over the production of jute. In normal times, however, such conflicts are comparatively rare.

A more serious competition for land resources may arise between cropland, grassland and forest area. As population grows, crop cultivation and livestock raising encroach more and more on forest areas. Encroachment on the forests by crops is especially damaging in some tropical countries where forests are burned and crops are grown for short periods under a system of shifting cultivation. As population grows and the need for land becomes greater, the fallow period between crops becomes progressively shorter with disastrous consequences in erosion and loss of soil fertility. In mountainous areas in both tropical and subtropical countries any serious encroachment on the forest results in erosion and serious repercussions on the fertility of the plains. This usually occurs when there is a rising demand for forest products, including wood for construction, etc., fuelwood, and pulp and paper products for which income elasticities are high. All these considerations also point up the need for a careful policy of land utilization and forest conservation.

Export prospects for agricultural products

There is no need to stress the dependence of economically less developed countries on exports of primary products, especially agricultural products, and most of these countries include increased agricultural exports among their development goals. World trade in agricultural products as a whole, however, has made little progress for some decades. Thus, the volume of world agricultural exports (excluding trade between the U.S.S.R., Eastern Europe and Mailand China) in 1958 was only some 20 percent higher than in either 1934-38 or 1948-52.[9] The volume of agricultural exports in 1958 from economically less developed countries as a whole, though nearly 20 percent higher than in 1948-52 (when recovery from the war years was incomplete), was scarcely higher than in 1934-38. The comparison with the late 1920's is even less favorable; from 1928 to 1958 the total volume of world trade increased by more than 80 percent, but that of exports of agricultural products by about 15 percent. And while real prices of agricultural exports, as measured by their capacity to purchase manufactured goods, are still some 50 percent higher than in the years of depression before the war, they have declined steadily during the past decade. As a result the

[9] There was, however, a sharp increase of about 6 percent in 1959 in the volume, though not in the real value, of world agricultural trade; see Chapter II.

increase of 20 percent in the volume of agricultural exports from less developed countries from 1948-52 to 1958 brought virtually no increase in the real value of their export earnings. Evidently the problem of increasing earnings from agricultural exports is no simple one.[10]

The situation is not of course the same for all commodities and therefore for all countries. The main factors tending to restrict international trade in agricultural products have been (*a*) increased domestic production in the industrialized countries which provide the main import markets (this affects mainly the products of temperate agriculture) and (*b*) the increasing development of synthetic substitutes for fibers, rubber and other agricultural products, e.g., detergents for soaps based on vegetable oils, together with greater economy in the use of raw materials. On the other side, the main factors tending to expand agricultural trade have been rising incomes and populations, though as stressed earlier income elasticities of most agricultural products decline considerably at the levels of income now ruling in the main importing countries. For commodities with relatively high income elasticities, which are neither produced domestically in the main importing countries nor extensively replaceable by synthetic substitutes, the growth of world trade has been rapid (in terms of real export earnings) and commensurate with growth of world trade in manufactured goods. Such products as coffee, cocoa and some tropical and semitropical fruit fall into this category. The same is true of some raw materials such as wood and wood pulp, and of a few others such as rubber and wool for which demand has grown even more rapidly than the use of substitute materials. For most other major export products the growth of export earnings in the postwar period has been more modest and sometimes even negative.

Even for more favorably placed commodities, however, any rapid increase in world exports would often bring down prices so far that there would be little if any increase in total earnings. Nevertheless, the longer-term prospects for these products are for continued growth, except in so far as some of the traditional markets are approaching saturation. This may be the case for tea (and in some countries for coffee), and here renewed growth may largely depend on building new markets.

[10] A more detailed analysis is given in *The state of food and agriculture 1956*, Chapter III.

This is the over-all view and it is important by way of background. It does not, however, take into account changes in the share of the market secured by different exporters which may greatly influence the outlook for any individual country. Some postwar changes in this respect have been to the disadvantage of less developed countries, chiefly where a more rapid growth of domestic demand than of production has reduced the supply available for export. The decline in Argentine exports of cereals and meat during the late 1940's and early 1950's is a well-known instance. Since the war, too, the Far East region as a whole has changed from a net exporter to a net importer of cereals. In both cases, larger exports from higher income countries in North America and Oceania have tended to fill any gap in the world market.

The view of an individual exporter is most likely to differ from the over-all world view if its share of world exports is small. In that case to double its volume of exports might have little effect on world supplies and prices and might roughly double its export earnings. The problem is then mainly one of domestic resources and costs.

For a major exporter of a commodity, however, the situation is more complex. The effect on world prices and on the country's total earnings of increasing its volume of exports must be carefully considered, bearing in mind, however, that an over-high price level will encourage both the search for substitutes and the encroachment of newer and competitive exporters into world markets. For the large exporters there appears to be no alternative to an informed judgment, based on a continuous study of long-term trends and short-term fluctuations in world consumption, prices, stocks and of production and exports from competing countries. This is particularly difficult for tree crops where many years may elapse between planting and bearing.

Targets for agricultural production

Projections of demand, as discussed above, give one starting point, though not the only one, for framing agricultural production targets. Thus, the projections of the demand for domestic food supplies (including any allowances for special nutritional programs or reserve stocks), together with estimated requirements of raw materials for domestic industry and of expected exports of agricultural products, give an estimate of the total supply of

agricultural products required. Part of this supply will usually be imported, if only the products which cannot be grown domestically for climatic reasons. The import program, however, will depend not only on largely agricultural considerations such as relative production costs. In some countries nonagricultural factors will be important; for example, domestic and external political considerations, balance-of-payments problems, the availability and form of economic aid, and reciprocal trade patterns with trading partners covering other sectors as well as agriculture. It may be useful to prepare a tentative import program for agricultural products based on such considerations. The estimated total requirement of agricultural products, including exports, adjusted by any tentative import program would then give a first indication of the magnitude of the desirable agricultural output. Such estimates may be useful on both an aggregate and a commodity basis.

This is clearly only a first approach and one which can be adopted only in countries with enough statistical background to establish demand projections. Moreover, any first estimates of the output needed derived from such projections would have to be carefully tested for technical and economic feasibility, as a result of which it might be necessary to adjust the estimates of import requirements or even of consumption.

A second approach, which may be followed in any country with basic statistics of agricultural production, would be a simple projection of recent trends of output. Every economy, however undeveloped, has a certain momentum. Even where little effort has yet been made toward economic development there will be some growth of production, though it may not keep pace with population, and slow shifts in the pattern of cropping. A simple projection of the recent trend of production, perhaps graphically, would give a first indication of the possible line of development for the main crops and, to the extent that data are available, for minor crops and livestock products as well. Similar trends and projections for crop areas and yields would also be valuable in providing a more complete picture of current trends.[11]

[11] It would be important for such projections to be based on data for a sufficient number of years, especially in countries where year-to-year fluctuations in yield and output are large.

Comparisons between the tentative estimates derived from production trends and from projections of demand would be useful in giving a first impression of the possibility of meeting the estimated consumption requirements. Such comparisons might also give indications of the commodities for which an intensification of the recent rate of expansion seemed necessary to keep pace with the estimated demand, of other commodities where special efforts might not seem necessary, and perhaps a third group where the growth of production seemed to be in danger of outrunning the growth of demand. In less developed countries the last possibility might be most likely for some export products.

Where more elaborate forms of planning are followed, similar comparisons on an aggregate basis of recent production trends with demand projections would give a first indication of the adequacy of the recent rate of growth of the agricultural sector as a whole.

For individual commodities these indications could be clarified by recent trends of imports or exports and of prices. A rising trend of imports over a period of years would obviously confirm that domestic production was lagging behind demand. So, too, might a falling trend of exports, though in this case alternative explanations might be a shrinking world demand or successful competition by other exporting countries. Similarly a rising trend of "real" prices for a commodity would suggest that supplies were falling behind effective demand, and *vice versa*. Even without demand projections such data, fairly readily available in most countries, would provide reasonably good indicators of commodity supply/demand trends, and provide a third and relatively simple approach to establishing production targets.

Further approaches might be made from a more technical angle. For example, as a fourth possible approach, a mixed group of economic and agricultural specialists might be established to work out in some detail desirable and feasible lines of agricultural development, taking into account likely consumption needs, the agricultural resources of the country, and the financial and other means likely to be available. Their conclusions might indicate also what physical inputs and what government action might be needed to secure the results proposed. For more detailed working on these lines, subgroups of the same character could be set up for separate aspects of agriculture, e.g., crop production,

livestock production, irrigation, forestry and fisheries, as in the preparation of the Indian third five-year plan. Similar groups might at the same time look into the nutritional, social and institutional aspects of agricultural production. The more complete the information available to such groups, the more concrete could be their proposals. Thus, data on the agricultural resources or on farm management and cost factors for different parts of the country would enable suggestions to be made on the most appropriate localities for different types of development. The conclusions of the subgroups established under such an approach would ultimately be consolidated into an over-all report.

As a fifth approach the above procedure might be reversed; that is to say, the various inputs likely to be available could be taken as a starting point and an estimate made of the additional production to be expected from their employment. Such "input programing" would cover, for example, the expected return from large-scale projects of irrigation or land settlement due for completion during the period of the plan. It would take into account also proposed resources for the provision of additional fertilizers, small-scale irrigation, and improved practices, and estimate the likely output which might result on the basis of conversion factors derived from experimental work or past experience.

Such an approach is widely used as it is attractive from two points of view. In the first place, it can be followed in countries where as yet there is little in the way of basic statistical or economic data on agriculture. Secondly, it gives the possibility of comparing the likely return from expenditures on different forms of agricultural development, by means of cost/benefit estimates, and thus gives some basis for choosing the most economic means or combination of means.

Input programing equally has some limitations. Conversion factors (or yardsticks), based on experimental data or past experience, to evaluate the likely additional output from any project are seldom very trustworthy in farm practice. This applies especially when they are used in combination: for example, factors for nitrogen, potash and phosphate fertilizers individually may be less reliable when used for mixed applications, or when fertilizers are used in conjunction with other practices, such as irrigation and the use of improved seeds. If output targets are being established on a commodity basis, there is no certainty that fertilizers, which it is assumed will be used for one purpose, would not be transferred to another, e.g., grains to cash crops. These and other problems which arise in input programing are discussed further below. Nonetheless, this can be a useful approach to agricultural programing if employed with an appreciation of its potentialities and limitations.

A sixth approach to production targets from a locality angle can be of value in some circumstances. For example, groups of local officials and others (including representatives of farmers) might be established to consider and recommend, if possible in quantitative terms, the type of agricultural development which would seem most appropriate in their own areas, and what investment and physical inputs or other requirements would be needed to bring it about. These estimates could be aggregated to build up yet another view for the whole country.

It goes without saying that more than one of these various approaches could be followed at the same time. The findings which emerge from them, however, will almost always show many inconsistencies, and considerable adjustments are likely to be necessary before a consistent set of output targets can be developed. Adjustments to the demand projections may also have to be made to bring them into line with production and other possibilities. Even then, however, the production targets can be no more than tentative, until more detailed consideration has been given to the feasibility or otherwise of the projects and measures by which they could be implemented. These are discussed in the next section. Still further adjustments to the production goals may thus prove necessary during this final stage.

Before turning to methods of implementing targets it may be useful to discuss briefly in what detail national agricultural production targets can usefully be broken down into targets for smaller areas. Where, as for example in India, the implementation of a federal plan is the responsibility of state or provincial governments, at least this degree of breakdown is of course necessary. A subdivision of output targets may also be desirable when there are wide differences of climate and topography between different parts of the country, or when it is desired to even up regional disparities, or alternatively to concentrate resources in key areas.

A much more detailed form of planning was discussed in the Indian second five-year plan:

> Each district and, in particular, each national extension and community development project area should have a carefully worked out agricultural plan. This should indicate

for villages the targets to be aimed at, the broad distribution of land between different uses and the program of development. Within the framework of an overall policy... such local plans will be valuable steps leading to more careful planning for states and regions and for the country as a whole. The crop pattern envisaged by these local plans has in the main to be influenced through such incentives as the provision of irrigation, credit and marketing facilities, provision of fertilizers, and intimate contact with the cultivator on the part of extension workers and especially the village level workers.

If local communities can be encouraged to develop their own production goals within the broad framework of the national plan, it may well be a valuable additional incentive to local effort. If, however, it were intended that all these local plans were to be carefully phased, co-ordinated and aggregated to form a state and national plan, the detailed paper work seems excessive and unnecessary, especially in view of the flexibility always needed in agricultural plans. In the U.S.S.R., before the recent decentralization, central agricultural planning appears often to have covered local plans in great detail, in some cases extending down to the production plans of individual state or collective farms and including targets for crop areas and livestock numbers. The whole planning machinery is said to have become so enmeshed in detail that important decisions were delayed and production development badly hampered.

Since the reorganization the individual plans are worked out tentatively on state and collective farms and combined into plans for the district, the republic and ultimately the U.S.S.R. as a whole. This type of planning is regarded as more realistic than plans prepared centrally. Only the quantities of the main products to be sold to the State under the official collection by districts and farms, however, are now established centrally, or, for less essential products, at the regional level. These indications ensure that the trend of production is in line with expected urban demand. The official deliveries are of course by no means the same as the total output or even the total supply marketed. Operational matters and decisions are left more and more to local initiative.

How much detailed planning from the ground up is feasible in countries where the main output comes from multitudes of small farms is debatable. There can be no doubt, however, that if even only a small proportion of villages or other rural communities prepared local plans these could give valuable pointers to the aspirations and real needs of the cultivators, the more so to the extent that these plans originated spontaneously in the villages themselves rather than in response to suggestions from outside.

Problems of estimating resources for agricultural development

In over-all economic development planning it is usual to start with certain assumptions, based largely on experience, on the share of the national income which will be set aside for investment, and on the capital/output ratios applicable to the whole economy and to its main sectors. For example, if 15 percent of the national income were invested each year and the average capital/output ratio is 3 : 1, the national product would be likely to increase by about 5 percent annually. If at the same time tentative estimates are made of what additional investment resources might be obtained from abroad, and of the distribution of the total resources available between the main sectors of the economy in accord with demand forecasts, it is possible to build up a first outline of a desirable and feasible rate and pattern of economic growth. Tentative conclusions may be drawn on the main fields for public investment and on what should be left to the private sector. In the course of working out a more detailed plan all these estimates are liable to adjustment until a mutually consistent set of targets is arrived at, in line with over-all policy and with the financial and other resources likely to be available.

If this approach to planning is to be effective, a considerable background of statistical and economic information is needed. This approach also has weaknesses which, if not allowed for, may lead to serious errors. To mention only a few, the capital/output ratio for past periods may differ appreciably from the marginal productivity of new investments. The latter is subject to constant change, especially in sectors of the economy where productivity is rising, e.g., as a result of technical progress. The return from investment in any sector is likely to be greatly influenced by parallel investment in the infrastructure. Industrial development, for example, may be greatly influenced by investment in electric power. Agricultural development, because of its dispersed nature and the need to market bulky produce, may be greatly affected by investment in road construction. Nonetheless, this approach to planning economic development is

useful, especially in long-term perspective planning, in establishing the first broad framework of a national plan. In economically developed countries, estimates of investment and of capital/output ratios may be of operational use and validity. In less developed countries, where the basic data are much less complete, such estimates are bound to be more speculative and must be used more cautiously.

This approach to planning, however, is more uncertain and liable to error in agriculture than in other sectors. Reasonably reliable basic data are hard to obtain, even in relatively developed economies, and the concept of investment in agriculture is less clear-cut than in other major sectors. For these and other reasons, discussed more fully below, it is particularly difficult to arrive at reliable estimates of the resources needed for a given increase in the agricultural output. Unless some of the special features of the agricultural sector are kept in mind, a misleading impression of the resources and programs needed for agricultural development may be obtained from estimates based primarily on capital/output ratios.

It is partly for this reason, and partly because many less developed countries do not yet have the basic data or experience to embark on an aggregate approach to planning, that various methods of arriving at provisional output targets have been discussed before considering what resources and policies would be needed to achieve these levels of production. Some of the methods described for establishing provisional targets do not bring in the concept of investment, though investment problems of course arise later in considering the feasibility of the targets and the ways of achieving them. Some methods of establishing output targets indeed require no more than basic statistics of international trade, price movements and agricultural production, which are available to a greater or lesser extent in nearly all countries.

In agriculture it seems more logical in most circumstances to start with a first approximation of what additional output is needed and feasible, and with first estimates of the resources needed to obtain this output by some promising combinations of projects and policies, rather than to begin with some rather shaky assumptions on the rate of savings, the share available to agriculture, and the applicable capital/output ratio. If a generalized estimate of a capital/output ratio for agriculture is required it can usually be worked out more realistically as a second stage after some broad decisions have been taken as to the means to be adopted for implementing the production targets. Even so, its significance is likely to be limited.

One reason for the difficulty of estimating the resources needed for agricultural development is in fact the unusually wide choice of methods. For example, if steel production is to be increased it is clearly necessary to build a new steel mill or to enlarge existing plants. More than one type of mill may have to be considered, but the choice is fairly restricted. On the other hand, if grain production is to be expanded it may be done by reclaiming land, by plowing pastures, by increased irrigation (either large-scale or minor irrigation projects), by a greater use of fertilizers, by improved seeds, by better control of weeds, pests and diseases, by improved crop rotations, or the government may prefer a more generalized approach by increased extension services or by price or other incentives to farmers, leaving it to the producers themselves to decide the most suitable means (and inputs) for expanding their output. In any circumstances, an almost endless series of combinations in varying proportions of the above factors could be considered. The inputs required for any project would be estimated by the yardstick approach discussed earlier in connection with the establishment of a first approximation to output targets, and would be subject to the qualifications there noted. Although there is bound to be a large margin of error in any estimate on a national scale of what combination of methods would be the most effective and economic, this seems the most reasonable approach, as the choice of methods may greatly influence the magnitude and nature of the resources required.

Another, and perhaps more fundamental, difficulty lies in the limitations of the concept of investment as applied to agriculture, and of its corollary, the capital/output ratio, particularly as investment is usually measured in market prices in terms of the national currency. Some of these limitations may be briefly summarized.

Nonmonetary investment

Any measurement of agricultural investment in monetary terms is likely to be very incomplete, especially in less developed countries. A large part usually consists of a multitude of small improvements to the land, brought about by the unpaid labor of the farmer and his family, e.g., in

draining, leveling, bunding rice paddies, building barns, fences, etc. As it does not create inflationary pressures, and does not as a rule divert labor or other resources from other forms of production, this nonmonetary investment is particularly valuable in less developed countries, and if it can be encouraged, reduces the need for monetary investment. Conversely, if nonmonetary investment is inhibited by institutional or other difficulties the need for monetary investment is increased.

Scarce factors

Even where monetary payments are involved, a comparison of the investment needed in the agricultural and in other sectors of the economy may be misleading. Industrial development, for example, usually makes much heavier demands than does agricultural development on the factors which are usually scarce in less developed countries, such as foreign exchange and skilled labor.[12] This important difference may be concealed as for various reasons market prices often fail to reflect adequately the relative scarcities of investment factors. Agricultural investment, which can often draw on domestic resources amply available, may thus appear less profitable, in terms of its cost to the economy, than it would if a more rational form of measurement could be applied.[13]

Working capital

A large share of the capital needed to increase production in agriculture is short-term working capital. Working capital does not usually appear in the capital/output ratio, and unless its use in agriculture is taken into account the total capital requirement for agricultural development may be heavily underestimated.

Indirect benefits

The distinction between working capital and fixed capital is indeed less clear-cut in agriculture than in most industries, and so also to some extent is the distinction between gross and net investment. Expenditures on fertilizers, for example, are usually considered as coming from working capital, but in some cases have considerable residual values which benefit subsequent crops. The contribution of organic manures may be underestimated if only their immediate effect is counted and not their cumulative effect on the soil structure and fertility. In some cases the output itself serves also as an input, as in the production of legumes which add nitrogen to the soil, or when rice is cultivated as an interim crop to condition alkaline land. In brief, some cultural practices cumulatively raise the productive capacity of the land while others cumulatively reduce it. In choosing methods of agricultural development it is important to bear in mind the longer-term "appreciation" or "depreciation" of productive capacity, as well as the short-term effects indicated by estimates of input/output relationships.

Time factors and the interdependence of short- and long-term projects

Estimates of the return to be expected from agricultural investment as a whole or from specific types of agricultural investment are complicated because some projects take years to build up to the point at which they start to yield. An extreme case is afforestation, which may sometimes give no measurable return for decades. Land settlement or large-scale irrigation projects usually take 10 to 20 years to approach their full potential productivity. The planting of tree crops or the raising of beef cattle are well-known examples of agricultural projects with a long gestation period.

The problem is not simply one of timing, since a project yielding a return only after many years may have an indirect effect on current output. Thus, the afforestation of hill land, while in itself giving no direct return for a long period, may fairly soon operate as an important measure of soil conservation to maintain or increase productivity on adjacent valley land and to check deterioration from flooding. Rational agricultural development often implies a combination of long- and short-term measures, and this complicates the esti-

[12] "Skilled labor" is used in the conventional sense. Agricultural labor may often be highly skilled in the sense that it requires long experience. But it is a skill which is usually more abundant in less developed countries than other skills, e.g., using or servicing complicated machinery.

[13] A device sometimes used to avoid this and other difficulties of pricing is to replace market prices by "shadow prices," chosen to reflect more closely the relative scarcities of the inputs and outputs. Thus, in countries where foreign exchange is scarce the shadow price of imported goods would be raised by using an exchange rate less favorable than the official rate. The device can be useful for comparing alternative projects, though inevitably it brings in many arbitrary assumptions.

mation of resource requirements or the use of capital/output ratios.

Some other difficulties, which also affect any cost/benefit appraisal of agricultural projects, may be noted. One difficulty is that of pricing. The long period for maturation of many projects means that a series of future payments for amortization of capital expenditures and for annual operating cost must be compared with the returns anticipated from increased production over a future period. This involves making assumptions concerning agricultural price levels, in both monetary and real terms, over several decades in the future, and this is necessarily rather speculative. Another uncertainty comes from the wide range of possible outputs. The return from an irrigation scheme, for example, will clearly be very different if the irrigated land is used to grow grain or to produce high value cash crops or export crops. But the use to which the land is finally put will depend to a large extent not only on technical factors, but also on future market conditions when the scheme reaches the production stage, as well as on the social and economic status of the farmers at the time. Again, in costing a project various arbitrary assumptions must be made, e.g., on the value imputed to farm family labor and on "true" interest rates, since (like market prices) current interest rates may not accurately reflect the relative scarcity of capital to the economy.

The validity of such estimates to assess the absolute profitability of a project is obviously limited. If used to compare the relative profitability of two or more alternative schemes the margin of error is smaller, since the same general output pattern and the same assumptions can be used for each scheme, though the error may still be considerable.

Interdependability of projects: Ancillary projects

Although it appears that the resources needed for agricultural development can be estimated only on the basis of individual projects, and even then somewhat uncertainly, this project-by-project analysis should not obscure their close interdependence. For example, the encouragement of livestock production may make possible mixed farming and a generally higher level of productivity. A crop may be barely profitable when considered by itself, but play an important part in a rotation. Relatively small ancillary projects may be the key to considerably wider development in agriculture as in other sectors. A sugar-cane factory or an oil-pressing mill, for example, may be only marginally profitable and offer limited opportunities for employment, but may make possible a considerable increase in farm employment and output. Market, warehousing or transport facilities may be an essential step in bringing a subsistence area into production for the market.

Social, institutional and organizational factors

Finally, the return from a development project will depend to a considerable extent on social, institutional and organizational factors which may determine its feasibility or its profitability to the farmers or cultivators. These factors, discussed more fully below, may, for example, determine whether irrigation water is fully utilized; whether farmers can afford to buy or can use profitably the supplies of fertilizers or improved seeds made available; whether they will in fact take up the improved practices recommended by the extension services.

* * *

The above points have not been raised to question the value of the contribution that economic analyses can make to the formulation of agricultural development projects. There is no other way to assess the resources needed for a given expansion of output, to compare alternative agricultural projects, or to reach some reasonable judgment of the value of agricultural projects in comparison with alternative projects in other sectors. All these things are clearly essential for economic development planning. The intention is rather to bring out the many factors to be taken into consideration in agriculture, and also to emphasize that an analysis in monetary terms alone is seldom by itself an adequate basis to assess the feasability of a development project, even if technically sound.

It is equally important, for example, to take into account the actual situation of the farmers in order to judge their probable reaction to any proposed measure, to know whether a project can be backed by the necessary organization, especially at the local level, or whether farmers will have

access to the improved planting material, fertilizers, technical advice or other things which may be needed and assumed in plans. The bearing on the choice of measures to implement agricultural development of the institutional, social and economic circumstances of the farmers, together with some organizational questions, are therefore briefly discussed in the next section, before considering further the resources needed for agricultural development.

The choice of means to implement production target

There are many ways in which governments can influence the resources devoted to agriculture and the rate and pattern of agricultural development; for example:

(*a*) by direct public investment in agriculture, as for large-scale projects of irrigation and land settlement, or in the essential infrastructure, e.g., access roads;

(*b*) by measures and policies to increase farmers' incentives (or to remove or reduce disincentives) to expand agricultural investment and production; these include measures to improve marketing and stabilize farm prices, to make farm credit more readily available, to improve the agrarian structure, to give relief from some forms of taxation, etc.;

(*c*) by the provision of improved services to agriculture, e.g., extension and information services for cultivators, as well as services which operate in the longer term, such as agricultural research and professional training in agriculture.

This is not the only possible classification; nor do all measures fall neatly in one or other of the three categories. Nonetheless, in general, agricultural development programs and policies are implemented by a combination in varying proportions of these three types of measures.

The choice and combination of the measures which will lead most effectively and economically to the achievement of the plan is the most important, and usually the most difficult, aspect of agricultural planning. The means chosen must of course be in harmony with the policies of the country, with the objectives of the over-all development plan for the whole economy, and with the financial and other resources available. They must take into account also the skills and limitations of the cultivators on whom the success of the plan ultimately depends, and of the economic, social and institutional environment in which they have to work. Finally, it is necessary to balance the interests of agricultural producers and of consumers, especially in economically less developed countries, where food is the largest single item of expenditure, and to select methods of development which will not hamper the growth of other sectors of the economy.

General approach to implementation policies

In any concrete situation the choice of policies, projects and other measures will already have been decided to a considerable extent by what has happened earlier. A number of development schemes are likely to be under way which it would not be feasible to discontinue, except in the unlikely event that some proved to be basically unsound. Similarly, there are always existing services to be maintained or enlarged, and policy commitments which it would be difficult to change unless there were strong reasons for doing so. Nonetheless, a considerable area of choice is likely to remain where policies and measures have not yet been decided, or where those already operating are patently inadequate.

It is not easy to find objective criteria for such decisions on the general strategy of agricultural development and to choose the most promising combination of the three main types of measures listed above, amid the arguments and counter-arguments of specialists in particular fields, believers in particular policies or spokesmen of special interests. Economic measurements such as cost/benefit ratios can be of value in judging between alternative projects for irrigation or land settlement, or even to compare them with measures to stimulate the use of fertilizers, though with some limitations already discussed. But they can do little to help in deciding what weight to give to such projects of physical investment on the one hand, and on the other to policies of greater production incentives, or to increased extension and other services to farmers.

In many cases the most realistic approach will be to look at the agriculture of a country as a going concern, and to consider what extensions and adjustments can most simply and economically give desired results. There are several reasons for such an approach. In the first place it corresponds to the actual situation. During the normal planning period of around five years the additional production will seldom exceed 10-20 percent of the output at the beginning of the plan and will often be less. In other words, much the largest part of the output at the end of the plan, even if all objectives are reached, will come from resources already operating when the plan started.

If agricultural development is thought of primarily in terms of savings and investment there may be some tendency to overemphasize new projects, especially those which can be expressed and assessed in monetary terms, to the neglect perhaps of less easily measured and more intangible things such as education and extension, economic incentives or the removal or alleviation of institutional hindrances to development. There may be also some tendency to concentrate expenditure on new projects and to leave barely enough for the maintenance and full exploitation of existing assets, especially if the progress of the plan is assessed in terms of development expenditure. New wells may be dug while existing facilities are not fully used, new land reclaimed while the existing agricultural area is yielding only a fraction of its capacity, even with the techniques already known in the country.[14]

As part of this approach it would be of value to make a rather careful quantitative inventory of the existing resources which are not yet fully exploited: irrigation water not used for lack of distribution channels, or (if distribution channels are completed) not fully utilized for double cropping; readily cultivable land not fully used for lack of access to markets; unused small warehouses or other buildings suitable for storage; sugar factories or oil-pressing plants not working to capacity.

The approach could go further, however. It is known, for example, that in all countries, but especially less developed countries, the yields obtained by the better farmers greatly exceed, sometimes by several times, those of the less successful farmers. But there has been little analysis of why this should be. Much is no doubt due to rather immutable personal factors, but much also is likely to reflect economic and physical handicaps, e.g., lack of credit, of incentives, of draught power. An analysis of the causes, based on an objective survey of selected farms, might be of considerable value in agricultural planning by pinpointing the main reasons for low productivity in the circumstances of any particular country or district.

Some of the factors which arise in this approach to planning agricultural development are discussed below: means of obtaining more precise information on the situation of farmers on which to base policy; the influence of conditions of land tenure on implementing development plans; factors influencing the fuller employment of rural labor; and finally organizational problems, particularly as they affect the measures of price stabilization, farm credit and other incentive policies or the provision of improved extension and other services to farmers.

Importance for agricultural planning of detailed information on the day-to-day problems of farmers

It seems important to stress the need for accurate information on the actual situation and problems of farmers if the choice of methods to implement production programs is to be soundly based, and also to judge the feasibility of the targets themselves. In the last analysis it is the farmers and cultivators who make the final decisions on cropping, expenditure, and methods of farming which determine the future course of production. In most less developed countries, however, a majority of farmers operate under disabilities likely to inhibit them from following the courses needed for a progressive development of agriculture. The success or failure of a plan may largely hinge on understanding their difficulties and finding ways of overcoming them.

Many of the disabilities of farmers in less developed countries have already been referred to in this chapter. They were briefly summarized in the Director-General's foreword to *The state of food and agriculture 1959*:

> The more closely the situation is examined, the more one is impressed by the odds against the cultivator in many less developed countries. Handicapped by ignorance, poverty

[14] Bringing new land into cultivation may, however, be necessary in such circumstances largely for social reasons, e.g., to provide subsistence and employment for landless laborers.

and debt, he must face great fluctuations of price, and because of his lack of resources must usually sell immediately after the harvest when prices are lowest. If he improves his methods of farming, much of the benefit of his increased output may go to the merchant or landlord to whom he is indebted. Often he has so little security of tenure that he has no real inducement to improve his holding. When all is considered, the wonder is that agricultural production has increased as much as it has. Until these disabilities are reduced it seems inevitable that much of the teachings of the farm advisory services will fall upon stony ground.

The extent to which any or all of these problems arise naturally varies from country to country. They were examined in some detail in the same publication in a chapter entitled "Some General Problems of Agricultural Development in Less Developed Countries." As a result of this review it was suggested that a primary aim of governments should be to create a favorable economic and social climate for agricultural expansion as an essential complement, or even prerequisite, to efforts to improve technical methods of farmers. Three factors were suggested for special attention:

(*a*) reasonably stable prices for agricultural products at a remunerative level, though one within the reach of the mass of consumers,

(*b*) adequate marketing facilities, and

(*c*) a satisfactory system of land tenure.

It was stressed that if in these or other ways which may be of importance in particular countries, favorable conditions for agricultural development were established, investment in agriculture would be more likely to match the needs of a country for additional production. Moreover, "the initiative of farmers would be likely to lead to an increased nonfinancial investment to improve their holdings. Farmers would be more receptive to the teaching of extension services and the adoption of new methods and more eager to utilize credit for productive purposes. Direct measures by governments to expand production, such as the provision of improved planting material or fertilizers at reasonable prices, as well as schemes of irrigation, land reclamation or settlement, would be likely to lead to better results."[15]

A common weakness of agricultural planning in many less developed countries appears to be the scarcity of precise knowledge of the real situation and problems of farmers, not in a general way, but as they affect farmers in a particular country or district. There is often a wide gap between those responsible for preparing and carrying through development plans and the cultivators themselves. This gap is usually much wider than in more developed countries, for reasons which can be easily understood.

It is, for example, very hard to get much definite information in many countries about the prices actually received by cultivators, even more so for grain than for purely cash crops. Prices at wholesale markets are usually available, but as is well known the cultivators are often separated from these markets by one or more intermediaries who clearly take some payment for the services they perform. Farm prices cannot be reliably estimated by adjusting the wholesale price by some constant margin, for the wide seasonal variations in agricultural prices encourage speculation, while the position is further complicated by the frequent indebtedness of cultivators and the common practice of repayment in kind, reckoned at some notional price, or price ruling in the village when the debt is paid, usually just after the harvest when prices are low.

Again, where tenancy is on a share basis it is very hard to find how many cultivators have any surplus of grain left to sell after paying their rent and debts, and allowing for their own consumption, though it is known that they often have to buy grain from earnings outside the farm to carry their families to the next harvest. Thus, it is difficult to judge how many producers are in fact sellers of grain; what their share is of the total quantity marketed; and what share is marketed by landlords and others to whom cultivators are indebted, but who take little interest in increasing production.

Yet, all these matters are clearly highly relevant if consideration is being given to stabilizing or raising grain prices as an incentive to increased production. They would also be very relevant in judging whether proposed measures to encourage the use of more fertilizers, better seeds and other improved practices for cereals were likely to be attractive enough to induce farmers to undertake the additional effort, expense and risk, or whether fertilizers, for example, would be more likely to be resold for use on more profitable crops.

Many other examples could be suggested where more definite information might be of great value in choosing measures to implement a plan or in making other administrative decisions. For exam-

[15] *The state of food and agriculture 1959.*

ple, it is a commonplace that much rural manpower in less developed countries is unemployed or underemployed, at least seasonally, and much has been written about how it could be more fully utilized. There is seldom any quantitative information, however, on how much is available at different times of the year, on the conditions in which it could be employed, or other information which is essential if it is intended to find ways of better utilizing this potential resource.

A recent survey in India suggested that about three quarters of those farming on their own account were fully employed, but that less than half the wage labor was fully employed, and that over 20 percent worked for less than one quarter of the year.[16] The same inquiry indicated a comparable degree of unemployment in textiles and some other urban industries. Few countries, however, have information of this kind.

Similarly, it would often be of great value in agricultural planning to have full information, from the point of view of the cultivator, on such things as the security and precise conditions of tenancies, on the extent of rural indebtedness, including the magnitude of old accumulated debts beyond the repayment capacity of the borrowers, and the need if any for administrative or legal action to adjust such debts. It would also be important to know for what purposes loans were needed, the methods of financing purchases of production requisites, the reasons for the lack of progress of co-operative methods in most less developed countries, or on the good and bad features of existing marketing facilities. Otherwise, judgments on the probable response of cultivators to particular measures must be made in the dark, or at best in half light, and based largely on hunch.

Some information of this kind may be obtained from advisory groups of farmers or, where they exist, from farm organizations. Even in advanced countries, however, such groups and organizations tend to be dominated by the larger farmers, and their views, though valuable, may therefore not be fully representative. In less developed countries this danger would be likely to be still greater.

Farm management studies, where undertaken (and in less developed countries there are rather few), can often furnish valuable objective information on the actual situation of farmers, though only after a considerable delay while farm accounts are assembled and analyzed. However, because of the large amount of detailed work involved they usually cover relatively few farms.

In many cases, a simpler way of collecting essential information for planning may, therefore, be through sample surveys among cultivators in representative villages or other areas. For example, a large-scale sample survey conducted by the Indian Reserve Bank threw a flood of light on the indebtedness of Indian farmers and showed their extreme dependence on loans from relatives or from merchants, moneylenders and landlords, usually at a crippling rate of interest. The continuous survey of farm expenditures and household consumption carried out regularly by the Japanese Department of Agriculture provides most useful information on a variety of topics on which informed judgments may be based. Thus, in addition to giving valuable information on nutritional problems and on problems of farm management, such surveys would be likely to throw much light on the probable effect of changes in farm prices and incomes on deliveries of produce to the market.

Smaller-scale and less elaborate surveys than those mentioned, if carefully devised and directed toward specific problems arising in the course of agricultural planning, could often yield information which would be of great value in selecting appropriate measures to implement agricultural development policies by throwing more light on the basic problems of the cultivators and suggesting means of overcoming them. But to be reliable they would have to be very carefully planned, and be carried through by experienced workers of great integrity, who had the confidence of the cultivators. This suggests the use of officials resident in the area, though naturally not those responsible for the collection of revenue. Or such surveys might be organized perhaps on a more regular basis through, e.g., universities, and carried out on a selected panel of villages which the field workers could visit regularly so that they become known and trusted by the cultivators. Measures to implement agricultural development plans based on such information would be far more likely to give results than schemes hastily improvised or adapted from those of more advanced countries with very different agricultural and social conditions.

[16] *Indian Finance*, 29 August 1959. Information on the plight of agricultural laborers and their families is also contained in the *Report of the Agricultural Labour Enquiry of the Government of India*, Ministry of Labour. New Delhi, May 1954.

Land tenure and the choice of methods for agricultural development

The choice of feasible methods to encourage agricultural development, particularly the provision of incentives to increase production, may be greatly influenced by systems of land tenure, including the size of farms. Agricultural development, particularly increased production for the market, is bound to be difficult when the main production is on large numbers of small farms, sometimes fragmented into scattered plots, and operated on little more than a subsistence basis. Although very high yields per hectare have been reached in some countries, notably Japan and the Egyptian Region of the United Arab Republic, in spite of very small farms and a considerable degree of fragmentation, these conditions are always a serious handicap and very intensive labor and other inputs are necessary for high yields. In different circumstances and at a higher level of national income, countries like Denmark and the Netherlands have achieved a very high productivity per hectare within a typically small farm structure.[17]

A high level of productivity per man is naturally still more difficult to reach when farms are small, though even in this respect there are possibilities, e.g., in double cropping, or in specialization on intensive livestock and horticultural production. Here again, Denmark and the Netherlands stand high. The latter measures are feasible, however, only when adequate markets for such specialized products are readily accessible, which is seldom the case in less developed countries except in the immediate neighborhood of large towns. Furthermore, specialization on high quality products often involves the import of a substantial part of the grain used for food and livestock feed.

The consolidation of fragmented farms is more likely to merit priority in the agricultural plans of the economically more advanced countries where raising farm incomes by higher productivity per man is a primary policy objective. Consolidation does not greatly change the average size of holding, and is of course feasible even when there is a high pressure of rural population. It may sometimes lead to substantial increases in output, e.g., where land consolidation would make possible small irrigation projects, though its main value lies in making possible higher productivity per man. Land consolidation, however, can be a heavy drain on the administrative and financial resources of government, typically scarce in less developed countries. In the early stages of economic development an increased output per hectare is often even more important than increased productivity per man, and the priority given to land consolidation will largely depend on whether these resources are considered likely to give a larger increase in output if used for this or for some other purpose. At a later stage of economic development increasing agricultural productivity per man becomes relatively more important, and land consolidation would rate a higher priority.

The creation of larger and economically more viable holdings may also be important and feasible in some circumstances. However, in less developed countries which are densely populated, notably in Asia, scarcity of land and the continuing rise in the absolute numbers of the farm population often rule out the possibility of increasing the size of holding. Its may indeed be difficult to prevent a further decline. The situation in this respect is less difficult in large areas of Africa and Latin America, where land is less scarce in relation to population.

Co-operative farming is sometimes suggested as a means of giving small farmers some of the benefits of large-scale production. Interesting schemes of this kind have been operated in Nigeria and the Sudan, where mechanized cultivation, etc., are carried out from a central machine station, though each farmer retains and does the greater part of the work on his own plot. In this respect they differ from the well-known examples of co-operative farming in Israel, where many co-operative farms operate as single units.

In many less developed countries systems of tenancy are an important impediment to agricultural development, and even if agrarian reform is not immediately practicable, some modification of the tenancy system may merit high priority in agricultural development plans. For example, if there is no security of tenure, or if the tenant has no right to compensation on eviction for any permanent improvements which he has made on

[17] It is unnecessary for the present discussion to re-examine the familiar problem of what is meant by a small farm. The concept does not, of course, depend only on area, but will vary greatly with the soil, climate, intensity of cultivation and the stage of social and economic development of the locality; it is thus more meaningful and readily defined in a concrete situation than in general terms.

the holding, he has clearly little incentive to make such improvements or to raise the fertility of the soil, since the longer-term benefits of his efforts may accrue to others.

Furthermore, incentives for the adoption of improved methods of farming and increased production are likely to be greatly diluted when much of the land is held on share tenancies. When the tenant's share of the crop is small (it is often only one half and sometimes less), any inducement to raise his output is correspondingly reduced. In such circumstances, increased production for the market may come largely from a minority of farms owned by their cultivators or held on fixed rent tenancies; these farms are usually above the average size.

Serious secondary effects follow from the poverty of most sharecroppers because they cannot afford to adopt improved methods, while their insecurity of tenure often makes it hard for them to obtain credit from sources other than the landlord or the local moneylender. Much naturally depends on the way in which the sharecropping system is operated in any particular instance. In a substantial number of less developed countries, landowners do not as a rule contribute to the cost of cultivation, including such aids to higher yields as fertilizers or improved seeds. The cultivator's economic return from expenditure on these items is thus reduced in proportion to the share he pays. If half the increased output from fertilizers goes in rent, he gets only half the return from his investment that an owner farmer or a farmer with a fixed rent would obtain. This difficulty might be partly overcome by legal measures requiring the cost of requisites for higher yields to be shared *pro rata* to the rent. The proportionate benefit of both landlord and tenant would then be the same as that of an owner farmer. As such a regulation would be in the interest of both parties, the possibilities of its enforcement would be enhanced.

The incentive effect of price stabilization measures is also likely to be sharply diminished when tenancy is on a crop sharing basis. As already noted, tenants often have little or nothing to sell over and above the needs of their families after paying their rent, and so would receive little benefit from stable prices. The main sales for the market are likely to be made by the landowners, or by the moneylenders or merchants to whom cultivators have repaid debts in kind. While these more commercially minded groups might benefit from more stable prices, they usually have little interest in improving the production methods of the cultivators. In such situations, price support measures would be likely to have only minor effects in encouraging larger output. In principle this difficulty could be got around by imposing some form of fixed ceiling on rents (e.g., half the crop or so many quintals per hectare, whichever was smaller).

Again, crop sharing not infrequently applies only to the main crop, usually cereals, and not to any "catch-crop" grown after the main crop is harvested. If double cropping could be more widely adopted in these circumstances by the use of quick growing crops on irrigated land, it could provide an additional source of income to tenant farmers. Most less developed countries are in regions where a second crop of cereals, or still better of legumes or oilseeds, can be produced under irrigation. Even a second crop of vegetables, largely for home consumption, and of green fodder for the tenant's livestock, could be of considerable value in raising the tenant farmer's level of living. This might be an effective line of approach for the extension services.

Sharecropping is still prevalent over wide areas of Asia, North Africa and Latin America, even though its importance on a world scale has been diminished by the postwar land reforms in, e.g., India, Japan, and the United Arab Republic. Even when officially abolished, however, sharecropping may still persist quite extensively under private arrangements. Small farmers often let all or part of their farms on this basis to neighboring farmers or landless laborers (despite legal provisions to the contrary) because of their own inability to cultivate their land, or to be able to devote themselves to other occupations. Such small landlords are often even more demanding than larger landowners, especially if they have little else to live on.

In many countries, including the Philippines and Iraq, legal ceilings have been placed on the share of the produce which may be charged as rent, but such laws are almost impossible to enforce in countries where land is scarce and farm labor plentiful. Measures to give greater security of tenure may even in certain instances react back on the cultivator, for landowners may feel it desirable (if a certain minimum length of occupancy is set down before greater tenure rights are granted) to change their tenants every two or three years to avoid losing a measure of control over their land.

The main issue under consideration here is how incentives to increased production may be made effective where small farms, tenancy and particularly sharecropping are prevalent forms of land tenure. The wider issues of land tenure and agrarian reform fall largely outside the purview of this chapter, although there can be no doubt that tenure systems which cause political and social unrest may sometimes badly hamper agricultural development, even if the technical methods of agriculture in use are efficient, as in some plantation systems. Where dissatisfaction with the system of tenure is combined with a failure to develop the efficient use of much of the best land, as in the *latifundia* of some Latin American countries, the impediment to agricultural development is obviously much greater.

In many cases agrarian reform is approached primarily as a social or political problem and less attention is given to its effects on, and the needs of, agricultural production and development. Indeed, mere redistribution of land is often carried through without the necessary follow-up measures, such as the provision of credit, marketing facilities and extension services. An emergency or revolutionary situation may preclude a careful examination in advance of the economic implications of proposed new ownership patterns. However, in some countries possibilities appear to exist for an agrarian reform which could give consideration to economic as well as social objectives. For example, in some Latin American countries measures are under consideration for the redistribution of large estates. Again, in some countries of Africa and a few areas in the Near East there is a move toward confirming rights of individual ownership in areas where various systems of tribal or communal tenure have outlived their usefulness and are breaking down because of the increasing pressure of population, or because of the widespread planting of permanent tree crops which cannot be reconciled with a tribal system of land tenure.

There are many areas, however, where tribal systems of land tenure are still functioning and show considerable capacity for adjustment to economic development. Where tribal institutions are still respected, the development of co-operative organizations adjusted to tribal traditions would be a natural means of promoting agricultural development.

The general question may indeed be raised whether transfer to small-scale private ownership (i.e., land-to-the-tiller programs) is always the best solution even though it may reflect the aspirations of the more progressive farmers. This applies especially where agricultural methods are still rather primitive. Small family farms under owner occupancy have shown their capacity for rapid increases in productivity in many countries. Historically, however, rapid agricultural improvement has often come from large estates, as in England in the late eighteenth and early nineteenth centuries, where enlightened landlords insisted on suitable rotations and methods of farming as a condition of tenancy and contributed their personal technical knowledge and capital to carry them out.

In most countries such paternalism is no longer feasible. Nevertheless, rather than leaving small farmers to sink or swim as best they can, it may be preferable to adopt some form of lease from the state or community which gives security of tenure, provided that a specified system of farming is followed with reasonable efficiency, and the cultivator aided with, e.g., technical advice, some forms of cultivation and of pest control which can best be carried out on a large scale, short-term credit, and marketing facilities.

An interesting example is provided by the "partnership schemes" sponsored by the Production Development Board of the Western Region of Nigeria which supplies finance, technical advice and equipment in partnership with either a co-operative or a local community, the members of which make over their land for 50 years. The larger plantation schemes of this Board and similar organizations in other African territories are of interest from the point of view of land tenure, in that they represent attempts to secure the economic advantages of plantation-scale production without the alienation of land to private concerns.

The Gezira cotton growing scheme in the Sudan is another successful example of such an approach, under a triple partnership involving the government, the Gezira Board and the tenants. The government, which took the land on a long lease and carried out the capital works, is responsible for the main irrigation canals. The Gezira Board is responsible for management, including subsidiary canals, land preparation, seeds, fertilizers, pest control, farm supervision and accounting, credit, and the transport, ginning and marketing of the crop. The tenants do the work under supervision and must allow a fixed rotation of long-staple cotton, durra and lubia (a legume) with about half the land in fallow. They may market

durra and lubia for themselves, but cotton can be sold only through the Board. The proceeds from cotton are divided, 44 percent each going to the government and the tenants, 10 percent to the Board, and 2 percent to a Social Development Fund for the benefit of the tenants.

There are now about 31,000 tenants in 950 villages. Each tenancy consists of about 40 acres held on an annual basis, though evictions are rare and only permissible for inefficient farming. The scheme has been criticized for failing to evoke a personal interest in the improvement of the land. In addition, supervision is limited in practice to the cotton crop, and little assistance is given with livestock, though a village farming experiment for mixed farming, covering 60 to 70 families, was started at Wad Naim in 1953. Nevertheless, tenants under the scheme enjoy incomes which are well above the average in countries at this stage of development, while the contribution of the cotton export to the country's economy is crucial. It is doubful whether these results would have been possible under a less organized approach.

The fuller utilization of farm labor

As this chapter is concerned with agricultural development planning, the main emphasis has been placed on ways of utilizing more fully farm labor on individual holdings especially by incentive measures, or for communal projects using voluntary or paid labor to raise the agricultural potential by, for example, digging feeder channels for the local distribution of irrigation water or the construction of access roads. Large-scale schemes of irrigation or land reclamation would also draw heavily on any underutilized rural labor, though normally on a wage basis and often in an area remote from the laborers' homes so that the provision of transport and shelter for the labor force would arise. Some further points may be added on the fuller use of labor, first in agriculture itself in relation to the problems of agricultural diversification and mechanization and, secondly, to improve rural amenities and levels of living.

The underemployment of rural labor in most less developed countries is due not only to the fact that there are too many workers for too little land; some is the result of technical factors. Thus, in countries where there is a long dry season each year when nothing will grow and the land is too hard to plow, there is little cultivation or harvesting work to be done for weeks at a time. Aside from part-time work outside agriculture, the main way of creating additional employment appears to lie in irrigation to make possible double cropping.

Another reason for seasonal variations in farm work is the wide prevalence of monoculture in many less developed countries. If most of the land is under grain there is relatively little to be done except in the sowing and harvesting periods. A more diversified form of production would enable farm labor to be spread more evenly over the year and thus be more fully used. This is an important reason for the high labor productivity in some areas of mixed farming. More diversified production, however, is not only a technical matter. Apart from production for family consumption, it can be followed only where there is a market for a fairly wide range of products. As livestock products and most alternative crops are more expensive than grain, widespread diversification is only feasible in countries where income levels are high enough to provide markets for these products. Even at a fairly early stage of economic development, however, it is of value to encourage this trend, notably by providing marketing facilities to reduce the cost to consumers and improve the quality and condition of, for example, milk, fruit and vegetables. For greater diversification of production has at least a threefold value: it can raise the nutritional level; it can help to increase the fertility of the soil; and, as already stressed, it can raise agricultural productivity and incomes.

The abundance of rural manpower in most less developed countries has an obvious bearing on the degree to which mechanization is justifiable in agriculture, on the land itself and in projects of irrigation, land reclamation, etc. This is a problem of some importance in both agricultural and general economic planning.

The extent to which mechanization is justified in a given agricultural project depends in the first instance on technical factors. There are some operations in agriculture, for example, some forms of deep plowing for land reclamation, which cannot be effectively carried out without the aid of machinery.

Technical considerations apart, however, a simple comparison of the costs of labor and machinery shows the very different situation in developed and less developed countries. Economically, the degree of mechanization justified in a country depends on the relative scarcity of labor and capital.

These are roughly reflected, though very imperfectly, in wage rates and interest rates. Thus, in industrialized countries, where wages are relatively high and interest rates usually low, a much higher degree of mechanization is profitable than in economically less developed countries where wages are usually low and interest rates high.[18] While this is broadly in accordance with experience, the situation may be obscured in particular cases, e.g., when official interest rates for credit, fixed on the basis of over-all political decisions, are far below market rates of interest. On the other hand, market rates of interest, especially in agriculture, may be inflated by the risk of default and by the strong bargaining position of the moneylending class in relation to most farmers and cultivators. Technicians, especially those trained in industrialized countries, do not always fully allow for these differences in economic conditions and sometimes tend to recommend a greater degree of mechanization than is appropriate in a less developed country.

There may be some instances, however, when a higher degree of mechanization may be more justifiable than would be suggested by cost relationships; for example, if the demand for farm labor is highly seasonal and there is a shortage at harvest or other times of peak activity, or if it is important to speed up the flow of labor from agriculture into industry.

In recent years much attention has been given to ways of employing underutilized farm labor which cannot yet be absorbed in other sectors to improve social and welfare amenities in rural areas. Equally, there has been criticism of the too simple assumption that such labor could be used without significant cost to the community, on the grounds that it must in any case be fed, clothed and sheltered. If the rural unemployed are put to work, whether paid or unpaid, they will need a larger food consumption than if they did nothing. If paid they will seek other consumption goods as well. Even if the additional work is carried out without wages by cultivators to improve their own holdings, it will be done with the expectation of some additional benefit later, though in this case only after the additional work has led to additional production.

Increased activity in the rural sector, if not immediately productive, may thus have repercussions which can aggravate a potentially inflationary situation. One way of obtaining additional rural output with a minimum inflationary effect would be to use underutilized rural labor to satisfy its own basic needs in ways which throw little or no additional demand on urban industries. Community development schemes, using voluntary labor to construct rural roads, improve water supplies, or even to provide school buildings, is one attempted solution which has many successes to its credit. However, enlightened leadership and a rather farsighted outlook on the part of the rural community are needed if this type of activity is to be maintained for long. In earlier centuries precisely similar tasks were often carried out in Western Europe by organized unpaid labor, but obligatory work is less and less easy to reconcile with present-day thinking, even though those who do the work also benefit by it.

Another interesting approach, which needs to be further explored, is the setting up of village exchange schemes to enable underemployed rural workers to undertake additional production which, though surplus to market requirements, could still satisfy their own basic needs. Thus, a laborer who cannot find employment for cash wages can be called in to thatch a farmer's hut and mend his fence, and can be paid in garden or dairy produce which would not fetch a remunerative price in the market. A village weaver can contract to produce more cloth than he can sell in the outside market in order to supply the local cabinet-maker and obtain payment in articles of furniture which are made in addition to what the cash market could absorb. Each producer's extra output can thus create a private market for the extra output of one or more of the others.

The extent to which such transactions can be developed depends, first, on organizing a special exchange for credit trading of the surplus output among the producers themselves and, secondly, on substituting this output for similar supplies now bought for cash. While industrialization is ultimately a major benefit for the rural people in less developed countries, in the short run and during the period of transition, when there is a large disparity in productivity between urban and rural areas, the village economy is often in the same relation to the town economy as an underdeveloped to an industrialized country. The wise course may thus

[18] In less developed countries, where most machinery has to be imported, capital may in effect be much the same as foreign exchange. If a project (or ways of carrying through a project) is capital-saving it is also likely to be import-saving.

be for the village to reserve its supply of " urban exchange " (from sales to urban markets) for capital imports from towns, such as improved tools and equipment, and to use its own idle capacity to take care of those needs for which urban imports are not indispensable. This could be effected simply by using credit instead of cash within a small village trading group. An experiment along these lines was started in the community development areas of West Bengal[19] in India, but though highly promising was shortlived, perhaps through lack of leadership and follow-up action. These devices may appear to be of somewhat marginal consequence to the problems of planning agricultural development in the narrower sense; but they have an important bearing on the wider problems of rural productivity and in giving confidence to rural producers in the efficacy of their own efforts to improve their immediate condition.

Organization for implementation

Many of the most serious problems of governments in promoting agricultural development in less developed countries fall into the two categories, financial and organizational. The financial problems have been much publicized, but in many cases the organizational problems appear to be still more intractable. Clearly much depends on the methods of development selected.

Because of the dispersed nature of agricultural production, nearly all measures and projects for agricultural development in less developed countries require for their implementation an extensive local organization in day-to-day contact with farmers and cultivators. This organization is seldom entirely governmental and usually includes large elements based on semiofficial or co-operative agencies and on private enterprise. To a large extent, the success of any agricultural development program hinges on the adequacy of the local organization and the way in which it is used.

The need for a local organization applies most obviously to the provision of extension and other services to farmers, or to the establishment of improved systems of farm credit or marketing. It is usually no less essential, however, if schemes of price stabilization or agrarian reform are to be carried through effectively. Even large schemes of public investment often require an extensive local organization; for example, to arrange for the construction of feeder channels to carry irrigation water to individual holdings. In less developed countries, with low levels of education and income, to build up a country-wide organization with the necessary efficiency and integrity is particularly difficult, and it is on this rock that many agricultural development plans and projects have foundered.

In many cases a major weakness is that the limited number of local officials responsible for agricultural and rural development appear to have far more tasks assigned to them than they can conceivably carry out effectively. They are seldom consulted on their ability to undertake new duties, and when they are it is often difficult for them to refuse; they may not in any case appreciate in advance how much additional work is involved. Moreover, a large part of their time tends to be occupied in paper work or routine duties, at the expense of time for practical extension or organization work among farmers and cultivators. The problem was put forcefully in a recent report on Indian food problems sponsored by the Ford Foundation.[20] The following quotation relates to village level workers in the Indian community development scheme, but similar comments could be made on extension and other agricultural officials in the farming areas of many countries.

> The broad objectives of the Community Development program and of improving agricultural technology, as they come down from the many departments and organizations at the Centre, State, district and block levels, finally come to central focus on the village level worker to unify, co-ordinate and integrate everything into a program for the villager. Even if he had the capacity to do the job, time would not permit him to do all the things expected. As a result, he has to choose among many possibilities.... It is no wonder that there is a wide gap between what he is expected to do and what, in fact, he actually gets done.... By the nature of his intimate contact and acquaintance with village people, he has the opportunity of effecting change toward both immediate and long range goals. It is urgent that all superior officers recognize this as the village level worker's basic task, and that his role be construed as one of service to the village rather than errand boy for those above him.... Among the more onerous

[19] See *The village exchange program for industrial extension in West Bengal.* Development Department of the Government of West Bengal, Calcutta; and Sushil Dey, *Industrial development - A new approach*, Calcutta, 1955.

[20] *Report on India's food crisis and steps to meet it.* Government of India, April 1959.

distractions from the primary educational job of the village level worker and other extension officers are the service tasks such as the procurement of seed and fertilizer, collection of fees, management loans, etc. It is a temptation to say that the extension worker should slough off these chores, but often alternative ways of handling them are not available.... Often the services are of such a crucial character that withdrawal may cause a failure of the program. We can only conclude under the circumstances that such vital service activities be continued only for as short a time period as necessary, and that immediate steps be taken to develop other provisions for rendering these necessary service functions.

What is said here of community development and extension work applies no less to other vital services in agricultural development. Inadequacy of the local organization may be an important factor in delaying the implementation of schemes of agrarian reform, thus prolonging the unsettling period of uncertainty to the detriment of production. Similarly, the utilization of new irrigation facilities, or the operation of improved services of credit and marketing, to quote only a few examples, may be badly delayed or ineffectively carried out because of the weakness or overloading of the sometimes none too experienced local staff responsible for these activities. In many cases a considerable strengthening of such staff is no doubt necessary. The final solution, however, often lies not so much in building up a greatly increased staff of national or local government officials, as in devolving as many of these functions as possible on other bodies, for example farmers' co-operative and other producers' organizations, local committees, voluntary workers, or to the private sector.

Price stabilization

Many problems of local organization are well illustrated by reviewing some of the difficulties which governments in less developed countries have encountered in trying to stabilize the farm prices of cereals. It is widely recognized that in many of these countries more stable farm prices would be a powerful incentive to increased grain production, even if held at a level which would entail no increase in the average price paid throughout the year by consumers. As already emphasized, most farmers must sell at low prices soon after the harvest, or even pledge their crops to merchants before the harvest, for lack of resources to keep their surplus until later in the season when prices are usually much higher. A more stable price would thus enhance their returns.

It is also widely held that grain prices can best be stabilized in less developed countries by a system of buffer stocks.[21] To stabilize prices to consumers the reserve or buffer stock should be large enough not to be easily exhausted when releases are made at times of rising prices. At least part of the reserve should be located near large consuming centers.

Large grain silos near consuming centers, however, do little to stabilize prices to producers in countries where the marketing system is imperfect and most farmers are virtually without liquid resources. For this to be effective all farmers must have easy access to official buying depots where they can at any time count on getting at least an official minimum price for their produce. Thus, a network of buying points, with storage facilities and a widespread local staff, is necessary if price stabilization policies are to serve as an incentive to production as well as a protection to consumers. The local buying points may be operated by the official agency concerned, or by co-operative agents (as in Japan) or private firms (as in Nigeria and sometimes in India) acting as agents for the government. The important thing is to see that the producers can count on receiving the minimum price.

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[21] That is to say that the government or an official agency is prepared to buy grain if prices fall below a certain minimum level, either throughout the country or in limited areas, and to release supplies to the market when prices rise above a certain maximum. The aim is then not so much a fixed price level, as to reduce price fluctuations sufficiently to avoid serious hardship to either producers or consumers. An alternative, widely used during the period of shortages and rationing, and still maintained in some countries, is to fix grain prices at all stages of distribution.

For a fuller discussion of these problems see *Report of the FAO/ECAFE centre on policies to support and stabilize agricultural prices and incomes in Asia and the Far East* (held in New Delhi in March-April 1958) and *Report of the centre on food and agricultural price stabilization and support policies in Latin America* (held in Santiago de Chile, February 1959). The report of the Far East center in particular contains a full discussion on factors to be taken into account in establishing the level at which to stabilize prices, though ultimately this must be found by experience. Too high a price level is likely to lead to production in excess of demand, and in turn to continuously rising stocks and a heavy drain on government revenues. If the support price level is too low, or if there is no effective price support to farmers, production is likely to fall short of demand, leading to inflationary pressures and in turn to the need for larger imports (or reduced exports) to counteract them; in these circumstances it will seldom be possible to build up a reserve stock, except perhaps from imported supplies.

Ceylon is one country where price stabilization, in this case at a relatively high level,[22] has been tried as an incentive to grain production; purchases are made through some 900 co-operative agricultural production and sales societies, acting as the agents of the government. The results obtained, however, have been less than had been hoped, largely because of the difficulty of ensuring that cultivators did in fact receive the guaranteed minimum price. In his report for 1956 the Marketing Commissioner stated that "the complexity of factors relating to the structure of agrarian economy, rural indebtedness and transport difficulties stand in the way of the cultivator deriving the full benefit of the scheme."[23] The difficulties were analyzed further by the Technical Working Group on the Development of Paddy Production:[24]

> . . . allegations are often made that the full purchase price is not obtained by the producer; middlemen are said to buy the output from the cultivators at reduced prices and sell it to the Purchasing Centre at the guaranteed price. . . If at the time when [the cultivator] wishes to sell his output he is unable to obtain the guaranteed price due to organization difficulties and is therefore compelled to sell to a middleman at a lower price, the incentive to maximising production is seriously weakened. Most middlemen are able to carry on their activities due to the Purchasing Centre being distant, transport difficulties, and the Centre not being in a position to take delivery and pay in cash when the cultivator brings his output for sale. The cultivators consequently find it less troublesome to sell to a middleman. In addition, many cultivators are indebted to middlemen, traders, etc., because of the inability to obtain all their credit requirements from the Cooperative Institution and are therefore compelled to return their loans in the form of produce.

Similar reports are to be heard, officially or unofficially, from many other countries. In some, it is alleged that there is often collusion between the officials of the buying agencies and private traders. The West African Statutory Marketing Boards, which employ private firms as buying agents, endeavor to protect the producer by appointing two or three buying agents in each locality so that the farmer has an opportunity of comparison and choice.

[22] Largely with the help of export earnings from other agricultural products.

[23] *Administrative report of the Commissioner for the development of marketing*, Colombo, 1956.

[24] National Planning Council; *First interim report*. Colombo, 1957.

Credit and marketing

Experiences such as those described for Ceylon underline the importance of building up an adequate local organization if price supports to stimulate production are being considered as one means of implementing a development plan.[25] But this applies equally to the provision of better facilities for farm credit, especially if these are to reach the smaller farmers; large farmers can usually obtain credit more readily. It applies also where fertilizers and other requisites are distributed through official channels. In view of the scarcity of suitable staff, it is often suggested that all these functions should be undertaken through one organization. This was the conclusion of the All-India Rural Credit Survey of the Reserve Bank of India in 1955, which recommended an integrated scheme of rural credit and marketing. The proposals included limited liability credit societies, large enough to employ a full-time manager and to become economically viable, but covering a small enough area to be reasonably accessible to all cultivators; a shift of emphasis from land to crops as a security for loans, borrowers signing agreements to market their produce through the credit co-operative or its affiliated marketing and supply society; as far as possible the provision of credit in kind to ensure its use for productive purposes. In line with these proposals some 6,000 "large size"[26] societies were reported to have been organized by 1959.

These features, and some others of general interest, are also to be found in the Japanese multi-

[25] Proposals for making the local organization more effective in Ceylon include checks to ensure that purchases are made only from *bona fide* cultivators, prompt payment for paddy delivered, the issue of purchase receipts to cultivators, and the establishment of more co-operative buying points in areas not adequately served. (*Report of the Commissioner for Marketing, 1956.*)

[26] "Large" to distinguish them from the existing "small" primary co-operatives usually serving a single village. These were not only too small to be viable, but were often dominated by one or two individuals. To quote the report of the Indian Reserve Bank "When local co-operation gets into the charge of the village moneylender, and more especially the landlord-cum-moneylender, he becomes the society, the depositor and the borrower, all of them together or each in turn, with the ease with which the one Godhead becomes Brahma, Vishnu and Shiva - Creator, Preserver and Destroyer – in the more picturesque expressions of Hindu philosophy, or with the exclusiveness with which matter and energy exchange roles in the more recent refinements of nuclear physics."

purpose agricultural co-operative associations. These are among the most successful agricultural co-operatives outside the economically advanced Western countries. They currently handle about 55 percent of all farm products marketed and provide between 40 and 50 percent of all credit to farmers, mainly on short-term loans. The co-operatives own about 31,000 warehouses for their marketing operations and derive an appreciable income from warehouse business. In addition they are responsible for the distribution of about 70 percent of the large quantities of fertilizers used in Japan and of some 80 percent of the pesticides, as well as such other requisites as machinery and feedingstuffs. Altogether, Japanese farmers buy over 40 percent of their farm requisites and about 11 percent of their living necessities through their co-operatives.

Loans for the purchase of fertilizers and other requisites can be obtained on the guarantee of five members, at about 9 percent interest, on condition that grain sold through the co-operative shall be the source of repayment. Conditions for loans vary somewhat according to the purpose for which they are required. Orders for fertilizers are placed in advance by farmers, centralized through the prefectural and national associations, and delivered to local co-operatives for collection by the farmers at the time they are required. Payment for the grain, etc., bought by the co-operatives as agents for the government is channeled down through the central bank. To meet the large payments required for these purchases the government usually issues short-term bonds, most of which are taken up by the Bank of Japan.

Producers' associations

Effectively functioning producers' organizations, whether co-operative organizations or statutory boards, can be of great value in implementing agricultural development programs and it seems worth considering some of the conditions which make for their success.

A first point which seems significant is that a great deal depends on the use made of these organizations by the government itself. Where producers' co-operatives and other farmers' organizations have been established in less developed countries the initial impetus has almost always come from governments, and governments usually provide some degree of supervision over their activities. The use of farmers' associations as official buying agencies for cereals, as in Japan, or for the distribution of fertilizers and the collection of land purchase annuities under the agrarian reform schemes, as in Taiwan, clearly goes far beyond this.

The value of such close working arrangements is that they give the farmers' associations a status, a continuing function, and above all a regular source of income which they would not otherwise enjoy. These advantages may be of decisive importance in less developed countries, where small and struggling farmers' associations find it hard to compete with private traders who have much greater resources, especially when they form some loose combination to combat the spread of co-operatives. On the other hand, there is the danger that the producers' associations may become virtually government agencies, and this can be avoided only if they are left with a large degree of autonomy in their own affairs.

Such working arrangements, for which there are interesting parallels with the operations of statutory marketing boards in West Africa, or the use of producers' marketing boards in the United Kingdom for the distribution of deficiency payments arising under this system of price guarantees, seem to deserve serious consideration in less developed countries. They can at the same time relieve the administrative burden of government departments and give an impetus to the development of farm organizations.

A second way in which governments can influence the growth of producers' organizations is in the provision of credit. If this were needed for improved marketing services it would not in general imply the provision of additional credit, since credit for marketing is already obtained by merchants from commercial sources to finance their operations. The problem would rather be its diversion, at least in part, from private merchants to producers' organizations. One means which has been used by the government of India to restrain speculation in cereals at times of rising prices has been to limit commercial bank credit for the purchase and stocking of grain. If more orderly marketing through producers' organizations and more stable farm prices were considered a useful means of encouraging agricultural development, it would be within the power of most governments to see that a larger share of the credit for agricultural marketing was channeled, through a central co-operative bank, to individual producers' co-opera-

tives. Reference was made earlier to the similar method followed in Japan to finance co-operative purchase of farm products at the time of harvest.

The problem evidently does not end there. If improved marketing resulted in some increase in farm incomes, it would entail additional farm expenditure for consumption and for production requisites. In the circumstances of most less developed countries this might be largely a transfer of purchasing power from merchants, landowners and moneylenders to farmers, but it would still imply a change in the pattern of expenditure. The issue of additional farm credit for production purposes puts the problem more directly since it would lead to increased farm expenditures for production requisites, and often for fixed capital investment. This aspect is considered in a later section.

The form and scale of organization seems another point of importance. The conclusion reached in the All-India Rural Credit Survey that such organizations should be large enough to employ a full-time manager, yet sufficiently numerous to be readily accessible to all farmers, seems amply borne out by experience in other countries. This points to an organization serving small groups of adjacent villages, with elected directors from each village. It also underlines the value of multipurpose organizations, for in this way the volume of business is enlarged, while farmers can deal with marketing, credit and the supply of requisites in one place.

Many reports have stressed the importance of simplicity of procedures and speed of operation if producers' co-operatives are to be successful, especially in providing credit. Complaints of red tape and delays in granting loans are common in many countries, and to some extent account for the continued resort to private moneylenders, despite very high interest rates, as they can act at once on their own responsibility. Their promptness can be matched by farmers' associations only if they are left a fair degree of freedom of action, which in turn is possible only when the directors and the managers are sufficiently dependable. A vital point here, and indeed for any linking of credit and marketing, is the acceptance of crops as security for loans rather than insistence on land. In many countries this requirement automatically debars a large proportion of farmers from institutional credit.

No less essential if producers' organizations are to be effective in marketing is the prompt payment of members for all produce delivered, a point stressed in the report already quoted of the Commissioner for the Development of Marketing of Ceylon. One element in the success of the Kaira District Co-operative Milk Producers Union in India, which provides milk for the well-known Bombay Milk Scheme, is that payment is made on the spot for milk deliveries from members. Where this is not possible partial payments or negotiable warehouse receipts give farmers some immediate return. Thus, the Kilimanjaro Native Co-operative Union in Tanganyika, which markets the great bulk of the coffee produced in that area, makes initial payments on produce delivered and final payments at the end of the season when marketing has been completed. This co-operative also purchases production requisites for its members, receives deposits and encourages mutual help.

If farm credit is issued in cash there is an evident danger that much of it will be used for nonproductive purposes. In some countries, mainly in Latin America, this difficulty is avoided by the issue of supervised credit for specific purposes, though this system entails much trained personnel for administration. Probably a simpler method is that recommended in the report of the All-India Rural Credit Survey of issuing farm credit largely in kind. In Taiwan, for example, some of the credit is issued in the form of fertilizers and there repayment, too, is in kind on the basis of a fixed ratio of rice to fertilizers, profitable to both the farmers and the government. Under the three-year agricultural program launched in 1960 by the government of Indonesia, credits are to be granted through some 500 " paddy centers," partly in the form of high-yielding seedlings and fertilizers for repayment in rice after the harvest.

A last point: institutional credit, whether or not repaid in kind, can be an important factor in implementing measures of price stabilization since a condition of loans against the security of crops would be that the producer marketed his surplus through the farmers' organization. Ideally, payments might be made optionally in cash or kind. For example, any grain, cotton or other suitable produce delivered by growers for marketing or in repayment of loans would be credited to them at the minimum guaranteed price. But if actual sales were at a higher price they would later receive an additional payment. Similarly, if producers' associations were made responsible for the collection of, e.g., land taxes, irrigation dues or annuities for

land purchase, farmers might be entitled to pay either in cash or in produce at the minimum guaranteed price, whichever he found preferable. This procedure would put a floor under the market for a considerable part of the output, and if effectively operated would often be an important incentive to increased production.

These matters go beyond the scope of general development planning, though scarcely of agricultural planning, since they lie at the root of many organizational problems crucial to agricultural development. The main point for emphasis is that if strong producers' organizations can be built up in less developed countries it should be possible to transfer to them much of the detailed administration of agricultural development measures. In this way it may be possible to undertake measures and services which would not otherwise be organizationally feasible and to free government staff, including skilled extension workers, for other duties.

It should be stressed, however, that to establish such organizations hastily and to entrust important functions to them without proper organization and training is to court failure. The Japanese co-operative movement, for example, has a long history. Nevertheless, it still finds it necessary to hold training courses for co-operative officials, and this practice is also followed in, e.g., India and the British territories in Africa. In some cases training is provided not only for officials but also for the directors of co-operative societies. Not only training, but also experience is necessary, and this, too, debars over-hasty development. Nevertheless, where conditions are favorable, and how favorable they are depends largely on government planning and action, there is a sufficient record of success from widely different areas of the world to make it clear that co-operative and other producers' organizations can make a major contribution to agricultural development.

The area of choice

In an earlier section (page 124) projects and measures for agricultural development were classified into three broad groups:

(*a*) direct investments by governments;

(*b*) incentive measures (including the removal or reduction of disincentives) to encourage farmers to raise production;

(*c*) the provision of advisory and other services to increase agricultural efficiency.

Other classifications could be made, and for some purposes might be more significant; this one, however, largely reflects the alternatives as they would present themselves to an agriculture department, a planning commission, or perhaps still more to a finance department. Some consideration may now be given, in the light of the preceding discussion, to the conditions tending to favor one or other of these broad groups of projects and to their interrelationships.

Direct investment by governments

In many less developed countries, especially those at an early stage of economic development, a large share of government development expenditures is devoted to schemes of direct investment; in agriculture, typically to large-scale schemes of land settlement or of irrigation, sometimes combined with hydroelectric development. As many less developed countries have extensive areas of uncultivated land, or land which is without water for long periods of the year, these are often the most obvious ways of promoting increases in the agricultural output, though as a rule they give substantial returns only after a period of some years. Large-scale projects of this kind also have a greater " public relations " value than less spectacular methods of development, and are useful in bringing home to the public that economic development is under way.

As such projects are usually too costly for anything but government financing, the emphasis in the development program on government investment may thus reflect the physical needs of the countries. But even when such large-scale projects are not included in a development program, a large proportion of direct government investment may be needed in the circumstances characteristic of most countries at an early stage of economic development; for example, when the domestic accumulation of private capital is too limited or dispersed for effective development; when much private investment is for unproductive or inessential purposes;

when the forms of investment most needed, e.g., roads, are unsuitable for private investment; when the investment includes a large foreign exchange component which would not be readily obtained by private investors; or when there is a shortage of skilled administrative and technical personnel.[27] In these circumstances direct government investment may be the only means of financing even medium-sized undertakings which in more developed countries would often be left to private enterprise, e.g., the manufacture of fertilizers or farm machinery. Obviously, too, the degree of direct government investment partly reflects the political philosophy of the government.

Incentive measures

Schemes of direct government investment, however, may fail to approach their full production potential unless they are combined with measures to give farmers greater incentives to increase their output, or to remove institutional and other obstacles to agricultural development. Without such measures, indeed, any substantial increase in production for the market may be difficult to achieve. The need for incentive measures arises when the economic and social conditions in a country prevent a flow of resources and effort into agriculture on a scale commensurate with its need for increased food production. As already indicated, these difficulties most often stem from inadequacies in the systems of marketing, land tenure and credit, aggravated by the small scale of operations and weak bargaining position of most farmers.

To a large extent, incentive measures in less developed countries thus represent government efforts to break through the barriers which are imposed by the social and economic structure to a more rational use of resources. They are often an essential first step to lift cultivators from the state of apathy and hopelessness engendered by generations of exploitation. Price supports or agrarian reforms may be needed to give them an assurance, which they have never before had, that they will reap a commensurate reward from any additional efforts and expenditures which they undertake.

Improved services

Similarly, the provision of improved extension and other services to teach farmers new and improved methods is often essential if either government investment or incentive measures are to give anything approaching their potential benefit. Government services to agriculture in economically less developed countries need not be only advisory in character; there are many successful examples of the provision to small farmers of such things as mechanical cultivation, improved breeding stock, or pest and disease control. Pests and diseases of crops and livestock are indeed often amenable only to control measures on a national or even international scale, as in the case of foot-and-mouth disease of cattle or of locusts.

Operation of incentive policies and improved services

As a general rule the share of government expenditure on agriculture which is devoted to incentive measures and to the provision of services tends to become larger as countries become more developed economically. This partly reflects the gradual transition from a subsistence to a market agriculture, for incentives have their main effect on production for the market. These measures, however, can raise the level of agricultural production only to the extent that they lead to more productive methods of farming and induce farmers to devote more resources to production. Much of any increased investment, especially in less developed countries, is likely to be in the form of labor, largely unpaid labor, by the farmer and his family. As there is an abundance of farm labor in most less developed countries it is usually desirable to maximize this component. Nonetheless, some of the additional farm investment is normally monetary, involving increased expenditures by farmers, partly within the farm sector, as for additional animal draught power or improved planting material, and partly from other sectors, e.g., for farm implements, building materials, fertilizers,[28] pesticides.

[27] The last point may appear paradoxical. Projects of direct government investment, however, often require a less comprehensive local organization than many schemes of the "incentive" type. Moreover, large-scale development projects are often carried out under contract by foreign firms which furnish the technical management.

[28] Reasons were given earlier for regarding expenditure on fertilizers as akin to investment.

Thus, when a government places emphasis on incentive policies or on improved services to agriculture, it does not thereby avoid the task of ensuring that farmers can obtain readily an adequate supply of production requisites. In this respect it is in the same position as a government which confines its activities to making supplies of production requisites available to farmers without any special measures to encourage their use. The main advantages from the "incentive" approach are: (*a*) incentive measures make it more certain that the additional requisites will be used, or that they will be taken up in greater volume and used for the purposes most needed, and (*b*) incentive measures encourage nonmonetary investments to a much greater extent than does the simple supply of production requisites. They thus put an additional drive behind technical measures for agricultural development. In many less developed countries this extra impetus may be necessary to get agricultural development under way, or to work up a sufficient momentum for agriculture to meet the growing market demand for its products. How far incentive measures should be considered thus depends largely on an assessment of how far current social, economic and institutional deficiencies are acting as a brake on needed agricultural production.

There are a good many practical problems in effectively carrying through incentive measures. Emphasis was laid in an earlier section on the complex organizational problems, and these are probably the most difficult. Again, incentive measures usually lead to some increase in farm incomes. In less developed countries this may mean some reduction in the net outflow of funds from agriculture to other sectors. There may be some transfer of income to farmers from landowners, moneylenders and merchants.

In the nature of things, part of any increase in farm incomes will be spent by farmers on their personal consumption, which is indeed a goal of economic development. Otherwise the incentive effect will be small. At very low income levels increased food consumption may even be a prerequisite for increased work. In the main, however, if incentives are to make their maximum contribution to agricultural development it is important to find measures, or ways of implementing them, which tend to raise the share of any increase in farm incomes which is devoted to productive investment.

In economically more developed countries this may often be largely a matter of fiscal policy, e.g., of adjusting income tax differentials and depreciation allowances. In economically less developed countries the fiscal approach is usually less generally applicable and other methods must be sought. Thus, in some countries supervised farm credit is used as one means of ensuring that funds provided for productive investment are not spent on consumer goods, though administratively this system is costly. As an alternative, credit may be issued mainly in the form of farm requisites. Other examples, not necessarily in connection with credit, will suggest themselves in the circumstances of any particular country.

To the extent that investment is nonmonetary and in the form of farm labor, there can be no question of any diversion of funds to consumption spending, at least until the "investment" has borne fruit. This is a major virtue of some "incentive" type measures, notably agrarian reform, which provide a strong inducement to increased productive work on farmers' own holdings. In a good many countries loans or grants are given to farmers to encourage some form of direct investment by them in, for example, farm buildings or in small irrigation schemes, in the expectation that a small government contribution may bring about a still larger investment, monetary and nonmonetary, by the farmers.

The importance of ensuring that adequate supplies of production requisites are readily available if incentive policies are to be successful has already been stressed. Otherwise farmers' efforts to expand output may be largely frustrated. In some Latin American countries, for example, there were at one time many complaints that agricultural development was badly hampered by inadequate government allocations of foreign exchange for the import of farm machinery and especially of spare parts. It is usually only in the more industrialized countries that this task can be left to private enterprise with satisfactory results. In less developed countries, at least some degree of government intervention is almost always necessary.

Decisions will be needed on such matters as the relative advantages of importing or producing domestically fertilizers and other production requisites,[29] and what part of their domestic production

[29] Apart from the size of the farm demand, the deciding factors in such cases are mainly nonagricultural, e.g., considerations of foreign exchange, relative manufacturing costs, availability of skilled labor, etc.

can safely be left to the private sector and where direct government investment is preferable. Technical as well as financial considerations arise. For example, the multiplication of high quality seeds and other improved planting material, or the production of veterinary vaccines, may require more skilled supervision than could be expected under private enterprise in many economically less developed countries. Or such products may have to be supplied to farmers at prices which would leave little or no profit for private entrepreneurs. In such cases it will be necessary to establish government seed farms or production laboratories.

It may also be important to budget at an early stage for improved education, research and extension services for agriculture. These are things which cannot be hastily improvised, and timely provision will have to be made for the necessary training of staff at home or abroad if an effective service is to be built up.

Investment and expenditure

Throughout this chapter stress has been laid on the complementary nature of different measures for agricultural development, and of the close interrelation between agricultural and general economic development, without which progress in agriculture is retarded. But while basically complementary, all projects, agricultural or non-agricultural, are in another sense competitive. They all compete for the limited funds available for investment and current budgetary expenditures, as well as for the administrative and organizational resources which in many countries may be as much a limiting factor as finance.

The proportion of the resources required to implement different schemes and projects may vary rather widely from one type of development project or measure to another. This means primarily that countries normally give preference to development projects and measures, and on ways of carrying them through, which draw mainly on the resources with which they are best endowed. It may also mean that in some cases combinations of development projects can be selected which are complementary not only in their effect on production, but also (or at least minimally competitive) in the resources needed to implement them.

An attempt has been made in the following table to summarize the main investment, budgetary and organizational resources called for by a few representative development projects and policies. It may serve to bring out some of the main issues and interrelationships, though to avoid making the table too complicated most of the secondary effects have been omitted, e.g., the potential inflationary effects of large-scale government investment projects. Where incentive policies increase the demand for, e.g., fertilizers, the considerations which are noted in the table regarding their increased supply will arise indirectly and as a secondary effect.

The table may also be useful in bringing into clearer focus the monetary expenditures and other efforts required from governments, private or semi-private organizations and farmers if the program or policies mentioned are to result in increased production. For example, a price stabilization scheme will not have its full incentive effect unless there are adequately staffed and financed local purchasing stations within easy reach of most farmers. Similarly, larger supplies of fertilizers will not have their full effect unless an adequate distribution system is available, and unless credit facilities enable farmers to buy them and price relationships make their use profitable.

Expenditure for investment and production by individual farmers, together with any nonmonetary investment engendered by incentive measures, have been shown separately from investment outside the farm sector proper. The latter, and also current governmental expenditure, have been broken down to show separately the foreign exchange component. Requirements for local organizations in contact with farmers have been shown in a column by themselves, partly to stress their importance, partly because by no means all the requirements and costs under this heading need be governmental; much may fall to producers' credit, marketing or co-operative organizations or to private initiative.

Some of the points brought out in the table may be briefly noted. Rather few projects in the agricultural sector involve a large direct expenditure of foreign exchange. On the contrary, agricultural development is often important to increase exchange earnings or for import saving. Irrigation and fertilizers are the only projects included in the table which would usually imply substantial foreign exchange expenditure by less developed countries, though farm machinery, pesticides, etc., usually would as well.

Incentive measures or the provision of services do not as a rule call for a large direct monetary

SCHEMATIC REPRESENTATION OF RESOURCE REQUIREMENTS FOR TYPICAL AGRICULTURAL DEVELOPMENT PROJECTS AND MEASURES

Project or measure	Nonfarm investment (government and private sectors)		Investment and production expenditures by farmers		Current government budgetary expenditures		Local organizational needs
	Foreign exchange	Domestic currency	Monetary	Labor (largely nonmonetary)	Foreign exchange	Domestic currency	
DIRECT INVESTMENT							
Large-scale irrigation	* * * Import of construction equipment, pumps, turbines; possibly cement and steel.	* * * Wages of workmen. Domestic building materials.	* Any additional equipment for irrigated farming.	* * * Digging feeder channels and leveling land.	—	—	* * Organization and guidance for digging feeder channels, leveling land, growing irrigated crops, etc.
Small-scale irrigation with government assistance	* * Import of pumps and other materials	* * * Persian wheels, pumps, or other simple irrigation equipment made domestically.	* Ditto.	* * * Ditto; also installation.	—	—	* * Ditto; also supervision of loans and subsidies.
Increased supply of nitrogen fertilizers							
(*a*) Domestically manufactured	* * * Import of material and equipment for plant.	* * Local labor and building materials for plant and warehouse space.	* * Purchase of fertilizers.	* Application of fertilizers.	—	Possibly subsidies to reduce costs to farmers.	* * Distribution (not necessarily governmental).
(*b*) Imported	—				* * * Import of fertilizers.		
Improved planting material	—	* * Establishment of seed farms, etc.	* Purchase of seeds.	—	—	Ditto.	* * Arranging for local seed multiplication and distribution (not necessarily governmental).

INCENTIVE MEASURES							
Domestic price stabilization and improved marketing	—	* * * Establishment of network of buying points and warehouses. Establishment of revolving fund.	* * * Likely to encourage production expenditures and investment.[1]	* * * Likely to encourage nonmonetary investment and operating efforts.	—	Any operating losses.	* * * Buying organization (not necessarily governmental).
Farm credit	—	* * * Distribution points. Establishment of revolving fund.	* * * Ditto.[1]	* Ditto.	—	Ditto.	* * * Credit organization (not necessarily governmental).
Agrarian reform	—	—	* * * Ditto.[1]	* * * Ditto.	—	Compensation to landowners (depends on arrangements for financing).	* * * Governmental, but not continuing.
RESEARCH, EXTENSION AND EDUCATION SERVICES	* Minor import of equipment	* * Establishment of research stations	* * Ditto.[1]	* * Ditto.	—	—	* * * Normally governmental skilled technical personnel.

NOTE: For simplicity the tabulation excludes the cost of headquarters administrative and technical staff and of foreign technicians. It excludes also operating costs and labor of farmers, e.g., the additional labor of cultivating (e.g., double instead of single cropping) and of harvesting the heavier crops from land receiving irrigation water or fertilizers. Only the construction costs of large-scale irrigation schemes are included; after the scheme comes into operation there would be day-to-day operating costs normally offset by water charges. A scale of one to three stars has been used to indicate a small, medium or large component under each heading, but these are no more than notional and intended only for rough comparison. Finally the table does not take into account any secondary effects, e.g., inflationary pressures.

[1] Increased expenditures on fertilizers, improved seeds, farm implements and machinery, etc.

investment. A price stabilization system would require the setting up of a network of buying points and warehouses, which may involve a substantial investment.[30] Some investment would be needed for agricultural research stations and schools. In general, however, the main expenditures involved would be current expenditure for salaries. In spite of the importance of adequate organization, especially at the local level, and the provision of technical services, their direct cost is usually small compared with expenditure on development projects including the provision of inputs. The main economic cost, indeed, usually lies not in the incentive schemes themselves, but in meeting increased demand by farmers for production requisites, and also for personal consumption, to which they may give rise. Increased farm expenditure, however, would usually be for quick yielding projects such as small irrigation units, fertilizers or improved seeds, while much of the investment would be nonmonetary. Additional farm expenditure on personal consumption could thus seldom arise until after an increased output had been harvested and sold. It should thus cause little inflationary pressure.

There may be other substantial payments under some measures of the incentive type, though they are more significant from what may be called the "Treasury" point of view than in their over-all impact on the economy. Thus, compensation may be paid to landowners under schemes of agrarian reform. Apart from the initial provision of funds for farm credits, there may be losses from bad debts. There may also be trading losses in domestic price stabilization operations,[31] especially in the early stages when the staff is inexperienced. All these are basically transfer payments, which redistribute the national income but do not greatly influence its level, though they may change the pattern of expenditure. Nevertheless, many of these payments must be made from current revenues or met by the issue of bonds. Either course may cause difficulties for the finance departments of less developed countries.

[30] Price stabilization measures may also involve the cost of carrying a stock of, e.g., grain.

[31] In some countries price supports are used to raise farm incomes for social reasons and substantial funds may be transferred to the farm sector, either by direct government payments or more often indirectly by artificially maintaining the level of farm prices. The poverty of most consumers rules out such policies in most economically less developed countries, where there is more often a net outflow of funds from the agricultural to other sectors. Nevertheless, price stabilization measures can often raise farm returns without higher prices to consumers by savings on distribution costs, including the speculative gains often made by distributors when agricultural prices show marked seasonal fluctuations. It is not unusual, however, in less developed countries, to aid one sector of agriculture at the expense of another, e.g., by export taxes on certain agricultural products to finance an incentive price to farmers (or a consumer subsidy) on food grains for domestic consumption.

The concentration of resources

A country following a vigorous program of economic development and investment which strains its economic resources is always likely to be on the verge of inflation. A time must come when the inclusion in the program of additional projects, however desirable, is no longer compatible with reasonable stability of the currency. This applies especially to slow yielding projects involving heavy investment expenditure. When this point is reached any enlargement of the investment program depends on getting further economic aid from abroad.

This aid is naturally most useful in the form of convertible foreign exchange, but other forms, including the supply of physical goods and technical aid, can be used to extend the development program if they coincide with limiting factors in the recipient country. Much thought has been given recently to the possible use of surplus agricultural products to aid economic development. Shipments of such surpluses on special terms can, in fact, enlarge the recipient country's resources for development if the additional consumer demand resulting from investment expenditure were giving rise to food scarcities and inflationary pressures which would otherwise have to be countered by spending foreign exchange on food imports. Any "counterpart funds" arising from the sale of these surpluses do not, however, represent additional resources for investment as the government could always have obtained funds in its own currency by loans or other means. A warning note should perhaps be added. If, for example, measures of agrarian reform, improved marketing, or domestic price stabilization were needed for a healthy development of the recipient country's own agriculture, it would seem important that the respite from food scarcities and inflationary pressures given by the import of agricultural surpluses should be used to carry

through these adjustments rather than as an opportunity to postpone necessary reforms.

In earlier discussions an attempt has been made to outline the main factors to be taken into account when a final choice of projects and measures for development has to be made in the agricultural sector. But it has also been stressed that the various projects and measures are complementary and reinforce each other. A choice which implies sacrificing some types of project is liable to cancel this mutually reinforcing effect. Yet, to attempt to do everything at once may mean that resources are spread so thinly as to be largely ineffective. This is a constant dilemma in programing and planning.

These difficulties apply both within the agricultural sector and in its relations to the rest of the economy. An irrigation project is most likely to succeed when at the same time adequate extension services can advise farmers on methods of irrigated farming, when credit facilities make it possible for farmers to take up these methods, when supplies of production requisites are at hand, when the system of land tenure gives farmers the confidence to invest money and labor in improving their holdings, and when effective marketing facilities and reasonably stable prices assure farmers of a fair return for their produce. If one or more of these factors is lacking, the value of the others is impaired and development will be slower.

Similarly, agricultural development will be most rapid when parallel development in urban industries provides farmers on the one hand with an expanding market for their produce and, on the other, supplies them with an increasing flow of production requisites and consumer goods at prices which they can afford. Agricultural and industrial development thus go hand in hand. It is no accident that the agricultures of the more industrialized countries are often the most productive, or that, subject to limitations of climate and soil, the most efficient agriculture within the industrialized countries is often to be found in the neighborhood of large towns where the urban influence is strongest.

One way of combining the value of this cross fertilization with an adequate build-up of resources is to concentrate a large share of the total development effort of a country into limited areas or sectors. A comprehensive approach within a restricted area permits a build-up of resources, which would be impossible if the resources were spread thinly over the whole economy. In over-all planning, limited areas may be chosen for more intensive development. In a newly developing country, for example, it would be reasonable to concentrate on a favorable area where investment would yield the largest and quickest returns. In a country at a more advanced stage of economic development, a localized scheme of development might be used to help a backward area to catch up with the rest of the country: the Cassa per il Mezzogiorno scheme for the south of Italy is an example.

If the same approach is applied more narrowly within the agricultural sector two alternatives are possible. A comprehensive plan may be developed to increase the production or productivity of a particular crop of special importance to the country. Alternatively, a limited area may be chosen for comprehensive agricultural development.

There are a good many examples of special attention being devoted to a particular crop. Thus, jute production was built up quickly in India after partition, and latterly sugar-cane production in the same country has responded remarkably to provisions of guaranteed minimum prices to growers as well as distribution of improved seed and other programs. Rubber, cocoa and other export crops provide further examples of such a specialized approach, aimed sometimes at building up production, though latterly more often to increase productivity, and therefore the competitive power of a country's exports on world markets. Examples include the largely self-financed schemes in Ceylon and the Federation of Malaya for replanting rubber plantations with high-yielding varieties.

As such crops are often largely concentrated in favorable areas, in practice these schemes are generally automatically localized. However, when the main need is to step up the production of a basic crop such as grain, which is produced throughout the country, a limited geographical area must be selected if the aim is to build up an effective concentration of resources.

Following a suggestion in a specialist report sponsored by the Ford Foundation,[32] it is therefore proposed under the Indian third five-year plan to select one district in each state for comprehensive treatment. The scheme envisages the simultaneous

[32] *Report on India's food crisis and steps to meet it.* Government of India, April 1959. It is understood that the Ford Foundation will contribute to the cost of this scheme.

provision in each of the selected districts of the main elements needed for increased production: irrigation, fertilizers, pesticides, improved seeds, strengthened extension services and improved credit and marketing facilities. The districts have been selected on the basis of existing irrigation facilities or relative immunity from climatic hazards, and of the large contribution which they already make to the supply of food grains entering commercial channels.

Such an approach can be useful from more than one point of view. It can contribute substantially to production. It can also provide a pilot or experimental area to try out new approaches, which if successful can be more widely applied, and serve as a training ground for administrators and for technical and local staff. Pilot areas have also been used on a smaller scale to test out more limited projects, as for crop insurance in Ceylon. Such pilot schemes can also be of value in establishing suitable administrative methods and pinpointing difficulties, though they naturally lack the element of interaction between different types of projects which is one of the most valuable features of the more comprehensive approach.

More experience is needed of localized schemes of intensive agricultural development. They are likely to be most effective, however, when they form part of wider local schemes of intensive over-all development. On general grounds it would seem important that the selected areas, though small enough to permit an adequate concentration of resources, should also be large enough to constitute a representative area rather than a demonstration village. A period of years would usually be needed for such an experiment to be properly tried out. On the other hand, difficulties could easily arise if it were continued so long that the gap between the development areas and the rest of the country became very pronounced. To avoid local rivalries the trial nature of such schemes, and the expectation that if successful they would be extended to other parts of the country, should be made abundantly clear from the outset.

This approach is clearly no more than an expedient when available resources are patently inadequate for nation-wide development. It may make possible a breakthrough in a limited area which can afterward be extended to the rest of the country. For political and social reasons the approach could hardly be carried to an extreme, and only part of a country's resources could be used for such a crash program. In a sense, however, this approach to development does in a co-ordinated way very much the same thing that took place earlier in most of the more developed countries because of the uneven distribution of markets and natural resources. In these countries, too, there were areas of rapid economic development and areas which remained relatively unchanged. It is as a rule only in the last few decades that conscious efforts have been made in economically developed countries to narrow the gap between their less and more economically developed areas.

Selected bibliography on agricultural programing

A substantial number of publications have appeared on general economic planning; fewer are available on the agricultural sector.

The first section of this bibliography gives a small selection of the material available on general economic development, most of which contain some mention of agriculture. More complete bibliographies in the general field may be found in:

UNITED NATIONS, *Bibliography on industrialization in under-developed countries* (New York, 1956, Sales No. 1956. II. B.2.); ORGANIZATION FOR EUROPEAN ECONOMIC COOPERATION, *Countries in process of development* (Paris, 1960, Special bibliography No. 34); HAZLEWOOD, Arthur, *The economics of underdeveloped areas* (London, Oxford university press, 1959).

The second section of this bibliography lists publications which deal not only with agricultural programing as a whole, but also with specific important aspects.

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ANNEX TABLES

ANNEX TABLE 1A. – INDICES OF THE VOLUME OF AGRICULTURAL PRODUCTION, BY COUNTRIES AND REGIONS

	1952/53	1953/54	1954/55	1955/56	1956/57	1957/58	1958/59 (Preliminary)
	Average 1952/53–1956/57 = 100						
WESTERN EUROPE	93	100	101	103	103	107	109
Austria	91	102	97	103	107	110	120
Belgium-Luxembourg	93	96	104	107	100	105	110
Denmark	99	101	101	97	102	110	110
Finland	98	105	100	97	100	106	109
France	91	99	104	104	101	103	105
Germany, Western	95	101	101	100	102	105	108
Greece	79	102	100	108	111	127	120
Ireland	95	98	106	99	103	115	102
Italy	92	104	96	105	104	101	113
Netherlands	99	99	100	104	98	104	109
Norway	97	99	100	97	108	101	103
Portugal	87	106	104	102	101	105	99
Spain	101	95	103	98	103	108	110
Sweden	104	104	101	91	101	100	94
Switzerland	100	101	102	99	98	101	113
United Kingdom	96	98	99	99	108	108	105
Yugoslavia	70	108	94	125	103	137	116
NORTH AMERICA	99	99	97	101	103	98	106
Canada	110	103	78	99	109	92	98
United States	98	98	99	101	103	99	107
LATIN AMERICA	95	96	100	102	106	112	115
Argentina	99	97	99	97	107	109	108
Brazil	93	95	99	106	106	115	122
Chile	100	95	102	101	102	110	110
Colombia	98	100	98	102	102	110	113
Cuba	99	97	94	99	111	114	115
Mexico	85	88	103	111	113	121	126
Peru	98	100	102	103	97	98	98
Uruguay	97	108	102	99	95	101	93
FAR EAST (excl. Mainland China)	93	98	100	104	107	105	109
Burma	102	98	97	96	107	92	107
Ceylon	94	95	101	108	102	105	108
China: Taiwan	96	97	100	101	108	114	117
Federation of Malaya	95	93	99	105	108	108	110
India	91	101	101	103	105	104	106
Indonesia	93	98	106	102	102	103	105
Japan	96	85	94	114	110	115	118
Korea, South	86	105	105	106	98	107	109
Pakistan	99	97	102	98	105	103	100
Philippines	93	98	99	101	109	111	111
Thailand	89	106	85	105	115	93	106
AFRICA	94	98	100	102	106	103	107
Algeria	91	101	106	95	108	98	95
Morocco: former French Zone	92	102	106	100	100	85	98
Tunisia	94	109	103	81	113	98	136
Union of South Africa	91	96	101	104	108	107	108
NEAR EAST	94	100	97	100	109	112	116
Iran	90	98	98	104	109	114	115
Israel	81	92	100	103	123	128	132
Turkey	99	107	87	101	106	109	121
U. A. R.: Egyptian Region	96	92	102	103	107	114	115
OCEANIA	96	98	98	104	105	102	116
Australia	97	97	97	104	105	99	119
New Zealand	97	96	100	103	104	106	109

NOTE: These indices may differ from national indices produced by the countries themselves because of differences in coverage, weights and methods of calculation.

ANNEX TABLE 1B. – INDICES OF PER CAPUT FOOD PRODUCTION, BY COUNTRIES AND REGIONS

	1952/53	1953/54	1954/55	1955/56	1956/57	1957/58	1958/59 (Preliminary)
	Average 1952/53–1956/57 = 100						
WESTERN EUROPE	95	101	101	102	102	105	106
Austria	91	102	96	103	108	110	121
Belgium-Luxembourg	94	96	104	107	100	106	112
Denmark	99	101	101	97	102	110	110
Finland	98	105	100	97	100	106	109
France	91	100	104	104	101	103	105
Germany, Western	95	101	101	100	102	105	109
Greece	81	105	100	103	110	123	120
Ireland	95	98	106	99	103	115	102
Italy	91	103	96	105	104	102	114
Netherlands	99	99	101	103	98	105	110
Norway	97	99	100	97	108	101	103
Portugal	87	106	104	102	101	105	99
Spain	101	95	103	98	102	109	110
Sweden	104	104	101	91	101	100	94
Switzerland	100	101	102	99	98	101	113
United Kingdom	96	98	99	99	108	108	105
Yugoslavia	70	109	93	125	103	137	117
NORTH AMERICA	103	100	97	99	101	96	102
Canada	111	104	78	99	107	91	96
United States	98	97	100	101	104	103	112
LATIN AMERICA	99	99	101	99	103	103	103
Argentina	98	96	100	98	108	108	108
Brazil	89	95	101	103	111	115	119
Chile	100	95	102	101	102	110	110
Colombia	97	97	97	106	102	105	108
Cuba	100	97	94	98	111	113	116
Mexico	87	91	103	106	113	120	123
Peru	100	102	101	102	95	97	95
Uruguay	95	109	101	99	95	100	94
FAR EAST (excl. Mainland China)	95	100	100	102	104	100	103
Burma	102	98	96	96	107	92	108
Ceylon	97	90	101	113	99	99	101
China: Taiwan	96	97	100	100	107	113	117
Federation of Malaya	90	89	102	104	115	113	109
India	90	102	101	103	104	103	105
Indonesia	90	98	106	102	104	104	107
Japan	97	85	94	114	110	115	119
Korea, South	86	107	104	106	98	108	110
Pakistan	96	100	103	96	105	102	100
Philippines	94	99	100	101	107	110	111
Thailand	90	108	83	104	114	89	104
AFRICA	99	101	100	99	101	96	96
Algeria	91	99	106	95	110	98	95
Morocco: former French Zone	91	102	106	100	101	85	99
Tunisia	95	110	103	80	113	99	137
Union of South Africa	91	96	100	104	108	107	108
NEAR EAST	97	103	97	98	105	105	105
Iran	92	98	98	103	109	114	114
Israel	82	92	101	103	122	126	130
Turkey	99	108	86	100	106	111	123
U. A. R.: Egyptian Region	86	93	103	105	113	115	111
OCEANIA	103	103	99	101	95	92	105
Australia	98	101	99	104	98	95	120
New Zealand	98	96	100	103	102	104	105

NOTE: These indices may differ from national indices produced by the countries themselves because of differences in coverage, weights and methods of calculation.

ANNEX TABLE 2A. – WORLD [1] PRODUCTION OF MAJOR COMMODITIES

	Average 1934-38	Average 1948-52	1954/55	1955/56	1956/57	1957/58	1958/59	1959/60 (Preliminary)
	Million metric tons							
Wheat	95.0	113.6	119.2	124.2	123.1	126.2	139.0	135.5
Barley	28.5	36.1	44.8	46.3	52.4	49.9	51.6	51.5
Oats	37.5	42.5	42.3	45.7	43.9	40.8	43.2	37.5
Maize	94.1	119.6	123.5	130.2	137.0	139.4	150.0	166.6
Rice (milled equivalent)	70.2	75.0	82.5	88.6	93.0	86.7	95.1	99.0
Sugar (centrifugal)	20.0	26.6	31.7	32.3	33.8	35.5	39.1	38.8
Citrus fruit	11.1	15.1	17.8	18.2	18.0	18.1	19.7	20.0
Apples	11.0	12.7	13.8	12.8	14.7	9.0	19.0	12.2
Bananas	8.1	11.4	12.7	12.9	13.4	14.2	14.3	14.2
Vegetable oils and oilseeds (oil equivalent)	9.2	11.7	13.3	13.4	14.9	14.8	15.3	15.2
Animal fats	3.01	4.14	4.72	5.02	5.33	5.29	5.12	5.29
Coffee	2.41	2.25	2.43	2.84	2.51	3.17	3.48	4.53
Cocoa	0.74	0.75	0.82	0.83	0.90	0.77	0.92	0.98
Tea	0.47	0.56	0.67	0.70	0.70	0.72	0.76	0.76
Wine	18.0	17.6	21.2	21.4	20.8	16.8	21.7	21.9
Tobacco	1.96	2.46	2.78	2.88	2.91	2.78	2.71	2.77
Cotton (lint)	5.29	5.78	6.48	6.82	6.51	6.18	6.36	6.98
Jute	1.95	2.04	1.67	2.32	2.31	2.23	2.41	2.11
Wool (greasy)	1.51	1.57	1.75	1.81	1.91	1.87	1.96	2.04
Rubber (natural)	1.00	1.74	1.85	1.95	1.92	1.93	1.95	2.09
Milk (total)	193.6	205.2	227.4	229.3	233.6	238.4	240.1	242.6
Meat [2]	26.9	30.5	35.4	37.2	38.9	39.3	39.1	39.8
Eggs	5.82	7.48	8.70	8.85	9.06	9.33	9.50	9.66
	Indices: average 1952/53–1956/57 = 100							
Index of all farm products	77	89	99	102	105	104	109	112

	1953	1954	1955	1956	1957	1958	1959 (Preliminary)
FOREST PRODUCTS	*Million cubic meters*						
Roundwood	1 470	1 552	1 601	1 658	1 663	1 664	1 670
Sawnwood	267.0	274.5	296.3	294.2	289.6	295.0	303.0
Plywood	8.3	9.0	10.8	11.3	11.8	13.0	14.1
	Million metric tons						
Wood pulp	39.1	42.4	46.6	49.8	50.3	50.2	51.7
Newsprint	9.8	10.4	11.2	12.0	12.3	12.1	12.6
Other paper and board	38.6	41.0	45.7	48.0	49.3	50.5	52.0

[1] Excluding U.S.S.R., Eastern Europe, and Mainland China, except for forest products. – [2] Beef and veal, mutton and lamb, pork.

ANNEX TABLE 2B. – WORLD EXPORTS [1] OF MAJOR COMMODITIES

	Average 1934-38	Average 1948-52	1954	1955	1956	1957	1958	1959 (Preliminary)
	Million metric tons							
Wheat and wheat flour (wheat equivalent)	15.36	25.03	22.64	24.72	31.64	29.47	27.55	28.74
Barley	1.74	3.23	5.47	5.16	7.04	6.35	6.51	6.16
Oats	0.72	1.23	1.48	0.91	1.33	1.44	1.47	1.39
Maize	9.33	4.34	5.42	4.68	5.88	7.12	8.80	9.63
Rice (milled equivalent)	9.67	4.40	4.29	4.85	5.46	5.61	5.03	4.83
Sugar (raw equivalent) [2]	9.64	10.74	11.90	13.31	13.52	14.67	14.33	13.24
Citrus fruit [3]	2.07	1.89	2.60	2.84	2.39	2.69	2.76	3.08
Apples	0.69	0.57	0.70	0.98	0.87	1.14	0.86	1.22
Bananas	2.48	2.35	2.93	3.05	2.96	3.25	3.49	3.55
Vegetable oils and oilseeds (oil equivalent) [4]	4.19	3.63	4.51	4.61	4.98	5.15	4.82	5.04
Coffee	1.66	1.94	1.80	2.08	2.34	2.24	2.23	2.59
Cocoa beans	0.69	0.70	0.72	0.72	0.76	0.80	0.66	0.75
Tea	0.40	0.42	0.51	0.44	0.52	0.50	0.54	0.52
Wine	1.94	1.64	2.39	2.69	2.49	2.79	2.74	2.47
Tobacco	0.49	0.54	0.59	0.64	0.64	0.68	0.66	0.64
Cotton (lint)	3.01	2.36	2.64	2.39	2.85	3.09	2.63	2.77
Jute	0.82	0.86	0.90	1.00	0.89	0.82	0.93	0.87
Wool (actual weight)	1.08	1.10	1.04	1.17	1.21	1.23	1.17	1.39
Rubber (natural) [5]	1.04	1.82	1.87	2.07	2.07	2.05	2.14	2.33
Meat (fresh, chilled, and frozen) [6]	1.15	0.96	1.11	1.18	1.35	1.43	1.49	1.59
Eggs (in the shell)	0.25	0.24	0.34	0.35	0.35	0.38	0.39	0.43
FOREST PRODUCTS			*Million cubic meters*					
Roundwood [7]		[8] 18.4	21.3	27.0	26.6	27.3	25.5	26.0
Sawnwood		[8] 28.7	32.1	35.7	31.8	33.9	33.1	34.4
Plywood		[8] 0.5	0.8	1.0	0.9	1.1	1.1	1.2
	Million metric tons							
Wood pulp		[8] 6.0	6.9	7.6	7.8	7.8	7.7	7.9
Newsprint		[8] 6.0	6.2	6.6	7.0	6.9	6.8	6.9
Other paper and board		[8] 2.3	2.8	3.2	3.2	3.6	3.5	3.7

[1] Including exports from the rest of the world to the U.S.S.R., Eastern Europe, and Mainland China, but excluding exports from these countries, except for forest products. – [2] Excluding United States trade with its territories. – [3] Oranges and lemons only. – [4] Excluding copra imported into Malaya and Singapore for re-export, but including copra smuggled from Indonesia and North Borneo into Malaya and Singapore. – [5] Excluding imports into Malaya and Singapore for re-export, but including rubber smuggled from Indonesia into Malaya and Singapore. – [6] Beef and veal, mutton and lamb, pork. – [7] Logs, pulpwood, pitprops, fuelwood, poles, pilings and posts. – [8] 1953.

ANNEX TABLE 3A. – WESTERN EUROPE: PRODUCTION OF MAJOR COMMODITIES

	Average 1934-38	Average 1948-52	1954/55	1955/56	1956/57	1957/58	1958/59	1959/60 (Preliminary)
	Million metric tons							
Wheat	31 07	30 32	35 70	37 81	32 00	40 57	39 09	42.57
Rye	7.49	6 65	7 64	6 69	7.14	7 21	6.98	7.15
Barley	9 08	10 93	13 72	14 74	19.04	17.50	17.69	20.38
Oats	16 44	14 84	14 58	14 78	15.98	13 23	12 87	12 64
Maize	9.73	7.15	8.55	9.72	10.11	12.19	11.04	14.16
Sugar (centrifugal)	4.02	5.14	6.53	6.89	6.49	7.03	8.16	7.24
Potatoes	69.87	76.26	80.93	73.04	84.07	78.58	72.42	81.39
Citrus fruit	1.99	2.10	2 63	2.54	1.84	2.76	2.89	3.11
Apples	7.42	8.74	9.49	8.69	10.29	4.22	13.73	7.19
Olive oil	0.81	0.86	0 85	0.72	0.90	1.08	0.86	1.07
Animal fats	1.04	0.89	1.18	1.25	1.31	1.37	1.42	1.44
Wine	14.13	13.10	15.33	16 08	15.58	11.52	16.01	16.31
Tobacco	0.19	0.25	0.29	0.34	0.30	0.37	0.31	0.31
Milk (total)	77.02	77.17	90.92	89.74	91.27	95.18	95.69	97.40
Meat [1]	8.56	7.53	10 23	10.51	10.68	11.07	11.25	11.54
Eggs	1.95	2.10	2.66	2.71	2.84	2.99	3.06	3.12
	Indices: average 1952/53–1956/57 = 100							
Index of all farm products	82	87	101	103	103	107	109	113
	1938	Average 1948-52	1954	1955	1956	1957	1958	1959 (Preliminary)
	Million standards							
FOREST PRODUCTS [2]								
Sawn softwood	10.24	9.87	10.72	11.13	10.84	10.62	10.61	10.42
	Million cubic meters							
Sawn hardwood	9.07	9.08	9.92	10.69	10.70	10.80	10.95	10.97
Plywood	1.09	1.24	1.86	1.95	1.91	2.10	2.13	2.30
	Million metric tons							
Fibreboard (hard and insulating)	0.17	0.67	1.05	1.19	1.27	1.38	1.45	1.51
Wood pulp (chemical)	6.67	5.96	7.66	8.37	8.69	9.24	9.12	9.48
Wood pulp (mechanical) [3]	3.95	3.46	4.40	4.66	4.96	5.08	5.07	5.22
Newsprint	2.80	2.33	2.86	3.12	3.43	3.53	3.51	3.64
Other paper and board	8.29	8.85	12.11	13.18	13.67	14.76	15.02	15.65

[1] Beef and veal, mutton and lamb, pork. – [2] Including Eastern Europe. – [3] Only partial coverage of production of exploded and defibrated pulp.

ANNEX TABLE 3B. – WESTERN EUROPE: EXPORTS AND IMPORTS OF MAJOR COMMODITIES

	Average 1934-38	Average 1948-52	1954	1955	1956	1957	1958	1959 (Preliminary)
	Million metric tons							
GROSS EXPORTS								
Wheat and wheat flour (wheat equivalent)	1.47	0.77	2.31	3.40	2.31	3.10	3.89	3.22
Sugar (raw equivalent)	0.86	1.37	1.68	1.83	1.56	1.84	1.36	1.29
Citrus fruit [1]	1.18	0.91	1.26	1.40	0.86	0.97	1.20	1.35
Apples	0.19	0.31	0.41	0.66	0.53	0.74	0.40	0.80
Wine	0.50	0.48	0.77	0.76	0.93	0.86	1.11	0.75
Bacon, ham, and salted pork	0.26	0.14	0.27	0.29	0.28	0.30	0.30	0.28
Eggs (in the shell)	0.20	0.17	0.26	0.27	0.28	0.31	0.31	0.35
Wool (actual weight)	0.23	0.11	0.09	0.10	0.11	0.11	0.10	0.13
	Million cubic meters							
Coniferous logs [2]	2.39	1.71	0.88	0.92	0.63	0.67	0.94	0.93
Broadleaved logs [2]	0.50	0.45	0.67	0.94	0.66	0.66	0.58	0.77
Pulpwood [2]	3.03	3.53	4.11	5.74	5.22	5.18	3.94	4.45
Pitprops [2]	3.16	3.00	2.44	3.00	3.03	3.13	2.56	1.93
Sawn softwood [2]	13.86	12.66	14.88	15.39	14.05	14.26	13.05	15.18
Plywood [2]	0.36	0.30	0.45	0.50	0.40	0.44	0.41	0.51
	Million metric tons							
Wood pulp [2]	4.55	3.51	4.39	4.70	4.97	4.90	4.82	5.08
Newsprint [2]	0.92	0.87	1.02	1.12	1.30	1.29	1.33	1.36
Other paper and board [2]	1.20	1.51	2.24	2.46	2.48	2.72	2.68	2.96
GROSS IMPORTS								
Wheat and wheat flour (wheat equivalent)	11.95	14.42	12.88	13.19	15.78	14.04	12.22	12.78
Barley	2.41	2.53	3.95	3.58	5.06	4.62	4.69	4.75
Maize	8.46	4.03	4.27	4.51	5.02	4.78	6.32	7.65
Rice (milled equivalent)	1.31	0.35	0.42	0.59	0.59	0.51	0.52	0.61
Sugar (raw equivalent)	3.47	4.25	3.79	4.07	4.41	5.38	4.87	4.63
Vegetable oils and oilseeds (oil equivalent)	3.00	2.52	3.02	3.09	3.43	3.57	3.30	3.33
Oranges	1.28	1.33	1.92	2.06	1.73	1.95	2.10	2.24
Coffee	0.69	0.48	0.61	0.68	0.75	0.76	0.80	0.88
Cocoa beans	0.36	0.33	0.40	0.40	0.39	0.45	0.39	0.43
Tea	0.26	0.23	0.28	0.26	0.27	0.31	0.30	0.27
Wine	1.68	1.39	2.00	2.40	2.13	2.53	2.64	2.18
Tobacco	0.37	0.34	0.39	0.41	0.40	0.41	0.41	0.40
Cotton (lint)	1.76	1.40	1.58	1.42	1.51	1.72	1.43	1.43
Rubber (natural)	0.36	0.59	0.71	0.80	0.76	0.79	0.77	0.69
Meat (fresh, chilled, frozen) [3]	1.12	0.81	0.77	0.93	1.14	1.18	1.12	1.09
Canned meat	0.08	0.18	0.20	0.20	0.19	0.23	0.24	0.24
Bacon, ham, and salted pork	0.39	0.21	0.31	0.31	0.32	0.34	0.35	0.36
Butter	0.57	0.39	0.32	0.40	0.44	0.45	0.46	0.47
Cheese	0.23	0.27	0.28	0.28	0.30	0.31	0.33	0.34
Eggs (in the shell)	0.31	0.21	0.29	0.31	0.32	0.34	0.36	0.41

[1] Oranges and lemons only. – [2] Including Eastern Europe. Prewar figures refer to 1938. – [3] Beef and veal, mutton and lamb, pork.

ANNEX TABLE 4A. – EASTERN EUROPE AND U.S.S.R.: PRODUCTION OF MAJOR COMMODITIES

	Average 1949-53	1954	1955	1956	1957	1958	1959 (Preliminary)
	Million metric tons						
EASTERN EUROPE[1]							
Total cereals[2]	38.3	37.5	44.5	38.8	47.0	41.2	45.6
Wheat	11.9	9.7	12.0	10.8	13.3	11.9	12.8
Rye	10.9	9.8	11.1	10.7	11.4	11.2	11.3
Barley	4.4	4.3	5.2	4.7	5.3	4.8	5.0
Oats	5.2	4.7	5.3	5.0	5.3	5.3	5.3
Maize	5.9	9.0	10.9	7.6	11.7	8.0	11.2
Potatoes	56.0	64.2	51.6	66.2	64.5	58.5	...
Sugar beet	20.9	23.5	24.1	19.8	26.3	27.1	25.5
Grapes	1.7	1.6	2.2	1.4	2.1	3.0	2.3
Sunflowerseed	0.59	0.70	0.72	0.56	0.55	0.61	0.93
Milk	20.3	22.3	23.4	23.7	25.3	26.9	...
Eggs[3]	9.6	10.6	11.6	12.7	13.6	14.3	...
Tobacco	0.12	0.10	0.18	0.21	0.22	0.21	...
Flax (fiber)	0.23	0.10	0.10	0.11	0.09	0.09	...
Cotton (raw)	0.11	0.17	0.09	0.07	0.08	0.08	0.08
U.S.S.R.							
Total cereals[4]	80.9	85.6	106.8	127.6	105.0	141.2	124.8
Wheat	34.5	42.4	47.3	67.4	58.1	76.6	68.6
Rye	...	...	...	14.1	14.5	15.8	...
Barley	...	...	...	12.9	8.5	13.0	...
Oats	...	...	...	13.2	12.7	13.4	...
Maize	...	3.7	14.7	12.5	7.0	16.7	...
Potatoes	75.7	75.0	71.8	96.0	87.8	86.5	86.4
Vegetables	10.0	11.9	14.1	14.3	14.8	14.9	14.3
Fruit	2.2	...	...	...	...	3.4	3.8
Grapes	0.8	...	...	...	...	1.7	1.7
Sugar beet	21.1	19.8	31.0	32.5	39.7	54.4	43.9
Sunflowerseed	2.0	1.9	3.8	3.9	2.8	4.6	2.9
Milk	35.7	38.2	43.0	49.1	54.7	58.7	62.0
Butter	0.50	...	...	...	0.75	0.78	0.84
Meat (slaughter weight)	4.9	6.3	6.3	6.6	7.4	7.7	8.9
Pigmeat	1.7	2.7	2.0	2.7	3.3	3.3	3.6
Eggs[3]	12.9	17.2	18.5	19.5	22.3	23.0	25.0
Cotton (raw)	3.5	4.2	3.9	4.3	4.2	4.4	4.7
Flax (fiber)	0.23	0.22	0.38	0.52	0.44	0.44	0.39
Wool	0.20	0.23	0.26	0.26	0.29	0.32	0.35

SOURCES: Based generally on the official statistics of the countries concerned.

[1] Albania (except for milk and eggs). Bulgaria, Czechoslovakia, Eastern Germany, Hungary, Poland and Romania. 1959 production of some products has been estimated for Albania, Bulgaria, Romania and Eastern Germany. – [2] Wheat, rye, barley, oats, maize. – [3] Thousand million. – [4] Including pulses.

ANNEX TABLE 4B. – EASTERN EUROPE[1] AND U.S.S.R.: EXPORTS AND IMPORTS OF MAJOR COMMODITIES

	Exports				Imports			
	1955	1956	1957	1958	1955	1956	1957	1958
	Thousand metric tons							
Wheat	2 373.2	1 608.6	5 468 2	3 943 2	2 739.6	2 208.2	4 389.3	3 403.1
Rye	728 6	622.1	442 4	461 0	601.8	791.1	342.0	416.9
Barley	565 0	785.4	1 214 0	278.3	776 0	769.0	1 066.7	600.5
Maize	487.5	492 8	184 6	300 0	680 8	535.1	142.3	667.1
Oats	75 6	164 3	223 5	261 1	40 0	87 0	150.0	133.0
Rice (milled equivalent)	21.4	37.9	55 3	50 0	652 5	805 3	571.9	677.6
Other feed	—	—	—	—	233 0	129 0	423.0	69.0
Sugar (raw equivalent)	1 127 2	525.6	605 2	1 072 9	1 094 5	405.2	706.7	446.2
Citrus fruit	0 4	0 4	0 3	0 2	152 1	155.9	205.7	274.2
Oilseeds	99.0	88.1	60 2	63.7	1 149 3	1 164.9	1 151.4	952.5
Vegetable oils	52 4	71.3	66 6	72 6	256 6	181.5	117.1	158.1
Meat	153 0	169.5	203.9	178 2	409 5	357.9	291.7	314.7
Butter	12.9	31.4	54.2	55 6	38 6	41.8	55.9	55.2
Cheese	3.1	3.5	11.2	4.5	11 0	9 8	16.3	11.5
Eggs	43.9	44 5	40.1	51 0	27 2	26 3	30.7	29.4
Tea	5.7	6 4	5.7	4.3	14 2	20 1	27.7	31.9
Tobacco	31.7	50 0	48.3	45 2	106 9	127.4	149.1	140 9
Wool (clean basis)	15.0	13.4	14 5	17.3	91.7	94.9	113.3	114.3
Cotton (lint)	336.9	309.5	318.7	310.9	334 3	358.6	463.3	495.2
Flax	4.5	27.5	35.7	29.7	2.0	2.3	2.1	2.3
Natural rubber	—	—	—	—	103 8	226 6	255.9	377.2
Coffee	—	—	—	—	15.3	21.4	25.4	28.0
Cocoa	—	—	—	—	35.1	38.5	68.1	39.5

[1] Albania, Bulgaria, Czechoslovakia, Eastern Germany, Hungary, Poland,

ANNEX TABLE 4C. – U.S.S.R.: PRODUCTION AND EXPORTS OF FOREST PRODUCTS

	Average 1948-52	1953	1954	1955	1956	1957	1958	1959 (Preliminary)
PRODUCTION	*Million standards*							
Sawn softwood	8.80	12 08	12.55	13.75	13.93	14.92	17.10	18.01
	Million cubic meters							
Sawn hardwood	7.30	9.96	10.35	11.34	11.49	12.30	14.10	14.85
Plywood	0.66	0.95	1.02	1.05	1.12	1.15	1.23	1.30
	Million metric tons							
Fibreboard	0.02	0 04	0 05	0 05	0 07	0.09	0.11	0.13
Wood pulp (chemical)	1.08	1.56	1 68	1.74	1.85	1.96	2.09	2.22
Wood pulp (mechanical)	0.43	0 61	0 66	0.72	0.77	0.79	0.81	0.84
Newsprint	0.24	0.29	0 32	0.36	0.36	0.38	0 39	0.41
Other paper and board	0.92	1.76	1.95	2.04	2.22	2.41	2.57	2.79
EXPORTS	*Million cubic meters*							
Pulpwood	0.05	—	—	0.55	0.53	0.59	0.82	0.99
Pitprops	0.29	0 44	0.78	0.84	0 64	0 82	0.99	1.13
Sawn softwood	0 82	1.30	1.74	2 32	2.21	3 46	3.63	4.40
Piywood	0.05	0.05	0.06	0 09	0 05	0.10	0.11	0.13

ANNEX TABLE 5A. – NORTH AMERICA: PRODUCTION OF MAJOR COMMODITIES

	Average 1934-38	Average 1948-52	1954/55	1955/56	1956/57	1957/58	1958/59	1959/60 (Preliminary)
	Million metric tons							
Wheat	26.65	44.54	35.81	39.57	42.93	36.37	49.90	41.96
Oats	18.99	25.30	25.19	28.11	24.97	24.75	26.73	22.03
Maize	53.20	82.36	78.24	82.84	88.48	87.68	97.31	111.57
Rice (milled equivalent)	0.62	1.25	1.89	1.65	1.46	1.27	1.31	1.57
Potatoes	11.94	12 83	11.41	12.14	12.98	12.91	13.93	12.63
Citrus fruit	3.62	6.41	7.32	7.47	7.57	6.44	7.42	7.33
Vegetable oils and oilseeds (oil equivalent)	1.19	2.66	2.86	3.20	3.66	3.38	4.01	3.78
Animal fats	1.30	2 40	2.58	2 78	3.01	2 85	2 66	2.85
Tobacco	0.62	1.02	1.10	1.06	1.06	0.83	0.88	0.89
Cotton (lint)	2.76	3.11	2.98	3.21	2.90	2.39	2.51	3.17
Milk (total)	54.44	59.55	63.03	63.63	64.67	65.24	64.91	64.75
Meat[1]	8.09	10.83	12.37	13.15	13.76	13.28	12.77	13.66
Eggs	2.42	3.77	3.95	3.94	4.01	3.98	3.97	4.01
	Indices: average 1952/53-1956/57 = 100							
Index of all farm products	70	93	97	101	103	98	106	109
	Average 1934-38	Average 1948-52	1954	1955	1956	1957	1958	1959 (Preliminary)
FOREST PRODUCTS	*Million standards*							
Sawn softwood	11.86	18.14	18.43	19.99	19.04	17.36	17.38	18.20
	Million cubic meters							
Sawn hardwood	12.08	18.10	17.80	18.68	18.77	14.89	16.01	17.10
Plywood	0.82	3 49	4.99	6 52	6 71	6.75	7.69	8.15
	Million metric tons							
Fibreboard (hard and insulating)	0.64	1.21	1.50	1.67	1.72	1.63	1.71	1.80
Wood pulp (chemical)	5.20	13.70	17.02	19.16	20.50	20.14	20.19	21.80
Wood pulp (mechanical)[2]	3.44	7.23	8.32	8.87	9.32	9.10	8.88	9.24
Newsprint	3 38	5.74	6.51	6.92	7.32	7.40	7.10	7.45
Other paper and board	10.05	20.50	23.31	26.04	27.19	26.34	26.58	27.90

[1] Beef and veal, mutton and lamb, pork. – [2] Includes exploded and defibrated pulp.

ANNEX TABLE 5B. – NORTH AMERICA: EXPORTS AND IMPORTS OF MAJOR COMMODITIES

	Average 1934-38	Average 1948-52	1954	1955	1956	1957	1958	1959 (Preliminary)
	Million metric tons							
GROSS EXPORTS								
Wheat and wheat flour (wheat equivalent)	6.07	18.54	13.25	13.64	21.98	20.27	19.15	19.61
Barley	0.50	1.44	2.15	2.96	3.56	2.55	4.25	3.83
Maize	0.80	2.31	1.96	2.78	3.02	4.52	4.56	5.57
Rice (milled equivalent)	0.07	0.54	0.56	0.52	0.82	0.74	0.57	0.69
Oranges	0.15	0.23	0.33	0.30	0.41	0.33	0.16	0.26
Vegetable oils and oilseeds (oil equivalent)	0.02	0.41	0.85	0.84	1.17	1.31	1.09	1.28
Tobacco	0.20	0.22	0.22	0.27	0.25	0.24	0.23	0.23
Cotton (lint)	1.29	1.03	0.94	0.56	1.03	1.57	1.00	0.80
	Million cubic meters							
Coniferous logs	...	0.33	0.60	0.71	0.72	0.54	0.60	0.63
Broadleaved logs	...	0.23	0.25	0.22	0.26	0.24	0.27	0.29
Pulpwood	...	5.68	4.64	4.87	5.21	4.81	3.51	4.00
Sawn softwood	...	8.41	11.14	12.59	10.79	10.22	10.76	12.20
	Million metric tons							
Wood pulp	0.80	1.83	2.38	2.72	2.63	2.64	2.48	2.60
Newsprint	2.80	4.50	5.14	5.42	5.55	5.51	5.27	5.53
GROSS IMPORTS								
Sugar (raw equivalent)[1]	3.21	3.88	4.05	4.22	4.45	4.43	5.00	4.85
Citrus fruit[2]	0.11	0.19	0.22	0.21	0.21	0.21	0.20	0.24
Bananas	1.35	1.49	1.61	1.58	1.67	1.70	1.76	1.82
Vegetable oils and oilseeds (oil equivalent)	0.90	0.55	0.52	0.56	0.54	0.52	0.54	0.56
Coffee	0.81	1.27	1.07	1.23	1.33	1.30	1.26	1.45
Cocoa	0.26	0.29	0.25	0.24	0.27	0.25	0.21	0.23
Tea	0.06	0.06	0.07	0.07	0.07	0.07	0.07	0.07
Jute	0.07	0.08	0.06	0.05	0.08	0.06	0.04	0.07
Sisal	0.15	0.18	0.17	0.18	0.16	0.16	0.15	0.21
Wool (actual weight)	0.10	0.29	0.15	0.17	0.17	0.13	0.12	0.18
Rubber (natural)	0.52	0.81	0.65	0.70	0.64	0.61	0.52	0.63

[1] Excluding United States trade with its territories. – [2] Oranges and lemons only.

ANNEX TABLE 6A. – OCEANIA: PRODUCTION OF MAJOR COMMODITIES

	Average 1934-38	Average 1948-52	1954/55	1955/56	1956/57	1957/58	1958/59	1959/60 (Preliminary)
	Million metric tons							
Wheat	4.38	5.30	4.70	5.39	3.74	2.76	6.04	4.91
Sugar (centrifugal)	0.94	1.04	1.48	1.36	1.36	1.51	1.64	1.59
Wool (greasy)	0.59	0.69	0.79	0.85	0.93	0.88	0.97	1.03
Milk (total)	10.18	10.43	10.52	11.28	11.76	11.46	11.34	11.80
Meat[1]	1.42	1.58	1.79	1.88	1.86	1.97	2.10	2.21
	Indices: average 1952/53–1956/57 = 100							
Index of all farm products	78	90	98	104	105	102	116	116
		Average 1948-52	1954	1955	1956	1957	1958	1959 (Preliminary)
FOREST PRODUCTS	*Million cubic meters*							
Sawnwood		4.19	4.73	4.85	4.59	4.50	4.72	4.80

[1] Beef and veal, mutton and lamb, pork.

ANNEX TABLE 6B. – OCEANIA: EXPORTS AND IMPORTS OF MAJOR COMMODITIES

	Average 1934-38	Average 1948-52	1954	1955	1956	1957	1958	1959 (Preliminary)
GROSS EXPORTS	*Million metric tons*							
Wheat and wheat flour (wheat equivalent)	2.82	3.13	1.99	2.55	3.57	2.56	1.42	2.72
Barley	0.07	0.26	0.63	0.36	0.63	0.64	0.32	0.89
Oats	0.01	0.19	0.03	0.11	0.20	0.09	0.07	0.40
Sugar (raw equivalent)	0.56	0.47	0.81	0.80	0.82	0.98	0.89	0.84
Copra and coconut oil (oil equivalent)	0.13	0.13	0.16	0.17	0.17	0.16	0.17	0.16
Beef	0.15	0.13	0.17	0.25	0.24	0.28	0.28	0.32
Mutton and lamb	0.27	0.30	0.34	0.33	0.31	0.30	0.34	0.39
Butter	0.24	0.21	0.18	0.24	0.25	0.21	0.24	0.28
Cheese	0.10	0.12	0.11	0.11	0.11	0.10	0.10	0.10
Wool (actual weight)	0.49	0.66	0.62	0.71	0.72	0.80	0.73	0.87
GROSS IMPORTS								
Wheat and wheat flour (wheat equivalent)	0.06	0.21	0.26	0.28	0.32	0.34	0.32	0.27
Sugar (raw equivalent)	0.09	0.11	0.12	0.12	0.11	0.12	0.13	0.11
Rubber (natural)	0.01	0.04	0.05	0.06	0.05	0.04	0.05	0.05

ANNEX TABLE 7A. – LATIN AMERICA: PRODUCTION OF MAJOR COMMODITIES

	Average 1934-38	Average 1948-52	1954/55	1955/56	1956/57	1957/58	1958/59	1959/60 (Preliminary)
	Million metric tons							
Wheat	8.62	7.97	11.70	9.47	11.09	10.33	10.72	9.72
Maize	18.00	15.04	17.36	19.05	18.39	20.16	21.39	21.06
Rice (milled equivalent)	1.33	3.08	3.80	3.63	4.13	4.00	3.95	4.23
Sugar (centrifugal)	6.89	12.52	13.15	13.14	14.60	15.09	16.75	17.04
Citrus fruit	3.28	3.73	4.03	4.20	4.40	4.53	4.75	4.71
Bananas	4.20	7.80	9.26	9.38	9.80	10.60	10.50	10.50
Coffee	2.11	1.88	1.94	2.23	1.88	2.48	2.74	3.72
Cocoa	0.24	0.25	0.32	0.29	0.30	0.29	0.34	0.33
Tobacco	0.21	0.31	0.35	0.38	0.40	0.39	0.40	0.40
Cotton (lint)	0.59	0.86	1.12	1.28	1.16	1.27	1.26	1.20
Milk (total)	12.22	14.59	17.42	18.27	18.92	19.79	20.06	20.20
Meat[1]	5.03	6.10	6.14	6.45	7.10	7.27	7.30	6.75
Eggs	0.48	0.58	0.75	0.78	0.79	0.89	0.93	0.95
	Indices: average 1952/53-1956/57 = 100							
Index of all farm products	73	89	100	102	106	112	115	117
	Average 1948-52	1954	1955	1956	1957	1958	1959 (Preliminary)	
	Million cubic meters							
FOREST PRODUCTS								
Sawnwood	8.10	9.12	9.24	8.27	8.74	9.06	9.20	
	Million metric tons							
Wood pulp	0.22	0.30	0.32	0.37	0.37	0.40	0.42	
All paper and board	0.69	0.88	1.15	1.24	1.36	1.47	1.52	

[1] Beef and veal, mutton and lamb, pork.

ANNEX TABLE 7B. – LATIN AMERICA: EXPORTS AND IMPORTS OF MAJOR COMMODITIES

	Average 1934-38	Average 1948-52	1954	1955	1956	1957	1958	1959 (Preliminary)
GROSS EXPORTS	*Million metric tons*							
Wheat and wheat flour (wheat equivalent)	3.45	2.00	3.38	4.23	3.03	2.83	2.45	2.50
Maize	6.61	1.20	2.27	0.53	1.11	0.84	1.73	2.74
Rice (milled equivalent)	0.10	0.25	0.16	0.13	0.25	0.13	0.17	0.17
Sugar (raw equivalent)[1]	4.05	7.06	6.56	7.70	7.90	8.64	8.84	8.14
Bananas	2.04	1.92	2.34	2.38	2.32	2.55	2.81	2.89
Linseed and linseed oil (oil equivalent)	0.55	0.19	0.29	0.18	0.08	0.17	0.18	0.23
Coffee	1.40	1.61	1.35	1.57	1.70	1.57	1.56	1.88
Cocoa beans	0.21	0.18	0.22	0.22	0.21	0.20	0.19	0.17
Cotton (lint)	0.34	0.39	0.73	0.69	0.76	0.52	0.59	0.72
Wool (actual weight)	0.19	0.19	0.16	0.17	0.19	0.13	0.18	0.19
Meat (fresh, chilled and frozen)[2]	0.59	0.34	0.25	0.28	0.49	0.50	0 52	0.48
Canned meat	0.12	0.12	0.10	0.10	0.10	0.14	0.13	0.10
	Million cubic meters							
Broadleaved logs	...	0.40	0.34	0.40	0.43	0.37	0.34	0.35
Sawn softwood	...	1.25	1.19	1.12	1.10	1.76	1.54	1.56
GROSS IMPORTS	*Million metric tons*							
Wheat and wheat flour (wheat equivalent)	1.69	2.84	3.39	3.79	3.47	3.55	3.40	3.91
Rice (milled equivalent)	0.39	0.37	0.30	0.22	0.22	0.32	0.40	0.33
Sugar (raw equivalent)	0.25	0.36	0.43	0.47	0.28	0.48	0.35	0.32
Potatoes	0.18	0.24	0.21	0.19	0.20	0.21	0.16	0.15

[1] Excluding trade between the United States and its territories. – [2] Beef, and veal, mutton and lamb, pork.

ANNEX TABLE 8A. – FAR EAST (EXCLUDING MAINLAND CHINA): PRODUCTION OF MAJOR COMMODITIES

	Average 1934-38	Average 1948-52	1954/55	1955/56	1956/57	1957/58	1958/59	1959/60 (Preliminary)
	Million metric tons							
Wheat	12.13	11.35	13.45	13.96	13.78	14.72	12.96	15.49
Millet and sorghum	14.94	13.28	18.11	15.42	15.46	16.60	17.82	16.80
Rice (milled equivalent)	65.28	66.73	72.31	78.91	82.90	76.59	85.27	88.50
Sugar (centrifugal)	4.18	3.14	4.66	5.04	5.23	5.59	5.94	6.08
Sugar (noncentrifugal)	3.67	4.04	4.46	4.88	5.34	5.12	5.85	5.93
Starchy roots	21.62	26.06	31.76	33.62	33.79	34.94	36.71	37.52
Pulses	6.78	7.12	8.23	9.34	9.16	9.92	8.85	10.77
Vegetable oils and oilseeds (oil equivalent)	3.96	4.02	5.05	4.86	5.19	5.08	5.12	5.08
Tea	0.46	0.54	0.63	0.66	0.66	0.67	0.70	0.70
Tobacco	0.79	0.61	0.74	0.78	0.84	0.85	0.77	0.82
Cotton (lint)	1.22	0.90	1.30	1.20	1.26	1.31	1.23	1.17
Jute	1.94	1.99	1.64	2.28	2.26	2.18	2.36	2.06
Rubber (natural)	0.97	1.65	1.74	1.82	1.77	1.78	1.80	1.93
Meat[1]	1.65	1.77	2.00	2.22	2.30	2.38	2.41	2.44
Milk (total)	23.23	25.25	26.74	26.48	26.45	26.24	26.60	26.90
	Indices: average 1952/53–1956/57 = 100							
Index of all farm products	86	87	100	104	107	105	109	113

	Average 1948-52	1954	1955	1956	1957	1958	1959 (Preliminary)
FOREST PRODUCTS	*Million cubic meters*						
Sawnwood	16.86	21.03	24.52	30.02	31.91	30.71	34.00
Plywood	0.25	0.67	0.83	1.03	1.20	1.31	1.49
	Million metric tons						
Wood pulp	0.78	1.65	1.93	2.21	2.47	2.35	2.55
Newsprint	0.16	0.45	0.48	0.55	0.59	0.61	0.68
Other paper and board	0.90	1.77	2.09	2.42	2.84	2.91	3.24

[1] Beef and veal, mutton and lamb, pork.

ANNEX TABLE 8B. – FAR EAST (EXCLUDING MAINLAND CHINA): EXPORTS AND IMPORTS OF MAJOR COMMODITIES

	Average 1934-38	Average 1948-52	1954	1955	1956	1957	1958	1959 (Preliminary)
GROSS EXPORTS				*Million metric tons*				
Rice (milled equivalent)	8.96	3.05	3.08	3.55	3.51	4.06	3.40	3.52
Sugar (raw equivalent)	3.31	1.01	1.83	1.86	2.00	1.97	1.96	1.80
Vegetable oils and oilseeds (oil equivalent)[1]	1.71	1.32	1.24	1.51	1.52	1.42	1.41	1.12
Tea	0.36	0.39	0.47	0.40	0.47	0.44	0.49	0.45
Cotton (lint)	0.68	0.27	0.19	0.28	0.24	0.18	0.18	0.12
Jute	0.79	0.84	0.89	0.99	0.87	0.81	0.91	0.85
Rubber (natural)[2]	0.96	1.69	1.75	1.92	1.81	1.83	1.83	2.12
				Million cubic meters				
Broadleaved logs	...	0.76	2.20	2.50	2.98	3.27	3.40	3.45
Sawn hardwood	...	0.56	0.89	1.08	1.09	1.06	1.08	1.10
Plywood	...	0.02	0.17	0.24	0.30	0.35	0.40	0.45
GROSS IMPORTS				*Million metric tons*				
Wheat and wheat flour (wheat equivalent)	1.03	4.95	4.15	4.49	5.68	7.87	7.84	8.38
Rice (milled equivalent)	6.13	3.12	3.40	3.11	4.03	4.04	4.08	3.39
Barley	0.05	0.69	0.82	0.61	1.20	1.12	1.07	0.55
Maize	0.21	0.20	0.24	0.44	0.49	0.68	0.83	1.16
Sugar (raw equivalent)	1.68	1.16	2.56	2.30	2.07	1.89	2.07	1.94
Vegetable oils and oilseeds (oil equivalent)	0.37	0.25	0.38	0.49	0.48	0.54	0.51	0.56
Cotton (lint)	0.90	0.52	0.74	0.66	0.86	0.89	0.76	0.90
Jute	0.05	0.27	0.25	0.29	0.23	0.18	0.13	0.10

[1] Excluding copra imported into Malaya and Singapore for re-export, but including copra smuggled from Indonesia and North Borneo into Malaya and Singapore. – [2] Excluding imports into Malaya and Singapore for re-export, but including rubber smuggled from Indonesia into Malaya and Singapore.

ANNEX TABLE 9A. – NEAR EAST: PRODUCTION OF MAJOR COMMODITIES

	Average 1934-38	Average 1948-52	1954/55	1955/56	1956/57	1957/58	1958/59	1959/60 (Preliminary)
	Million metric tons							
Wheat	9.50	10.95	13.56	14.08	15.21	17.80	16.54	16.29
Barley	4.24	4.67	5.87	5.40	6.10	7.45	6.39	5.96
Rice (milled equivalent)	1.09	1.34	1.50	1.35	1.65	1.81	1.41	1.67
Total grains[1]	19.07	22.05	26.59	27.54	29.32	33.39	31.01	30.15
Sugar (centrifugal)	0.22	0.42	0.59	0.69	0.72	0.79	0.86	1.00
Pulses	0.70	0.78	0.84	0.85	0.84	0.90	0.80	0.84
Citrus fruit	0.79	0.85	1.12	1.25	1.19	1.31	1.50	1.49
Dates	0.87	0.85	1.06	1.01	1.11	1.10	1.09	1.10
Bananas	0.05	0.07	0.08	0.10	0.11	0.11	0.12	0.11
Vegetable oils and oilseeds (oil equivalent)	0.32	0.41	0.52	0.50	0.62	0.51	0.63	0.62
Tobacco	0.09	0.12	0.14	0.15	0.15	0.16	0.15	0.15
Cotton (lint)	0.56	0.66	0.74	0.76	0.81	0.80	0.95	0 99
Milk (total)	9.70	10.36	10.17	11.16	11.70	11.52	12.42	12.50
Meat[2]	0.65	0.85	1.01	1.06	1.20	1.22	1.16	1.13
	Indices: average 1952/53–1956/57 = 100							
Index of all farm products	72	84	97	100	109	112	116	116

[1] Wheat, barley, oats, maize, millet, sorghum, rice, rye, mixed grains. – [2] Beef and veal, mutton and lamb, pork.

ANNEX TABLE 9B. – NEAR EAST: EXPORTS AND IMPORTS OF MAJOR COMMODITIES

	Average 1934-38	Average 1948-52	1954	1955	1956	1957	1958	1959 (Preliminary)
GROSS EXPORTS	*Million metric tons*							
Wheat and wheat flour (wheat equivalent)	0.24	0.27	1.28	0.33	0.42	0.44	0.29	0.44
Barley	0.36	0.46	1.03	0.46	0.78	0.53	0.58	0.26
Rice (milled equivalent)	0.15	0.27	0.13	0.25	0.25	0.32	0.41	0.06
Total grains[1]	0.94	1.11	2.65	1.11	1.54	1.41	1.36	0.90
Citrus fruit[2]	0.30	0.20	0.36	0.30	0.35	0.37	0.39	0.45
Tobacco	0.04	0.07	0.07	0.06	0.07	0.09	0.06	0.07
Cotton (lint)	0.47	0.47	0.52	0.57	0.51	0.55	0.54	0.77
GROSS IMPORTS								
Wheat and wheat flour (wheat equivalent)	0.29	1.43	0.86	1.32	2.20	2.51	2.30	3.64
Total grains[1]	0.52	1.79	1.13	1.85	2.71	3.06	2.89	3.70
Sugar (raw equivalent)	0.33	0.54	0.73	0.86	0.94	0.93	1.02	0.95
	Million cubic meters							
Sawn softwood		0.38	0.71	0.62	0.47	0.51	0.50	0.53

[1] Wheat and wheat flour, barley, maize, oats, sorghums, millet, rye, rice. – [2] Oranges and lemons.

ANNEX TABLE 10A. – AFRICA: PRODUCTION OF MAJOR COMMODITIES

	Average 1934-38	Average 1948-52	1954/55	1955/56	1956/57	1957/58	1958/59	1959/60 (Preliminary)
	Million metric tons							
Wheat	2.66	3.16	4.30	3.91	4.33	3.71	3.93	3.72
Barley	2.60	3.18	3.77	2.81	3.69	2.18	3.24	2.50
Maize	4.62	7.01	8.63	8.74	9.25	8.66	9.23	8.85
Millet and sorghum	9.31	10.67	11.38	11.14	11.17	10.99	11.03	11.06
Rice (milled equivalent)	1.11	1.72	1.89	1.96	1.92	2.09	2.06	2.00
Sugar (centrifugal)	0.95	1.36	1.74	1.93	1.97	2.15	2.23	2.30
Starchy roots	35.40	45.43	51.41	52.31	48.75	50.25	50.44	49.38
Pulses	1.02	1.42	1.61	1.51	1.51	1.34	1.39	1.35
Citrus fruit	0.38	0.77	1.00	1.09	1.16	1.26	1.16	1.29
Bananas	0.30	0.31	0.43	0.50	0.50	0.55	0.55	0.55
Groundnuts (oil equivalent)	0.56	0.71	0.82	0.94	0.98	1.18	1.05	1.00
Vegetable oils and oilseeds (oil equivalent)	1.73	2.20	2.51	2.52	2.78	2.84	2.89	2.74
Coffee	0.14	0.29	0.38	0.49	0.51	0.54	0.59	0.65
Cocoa	0.49	0.50	0.49	0.53	0.58	0.46	0.57	0.63
Wine	2.14	1.72	2.51	2.07	2.49	2.16	2.05	1.98
Cotton (lint)	0.14	0.22	0.26	0.26	0.28	0.31	0.30	0.31
Sisal	0.16	0.23	0.29	0.30	0.31	0.33	0.35	0.36
Milk (total)	6.82	7.87	8.65	8.72	8.84	8.94	9.07	9.10
Meat[1]	1.52	1.84	1.89	1.99	2.05	2.07	2.10	2.10
	Indices: average 1952/53–1956/57 = 100							
Index of all farm products	70	88	100	102	106	103	107	106

	Average 1948-52	1954	1955	1956	1957	1958	1959 (Preliminary)
FOREST PRODUCTS	*Million cubic meters*						
Sawnwood	1.30	1.79	1.80	1.91	1.96	1.88	1.97

[1] Beef and veal, mutton and lamb, pork.

ANNEX TABLE 10B. – AFRICA: EXPORTS AND IMPORTS OF MAJOR COMMODITIES

	Average 1934-38	Average 1948-52	1954	1955	1956	1957	1958	1959 (Preliminary)
GROSS EXPORTS				*Million metric tons*				
Wheat and wheat flour (wheat equivalent)	0.52	0.33	0.53	0.63	0.35	0.30	0.36	0.22
Barley	0.21	0.55	0.64	0.46	0.48	0.10	0.25	0.25
Maize	0.67	0.36	0.79	1.02	1.31	1.39	1.56	0.82
Sugar (raw equivalent)	0.69	0.71	1.00	1.05	1.08	1.15	1.18	1.10
Oranges	0.15	0.40	0.53	0.66	0.56	0.76	0.69	0.74
Bananas	0.14	0.22	0.34	0.36	0.35	0.39	0.38	0.34
Groundnuts and groundnut oil (oil equivalent)	0.33	0.32	0.51	0.46	0.59	0.55	0.67	0.64
Palm kernels and oil (oil equivalent)	0.30	0.33	0.37	0.36	0.37	0.36	0.39	0.38
Palm oil	0.24	0.33	0.39	0.37	0.38	0.35	0.37	0.40
Coffee	0.13	0.28	0.35	0.43	0.50	0.51	0.54	0.57
Cocoa beans	0.46	0.48	0.47	0.48	0.52	0.57	0.44	0.55
Wine	1.41	1.12	1.59	1.90	1.53	1.90	1.53	1.63
Tobacco	0.03	0.07	0.09	0.08	0.09	0.08	0.08	0.10
Cotton (lint)	0.13	0.19	0.24	0.24	0.26	0.24	0.27	0.29
Sisal	0.16	0.22	0.27	0.29	0.30	0.32	0.34	0.36
				Million cubic meters				
Broadleaved logs		1.19	1.88	2.36	2.32	2.64	2.86	3.30
GROSS IMPORTS				*Million metric tons*				
Wheat and wheat flour (wheat equivalent)	0.28	0.75	0.77	0.79	0.98	0.97	0.84	1.61
Rice (milled equivalent)	0.39	0.18	0.23	0.35	0.34	0.46	0.38	0.53
Sugar (raw equivalent)	0.41	0.55	0.87	0.94	0.95	1.00	1.00	1.05

ANNEX TABLE 11. – TOTAL CATCH (LIVE WEIGHT) OF FISH, CRUSTACEANS, MOLLUSKS, IN SELECTED COUNTRIES

	1938	Average 1953-57	1953	1954	1955	1956	1957	1958	1959 (Preliminary)
	Thousand metric tons								
WORLD TOTAL	20 500.0	28 210.0	25 240.0	27 010.0	28 350.0	29 850.0	30 830.0	32 100.0	35 600.0
A. 1953-57 average catch: 1 000 000 tons and more									
Japan	3 562.0	4 828.1	4 521.6	4 544.6	4 912.8	4 762.6	5 399.0	5 505.0	5 875.0
United States (incl. Alaska)	2 253.1	2 791.5	2 666.2	2 771.3	2 783.4	2 981.9	2 754.9	2 703.6	2 889.7
China: Mainland	...	2 494.4	1 900.0	2 294.0	2 518.0	2 640.0	3 120.0	4 060.0	5 020.0
U.S.S.R.	1 523.0	2 376.6	1 983.0	2 258.0	2 495.0	2 616.0	2 531.0	2 621.0	2 756.0
Norway	1 152.5	1 879.0	1 557.1	2 068.2	1 813.4	2 201.3	1 754.8	1 438.8	1 607.2
United Kingdom	1 198.1	1 071.5	1 122.0	1 070.2	1 100.4	1 050.4	1 014.7	999.0	988.9
Canada (incl. Newfoundland)	836.8	1 004.0	924.2	1 027.4	965.0	1 105.4	997.1	1 000.7	1 050.6
B. 1953-57 average catch: 500 000 tons and more but less than 1 000 000 tons									
India	...	946.3	819.0	828.5	839.0	1 012.3	1 233.0	1 064.4	...
Germany, Western	776.5	775.2	764.9	703.9	814.8	800.6	791.7	743.1	765.0
Spain (incl. Ceuta and Melilla)	423.5	712.4	635.1	665.5	770.3	761.6	777.7	844.9	...
Indonesia	472.0	671.3	616.9	628.5	669.8	713.9	727.4	685.0	723.3
Union of South Africa (incl. South West Africa)	66.7	597.3	638.8	623.1	607.1	536.9	580.6	649.9	...
France (incl. Algeria)	530.3	519.1	520.3	500.2	522.7	537.9	514.5	519.7	511.0
C. 1953-57 average catch: 100 000 tons and more but less than 500 000 tons									
Iceland	327.2	476.1	424.7	455.4	480.3	517.3	502.7	580.4	639.9
Portugal	247.2	446.2	425.2	438.7	424.7	472.2	470.3	455.5	427.4
Denmark	97.1	424.8	342.8	359.4	425.3	463.0	533.3	598.1	673.7
Philippines	80.9	377.0	311.9	364.6	385.2	416.0	407.5	447.3	517.5
Netherlands	256.2	320.2	343.3	339.2	319.5	298.1	300.8	313.8	319.6
Angola	26.2	317.6	220.4	261.2	290.4	420.5	395.5	278.2	...
Korea, South	838.3	306.4	260.9	255.0	262.2	346.0	408.1	395.1	382.1
Korea, North	925.2	290.4	122.0	235.0	312.0	...	...	...	...
Pakistan	...	267.9	249.0	259.7	270.9	277.0	282.8	283.7	290.1
Thailand	161.0	220.0	205.0	229.8	213.0	217.9	234.5	196.3	204.7
Italy	181.2	215.7	208.4	217.6	218.0	219.6	210.3	209.3	213.4
Peru	...	212.9	147.8	176.1	213.3	297.3	483.1	930.2	2 000.0
Sweden	129.2	205.9	199.7	201.1	219.5	197.4	222.1	238.0	...
Brazil	103.3	189.4	160.7	172.0	190.3	208.0	216.2	215.0	...
Chile	32.2	173.2	107.2	143.5	214.3	188.3	213.1	225.8	272.8
China: Taiwan	89.5	172.8	130.4	152.2	180.3	193.2	208.0	229.7	246.3
Cambodia	...	150.0	...	150.0	150.0	150.0	...	...	...
Federation of Malaya	...	139.6	147.0	137.3	136.8	138.5	138.3	139.5	145.9
Viet-Nam	180.0	128.3	...	...	120.0	130.0	135.0	143.0	153.5
Poland	12.5	126.1	107.4	117.9	126.9	139.3	138.8	145.1	159.7
Morocco	43.7	118.0	138.8	103.5	94.3	108.2	145.1	161.7	144.4
Turkey	76.0	117.9	102.5	119.4	111.5	139.5	116.7	101.3	96.7
Mexico	17.1	102.2	...	90.9	105.8	134.8	117.5	164.0	190.6
Faeroe Islands	63.0	101.1	88.8	89.4	105.6	116.3	105.6	106.7	...
Burma	...	100.0	...	...	...	100.0	100.0	...	...
Muscat and Oman	...	100.0	...	...	...	100.0	...	...	...

ANNEX TABLE II. - TOTAL CATCH (LIVE WEIGHT) OF FISH, CRUSTACEANS, MOLLUSKS, IN SELECTED COUNTRIES *(concluded)*

	1938	Average 1953-57	1953	1954	1955	1956	1957	1958	1959 (Preliminary)
D. 1953-57 average catch: 50 000 tons and more but less than 1 000 000 tons									
Belgian Congo	0.9	90.8	70.2	78.9	86.1	96.2	122.4	136.6	153.4
Argentina	55.3	78.3	77.2	78.2	79.0	75.4	81.6	80.6	88.6
Belgium	42 8	71.8	74.4	72.6	80.0	69.1	62.9	64.3	57.5
Germany, Eastern	...	73.0	62.3	62.8	68.6	74.9	96.5	...	...
Venezuela	21.7	65.9	63.3	51.8	69.6	61.3	83.1	78.3	83.3
Finland	44.4	63.1	62.1	65.5	63.3	60.2	64.5	61.5	67.4
U.A.R.: Egyptian Region	38.1	63.5	52.1	56.7	63.4	70.3	75.2	80.0	85.6
Greece	25 0	59.7	46.0	52.5	60 0	65.0	75.0	80.0	82.0
Australia	33.5	52.6	52.0	53.7	52 5	49.9	55.3	53.6	...
Tanganyika	16.0	52.5	50.0	50 0	52.4	55.0	55.0	55.0	60.0
E. 1953-57 average catch: Less that 50 000 tons [1]									
Hong Kong	...	55.7	44.8	51.9	57.5	57.2	67.2	69.5	67.0
Aden	...	41.4	75.8	51.9	34.8	21.8	22.6	21.5	24.4
New Zealand	27.0	38.5	36.6	36.9	39.2	...	...	...	...
Uganda	...	36.1	23.4	25.0	34.9	45.7	51.3	52 8	55.6
Ceylon	...	33.1	25.5	29.7	31.3	40.3	38.5	40.7	47.6
Greenland	4.7	26.9	25.0	24.9	25.8	27.4	31.5	33.5	34.6
Ireland	12.8	26.2	19.0	21.5	23.6	30.5	36.6	37.5	38 8
Yugoslavia	16.8	26.1	25.7	23.0	22 6	28.4	30.7	31.4	29.4
Ethiopia and Eritrea, Fed. of	...	20.8	20.5	25.2	18.1	...	...	...	...
Colombia	10.0	20.3	16.0	16.0	18.0	21.2	30.1	25.0	21.1
Kenya	...	31.2	...	36.8	30.1	32.6	25.4	22 4	22.5
Ryukyu Islands	12.0	13.3	8.8	15.1	13.6	13.7	15.8	16.5	21.0
Cuba	10.0	14.4	10.2	11.5	12.8	15.6	22 0	21.9	28.2
Sudan	8.8	12.4	12.1	12.9	13.6	13.5	19.9	19.2	...
Tunisia	9.6	11.6	11.5	13.6	10.8	11.9	14.0	15 2	...
Israel	1.7	8.9	7.7	9.2	10.7	10.3	11.6	12.6	13.2
Singapore	1.5	8.3	5.7	6.3	6 2	9.6	13.8	12.3	...
Hawaii	7.0	7.5	8.6	9.3	7.0	7.5	4.9	5.1	7.5
St. Pierre and Miquelon	1.9	7.3	5.9	6.8	6 8	9.3	7.9	8.3	9.4
Ruanda Urundi	...	6.1	4.2	5.6	5.6	5.4	9.7	11.5	11.0
Uruguay	3.6	4.9	3.4	4.0	4.9	5.4	6.9	6.4	...
Mauritius	2.0	1.7	1.6	1.6	1.7	1.7	1.7	1.6	1.3
Malta and Gozo	1.1	0.9	1.0	0.8	0.8	0.8	1.0	1.1	1.1

[1] Only 23 of the 143 countries included in group E publish regularly annual statistics on fish catch.

ANNEX TABLE 12. – VARIABILITY OF PRODUCTION AND YIELD OF SELECTED PRODUCTS, BY REGIONS, 1948/49-1959/60

	Western Europe	North America	Oceania	Latin America	Far East [1]	Near East	Africa
	Percentage [2]						
PRODUCTION							
Wheat	5.5	12.6	17.2	15.3	5.9	8.3	8.6
Rice	12.2	13.7	—	3.7	4.3	17.4	2.7
Maize	13.5	8.9	—	5.1	7.8	5.8	6.5
Potatoes	6.5	10.0	10.3	6.1	5.1	5.4	—
Sugar (centrifugal)	8.0	6.2	9.6	5.7	7.3	6.6	6.6
Soybeans	—	11.6	—	12.4	5.1	—	—
Groundnuts	—	17.3	—	8.8	7.3	—	7.8
Tobacco	7.4	8.7	—	2.6	4.5	7.9	5.0
Cotton	—	13.4	—	6.6	8.1	6.6	3.8
Cocoa	—	—	—	8.6	—	—	8.2
Coffee	—	—	—	9.0	—	—	7.2
Tea	—	—	—	—	2.5	—	8.7
YIELD PER HECTARE							
Wheat	3.5	7.8	16.1	8.8	4.2	7.5	7.9
Rice	3.3	8.5	—	3.0	3.4	6.2	2.5
Maize	13.1	7.5	—	3.7	5.1	4.2	4.4
Potatoes	4.8	3.1	8.0	4.6	4.1	5.9	—
Soybeans	—	7.0	—	9.9	2.4	—	—
Groundnuts	—	11.3	—	5.7	7.7	—	2.7
Tobacco	3.5	4.2	—	4.0	7.1	6.0	6.0
Cotton	—	9.4	—	5.2	18.1	9.9	4.6

[1] Excluding Mainland China. – [2] Average annual deviation from trend line (standard error of estimate) as percentage of average annual production or yield.

ANNEX TABLE 13. – UNITED STATES COMMODITY CREDIT CORPORATION: QUANTITY AND VALUE OF INVESTMENT [1]

	Quantity (30 April)							Value (30 April)						
	1954	1955	1956	1957	1958	1959	1960	1954	1955	1956	1957	1958	1959	1960
	Thousand metric tons							*Million dollars*						
Wheat	24 208	28 156	29 073	24 453	24 174	33 937	35 512	2 155	2 633	2 795	2 411	2 402	3 105	3 253
Rice	58	763	1 322	804	732	535	455	6	98	232	107	104	81	65
Barley	622	2 044	1 987	1 774	2 698	3 242	2 383	34	107	92	87	114	155	113
Oats	589	1 052	1 222	650	732	1 376	646	32	58	60	32	32	57	27
Maize	20 568	22 255	29 192	34 801	37 211	39 206	45 291	1 296	1 437	1 926	2 289	2 414	2 486	2 786
Grain sorghum	1 029	2 927	2 887	2 040	8 295	13 498	14 964	60	167	128	105	393	706	833
Butter	165	149	34	16	45	20	27	245	212	44	21	60	26	35
Cheese	164	176	130	87	74	5	4	146	156	111	73	62	4	3
Dried milk	298	101	81	65	70	59	108	109	38	30	24	26	20	34
Linseed	382	201	41	351	59	279	18	56	25	5	42	7	31	2
Linseed oil	31	37	26	—	—	—	14	13	14	9	—	—	—	4
Cottonseed oil	469	170	5	—	—	27	—	185	64	2	—	—	7	—
Cotton linters	279	318	141	20	—	—	—	58	67	31	5	—	—	—
Cotton, upland	1 674	1 817	2 839	2 056	973	1 628	1 174	1 268	1 439	2 268	1 580	642	1 260	947
Wool	55	70	54	24	—	—	—	81	103	82	35	—	—	—
Tobacco	281	366	402	451	427	414	317	270	406	535	609	590	594	441
Other commodities								175	237	287	396	405	401	290
Total								6 189	7 261	8 633	7 816	7 251	8 933	8 832
								Percentage						
Change from previous year								+ 97	+ 17	+ 19	— 9	— 7	+ 23	— 1

SOURCE: *Report of financial conditions and operations*, United States Department of Agriculture, Commodity Credit Corporation, April 1955, 1956, 1957, 1958, 1959, 1960.

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

ANNEX TABLE 14A. – FOOD SUPPLIES AVAILABLE FOR HUMAN CONSUMPTION IN SELECTED COUNTRIES

Country	Period	Cereals	Starchy roots	Sugar	Pulses	Vege-tables	Fruit	Meat	Eggs	Fish [1]	Milk [2]	Fats
		Kilograms per caput per year										
WESTERN EUROPE												
Austria	1948/–50/	130	108	23	3	61	47	30	4	2	170	15
	1951/–53/	116	101	26	3	61	50	41	6	2	201	16
	1958/59	116	93	36	4	64	85	50	10	3	217	18
Belgium-Luxembourg	1948/–50/	106	148	28	4	60	60	47	12	7	141	21
	1951/–53/	104	147	28	4	66	76	49	13	7	160	22
	1958/59	93	147	32	4	67	55	56	15	6	187	22
Denmark	1948/–50/	104	141	36	7	62	48	62	9	18	272	18
	1951/–53/	95	137	41	6	64	54	58	8	13	269	25
	1958/59	78	128	48	5	67	57	71	8	16	233	26
Finland	1949/–50/	122	119	31	2	18	17	29	5	12	343	15
	1951/–53/	120	115	34	2	29	21	29	7	10	356	17
	1957/58	116	102	41	2	19	30	31	7	11	323	18
France	1948/–50/	121	133	23	6	140	...	56	10	6	142	14
	1951/–53/	116	122	26	6	139	46	61	11	6	148	16
	1958/59	113	100	30	6	126	45	68	10	5	188	17
Germany, Western	1948/–50/	114	209	24	4	51	38	29	5	8	166	16
	1951/–53/	99	172	25	3	46	66	41	8	7	192	23
	1958/59	90	149	29	4	47	74	52	12	7	200	25
Greece	1948/–50/	154	34	9	15	66	76	11	3	6	78	15
	1951/–53/	149	41	10	16	68	85	14	3	6	88	15
	1957/58	151	41	11	16	110	104	19	5	7	108	15
Ireland	1948–50	133	190	35	2	53	26	53	12	3	250	18
	1951–53	133	184	40	2	53	26	53	15	3	258	20
	1958	117	136	43	3	63	26	60	15	4	281	20
Italy	1948/–50/	149	38	12	13	81	53	15	6	4	93	10
	1951/–53/	146	40	14	15	93	66	18	7	4	100	12
	1958/59	140	53	19	11	117	68	24	9	5	111	16
Netherlands	1948/–50/	98	159	36	4	68	47	28	5	7	262	23
	1951/–53/	95	116	36	4	64	53	33	6	6	255	26
	1958/59	87	89	40	4	66	53	43	9	5	250	25
Norway	1948/–50/	116	128	24	3	28	28	33	7	25	287	23
	1951/–53/	103	107	32	3	30	39	34	7	20	275	26
	1958/59	88	104	38	4	37	55	39	8	19	261	26
Portugal	1948–50	120	108	12	13	107	56	16	3	16	22	14
	1951–53	125	117	14	11	111	54	15	3	17	23	15
	1958	121	109	16	10	102	74	16	3	21	25	15
Sweden	1948/–50/	88	120	44	4	25	51	49	10	16	...	20
	1951/–53/	83	111	41	3	25	57	50	10	18	312	20
	1958/59	74	100	40	4	26	55	52	10	17	251	20
Switzerland	1948/–50/	117	89	38	8	73	96	44	9	2	319	15
	1951/–53/	109	80	38	9	73	96	48	9	2	304	15
	1958/59	95	73	40	10	81	96	55	10	3	298	19
United Kingdom	1948/–50/	106	115	39	5	61	40	50	13	11	204	21
	1951/–53/	97	104	40	5	56	42	55	12	10	202	21
	1958/59	84	93	50	6	59	46	68	14	11	206	22
NORTH AMERICA												
Canada	1948/–50/	75	75	46	7	70	50	70	15	6	254	20
	1951/–53/	75	67	43	5	71	61	73	15	6	253	20
	1958/59	70	66	44	5	72	65	75	17	...	257	19
United States	1948–50	77	52	41	8	105	89	82	22	5	253	20
	1951–53	73	50	40	8	100	85	84	22	5	260	20
	1958	67	47	41	7	96	77	90	20	5	270	21

ANNEX TABLE 14A. – FOOD SUPPLIES AVAILABLE FOR HUMAN CONSUMPTION IN SELECTED COUNTRIES (*continued*)

Country	Period	Cereals	Starchy roots	Sugar	Pulses	Vegetables	Fruit	Meat	Eggs	Fish [1]	Milk [2]	Fats
		Kilograms per caput per year										
LATIN AMERICA												
Argentina	1948	126	88	35	2	40	58	116	7	2	145	16
	1951–53	105	79	32	4	45	59	103	9	2	144	18
	1958	104	75	33	2	41	81	118	9	4	140	13
Brazil	1948	79	123	30	26	24	81	39	3	2	73	6
	1951–52	91	118	33	25	25	90	28	3	2	...	7
	1958	90	73	33	26	...	114	29	5	...	58	65
Chile	1948	134	80	25	6	54	41	38	2	7	65	6
	1951–52	129	61	27	9	56	41	30	5	9	83	8
	1958	125	64	33	13	...	31	...	...	31	92	7
Colombia	1948	72	98	62	8	12	105	29	4	1	127	3
	1957	75	63	51	5	18	55	35	2	2	73	5
Ecuador	1954–56	78	61	25	12	23	275	11	3	2	76	4
Mexico	1954–56	141	10	25	21	10	39	12	4	2	70	10
	1958	156	8	27	17	19	61	...	7	...	78	9
Paraguay	1958	81	260	16	14	...	159	49	...	...	73	13
Uruguay	1949	96	43	36	4	20	70	114	7	1	137	15
	1952–53	96	59	32	2	27	59	123	7	1	167	16
	1958	105	46	37	1	35	55	...	...	...	182	18
Venezuela	1949	85	90	44	13	3	79	22	3	8	107	5
	1953	82	94	45	15	10	39	22	4	9	67	6
	1958	81	82	33	15	10	...	25	6	15	120	10
FAR EAST												
Ceylon	1952–53	118	35	16	32	42	4	3	2	5	15	4
	1958	117	23	14	39	42	8	3	1	7	13	4
China: Taiwan	1948–50	137	73	9	7	62	22	11	1	6	–	2
	1951–53	145	63	9	9	62	18	17	2	9	–	3
	1958	153	72	9	12	60	20	19	2	11	–	4
India	1949–50	112	8	12	23	16	13	1	0.1	1	47	[3] 3
	1951–53	121	11	11	24	16	13	1	0.2	1	46	[3] 3
	1957–58	124	11	14	26	–	12	2	0.2	1	45	[3] 4
Japan	1948–50	157	62	4	18	61	14	2	1	13	4	1
	1951–53	147	57	10	28	69	13	3	2	19	8	2
	1958	151	65	13	31	73	21	5	4	22	18	3
Pakistan	1949–50	161	...	12	8	18	14	4	0.4	1	55	[3] 3
	1951–53	153	...	13	8	18	33	4	0.4	1	56	[3] 4
	1957–58	149	...	17	12	21	14	4	0.4	2	56	[3] 3
Philippines	1952–53	131	50	14	12	16	–	12	3	8	5	3
	1957–58	128	51	12	7	8	26	10	3	9	17	9
NEAR EAST												
Israel	1950/–51/	133	45	19	8	103	104	15	19	16	153	15
	1951/–53/	150	39	21	7	116	120	12	13	12	147	15
	1957/58	124	45	27	9	123	118	26	19	8	152	16
Turkey	1948/–50/	188	16	6	9	56	62	14	1	1	79	7
	1951/–53/	197	28	8	11	67	66	14	1	1	84	7
	1958/59	149	39	10	14	77	89	13	2	2	85	8
United Arab Rep.: Egyptian Region	1948/–50/	174	11	13	12	46	42	10	1	3	60	[3] 3
	1951/–53/	176	9	14	10	51	58	11	1	3	47	[3] 4
	1957/58	188	10	12	12	107	64	14	1	6	43	[3] 5

ANNEX TABLE 14A. – FOOD SUPPLIES AVAILABLE FOR HUMAN CONSUMPTION IN SELECTED COUNTRIES (*concluded*)

Country	Period	Cereal	Starchy roots	Sugar	Pulses	Vege-tables	Fruit	Meat	Eggs	Fish [1]	Milk [2]	Fats
		Kilograms per capita per year										
AFRICA												
Libya: Cyrenaica.....	1957	115	6	33	7	21	41	8	2	1	108	6
	1958	109	8	33	6	17	43	8	2	1	125	5
Mauritius	1955	128	18	39	13	29	2	5	—	6	45	8
	1959	129	16	37	11	29	33	5	2	5	49	10
Morocco: former French Zone.....	1952/–55/	147	9	34	4	62	39	20	5	—	168	4
Rhodesia and Nyasaland, Fed. of: Southern Rhodesia.	1951–53	184	12	13	14	26	9	30	1	2	36	2
	1953	201	10	12	16	26	9	29	1	2	37	2
Union of South Africa	1948–50	156	16	39	3	34	26	42	3	5	79	5
	1951–53	161	13	36	3	35	28	40	3	8	79	6
	1957	148	16	43	4	37	31	45	3	8	86	6
OCEANIA												
Australia	1948/–50/	97	50	53	5	66	79	110	12	4	185	15
	1951/–53/	94	51	51	4	60	70	108	10	3	180	16
	1957/58	87	55	51	4	66	75	113	11	3	192	16
New Zealand	1948/50	90	52	50	4	79	53	103	13	7	253	16
	1951–53	86	43	43	5	86	52	106	12	6	267	20
	1958	86	59	42	4	70	57	105	15	7	277	20

[1] Estimated edible weight. – [2] Milk and milk products estimated in terms of liquid milk. – [3] Excluding butter.

ANNEX TABLE 14B. – CALORIE AND PROTEIN CONTENT OF NATIONAL AVERAGE FOOD SUPPLIES IN SELECTED COUNTRIES

Country	Period	Calories	Total protein (grams)	Animal protein (grams)
		Per caput per day		
WESTERN EUROPE				
Austria	1948/–50/	2 670	77	30
	1951/–53/	2 700	80	38
	1958/59	3 050	87	43
Belgium-Luxembourg	1948/–50/	2 890	84	38
	1951/–53/	2 950	87	47
	1958/59	2 930	86	45
Denmark	1948/–50/	3 240	105	60
	1951/–53/	3 340	95	54
	1958/59	3 350	92	57
Finland	1949/–50/	2 980	96	52
	1951/–53/	3 070	96	53
	1957/58	3 070	92	50
France	1948/–50/	2 800	92	40
	1951/–53/	2 840	93	43
	1958/59	2 950	96	49
Germany, Western	1948/–50/	2 730	79	32
	1951/–53/	2 870	77	39
	1958/59	2 990	80	45
Greece	1948/–50/	2 490	76	17
	1951/–53/	2 500	78	19
	1957	2 650	85	23
Ireland	1948–50	3 430	96	47
	1951–53	3 520	96	49
	1958	3 500	96	39
Italy	1948/–50/	2 350	70	19
	1951/–53/	2 480	72	21
	1958/59	2 650	76	26
Netherlands	1948/–50/	2 930	82	39
	1951/–53/	2 840	81	41
	1958/59	2 940	78	43
Norway	1948/–50/	3 100	99	53
	1951/–53/	3 100	90	50
	1958/59	3 080	86	50
Portugal	1948–50	2 320	67	21
	1951–53	2 410	68	21
	1958	2 430	71	26
Sweden	1948/–50/	3 150	90	56
	1951/–53/	3 060	90	57
	1958/59	2 890	81	52
Switzerland	1948/–50/	3 170	96	51
	1951/–53/	3 120	94	51
	1958/59	3 180	93	52
United Kingdom	1948/–50/	3 130	90	45
	1951/–53/	3 100	84	44
	1958/59	3 260	85	50
NORTH AMERICA				
Canada	1948/–50/	3 110	93	57
	1951/–53/	3 050	93	58
	1958/59	3 110	95	62
United States	1948–50	3 180	91	61
	1951–53	3 150	92	63
	1958	3 100	93	65

ANNEX TABLE 14B. – CALORIE AND PROTEIN CONTENT OF NATIONAL AVERAGE FOOD SUPPLIES IN SELECTED COUNTRIES *(continued)*

Country	Period	Calories	Total protein (grams)	Animal protein (grams)
LATIN AMERICA		*Per caput per day*		
Argentina	1948	3 240	110	66
	1951–53	2 980	97	60
	1958	3 020	101	64
Brazil	1948	2 360	63	24
	1951–52	2 400	60	18
	1958	2 500	62	20
Chile	1948	2 370	73	23
	1951–52	2 430	74	25
	1958	2 450	78	27
Colombia	1948	2 280	56	26
	1957	2 050	48	22
Ecuador	1954–56	2 130	51	13
Mexico	1954–56	2 380	64	13
	1958	2 560	71	17
Paraguay	1958	2 570	66	27
Uruguay	1949	2 920	93	59
	1952–53	2 950	99	66
	1958	3 110	100	65
Venezuela	1949	2 160	57	23
	1951	2 270	59	21
	1958	2 120	61	26
FAR EAST				
Ceylon	1952–53	1 990	42	6
	1958	2 010	48	12
China: Taiwan	1948–50	1 980	43	8
	1951–53	2 140	50	12
	1958	2 330	57	15
India	1949–50	1 640	43	5
	1951–53	1 750	47	6
	1957–58	1 800	47	6
Japan	1948–50	1 900	49	9
	1951–53	1 960	58	13
	1958	2 210	67	17
Pakistan	1949–50	2 040	49	8
	1951–53	2 010	47	8
	1957–58	2 010	49	8
Philippines	1952–53	1 960	43	10
	1957–58	1 980	36	11
NEAR EAST				
Israel	1950/51	2 680	88	34
	1951/–53/	2 780	87	27
	1957/58	2 750	84	33
Turkey	1948/–50/	2 530	81	15
	1951/–53/	2 700	87	17
	1958/59	2 850	90	15
United Arab Rep.: Egyptian Region	1948/–50/	2 370	70	12
	1951/–53/	2 410	70	11
	1957/58	2 640	78	13

ANNEX TABLE 14B. – CALORIE AND PROTEIN CONTENT OF NATIONAL AVERAGE FOOD SUPPLIES IN SELECTED COUNTRIES (*concluded*)

Country	Period	Calories	Total protein (grams)	Animal protein (grams)
		Per caput per day		
AFRICA				
Libya: Cyrenaica	1957	2 110	55	16
	1958	2 091	55	18
Mauritius	1955	2 220	47	11
	1958	2 230	45	10
Morocco: former French Zone	1952/–55/	2 350	72	18
Rhodesia and Nyasaland, Fed. of:				
Southern Rhodesia	1951–53	2 450	75	16
	1953	2 630	81	16
Union of South Africa	1948–50	2 640	73	27
	1951–53	2 680	74	27
	1957	2 660	74	31
OCEANIA				
Australia	1948/–50/	3 220	97	66
	1951/–53/	3 170	92	61
	1957/58	3 200	91	60
New Zealand	1948–50	3 360	100	67
	1951–53	3 350	103	70
	1958/59	3 430	106	72

ANNEX TABLE 15. – REGIONAL NETWORK OF TRADE IN FOOD, BEVERAGES AND TOBACCO, 1953 AND 1958.

From \ To	North America		Western Europe [1]		Latin America		Eastern Europe and U.S.S.R.		Far East		China: Mainland		Other regions [2]		Sum of regions	
	1953	1958	1953	1958	1953	1958	1953	1958	1953	1958	1953	1958	1953	1958	1953	1958
	Million dollars at current prices															
North America	580	700	1 372	1 565	431	529	1	61	620	715	–	7	258	278	3 312	3 855
Western Europe [1]	389	535	2 561	3 343	101	124	148	206	158	96	–	3	664	935	4 021	5 242
Latin America	2 180	1 940	1 236	1 283	357	270	17	49	105	101	–	13	56	67	3 951	3 723
Eastern Europe and U.S.S.R.	12	25	256	363	3	7	...	...	4	7	...	...	30	62	305	464
Far East	300	339	407	595	6	8	2	45	415	344	2	13	414	409	1 546	1 753
China, Mainland	1	2	25	49	–	–	...	...	52	58	–	–	92	171	170	280
Other regions [2]	285	430	2 103	2 561	12	9	23	40	269	189	1	3	548	566	3 241	3 798
SUM OF REGIONS	3 747	3 971	7 960	9 759	960	947	191	401	1 623	1 510	3	39	2 062	2 488	16 546	19 115

SOURCE: United Nations, *Yearbook of International Trade Statistics, 1958*, Vol. II.

[1] Including Turkey. – [2] Near East, Africa and Oceania.

ANNEX TABLE 16. – AVERAGE WORLD EXPORT UNIT VALUES OF AGRICULTURAL PRODUCTS

	Average					1958	1959	1958				1959			
	1947-49	1950-51	1952-53	1954-55	1956-57			I	II	III	IV	I	II	III	IV
	Indices, average 1952-53 = 100														
All agricultural products	92	105	100	97	93	87	85	90	88	87	87	83	85	85	87
Food and feed	107	96	100	91	90	87	87	87	87	86	89	85	88	88	88
Cereals	109	87	100	81	75	73	71	73	73	74	74	67	73	71	71
Edible oils and oilseeds	112	109	100	92	91	90	98	90	91	89	90	96	101	100	97
Meat	79	87	100	101	101	104	107	99	102	105	110	111	106	105	103
Dairy products	107	88	100	95	94	80	93	82	76	76	85	83	90	91	105
Beverages and tobacco	74	94	100	115	99	100	88	101	101	103	97	90	89	87	87
Agricultural raw materials	80	129	100	93	93	79	79	86	78	76	77	74	78	79	84
	U.S. dollars per metric ton														
Wheat	94	73	79	67	63	63	60	63	63	63	62	52	62	63	62
Wheat flour	129	100	113	98	87	81	79	80	85	80	80	77	82	79	77
Barley	84	64	69	53	51	49	50	45	47	49	53	54	50	48	49
Maize	79	69	78	61	58	51	50	52	51	51	49	51	51	50	49
Rice (milled)	153	131	175	132	116	120	110	118	118	125	123	114	116	108	105
Sugar (raw)	102	111	105	98	108	101	96	102	99	97	104	101	96	96	91
Apples	108	94	95	101	124	148	105	180	211	88	115	101	92	118	109
Bananas	100	102	99	99	101	93	94	93	93	92	92	93	94	94	95
Oranges and tangerines	117	104	99	103	123	120	102	114	122	162	124	95	92	122	123
Raisins	263	251	215	224	277	327	309	322	314	317	345	347	338	327	274
Copra	200	207	168	161	142	167	207	155	166	167	174	212	222	198	204
Palm kernels	130	146	155	130	123	130	168	129	128	129	136	161	170	170	169
Soybeans	124	111	111	104	93	87	85	89	91	90	84	85	87	87	83
Groundnuts (shelled)	194	176	221	199	200	171	164	179	175	161	164	158	164	169	167
Olive oil	875	677	603	563	722	607	473	627	622	601	577	432	457	546	496
Coconut oil	360	364	283	263	237	279	349	269	270	274	304	340	366	343	346
Palm oil	239	258	216	192	219	200	205	214	207	196	188	192	200	226	202
Palm-kernel oil	340	330	274	253	239	253	317	243	243	254	267	298	321	333	312
Soybean oil	464	390	309	319	339	302	257	317	323	286	277	267	265	252	244
Groundnut oil	468	442	408	362	406	362	328	365	378	359	340	323	337	342	308
Cattle	110	127	114	125	123	129	141	120	131	135	130	135	134	151	151
Beef and veal	331	407	471	458	430	505	576	452	497	519	545	572	575	590	564
Mutton and lamb	288	257	308	402	433	415	366	443	389	402	406	437	371	317	293
Bacon	724	627	702	657	701	689	655	614	704	703	737	688	616	663	652
Canned meat	596	803	921	890	848	848	899	825	829	847	898	899	899	897	900
Cheese	722	604	670	660	734	633	752	602	585	605	730	741	705	736	819
Butter	1 010	847	958	959	858	633	917	678	582	588	673	703	947	904	1 085
Eggs in the shell	768	624	706	648	637	600	533	595	580	574	631	515	468	510	605
Milk, condensed and evaporated	352	309	340	312	326	312	310	333	317	289	311	309	298	303	330
Milk, powdered	553	389	487	394	404	373	359	403	349	375	371	337	351	370	373
Potatoes	57	50	59	49	56	60	58	52	70	57	56	59	56	50	61
Oilseed cake and meal	84	73	74	71	62	55	66	55	51	53	58	63	63	67	71
Coffee	528	1 019	1 124	1 250	1 043	922	754	996	950	928	836	780	771	734	735
Cocoa	548	639	679	946	575	846	746	805	899	942	815	787	751	733	691
Tea	1 152	1 024	981	1 384	1 256	1 221	1 210	1 174	1 188	1 271	1 226	1 158	1 179	1 218	1 251
Wine	245	173	168	145	165	217	174	183	207	259	247	181	171	168	176
Tobacco (unmanufactured)	1 128	1 115	1 199	1 251	1 287	1 285	1 299	1 345	1 303	1 212	1 287	1 278	1 299	1 319	1 299
Linseed	192	155	147	120	130	125	131	131	128	122	123	127	126	128	143
Linseed oil	563	385	314	186	281	251	213	247	275	229	242	213	182	217	250
Cotton	769	1 005	887	816	742	691	601	728	683	669	684	620	643	574	581
Jute	312	284	212	183	198	196	178	207	175	193	190	191	173	165	181
Sisal	278	341	290	165	148	140	174	139	136	140	144	151	168	185	191
Wool (greasy)	975	2 065	1 507	1 459	1 491	1 135	1 091	1 311	1 172	1 073	978	973	1 034	1 133	1 242
Rubber (natural)	386	881	592	579	626	525	665	539	489	505	561	572	638	691	746

ANNEX TABLE 17. – AVERAGE UNIT VALUES OF AGRICULTURAL EXPORTS AND IMPORTS OF THE U.S.S.R., COMPARED WITH THE WORLD AVERAGE

	Average export unit values				Average import unit values			
	1955	1956	1957	1958	1955	1956	1957	1958
	U.S. dollars per metric ton							
Wheat								
U. S. S. R.	83	76	80	74	91	62	58	63
World [1]	66	63	63	63	78	78	76	71
Barley								
U. S. S. R.	66	64	64	59	–	–	–	–
World [1]	54	52	49	49				
Oats								
U. S. S. R.	63	61	61	48	–	–	–	–
World [1]	58	50	44	41				
Maize								
U. S. S. R.	70	71	67	68	73	70	70	70
World [1]	62	60	55	51	74	75	69	59
Rice (milled)								
U. S. S. R.	–	–	–	–	130	130	120	131
World [1]					138	135	130	139
Butter								
U. S. S. R.	1 192	1 164	1 150	854	994	993	912	635
World [1]	950	920	797	633	979	925	791	640
Eggs								
U. S. S. R.	–	–	–	–	562	587	553	447
World [1]					660	648	607	590
Lemons								
U. S. S. R.	–	–	–	–	184	172	192	156
World [1]					173	193	184	197
Sugar (raw)								
U. S. S. R.	–	–	–	–	69	68	134	78
World [1]					119	120	140	116
Sugar (refined)								
U. S. S. R.	116	119	150	123	98	100	148	117
World [1]	118	124	159	123	125	127	153	127
Oilseeds								
U. S. S. R.	141	145	146	119	131	126	113	116
World [1]	139	139	138	141	161	162	163	160
Vegetable oils								
U. S. S. R.	371	432	428	349	296	322	356	320
World [1]	272	304	307	290	293	333	334	311
Cocoa								
U. S. S. R.	–	–	–	–	999	668	518	896
World [1]					906	633	620	912

ANNEX TABLE 17. - AVERAGE UNIT VALUES OF AGRICULTURAL EXPORTS AND IMPORTS OF THE U.S.S.R., COMPARED WITH THE WORLD AVERAGE
(concluded)

	Average export unit values				Average import unit values			
	1955	1956	1957	1958	1955	1956	1957	1958
	U.S. dollars per metric ton							
Coffee								
U. S. S. R.	–	–	–	–	1 393	1 336	1 280	1 086
World [1]					1 236	1 186	1 149	1 010
Tea								
U. S. S. R.	691	763	562	621	1 037	1 078	1 229	1 366
World [1]	1 431	1 268	1 245	1 221	1 554	1 351	1 360	1 283
Tobacco								
U. S. S. R.	–	–	–	–	985	914	936	879
World [1]					1 318	1 321	1 394	1 375
Cotton (lint)								
U. S. S. R.	884	880	802	767	1 008	1 050	1 130	951
World [1]	804	740	743	691	854	783	739	705
Wool								
U. S. S. R.	2 333	2 695	1 972	1 986	1 930	1 855	2 229	1 950
World [1]	1 917	1 864	2 120	1 492	1 922	1 875	2 061	1 629
Rubber (natural)								
U. S. S. R.	–	–	–	–	760	780	721	593
World [1]					763	739	679	565

NOTE: It should be noted that the import values for the U.S.S.R. are given in f.o.b. values at frontier of the exporting country or at the port of shipment, in contrast to the more usual c.i.f. basis which is used for the world average. The rubles are converted at the official exchange rate of 4 rubles = U.S. $ 1.
[1] Excluding Eastern Europe, the U.S.S.R., and Mainland China.

SPECIAL CHAPTERS

In addition to the usual review of the recent world food and agricultural situation, each issue of this report from 1956 has included one or more special studies of problems of longer-term interest. Special studies in earlier issues have covered the following subjects:

1956

Some factors influencing the growth of international trade in agricultural products.

World fisheries: General trends and outlook with examples from selected countries.

1957

Factors influencing the trend of food consumption.

Postwar changes in some institutional factors affecting agriculture.

1958

Food and agricultural developments in Africa South of the Sahara.

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