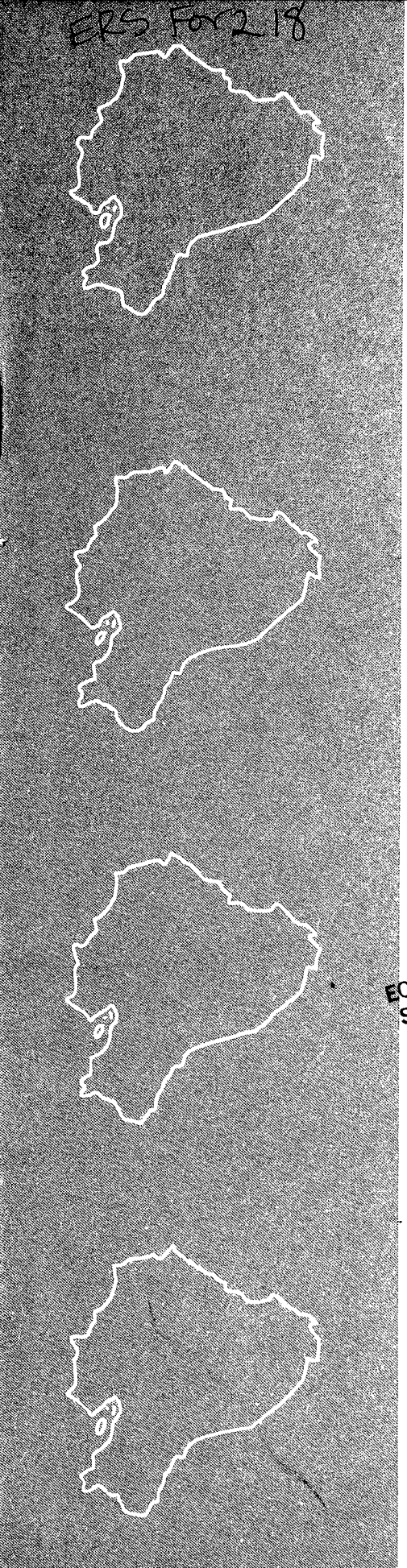

AGRICULTURAL PRODUCTION AND TRADE OF

ECUADOR

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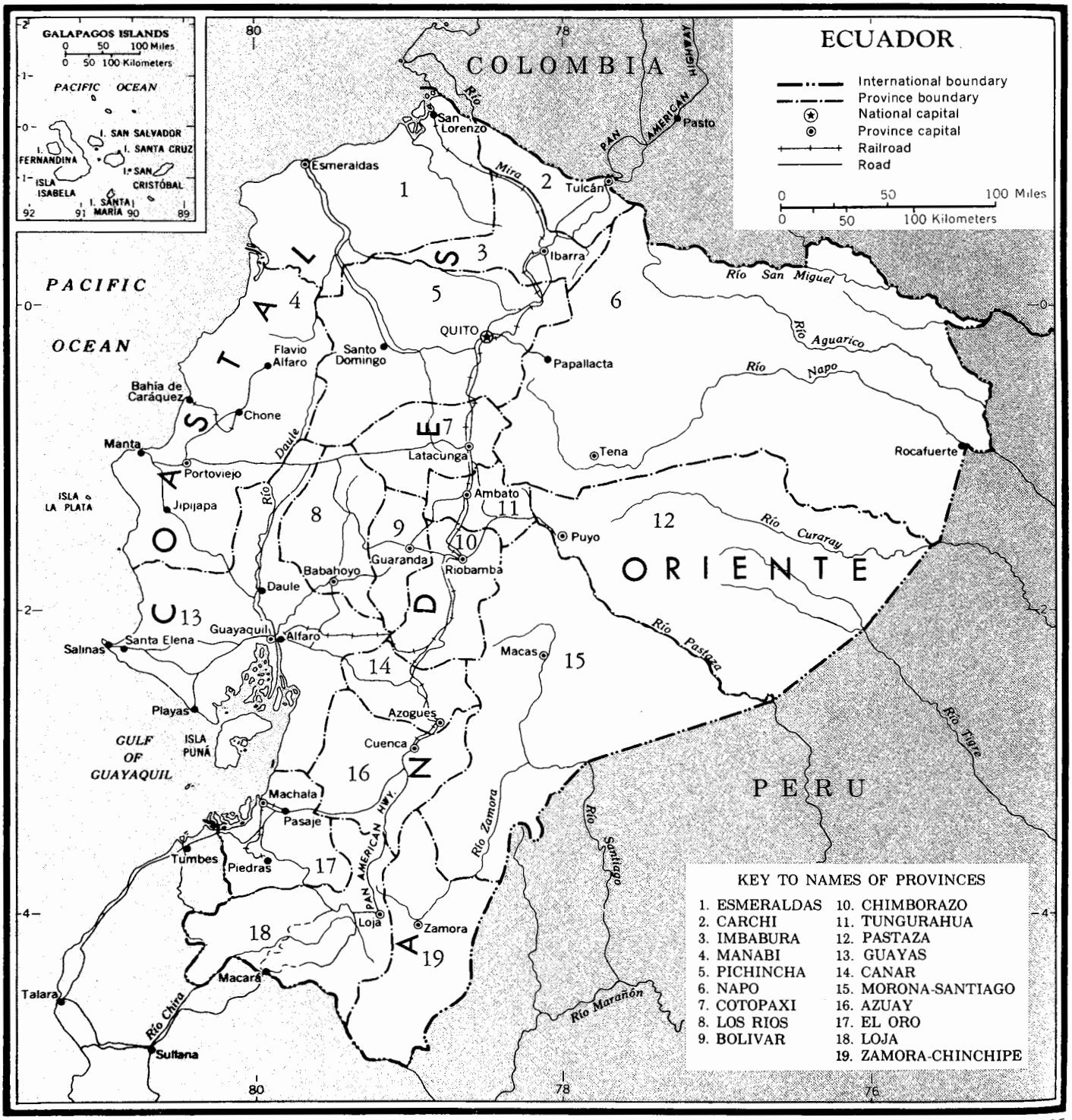
FOREIGN REGIONAL ANALYSIS DIVISION
ECONOMIC RESEARCH SERVICE
U.S. DEPARTMENT OF AGRICULTURE



U.S. DEPARTMENT OF AGRICULTURE

NEG. ERS 5387-67(10) ECONOMIC RESEARCH SERVICE

FOREWORD

A continuing review and analysis of general economic and agricultural developments in Western Hemisphere countries is carried out as part of the global research effort of the Foreign Regional Analysis Division of the Economic Research Service.

Principal research areas are situation and outlook, demand and competition, and long-range outlook. Results of this research are intended to provide to concerned groups, including farmers, businessmen, universities, and Government agencies, information on developments abroad which affect U.S. agriculture and trade.

The Ecuadorean study is another report in the demand and competition series. Other recent reports in this series include: The Agriculture and Trade of Costa Rica, ERS-Foreign 102; Peru: Market and Competitor for U.S. Farm Products, ERS-Foreign 157; The Agriculture and Trade of Panama, ERS-Foreign 179; and Brazil-Agricultural Competition and Demand, ERS-Foreign 190.

This report analyzes recent developments in Ecuador's agriculture, trends in production and trade in agricultural products, and future prospects for U.S. agricultural exports to Ecuador. The only previous study on Ecuador was published in 1947, A Study of Rural Life in Coastal Ecuador, FAR 17.

Charles R. Davenport, Chief
Western Hemisphere Branch
Foreign Regional Analysis Division

EXPLANATORY NOTES

Area units are expressed in hectares (2,471 acres). Tons are metric tons (2,204.6 pounds). Values are given both in Ecuadorean sucres and in dollar equivalents. Sucres have been converted to dollar equivalents at rates indicated or taken from official Ecuadorean Government sources. Production and trade estimates are based on both official Ecuadorean Government reports and estimates of the U.S. Department of Agriculture. Trends are in compound rates unless otherwise specified.

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Washington, D.C. 20250

June 1968

SUMMARY

Ecuador has assumed an increasingly important role in U.S. trade. Total and agricultural imports from and exports to Eucador have gained more rapidly than with Latin America and the world. Opportunities for increased U.S. trade in nonfarm and farm commodities will likely result from the continued expansion in Ecuadorean imports and exports in the next several years.

The Ecuadorean economy relies heavily on farm production, which supplies about 95 percent of food needs and many of the agricultural products required in industry. Agricultural commodities are the main source of the country's foreign exchange earnings, accounting for approximately 90 percent of total export earnings, with the largest portion represented by bananas, coffee, cocoa beans, and sugar. Over one-half of the economically active population in Ecuador is employed in the agricultural, forestry, and fisheries sector. This sector contributes about one-third of the total gross domestic product.

Ecuador's program of Economic and Social Development for 1964-73 is aimed at achieving a higher rate of economic growth, increased employment, a viable balance-of-payments position, improved infrastructure, and a betterment of public health, housing, and education. Agricultural policies and programs relating to this goal are directed toward land settlement and reform, expanded agricultural credit, improved farm and marketing practices, diversified output, and promotion of trade.

Demand for farm production has increased steadily as a result of rapid population growth and gains in per capita income. But food consumption remains well under minimum nutritional standards and below Latin America's average consumption level.

Traditional systems for farm production generally prevail. However, agricultural production has kept ahead of rapid population growth in the last decade.

Ecuador's total exports in 1960-64 were officially reported at an annual average of $115 million, compared with imports of $120 million. Agricultural commodities accounted for 92 percent of exports and 12 percent of imports. Trade is mostly with United States, which takes almost two-thirds of exports and supplies nearly one-half of imports. Most of the remainder is with the European Common Market, Latin America, Japan, and the United Kingdom.

Annual average U.S. imports from Ecuador increased from $56.1 to $70.8 million from 1955-59 to 1960-64, with the agricultural share 89 percent in both periods. Exports have gained less rapidly, from $47 to $57.6 million in the same period with the agricultural portion growing from 12 to 14 percent of the total. Four commodities--bananas, coffee, cocoa beans, and sugar--account for about 98 percent of U.S. farm imports from Ecuador. Principal agricultural exports are tallow, wheat and flour, fats and oils, and cornstarch, which account for over half of farm shipments.

AGRICULTURAL PRODUCTION AND TRADE OF ECUADOR

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INTRODUCTION

Ecuador is on the northwestern coast of South America, between Colombia and Peru. It is one of the smaller countries of South America, approximately twice the size of North Carolina, and roughly the size of Colorado.

Ecuador's total land area is estimated at about 271,950 square kilometers. Its territory includes the Archipelago of Colon (the Galapagos Islands), a group of 13 large and several small islands, lying about 885 kilometers off the coast. Continental Ecuador, as its name indicates, extends north and south of the Equator and enjoys three types of climates: Tropical, subtropical, and temperate. It is divided into three distinct regions by the Andes crossing the country from north to south.

Resources

The fertile Pacific coastal plain, or the Costa, contains a little over a quarter of the country's area. This region produces the principal export crops (bananas, coffee, cocoa beans, sugar, and rice) as well as other products mostly for domestic consumption (tropical fruits, livestock products, cotton, and tobacco). Cotton and coffee are grown under irrigation in the drier areas.

The highland region, or Sierra, consists of the eastern and western Cordilleras of the Andes, and the valleys between. In this temperate zone, agricultural conditions are very uneven since humid and dry areas alternate, irrigation is limited, and weather conditions are varied. The Sierra's main products are corn, wheat, potatoes, vegetables and fruit, and livestock products.

The area known as the Oriente lies east of the Andes and slopes gently downward towards the Amazon River Basin. This region is largely undeveloped, but cattle raising is of some importance.

The Galapagos are unimportant agriculturally. However, this region has economic significance because of its rich offshore fishing grounds. The surrounding water comprises one of the richest tuna fisheries in the world.

1/The author wishes to acknowledge the assistance of the statistical staff of the Western Hemisphere Branch, in the preparation of the statistical appendix of this study.

Rainfall in Ecuador varies widely. In the Costa region the rainy season is from December through May, and annual precipitation varies from 12 inches in Ancon to 130 inches in Bucay and over 150 inches in some places in the northeast. In the Sierra, rainfall occurs mostly between October and May. It varies from 15 to 50 inches, but is more evenly distributed than in the Costa. In the Oriente, annual rainfall of more than 120 inches is distributed over the entire year. Soil fertility also varies greatly, ranging from rich soils on the coast to eroded hillsides in the Andes.

The most important mineral resources are petroleum, gold, and silver. Present petroleum production does not yet meet local requirements, but the Government is trying to intensify exploration activities since it is expected that the petroleum reserves on the coast will be exhausted by 1973. What is believed to be a large oil discovery was made in the Amazon Basin of Ecuador in 1967. Some gold has long been produced, principally in the Province of El Oro. Commercially valuable deposits of copper, iron, zinc, magnesium, manganese, platinum, lead, and coal may exist, but exploration and development have been slow. Sulfur is produced, and there are rich deposits of limestone. Sulfur deposits of approximately 30 million tons in the Province of Carchi and deposits of gold, silver, and other minerals in the Province of Cañar were discovered recently.

Over half of Ecuador's area is covered with forests, one of the country's valuable natural resources. Balsa wood and tagua nuts are some of Ecuador's most important exports of forest products. Also among the tropical wood products exported are kapok, mangrove lumber, and cinchona bark.

Rich fishing grounds abound off the coast of Ecuador, as well as in its rivers and lakes. There is an abundance of whale, tuna, tortoise, corvina, haddock, shrimp, and crab. Production has increased rapidly, and the major part of it is frozen and exported.

The Role of Agriculture

The Ecuadorean economy relies heavily on farm production. Domestic output supplies about 95 percent of the food needs and many of the agricultural products required in industry. Agricultural commodities are the main source of the country's foreign exchange earnings, accounting for approximately 90 percent of total export earnings each year, with the largest share represented by bananas, coffee, cocoa beans, and sugar. Over one-half of the total employed population in Ecuador is in the agricultural, forestry, and fisheries sector.

The contribution of the agricultural, forestry, and fisheries sector to the total gross domestic product has shown a slightly decreasing trend in recent years but still amounts to about one-third of the total.

Traditional systems of farm production generally prevail, but more modern methods are used in some of the farming, mainly in the Costa and in the more fertile valleys of the Sierra. Land tenure problems and the lack of a market economy in much of the country have restricted agricultural progress. Isolation resulting from the country's rugged terrain and the lack of an adequate transportation system limit development.

AGRICULTURAL POLICIES AND PROGRAMS

Comprehensive economic development planning has been adopted to achieve economic and social objectives. The first such plan, the Program of Economic and Social Development, covers a 10-year period (1964-73).

Goals and Policies

The Program of Economic and Social Development, together with related policies, is aimed at achieving a higher rate of economic growth, a better distribution of rising incomes, increased employment, a viable balance-of-payments position, and a rise in living standards and educational levels.

The higher rate of economic growth is to be achieved by increasing per capita gross domestic product (GDP) at an annual rate of 3 percent in the first half of the decade and 3.2 percent during the second half. A target growth rate of 5.6 percent was established for the agricultural sector. Subsidiary goals were also established for gross investment, public and private consumption, exports, and imports. Structural changes include an increase in the industrial component of the gross domestic product and a reduction in the agricultural, forestry, and fisheries sector's contribution.

Increased output, a better distribution of rising incomes, and a reduction of rural unemployment and underemployment are to be achieved principally by a combination of public and private efforts through increased investment and a growing emphasis on agrarian reform and colonization. This increased emphasis is viewed as necessary both from the socioeconomic standpoint and to facilitate general economic development.

The plan calls for funds for increased investment to come from the external sector and from greater public revenues resulting from tax reform. The public share in total gross investment is estimated to be 45.8 percent in 1964-68 and 42.1 percent in 1964-73. The target for export gains was set at 6.0 percent for 1964-68 and 5.5 percent in the 10-year period; the target for imports was 3.6 percent for 1964-73. In the first half of the period, investment priorities are first the industrial, and then the agricultural, social, transportation and communications sectors.

A viable balance-of-payments position is to be pursued through increased and diversified exports at more stable levels together with import substitution and improved terms-of-trade.

Several programs to improve education have been started by the Government. A major problem is the high proportion of illiteracy, characteristic of developing countries. While illiteracy declined somewhat, in 1963 more than one-third of the population over 15 years old could not read and write and one-half of the remainder lacked enough education to enable an effective contribution to economic development. The Ecuadorean Educational Plan target is to increase primary school enrollment from 709,000 pupils in 1963/64 to 1,103,000 in 1973/74. Six years of compulsory schooling have been established throughout the country. In secondary education, the goal is to increase enrollment and establish a program of basic studies to be followed by specialized training.

University objectives are to raise enrollment, to improve the quality of education, and to encourage training in fields most relevant for socioeconomic development.

Living conditions are to be improved by several measures. Better housing and public health are two important goals toward which progress has been made. Both public housing and cooperative or self-help programs are emphasized. A national housing fund is under consideration to finance construction, using funds provided by the Ecuadorean Bank of Housing and the social security system. A program of preventive medicine and public health is being developed by the Ministry of Social Security through the Subsecretary of Public Health. Integral Health Plans for the Provinces of Canar and Manabi are important regional plans.

Agricultural Programs

Agricultural efforts for the implementation of economic policies center around production and marketing, and international trade.

Production and Marketing

Principal programs contemplated are land settlement and reform, provision for agricultural credit, improved farm and marketing practices, and diversification of output.

Agrarian reform and colonization programs are carried out by the Ecuadorean Institute of Agrarian Reform and Colonization (IERAC) and the Agrarian Reform Investigation and Training Center (CIERA). Research activities are performed and coordinated by the National Institute of Agricultural and Livestock Research (INIAP). National agricultural extension efforts are mainly under the Agricultural Extension Directorate of the Ministry of Agriculture and Livestock; the National Banana Directorate; the Center of Economic Reconversion of the Provinces of Azuay, Canar, and Morona-Santiago (CREA); and the Andean Mission of Ecuador.

Private banks are required by the Agrarian Reform Law to use 15 percent of their portfolio for farm credit. Agricultural credit is also provided by the Central Bank, mostly for export credit and for short-term crop loans, and by the National Development Bank, usually in the form of medium and long-term loans.

The National Development Bank obtains its capital from three principal sources: Government funds, rediscounts with the Central Bank, and issuance of mortgage certificates or bonds. The Agriculture and Forests Promotion Law of December 1965 increased the capital available to the bank by 50 million sucres ($2.7 million), stipulating that the appropriation was to be utilized for agricultural credit. Branches of the bank are located in the major agricultural areas. Funds and surpluses are transferred between branches to provide maximum use of funds and to insure minimum credit costs. Through the geographic distribution of its branches, its orientation toward the economic development of the country, and its autonomous organization, the National Development Bank acts effectively in furthering programs of agricultural development.

Improved farming and marketing practices are to be promoted through a number of programs. Primary emphasis is on research and technical assistance, regional development, price supports, and improved marketing facilities. Government research and technical assistance programs are supplemented by those of semiautonomous agencies for principal commodities, such as bananas, coffee, cocoa beans, rice, cotton, and livestock. These and other special development and regional programs are coordinated by the Ministry of Agriculture and Livestock. In recent years the Ministry of Agriculture and Livestock, in cooperation with the National Planning Board, has emphasized regional development, such as the program in the Guayas Basin.

Commodity Commissions maintain producer prices for wheat and rice. Oilseeds, coffee and cotton prices are also maintained at levels established by the Government. Prices set for the 1967 output in sucres per kilogram (cents per pound) were: wheat, 1.36 to 1.48 (3.4 to 3.7); rice, 2.2 to 2.6 (5.5 to 6.5); peanuts, 3.2 (8.1); sesame seed, 3.7 (9.2); soybeans, 2.0 (4.9); and cotton, 10.2 to 12.0 (25.5 to 30.0). Agricultural prices are also affected by the Ministry of Industry and Commerce purchases to supply reflief stores.

The Government is also attempting to diversify agriculture to meet growing domestic needs and provide new exports. Diversification policies include replacing or complementing export banana production with new export commodities such as oilseed, hard fibers, and beef cattle.

International Trade

Ecuador's trade policy is to maximize foreign exchange earnings as a primary source of revenue, to stimulate domestic output, and to encourage exports. This trade policy seeks to encourage trade with other members of the Latin American Free Trade Association (LAFTA).

Foreign trade is carried out principally by private firms. Government controls include tariffs, customs surcharges, prior licensing and deposits, exchange controls, taxes and tax concessions, and import prohibitions.

Lowest duties apply to goods and services deemed necessary for the growth of agriculture, including breeding stock, fruit and vegetable plants, fertilizers, and agricultural machinery and equipment.

Ecuadorean import tariffs combine specific and ad valorem duties to provide a high level of protection. The ad valorem part of the duty generally ranges from 10 percent to 50 percent of cost, insurance, and freight (c.i.f). The same duties, customs surcharges, and taxes are applied to imports from all countries, with the exception of the preferential treatment granted to the other LAFTA member countries. As of December 1967, estimated ad valorem equivalents of duties in percentage of c.i.f. value for selected commodities were wheat, 20 percent; edible vegetable oils, 30 to 40 percent; hydrogenated oils, 22 to 35 percent; apples and pears, 72 percent; raisins, tallow, and cotton, 30 percent. LAFTA preferences were reflected in duties of 14 percent on wheat, 18 percent on tallow, 11 percent on hydrogenated oils, 18 percent on fresh apples and pears, and free on cotton of over 29 millimeters in staple length (1.16 inches).

Monetary stabilization surcharges of 10 percent are levied on the List I or essential imports. Prior import licensing is needed for most imports into Ecuador. Import quotas are applied to specific agricultural commodities, such as wheat and cotton. Imports of commodities that are deemed nonessential or competitive with the domestic output, like bananas and coffee, are prohibited. Sanitation and other special certificates are needed for certain shipments to Ecuador, including livestock, lard, wheat flour, plants, seed, and fertilizers.

Prior deposits are required on all imports, with the exception of List I or essential import items which are financed externally for a period of 1 year or more. List I items financed for a term of 180 days to 1 year are subject to a 15 percent prior deposit. The deposit for the rest of the items on this list is 35 percent of the f.o.b. value. The deposit is 50 to 70 percent for List II semiessential items and 100 to 140 percent for List II luxury or domestically produced items.

Licenses issued by the Exchange Department of the Central Bank are required for all exports from Ecuador, with few exceptions. Duties are assessed on exports of certain agricultural products including bananas, coffee, cocoa, cottonseed, hides and skins, horses, toquilla straw, molasses, and sugar. Also, export subsidies have been used to stimulate rice exports. A single exchange rate of 17.82 sucres per dollar (current official buying rate) applies to exports.

Multiple taxes levied on bananas, coffee, and cocoa exports were unified in 1964. The new tax on bananas is 21.4 percent of the f.o.b. value. For tax purposes, the f.o.b. value of a stem of bananas is considered equivalent to the f.o.b. value of two cartons. Since, on the average, two cartons contain about one and one-third stems, this is a one-third saving in export tax on box shipments. According to Central Bank estimates, this resulted in a revenue loss of about $9 million in 1964.

The 1964 tax reform established a 2 percent special tax plus two other export duties for coffee, f.o.b. value basis: washed, 9.4 percent and unwashed, 9.6 percent. This differential gives a relatively narrow spread as an incentive for washed coffee exports and increased foreign exchange earnings. However, duties have been waived on exports for small coffee consuming countries.

For cocoa beans, the single export tax replaced separate levies on production, movement, and export of cocoa. The new tax of 10 percent is applied to the f.o.b. export value. Reports indicate that the single export tax has proved difficult to enforce and that smuggling has reduced cocoa bean tax revenue appreciably. There is also a special charge of 40 sucres (about $2) for each 1,000 kilograms exported through the Guayaquil Port Authority. Ad valorem duties on sugar are low, estimated at 0.0075 percent of export value.

DEMAND FOR AGRICULTURAL COMMODITIES

Demand for farm products has increased steadily as the result of rapid population growth and gains in per capita income. The same factors have led to increases in the domestic demand for agricultural commodities for industrial use. However, external demand for traditional export commodities has presented mixed trends.

Population

On the basis of an estimated rate of increase of 3.4 percent and the 1962 demographic census, Ecuador's population is estimated at 5,116,500 for mid-1966 (table 1). However, other estimates recognize the apparent underreporting of the 1962 census and range as high as 5,250,000 for 1966.

Ecuador's population reportedly increased at a rate of 2.8 percent between the 1950 and 1962 censuses, and at an estimated 3.4 percent between 1962 and 1966. Gains have resulted primarily from natural increases. The higher 1962-66 growth rate assumes continuation of previous trends with a small decline in birth rates more than by a drop in death rates.

The population is about equally divided between the Costa and the Sierra, which together account for over 98 percent of the total. The Oriente accounts for only 2 percent of the country's population and the Galapagos about one-tenth of 1 percent. Greatest increases in the 1960's have occurred in the Costa and Sierra. The rate of increase has been greatest in the Galapagos, Costa, Oriente, and Sierra--in that order. In the Sierra, which has been losing population to the rest of the country, the rate of increase is only a little over half that for the country as a whole. The population shift reflects a decline in the economic importance of the Sierra and increased economic activity and development in other regions.

Urbanization has made rapid strides, with a decline in the rural share of the total population from 71.5 percent in 1950 to an estimated 61.4 percent in 1966. The rate of increase in the urban population was 4.8 percent between 1950 and 1962 and 5.2 percent between 1962 and 1966. While the rural population has increased in this period, its rate of gain has been 70 percent of that for the total population and about 45 percent of the annual rate of the urban population.

Most rapid gains in urbanization were made in the Costa, where the urban population increased at a rate of 6.3 percent between 1962 and 1966. The Oriente increased almost as rapidly, at 5.8 percent. Due to population shifts out of the Sierra, urbanization there proceeded at less than two-thirds the rate of the Oriente and Costa. The Galapagos remains classified as rural.

Estimates of employment by industrial sector are incomplete. However, trends between 1950 and 1962 indicate a very considerable and worsening rate of unemployment and underemployment (table 2). Total employment in that period increased at an average rate of only 1.5 percent, well below that required to keep pace with the population increase of 2.8 percent a year and the urbanization rate of 4.8 percent. Problems indicated are reflected in the distribution

of employment increases. Tertiary sector employment increased at a rate of 2 percent, primary at 1.9 percent, and secondary at -0.1 percent. 2/ Gains were made in agriculture, forestry, and fisheries, with declines in mining and quarrying, amounting to an overall gain of 1.9 percent in the primary sector. However, the decrease of 0.9 percent in the manufacturing industries' share of employment was contrary to the country's development goals and the needs of the economy. Trends since 1962 indicate some improvement, but unemployment and underemployment remain serious problems in Ecuador.

The net effect of population gains and shifts is a rapidly increasing demand for both farm products and marketing facilities. Total demand is growing at a rate which is not less than the population growth rate of 3.4 percent. Need for expanded marketing facilities is increasing at the rate of growth for the urban population, which exceeds 5 percent annually. Both demands place an increasing strain on the economy in view of present low consumption levels and a chronically deficient marketing system.

Economic Growth

Economic growth has been encouraged during the last decade by increased domestic demand for goods and services and a rise in exports. Gross domestic product (GDP), in current prices, increased from $574 to $1,024 million between 1955 and 1965 (table 3). The annual growth rate was nearly 6 percent. Real GDP, in constant 1960 prices, continued to rise (table 4). There was significant annual variation in growth rates which averaged 4.5 percent for the 10-year period.

In the past decade, gains were made in all of the principal economic sectors, but at varying rates. An increasing share of the GDP was contributed by manufacturing, construction, public utilities, banking and insurance. The share contributed by agriculture, forestry, and fisheries increased through 1962, but by 1965 had fallen below the 1950 share. A declining share of GDP was also contributed by mining and quarrying, and by transportation and communications.

Estimated per capita income, at constant 1960 prices, increased from $159 to $183 during the decade 1955-65, and average of 1.4 percent per year. The growth rate averaged near 1.6 percent from 1955-62 and 1.1 percent annually from 1962-65. While accurate data are not available, related trends indicate wide differences in income distribution. Many of the rural people live at near subsistence levels, and remain outside the market economy of the country. Among the remainder of the population, indications are that income is not evenly distributed. Per capita incomes are below the national average for a large proportion of the urban population.

General estimates of income elasticities in Ecuador made by the Food and Agriculture Organization of the United Nations range from 0.1 for tubers to 0.4 for sugar, 0.8 for meat and dairy products, and 0.9 for fats and oils. A survey

2/ Components of the primary, secondary, and tertiary sectors are listed in table 2.

of families with monthly expenditures between 450 and 1,070 sucres ($27 and $63 at the 1959 exchange rate of 16.96/dollar), conducted by Ecuador's National Planning Board, indicated 60 to 70 percent expended for food with the remainder for clothing and other basic necessities.

The combined effect of rising per capita incomes and high income elasticities of demand is increasing demand for food and other farm products. Assuming a balanced economic growth and continued gains in income, demand for most farm products should continue to grow during the next few years.

Food Consumption

Food consumption in Ecuador is low, below minimum nutritional standards, and is well under the average for Latin America. There is scattered evidence of some undernourishment (insufficient calorie intake) and malnutrition (diet imbalance).

Daily per capita food consumption in Ecuador in terms of retail food availability was estimated to average 2,100 calories and to include 53.3 grams of protein and 38.6 grams of fat in 1959-61 (table 5). This reflected little improvement over 1956-58, and not much improvement is expected by 1970. Food consumption is well under minimum nutritional standards for Ecuador of a diet of 2,500 calories, with 60 grams of protein and 42 grams of fat. Averages also obscure a much lower level of consumption for much of the population.

Nearly three-fourths of the caloric value of food in the Ecuadorean diet is supplied by high carbohydrate foods: cereal products, starchy crops, and sugar (table 6). The remainder is supplied in approximately equal proportions by pulses; other fruits and vegetables; fats and oils; meats, fish, and eggs; and milk and cheese. Cereal products alone accounted for 35 percent of the caloric intake and the starchy crops, mostly bananas, account for more than one-fourth of the total. Compared with the average for Latin America, consumption is lower in cereal products; sugar; pulses, fats and oils; meats, fish, and eggs; and milk and cheese. Consumption of starchy crops is considerably higher than the Latin American average; and the quantity of other fruits and vegetables consumed is somewhat higher.

Present food consumption levels indicate a large potential demand for all food products, especially the more nutritious foods. To meet minimum nutritional standards would require that total caloric intake be increased by nearly one-fifth. Protein intake would need to be increased 13 percent, and fat intake, 9 percent. To come up to the average food consumption in Latin America would require increases of 22 percent for calories, 24 percent for protein, and 56 percent for fat. However, potential demand is more closely dependent upon economic factors rather than minimum consumption standards. Demand for nonfood farm products is probably roughly comparable to that for food commodities. Filling the large potential demand will depend upon supply and income factors in the years ahead.

Export Demand

Foreign demand for Ecuadorean products, especially agricultural products, has had a very dynamic role in that Nation's economic growth. Agricultural commodities represent approximately 90 percent of the total value of exports, of which about three-fourths is supplied by bananas, coffee, cocoa beans, and sugar.

Bananas are the biggest export earner. In recent years external demand has been strong, and the outlook is for some gains in world demand for bananas. Nevertheless, increasing competition from other exporters could result in price and marketing problems for the Ecuadorean export banana industry.

Export demand for coffee has shown steady but small gains and competition has been a continuing problem. The International Coffee Agreement (ICA) gives promise of stabilizing the export market, in which Ecuador may be expected to share gains of about 2.5 percent annually. However, Ecuador is presently seeking nonquota markets.

Cocoa beans have enjoyed strong export demand in recent years, and the outlook is for a comparatively rapid growth in the world market for cocoa in the next few years. Competition will continue from other producers.

Sugar exports have increased rapidly despite continued pressure of surplus supplies on the world market. Ecuador's U.S. sugar quota has been largely responsible for export gains as well as for favorable export prices. The future of sugar exports is closely tied to future U.S. quotas for Ecuadorean sugar and possible trade agreements with other countries.

External demand for the many other products exported by Ecuador has been characterized by mixed trends. Recently the strongest demand has been for fish products, oilseeds, pyrethrum flowers, tagua nuts, and other tropical products. Future export demand for minor exports will depend on Ecuador's competitive position as well as on consumption and trade trends.

The Latin American Free Trade Area (LAFTA) presents a potential for reciprocal trade of Ecuador with other member countries. LAFTA may open markets for Ecuadorean products that could further the expansion of the country's economy if the trend towards diversification of her exports is sustained.

Ecuador is one of the four countries (others are Paraguay, Uruguay, and Bolivia) defined as relatively less developed within LAFTA and entitled to special preferential treatment. Ecuador receives from several countries lower duty rates than are applied to the other LAFTA countries on certain exports, including coffee, some vegetable oils, canned fruit, tropical and deciduous fruit, and corn. However, except for coffee, Ecuador exports only small quantities of these commodities.

Ecuador (along with Chile, Peru, Colombia, Bolivia, and Venezuela) is a member of the Andean subregional group of the planned Latin American Common Market (LACM). This Andean group was formed in mid-1967 to reduce trade barriers and to establish industry agreements within the subregion ahead of the 1985 date set for achievement of the LACM. As in LAFTA, Ecuador is to be accorded preferential treatment within this subregion. Such preference is to

include early duty-free access to the markets of the other subregion countries and a longer period in which to lower its own trade barriers.

AGRICULTURAL PRODUCTION AND MARKETING

The estimated total land area in Ecuador was equivalent to 5.3 hectares per person in 1966, two-thirds of the Latin American average. In contrast, land in crops (including fallow) was estimated at 0.3 hectare and land in crops and pasture at 0.6 hectare per person, compared with the average for Latin America of 0.4 and 2.3 hectares, respectively. 3/ Land use and production practices often reflect systems of farm organization and land tenure dating back to the Spanish Colonial period. Production of food and other commodities is restricted, in many instances, by inadequate transportation and marketing facilities.

Land Use

Ecuador's principal agricultural development has been in the Costa and Sierra regions which together account for approximately 48 percent of the total land area. The wet and humid Oriente is sparsely inhabited and characterized by a shifting agriculture devoted almost entirely to subsistence food production. The Galapagos has little agriculture.

Land in farms in the Costa and Sierra, according to the 1954 agricultural census, totaled 22 percent of Ecuador's total land area and approximately 46 percent of all land in these regions (table 7). In these two areas, 20.2 percent of the farmland was in annual and perennial crops, 29.6 percent in pasture, 5.8 percent in fallow, and 18.9 percent in forest and wooded land.

Land use in these two regions has evolved from distinct differences in climate, topography, population, and demand for goods and services. Due to the proximity of fertile lowlands to seaports, much of the land in the Costa is devoted to commercial tropical crops important to foreign trade, including bananas and cocoa beans. In contrast, the elevated lands of the heavily populated Sierra produce livestock products and temperate crops, including grains, pulses, and tubers, for domestic use.

The National Planning Board estimates indicate a potential of nearly 4 million hectares for expansion of the present farm area. This potential is in public lands suitable for crop or livestock production consisting of approximately 1 million hectares in the Costa (including the coastal sector of Pichincha Province) 120,000 hectares in the Sierra, and 2.8 million hectares in the Oriente. Achievement of the potential requires expanded investment in colonization, transportation, and related fields. Current plans focus on this type of development in the rich Guayas Basin and adjacent areas.

Land Tenure

Land tenure is characterized by the predominance of small subfamily farms or minifundios (holdings of under 20 hectares), which provided efficient employment for less than two people, and a small number of large multifamily farms or

3/ Ecuador estimate of land in crops and pasture is for Costa and Sierra only. See table 7.

latifundios (holdings of 500 hectares and over), which provide employment for more than 12 persons. Between these extremes are the family farms, from 20 to 100 hectares, which provide employment for two to four persons, and the medium-sized multifamily farms, 100 to 500 hectares, which provide employment for four to 12 persons.

According to the 1954 census, minifundios accounted for 90 percent of the farms and 17 percent of the land in farms in the Costa and Sierra in that year (table 8). In contrast, latifundios represented less than one-half of 1 percent or the farms but 45 percent of the farmland. Family and medium-sized multifamily farms accounted for 8 and 2 percent of the farms, respectively, and for 19 percent of the land in farms for each category. Average farm sizes were: minifundios, 3 hectares; family farms, 41 hectares; medium-sized multifamily farms, 200 hectares; and latifundios, 2,000 hectares.

Estimates of the relative productivity of different categories of farms vary considerably and averages can be misleading. For example, most of Ecuador's minifundios are in the Sierra and many are located where ecological conditions are very poor. Latifundios, on the other hand, are generally in the better coastal areas. Minifundios play a dominant role in domestic food production, except for livestock and livestock products. Latifundios tend to concentrate more on export products and livestock. However, available estimates indicate that land productivity for minifundios is considerably higher than that for latifundios. On the other hand, the generally productive family and medium-sized family farms are most likely to be responsive to innovation and market needs.

Agrarian reform was initiated in Ecuador in 1964 with the enactment of the Land Reform and Settlement Law by Decree No. 1480 and the creation of the Institute for Agrarian Reform and Colonization (IERAC). The goal of agrarian reform is a more equitable distribution of land and land rights, to be achieved by a limitation on the size of holdings, land redistribution, and supporting programs such as road building and provision of farm credit and marketing assistance.

The Land Reform and Settlement Law limits the size of individual landholdings in the Sierra to a basic maximum of 800 hectares, to which up to 1,000 hectares of mountain pasture or wasteland not suitable for irrigation with surface water may be added. The basic maximum in the Costa area is 2,500 hectares plus an additional amount up to 1,000 hectares of savannah or natural pastureland. Combined holdings for the Costa and Sierra are limited to 2,500 hectares, to which may be added 1,000 hectares of savannah, pasture, or wastelands. Also, farmland not used for more than 10 consecutive years may be expropriated by IERAC. According to Development Plan estimates, approximately 2.5 million hectares of agricultural land not utilized to capacity or in large holdings could be expropriated in 1965-73 to provide farms for 254,000 families.

The agrarian reform law provides for abolition of the huasipungo system and of similar forms of tenure and labor relationships, a system typical of the Sierra. A huasipunguero is a farm laborer who works on hacendados lands, an extensive farm or landholding, and in return receives a parcel of land (usually less than 2 hectares) on which he can build a house and raise crops and a limited number of livestock. The huasipunguero may also enjoy some other privileges,

such as the use of hacendados pasturelands, irrigation water, and access roads. The law establishes that when a huasipunguero has been working for 10 years on the farm, the huasipungo becomes his property. He is also entitled to receive from the employer, for each additional year, payments equivalent to the minimum wages he should have earned in the 10 years. When he has served for less than 10 years, he may also receive the land under certain conditions.

The resettlement program carried out by IERAC under the agrarian reform law seeks to develop a system of agrarian cooperatives designed to provide credit and other production requests, technical assistance, and marketing services.

During IERAC's existence, it has granted an estimated 19,000 land titles under the agrarian reform program and another 13,000 are in process. Under this program, approximately 133,000 hectares have been distributed and 220,000 are being readied. In the colonization program, approximately 7,500 land titles to some 266,000 hectares have been granted, and some 8,000 titles involving 255,000 hectares of land are being processed. Both privately and publicly owned lands are used by IERAC in the resettlement program.

Production Practices

Traditional production practices and low productivity characterize farm output in Ecuador. However, practices vary considerably by type of holding, region, and crop. Limited fertilizer use, lack of mechanization, and absentee ownership contribute to generally low productivity of the land.

Farm output per hectare is higher on the small agricultural units than on the large estates; on the latter, however, productivity per worker is higher. Agricultural development finds an important obstacle in the underutilization of land on the larger holdings. In general, the proportion of land on which crops are grown by intensive methods has an inverse relationship with the size of the landholdings. In farms of less than 5 hectares the index of intensity of cultivation (proportion of land cultivated) is 85.2, in medium-sized multifamily farms the index is 15.9 reducing output as well as employment opportunities. Only 6 percent of the land in latifundios is in annual and permanent crops, and a large proportion of the cropland is in fallow. For minifundios, the ratio of land in crops to fallow is an estimated 6.7, and this ratio decreases to 1.9 for family farms, 1.3 for medium-sized multifamily farms, and 0.7 for latifundios.

Ecuador lags in the use of agricultural inputs. Primitive methods of sowing and harvesting prevail on the slopes of the Sierra and in some areas of the Costa. Oxen and hand implements are currently used on a great number of farms. Consumption of fertilizers, in nutrient equivalent, increased from 6,100 tons in 1957-59 to 8,700 tons in 1963, but this still represented less than 6 kilograms per hectare of cropland (table 9). The rise in fertilizer consumption is attributed largely to bananas and sugarcane, which account for about 50 percent of total consumption. Ecuador has an extremely low degree of mechanization, with only one tractor for approximately 1,500 hectares of land in crops in 1963. Irrigation is of minor importance but is significant in the lower rainfall areas in both the Sierra and the Costa. The Development Plan forecasts that by 1973 there will be an irrigated area of 171,300 hectares, including the 41,550 hectares presently under surface irrigation.

Ecuadorean yields of coffee, cocoa, wheat, corn, barley, rice, and potatoes are lower than those of other Latin American countries. Better cultivation practices, control of diseases and pests, improved soil management and fertilizer use, increased irrigation, and the use of improved plant varieties and animal breeds are needed to increase agricultural productivity. In sugarcane cultivation, modern mechanization and irrigation systems, intensive fertilizer use, and other improved practices have already increased both yields and sugar content. Similar improvements have been made in wheat production.

Transportation and Marketing

The inadequacy of the transportation network, together with a poor marketing system, is a serious barrier to development. The regions of the Sierra and the Costa have between them almost all of the all-weather roads. There are more roads in the Sierra than in the Costa reflecting the larger number of cities and towns. Also, in the Costa many population centers are located on rivers or on the ocean, and much transport is by water. In the Oriente the road systen is little developed.

Ecuador's road system is estimated at 14,750 kilometers. Approximately 8,310 kilometers are all-weather roads--860 kilometers paved, 4,800 kilometers improved, and 2,650 unimproved. About 6,440 kilometers of the road system are usuable only in the dry season. This system links all Provincial capitals, except Tena and Macas in the Oriente.

A component of the Ecuadorean road system is the Pan American Highway which links principal centers in the Sierra and establishes connections with many roads to the Costa.

The Ecuadorean Development Plan, recognizing the importance of transportation in the economic advancement of the country, includes a large investment program for the transportation sector. However, in 1964 and 1965 only about one-half of the Plan's contemplated transportation investment was accomplished. This figure reportedly increased to 70 percent in 1966. Priority is given to roads to open new areas or to additional highways between the Sierra and the Costa.

The total cost of Ecuador's national Highway Plan, which includes the construction, reconstruction, improvement, and maintenance of the main highway network, has been estimated at 1,131 million sucres ($61.1 million) for 1964-68. This Highway Plan is partly financed by the National Highway Fund (422 million sucres or $22.8 million) and the rest by means of the loans extended by the International Development Association (145.4 million sucres or $7.9 million), the International Bank for Reconstruction and Development (163.6 million sucres or $8.8 million), the U.S. Agency for International Development (290.9 million sucres or $15.7 million), and the Inter-American Development Bank (109.1 million sucres or $5.9 million).

The Ecuadorean railroad system is a Government monopoly operated by the State Railways Company (Empresa de Ferrocarriles del Estado). It consists of 1,225 kilometers of single-track roads, all 42-inch gage with the exception of two short lines totaling 160 kilometers of 30-inch gage. This railroad system is formed by two main lines and three short lines. The main lines run from Duran (opposite Guayaquil) to Quito. These lines constitute the principal

transportation route, and haul most of the freight between the Sierra and the Costa. They pass through Simbambe, Riobamba, Ambato, and Latacunga, with a connection to Simbambe and Cuenca. A line also goes from Quito to Ibarra and to the port of San Lorenzo. In addition to these major lines, one short line is located in Manabi Province and two in El Oro Province.

River and ocean transportation are important. Barges, tugs, and rafts handle most of the river traffic. Ecuador has a 20 percent interest in the Flota Mercante Grancolombiana, which it owns jointly with Colombia. This fleet has six cargo ships, with a registered 21,773 gross tonnage, which carry approximately half of Ecuador's foreign trade. In addition, Ecuador has four tankers and two freighters in her merchant fleet.

Variations in Ecuador's marketing system generally reflect the relative efficiencies of the sectors serviced. For example, the marketing system for manufactures is generally adequate in terms of storage, handling facilities, and capitalization of the marketing structure. The agricultural sector suffers from comparatively inefficient marketing methods and an inadequate distribution system. The more important features of domestic agricultural trade in the rural areas are market days, county fairs, and small stores.

The inadequacies and inequities of the market structure are important limitations to Ecuador's agricultural development. Farm storage facilities are meager. There is little large-scale modern warehousing of foodstuffs, except for certain commodities such as rice and wheat. Storage and handling facilities in the consumer markets tend to be more adequate in the major provincial centers and in the cities of Quito and Guayaquil, which constitute the commerical centers of the country, than in the rural areas.

A significant part of the rural population lives at the margin of the money economy and contributes to the low demand of the internal market. Another factor is the unequal distribution of income.

The Development Plan includes plans to improve the marketing system by constructing modern storage and slaughterhouse facilities, establishing uniform grades and standards, building roads connecting the producing areas to market centers, and developing cooperative marketing associations to benefit small producers.

AGRICULTURAL PRODUCTION TRENDS

Net agricultural output has more than kept pace with rapid population growth in the last decade. Crop and livestock production have risen per capita in recent years. The increase in food production was slightly less than the increase in production of nonfood products, mostly for export. 4/

The index of net agricultural output increased from an average of 99 for 1955-59 to an average of 121 for 1960-64 (1957-59=100; table 10). This represented an annual increase of 4.1 percent, or 1 percent per capita. Comparable annual total and per capita percentage rates of increase for major components of the index were: crops, 3.9 and 0.8; livestock products, 5.3 and 2; and food, 3.7 and 0.6.

Agricultural output reached a record level in 1965 but was down the following year largely because of drought in some areas and excess rain in others, and unseasonable frost in the highlands. Preliminary estimates indicate that a new record in farm output was achieved in 1967.

Crop Production

Agricultural gains largely reflect increases in crop production, which account for about 90 percent of the total value of farm output of the 16 production index commodities--coffee, cocoa beans, bananas, wheat, barley, corn, rice, sugarcane, potatoes, kidney beans, cotton fiber, and castor beans. Per capita declines in field crop output have been more than offset by net gains for tree crops. The 9 field crops, produced mostly for domestic use, are of lesser importance than the three tree crops, produced largely for export, which account for an estimated 60 percent of the total agricultural production and two-thirds of the crop production.

Field Crops

The index of field crop output (1957-59=100) increased from an average of 96 for 1955-59 to 115 for 1960-64, an annual rate of increase of 3.7 percent or 0.6 percent per capita. In the same period, the area harvested for these crops increased at a rate of 1 percent and yields 2.7 percent. A small loss in total output in 1966 was regained in 1967, but although a per capita decline was registered in 1966, per capita production increased during the following year.

4/ In this section general agricultural and commodity groupings, production trends, production shares, production weights and importance, and coverage are based on the 16 agricultural products included in the U.S. Department of Agriculture production index for Ecuador and in tables 10 and 11. These 16 products account for approximately 80 percent of Ecuador's total agricultural output and include the most important farm commodities for which production series are available. A summary treatment of commodities not otherwise included is given under "Other Agricultural Products" in this section.

Sugarcane.--Sugarcane is a widely grown crop, ranking next to bananas in volume, and accounting for nearly one-fifth of the value of field crop production. It supplies sugar and molasses for export, but most of the sugarcane is used for domestic consumption as sugar, black sugar, and alcohol.

Sugarcane output increased at a rate of 10 percent per year from 1955-59 to 1960-64 (table 11). After a decline in 1965, production resumed the uptrend to reach a record 2.4 million tons from 22,000 hectares in 1967. Increased cane yields and higher sucrose content reflect improved varieties, better irrigation and cultivation practices, and increased fertilizer application.

Centrifugal sugar production has followed similar trends, although black sugar accounts for as much as one-fifth of the total sugar output. Centrifugal sugar output was estimated at 168,000 tons for 1966, of which about 58 percent was used domestically.

Most of the sugar output is from the two major sugar mills located in the Costa. The Valdez sugar mill processes an average of about 8,500 hectares annually and the San Carlos some 11,000 hectares. Other sugar mills, including the Monterrey in the province of Loja and the Tababuela in Imbabura, mainly produce sugar for domestic consumption.

The outlook is for further gains in sugarcane production in view of favorable ecological conditions, adequate land resources, and likely increases in demand. Domestic sugar consumption is increasing, but is still only about 22.5 kilograms per capita per year, less than 60 percent of the Latin American average. Export demand depends largely upon quota exports to the United States and only small gains are in prospect.

Potatoes.--Potatoes rank second in volume among field crops. They are third in value, accounting for about 14 percent of the output of principal field crops. Potatoes are universally grown as a basic diet staple.

Production averaged 256,000 tons in 1960-64, declining at the rate of 1.1 percent from an average of 271,000 tons for the previous 5 years. Recently production has varied considerably. It is estimated that 280,000 tons were produced from 70,000 hectares in 1967.

Potato production is concentrated in the highland provinces of Cotopaxi, Chimborazo, Pichincha, and Tungurahua. Potatoes must compete with other crops for better land, yields are low, and poor marketing facilities are a handicap. Production is also subject to weather extremes characteristic of the area. For example, output dropped one-fourth in 1966, due largely to frost damage.

Future potato output may stabilize at near present production levels. Per capita consumption of tubers, of which potatoes are the most important item, is over twice the Latin American average and is likely to decrease as diet levels and incomes increase.

Rice.--Rice is produced primarily for domestic use, although small amounts have been exported in recent years. Rice is a Costa crop and ranks third in volume and first in value of the field crops, accounting for one-fourth of the farm value of field crop production.

The area harvested in 1967 is estimated at 100,000 hectares for a production of 182,000 tons, off 9 percent from a year earlier due mainly to drought. However, strong domestic and export demand have brought rapid expansion in recent years, with output increasing at the rapid rate of 7 percent between 1955-59 and 1960-64.

Rice is a Costa crop. It is produced in the Guayas River Basin, which accounts for more than half of the total, and in the provinces of Los Rios, El Oro, Manabi, and Esmeraldas. Much of the rice production is grown by small farmers who rent most of the land used. Traditional methods of production result in low yields.

The outlook is favorable for increased rice production. Ecuadorean consumption of cereal products is low by Latin American standards, and rice consumption is less than one-third of the total. Also, export market prospects are good.

Corn.--Corn ranks with sugarcane as one of the most widely grown crops in Ecuador. It has been grown since before the Spanish conquest and accounts for one-fifth of the value of field crop output.

Output has trended upward, but production has varied considerably since most corn is grown in the highlands and is subject to the climate uncertainties of that area. However, steady gains in output in the Costa and Oriente, stimulated by increasing feed demand, are becoming an increasingly important factor in stabilizing production.

Corn output was estimated at a record 180,000 tons from 2,212,000 hectares in 1967--up from an average of 148,000 tons for 1955-59. Production uncertainties are illustrated by trends in the 1960's when output gained in 4 years and declined in 3 years.

Some gain in corn production is in prospect as output increases outside the Sierra and more is fed to livestock. Since corn already accounts for a leading one-third of cereals consumption and other cereals are preferred, little gain is in prospect for human consumption.

Barley.--Barley is a domestic crop grown for food and malting. It accounts for about 7 percent of the value of field crop output.

Production increased at a rate of 1.8 percent from 1955-59 to 1960-64. The estimated 1967 production was 105,000 tons, from 107,000 hectares, a record high. As a highlands crop, barley output is subject to considerable variations and yields reportedly range from about 700 to almost 1,000 kilograms per hectare. In 1967 two-row or malt barley accounted for about 20 percent of production. The remainder was 4- and 6-row barley used principally for human consumption.

Barley supplies about one-tenth of cereal consumption. While food consumption gains will likely be small, malting demand is expected to increase, and barley production will probably continue its upward trend.

Wheat.--Wheat ranks behind corn and rice in domestic cereals consumption. It is slightly behind barley in farm value of production, currently amounting to about 7 percent of the field crop total. Like other highland crops, production variations reflect weather uncertainties. Production is mainly in the provinces of Pichincha, Chimborazo, Carchi, and Bolivar.

Wheat production increased at a rate of 9.3 percent from 1955-59 to 1960-64 and at an average rate of 4.4 percent from 1965 to 1967. Yields have ranged from 820 to 1,100 kilograms per hectare in the 1960's--limited partly by plantings made in marginal producing areas, by stem rust and other diseases, insect damage, and traditional production practices in about three-fourths of the wheat area.

Wheat self-sufficiency has been an important Government policy but has met with limited success in view of production problems and strong demand. Nevertheless, production gains have been impressive, although imports still supply nearly one-half of total needs. Foreign technical assistance has been of considerable help in the program to increase output, particularly the variety work of the Rockefeller Foundation. Continued emphasis in Government policy on increased wheat production and a strong demand for wheat are incentives to further output gains.

Kidney Beans.--Pulses are a widely grown minor domestic food crop of which most is kidney beans. Kidney beans rank seventh in both volume and value of principal field crops, accounting for about 5 percent in total value.

Kidney bean production increased at a rate of 0.9 percent from 1955-59 to 1960-64 and reached a record 34,000 tons in 1967. Yields have ranged from an estimated 470 to 600 kilograms per hectare in the 1960's.

Pulse consumption in Ecuador is less than two-thirds of the Latin American average. However, consumer demand may lead to more attention to this crop and to more rapid increases in kidney bean output.

Castor Beans.--Castor bean production has declined since 1964 and now accounts for only about 2 percent in total value of principal field crop output.

Castor beans are grown in the moist tropical lowlands as an export crop. Production increased at a rate of 6.6 percent from 1955-59 to 1960-64, reaching a record 26,000 tons in 1964. However, production has averaged only 12,000 tons since then.

The outlook for castor bean production is uncertain in view of increasing competition from other countries and from synthetic oils. Prices have declined and Ecuador, lacking oil extraction facilities, has lost out to other countries with the shift from bean to oil trade, especially by the United States which has been the major market.

Sweetpotatoes.--This once important lowland food crop has drastically declined in importance to where it accounts for less than 1 percent of the value of field crop production.

Production averaged 56,000 tons in 1955-59, but dropped to 24,000 tons in 1960-64, a decline at a rate of 15.6 percent. For 1965-67, production averaged only 9,000 tons. The outlook is for continued production mainly for home consumption, with little gain in output due to preference for other commodities.

Cotton Fiber.--Cotton is becoming an increasingly important crop, and cotton fiber now accounts for nearly 2 percent of major field crop output. Most cotton is produced in the Costa, mainly in Manabi Province, with production in Guayas and Los Rios of less importance. Some cotton is produced in other Costa areas and in the provinces of Imbabura and Carchi in the Sierra.

Production of cotton fiber increased at a rate of 4.7 percent between the two 5-year averages (1955-59 and 1960-64), reaching 3,400 tons in 1960-64. After an exceptional harvest of 6,300 tons in 1964, output dropped to an average of 5,100 tons for 1965-67 mainly because of less favorable growing conditions.

Imports of cotton have been reduced from over one-third to less than one-fifth of cotton fiber needs in the 1960's, largely as the result of Government efforts aimed at self-sufficiency in cotton fiber through greater use of certified seed, expanded acreage, and the use of land more suited to production. With a continuation of these efforts, increased cotton fiber output and achievement of self-sufficiency are likely.

Tree Crops

Rapid gains in tree crops have been made in the last decade. From 1955-59 to 1960-64 the output index increased from 101 to 124 (1957-59=100) for a rate of increase of 4.2 percent or 0.9 percent per capita. In this period, all three major tree crops made net gains exceeding population growth. A record output was achieved in 1965, and after a drop in 1966 a new record was reached in 1967.

Bananas 5/.--Exportable-type banana production accounts for about two-thirds of the farm value of tree crop output, 44 percent of the value of all major crops, and 40 percent of the value of total farm output of major agricultural commodities. Bananas are extensively grown throughout the tropical lowlands, but bananas for export are produced mainly in the provinces of Los Rios and El Oro.

Exportable-type banana production increased from an average of 1.8 million for 1955-59 to an average of 2.1 million tons for 1960-64, or at a rate of 3.1 percent. A record output of 2.5 million tons was reached in both 1965 and 1967. Around 190,000 hectares corresponding to farms in the disease control program produce most of the export output. While the average area cultivated per farm is approximately 70 hectares, around 15 percent of the farmers control approximately half the acreage.

Ecuador developed its natural potential for banana production in the early postwar years partly as a result of the decline in Central American output resulting mainly from "blowdowns" or storm damage and Panama disease. There are two main banana growing periods. The winter crop (April to August) is larger and of better quality than the summer crop (September to March). The principal

5/ Exportable-type bananas.

variety for many years was the Gros Michel. In recent years Cavendish-type varieties (such as the Valery, Cabana, and Giant Cavendish), which are more resistant to Panama disease and yield up to 50 percent more, have been introduced by many producers. Their adoption has also been favored by the trend toward the export of boxed bananas, which makes the Cavendish-type variety's susceptibility to bruise damage a lesser problem.

In 1966, the National Banana Directorate restricted plantings to limit output and control disease. Planting of new areas to Gros Michel varieties is prohibited, and a maximum of 200 hectares is allowed per farmer or farming enterprise for disease-resistant varieties, which occupied an estimated total of 10,000 hectares of commercial production in 1966.

The outlook for Ecuador's exportable-type banana production depends upon both world demand and competition from other suppliers. While world demand is expected to continue to grow, prospects are for increased competition from traditional and new suppliers. Central America and Colombia have the advantage of being 3 to 4 days closer to principal consumer markets, of lower ocean transport costs, and of avoiding Panama Canal tolls in most cases. Ecuador is trying to meet this competition by improving quality, reducing export taxes, and lowering production and marketing costs.

Coffee.--Coffee, primarily a Costa crop, is the second tree crop in volume and value. It represents about one-fifth of the value of farm output and about 13 percent of crop output and 12 percent of total agricultural output.

Production increased at a rate of 7.8 percent from 1955-59 to 1960-64, when output went from 31,000 to 45,000 tons. After a sharp drop in 1964 as the result of unfavorable weather conditions, a record output of 66,000 tons is estimated for 1967.

Coffee was introduced early in the 19th century as a crop in Ecuador, but commercial production began about 1920 and was stimulated by cocoa bean diseases, reduced sugarcane output, and rising world coffee prices. In 1949 the Ecuadorean Coffee Institute (INECAFE) was established to expand and improve coffee output.

In 1965 the total area planted to coffee was about 145,000 hectares with an estimated 163.5 million trees, with approximately 400,000 persons involved in production and marketing. The principal areas in which coffee is grown are the provinces of Manabi, El Oro, Loja, and Bolivar.

Although there are large coffee farms, around 90 percent of the production units are represented by small one-family farms which average about 2 hectares in size. Coffee productivity is low, partly because of the declining trend in the volume of credit to coffee farmers which began in 1957. Coffee is grown in the shade, usually with plantains, bananas, and oranges which yield additional income. An advantage enjoyed by coffee plantations in Ecuador is that they are relatively free of disease and pests. Coffee beans are harvested once a year.

Ecuador's per capita consumption, about 2.7 kilograms (green basis) annually, is slightly higher than the average for Latin America.

The coffee cooperative movement is important and increased from 11 cooperatives with 425 members in 1966 to 35 cooperatives with 2,000 members in 1967. Net export returns of cooperative members have risen from $11 to $22.50 per bag. The Lodana Coffee Cooperative, formed in September 1966, has purchased the Government's wet-process plant with an annual capacity for processing 25,000 bags (60 kilograms) of coffee for export. The Federation of Coffee Cooperatives was granted 15 percent of the national export quota for the second quarter of 1967, whereas its share in 1966 had been only 9 percent.

Ecuador apparently has the resources to continue rapid gains in coffee output. However, increased production will be limited primarily by world demand and competition from other suppliers.

Cocoa Beans.--About 90 percent of the cocoa bean production is in the Costa provinces of Guayas, Los Rios, and Manabi. Cocoa beans account for about 15 percent of the farm value of tree crop production, 10 percent of crop output, and 9 percent of total farm output of principal commodities.

Production increased from 31,000 tons in 1955-59 to 40,000 tons in 1960-64--a rate of 5.2 percent. Output was up to 47,000 tons in 1965 but dropped to 35,000 tons the following year, largely as the result of disease. Preliminary estimates indicate that production recovered in 1967.

Ecuador assumed a leading role in world trade in the 18th century with exports of 1,400 tons of cocoa beans to Spain in 1740, and was the leading producer in the 19th and the first part of the 20th century. In 1917 production reached a peak, and almost 50,000 tons were exported. Subsequently, exports by Brazil and Ghana have exceeded those of Ecuador.

In 1960 there were 212,000 hectares planted to cocoa, of which 173,000 hectares were in production. In 1962 some 50 percent of the cocoa pods were affected by monilia frutigena disease which reduced both yields and quality. Subsequently, some of the area has been devoted to bananas and to coffee with cocoa or bananas. However, the area in disease resistant hybrid and clonal varieties of cocoa has increased, and the National Planning Board goal is 120,000 hectares by 1973. Increased fertilizer use and better production practices are also being promoted.

New cocoa bean processing plants have been established in recent years with the objective of converting beans into semiprocessed products to be marketed in the United States, Europe, and LAFTA countries. Industrial consumption of cocoa beans for domestic use was estimated at 2,000 tons for 1965/66 and 2,500 tons for 1966/67.

With the currently favorable export market and Ecuador's efforts to increase output, continuing gains in production of cocoa beans are likely.

Livestock Production

Production gains for livestock products have outpaced increases in both field and tree crop production. However, while livestock are universally grown, principal livestock products account for only one-tenth of total farm output.

The index of livestock output as measured by the four principal products (milk, beef, pork, and mutton) increased from 92 for 1955-59 to 119 for 1960-64, a rate of gain of 5.3 percent or 2 percent per capita. The smaller gain in number of animals indicates some increase in productivity.

Livestock Numbers

Livestock numbers have generally increased in recent years (table 12). Most rapid gains have been in poultry, followed by hogs, sheep, and cattle. Horses, mules, burros, and goats have also increased in number.

Cattle were introduced from Spain in the early colonial period and serve as work animals and producers of beef and milk. Creole breeds predominate. In 1967, cattle of all types were estimated at 1.8 million head, and the number was estimated to be increasing 1.7 percent a year.

Cows kept for milk in 1965 were estimated at 470,000 head. Of these, about one-half were producing milk during that year for a total output of 196,000 tons. The estimate for 1966 indicates a reduction in dairy cows to 460,000 head with 230,000 milking.

The low rate of annual increase in number of cattle is attributed to low meat and milk prices and to the inefficient marketing system for meat, milk, and dairy products.

The larger herds of cattle are found in the Sierra, followed by the Costa and the Oriente. In the Sierra, the provinces of Pinchincha, Azuay, and Loja have the most cattle, while on the Costa the greatest numbers are in the provinces of Manabi and Guayas.

Hogs are raised in the Sierra, mainly by Indian families, and in the Costa with Manabi as a major producing province. The number of hogs in 1967 was 1.73 million, with an annual growth rate of approximately 5 percent.

Poultry numbers were estimated at 5.7 million in 1967. Poor feeding and management practices, inefficient disease control, insufficient credit, and the lack of technical assistance have restricted the development of commercial poultry farming. Poultry numbers are about equally divided between the Costa and the Sierra.

More than 50 percent of the sheep in Ecuador are on big farms; the remainder are in small flocks in the Sierra. Nearly one-half are concentrated in three provinces of the Sierra--Cotopaxi, Chimborazo, and Bolivar. In 1967 the total number was estimated at 2.04 million, with an estimated annual rate of increase of around 2 percent.

The 1954 census listed 137,000 goats, 222,000 mules and burros, and 185,000 horses. Since that year, it is estimated that numbers have not increased more than 10 to 15 percent.

Livestock Products

Principal livestock products are milk, beef, pork, and mutton. Milk accounts for about 37 percent of the farm value of principal livestock products and 4 percent of the value of principal agricultural products; beef, 33 and 3 percent; pork, 23 and 2 percent; and mutton, 7 and 1 percent, respectively.

Average annual output of principal livestock products in 1960-64 and rates of increase from the previous 5-year average were estimated as follows: Milk, 182,000 tons and 5.7 percent; beef, 38,000 tons and 2.9 percent; pork, 17,000 tons and 7.2 percent; and mutton, 8,000 tons and 5.9 percent. For 1965-67, beef has continued to increase at about this rate, the rate of increase for milk and pork has diminished to about half, and mutton has failed to gain.

Ecuador's consumption of livestock products is low. Meat consumption is less than three-fourths that for Latin America as a whole. Consumption of dairy products is also low.

Production and consumption of livestock products are restricted by low productivity, marketing problems, and the lack of producer incentives. Occasional meat shortages in Quito and Guayaquil reflect these problems.

Accelerated improvement programs are planned for the upgrading of native cattle; in the fields of animal nutrition, artificial insemination, and animal health; in the establishment of cattle breeding centers; in the expansion of sheep, hog, and poultry production; and in the modernization of slaughterhouse facilities. The Ministry of Livestock issued a decree in March 1964 which established a nationwide slaughterhouse and meat industry law aimed in part at improving the beef cattle industry by establishing efficient slaughterhouse facilities. Success of these programs could increase output substantially for both domestic use and export.

Other Agricultural Products

Ecuador produces a large number of other temperate and tropical products which are of minor commercial importance or for which reliable production series are not available. Most important of these products are other cereals; vegetable oils; tubers; other livestock products; tobacco; fibers; and pyrethrum flowers.

Cereals include rye, quinoa, and oats. Rye output was estimated in 1965 at 1,900 tons from 3,600 hectares. Most recent estimates place quinoa at about 1,600 tons and oat production at 300 tons a year.

A wide variety of oilseeds are produced. Edible oilseed output in 1965 was estimated at 26,100 tons from 44,000 hectares. Area and production were estimated as follows: Cottonseed, 27,000 hectares and 12,000 tons; peanuts, 14,200 hectares and 11,000 tons; African palm, 360 hectares and 1,200 tons; and sesame, 2,440 hectares and 1,800 tons.

A number of other tubers are grown, including cassava, an important food crop with present output at about 100,000 tons.

Most important livestock products are wool, hides and skins, and lard. Estimates place lard output at 8,000 to 10,000 tons for home consumption.

Black tobacco for local consumption accounts for about 60 percent of total output. Total tobacco production in 1966 was estimated at 2,400 tons (cured leaf, dry basis) from 2,000 hectares.

Fibers include abaca and ramie. Production is of little commercial importance, but output is probably increasing.

Pyrethrum flowers are an important export crop. Production was started in World War II, but declined in the postwar period as the result of increased competition from synthetic insecticides. However, demand has increased in recent years and present production ranges from 1,600 to 2,500 tons.

AGRICULTURAL TRADE

Ecuador's foreign trade in the 1960's has been characterized by an increasingly unfavorable balance of trade. While the value of exports has increased rapidly, the value of imports has gained even more. In 1960-66, deficits occurred in 5 of the 7 years. The large positive trade balance in 1962 resulted primarily from import restrictions on nonagricultural commodities in that year (tables 13,14). Continuing deficits have resulted in part from unfavorable export prices in much of the period and increasing import needs. 6/

Total average exports in 1960-64 were valued at $115 million, compared with imports of $120 million. Agricultural commodities accounted for 92 percent of exports and 12 percent of imports. In 1966, both exports and imports reached new records of $147 and $172 million, respectively.

Ecuador's trade is mostly with the United States, which takes almost two-thirds of its exports and supplies nearly one-half of its imports. Most of the remainder is with the European Common Market, Latin America, Japan, and the United Kingdom. Trade with Latin America has been primarily with LAFTA countries--Colombia, Chile, Venezuela, Peru, and Argentina--and Panama, including the Canal Zone. Although trade with other countries, including the Eastern European countries, has not been significant, efforts are being made to increase Ecuador's traditional exports under bilateral trade agreements with Eastern Europe.

6/ This trade analysis is based on official Ecuadorean statistics without adjustment for balance-of-payments purposes and which may considerably understate the value of exports, mainly for bananas and fish products. For example, bananas were undervalued by more than one-third in some years. International Monetary Fund adjusted exports in million dollars are: 1960-64, $142.3; 1960, $144.5; 1961, $126.9; 1962, $142.8; 1963, 148.7; 1964, $147.8; 1965, $180.3; and 1966 $186.9. Use of this adjusted data results in a more realistic and considerably better trade balance picture of surpluses in every year since 1964. For 1960-66 International Monetary Fund estimates are 128 percent of Ecuadorean totals.

Exports

Agricultural exports have increased every year in the present decade, except for 1961 when coffee and cocoa bean shipments dropped sharply due to a combination of reduced volume and prices. Agricultural exports averaged $106 million for 1960-64 and increased from $96 million in 1960 to $131 million in 1966. Four commodity groups account for 95 percent of the total farm exports: bananas, coffee, cocoa beans, and sugar and sugar products.

Bananas

Banana exports have increased in importance and account for about 53 percent of the value of agricultural and 48 percent of the value of total exports. Ecuador supplies from one-fifth to one-third of the world trade in bananas.

Banana exports averaged 947,000 tons valued at $58.6 million during 1960-64. A record 1.1 million tons valued at $69 million was exported in 1964. Exports dropped sharply in 1965 as a result of increased competition from banana producing countries closer to the United States and due to European preferences to former overseas territories. However, exports largely recovered in 1966, primarily as the result of adverse weather conditions in other producing countries, mainly Colombia and Taiwan, and increased exports to Italy after that country eliminated the banana import monopoly.

The market for almost two-thirds of Ecuador's bananas is the United States, the world's largest importer. Most of the balance goes to Europe--Japan is a marginal market for Ecuador's bananas. However, Europe's share of Ecuador's exports, mainly Cavendish, increased from 32 percent in 1964 to 49 percent in the first half of 1966, countering declines in shipments to the United States.

Coffee

Coffee exports account for only about 1 percent of the world total; but about 21 percent of agricultural shipments from the country, and 19 percent of total trade for Ecuador. While coffee exports have fluctuated, their export share has remained fairly constant in the present decade.

The value of coffee exports increased from $19.4 million for 1960-64 to a record $38.2 million in 1965, but declined sharply in 1966. The volume rose from 28,000 in 1960-64 to 48,000 in 1965 with a drop to 43,000 tons in 1966. In addition to official exports, reports indicate a varying amount of border trade, particularly from the southern provinces of El Oro and Loja to Peru.

Coffee Agreement exports in 1965 were in excess of Ecuador's ICA quota and subject to penalties. However, a penalty waiver was given at the December 1965 meeting of the ICA Council. Ecuador's final quota and prorations for the 1965/66 coffee marketing year (October 1 to September 30) was 32,760 tons which was increased to 34,620 tons for 1966/67. The quota for 1967/68 stood at 33,240 tons as of October 1, 1967.

The United States takes up to half of the total coffee exports and most of emainder goes to the European Common Market, principally to France, Italy, West Germany. Efforts have been made to increase shipments to non-ICA countries, but quantities have been small to date.

Cocoa Beans

Cocoa beans have declined slightly in importance in the present decade, but have accounted for 16 percent of the value of agricultural exports and 15 percent of the value of all exports. Fluctuations have resulted from competition, production variations, and price shifts. Ecuador accounts for about 4 percent of world output and 2 percent of world trade.

Exports in the present decade have ranged from 36,000 tons valued at $21.4 million in 1960 to 29,000 tons valued at $16.2 million in 1964, averaging 33,000 tons and $17.7 million for 1960-64. Export earnings have been sharply affected by cocoa prices which declined from $26.80 per 100 pounds in 1960 to $16.91 in 1965, with a recovery to $23.04 in 1966 (basis Brazilian cocoa, New York market).

Major markets for cocoa beans are the United States, Colombia, and West Germany. The United States imports over 40 percent of the total. Recently, exports to Colombia have declined while shipments to West Germany have been maintained.

Sugar and Sugar Products

Sugar, molasses, and other sugar products have increased in importance and account for 5 percent of agricultural and 4 percent of the total value of Ecuador's exports. Sugar accounts for over 90 percent of the total and molasses most of the remainder. Ecuador accounts for less than 1 percent of world sugar production and trade.

Exports of sugar and sugar products averaged 66,000 tons with a value of $4.9 million in 1960-64. Shipments reached record levels in 1965 resulting from continued gains in output and an increasing U.S. sugar quota. In 1965, the San Carlos mill supplied 58 percent, and the Valdez the remaining 42 percent of total sugar exports. The allocation was fixed by the Ministry of Industry and Commerce in accordance with relative production capacities.

The United States takes virtually all of Ecuador's sugar and sugar product exports. As a consequence, export earnings are closely tied to the U.S. quota. Ecuador received a quota, including prorations of unfilled quotas from other suppliers, totaling 66,535 tons for 1966 which was increased to 67,668 tons for 1967 as of December 31, 1967.

Other Products

A number of other agricultural products are exported, but these account for only about 5 percent of agricultural and 4 percent of total exports. Prinipal commodities are grains, pyrethrum flowers, fibers, tobacco, and miscellaneous products.

Grain exports are largely rice which averaged 22,000 tons valued at $2.5 million in 1960-64. Small quantities of corn are exported, currently about 2,000 tons annually, mostly to Peru. In addition to officially reported trade, border shipments are estimated to reach as much as 500 tons for corn and 7,000 tons of barley annually, mostly for food consumption and brewing.

Castor bean exports averaged 19,100 tons valued at $2.1 million in 1960-64. However, production and exports have subsequently declined.

Long-fiber exports are mostly abaca and ramie. Japan is the principal destination for abaca and ramie. Ramie exports increased from 17 tons in 1964 valued at $5,600 to 24 tons in 1965 valued at $7,900.

Exports of pyrethrum flowers totaled an estimated 1,000 tons valued at $158,000 in 1967, mostly to the United States.

Tobacco exports--mostly to the United States--totaled 25 tons and were valued at $379,000 in 1965. In addition, border trade is reportedly carried on with Peru and Colombia.

A number of miscellaneous agricultural commodities are exported. Pineapple, annatto, and peanut exports were valued at $405,000 in 1965. Additional exports included tagua nuts, canned pineapple, and dehydrated bananas.

Imports

Imports of farm commodities increased every year in the 1960's until 1965 when high levels of agricultural output were achieved and imports were reduced for all major groups. Fats and oils and grain and grain products resumed their upward trend in 1966, but imports of the other major groups continued to decline. Agricultural imports increased from $10.9 million in 1960 to a record $21.1 million in 1964 with subsequent declines. Grains and grain products, fats and oils, cotton, fruits and vegetables, dairy products, and tobacco make up approximately 80 percent of farm imports and 9 percent of the value of all imports.

Fats and Oils

Fats and oils were Ecuador's major agricultural import group until 1964. Such imports account for about 34 percent of the value of agricultural imports and 4 percent of the value of total imports. Of this group, inedible tallow accounts for 49 percent, soybean oil 24 percent, palm oil 6 percent, and other fats and oils 21 percent of the total.

Fats and oils imports rose from an average of $5 million in 1960-64 to $5.8 million in 1966. Strongest increases were made in inedible tallow imports, which increased from 10,800 tons valued at $2.1 million to 19,500 tons valued at $4.0 million. Soybean oil imports for 1960-64 averaged 4,300 tons valued at $1.2 million. Peak imports of 6,400 tons in 1964 declined to 5,100 tons in 1966. Further increases in imports of fats and oils are likely in view of strong demand; consumption is about half of the Latin American average for these commodities and their products.

Tallow comes mostly from the United States, Australia, Canada, and Argentina, the United States supplying two-thirds of the total in 1966. The United States also supplies most of the soybean oil.

Grain and Grain Products

Imports of major grain and grain products account for 34 percent of the value of agricultural imports and 4 percent of the value of total imports. Wheat represents 80 percent of the total, and the remainder is about evenly divided between oats and other cereals and preparations.

Imports of grain and grain products averaged $4.7 million in 1960-64 and increased to a record $7.9 million in 1966. In the same period, wheat imports increased from an average of 46,700 tons valued at $3.8 million to 63,200 tons valued at $6.6 million. Flour, in wheat equivalent, averaged about 8 percent by value and 10 percent by volume of the imports of wheat and wheat products. Increased imports have occurred in spite of continuing production gains as the result of growing demand.

Minor grain imports are mostly oats, corn, and barley. Imports of oats were estimated at 4,500 tons in 1965, up somewhat from earlier years. Approximately 3,000 tons of corn were imported from the United States in 1963/64, but corn imports are usually insignificant. Small amounts of barley are sometimes imported.

Virtually all the wheat imports are from the United States and Canada. Imports from the United States accounted for approximately 40 percent of the total in 1960-64, and increased to about one-half in 1966 and to three-fourths in 1967.

Cotton

Cotton imports are declining as local production increases. Imports account for 5 percent of agricultural and 1 percent of total imports.

Cotton imports were about $1 million per year in 1960-64 and decreased to $0.3 million in 1966. Since customs duties have been increased on cotton and cotton textiles and the drive for self-sufficiency continues, imports are expected to decline even further. The U.S. share of this declining market has been small with principal imports from Peru and Colombia.

Fruits and Vegetables

Approximately 5 percent of the agricultural value and 1 percent of the total value of imports are supplied by fruits and vegetables. Principal categories are apples, raisins, fresh grapes, tomatoes and tomato preparations, and other fruits and vegetable.

Imports averaged $720,000 in 1960-64 with shipments continuing at about the same level for the next 2 years. Principal suppliers are Chile and the United States.

Dairy Products

Dairy product imports, principally dried milk and cream, have fluctuated considerably in the present decade in spite of increased milk output in Ecuador. Dairy imports account for about 3 percent of the value of agricultural imports and less than 1 percent of the value of all imports.

In recent years, the value of dairy imports has averaged about $460,000. The United States and Europe have been the principal suppliers.

Tobacco

Tobacco imported for blending accounts for about 3 percent of the value of agricultural imports and less than 1 percent of the value of total imports. Tobacco imports averaged 259 tons and were valued at $443,000 in 1960-64. Imports increased to an estimated 415 tons in 1966 as cigarette consumption and blending needs rose, and further increases are likely. Practically all tobacco is imported from the United States.

Other Commodities

Nearly half of remaining agricultural imports are food for relief and charity, mostly from the United States. Other imports include meats, and a number of miscellaneous commodities.

Principal meat imports have been poultry and ham valued at $7,500 in 1965. Other imports include breeding stock and seed. While the total is usually small, the United States supplies a high proportion of such livestock and seed imports.

U.S. AGRICULTURAL TRADE WITH ECUADOR

Ecuador has assumed an increasingly important role in U.S. trade. Total and agricultural imports from and exports to Ecuador have gained more rapidly than U.S. trade with Latin America and the world.

Ecuador's share of U.S. total and agricultural imports from Latin America reached 2 and 4 percent, respectively, in 1960-64. For exports, the portion was 2 percent for both nonfarm and farm products. In this period, Ecuador ranked 12th among the 23 Latin American Republics as a source for total U.S. imports and eighth for agricultural commodities. It was 11th for total exports and in 14th place as a market for agricultural exports.

U.S. imports from Ecuador increased from an average of $56.1 for 1955-59 to $70.8 million for 1960-64. The agricultural share was 89 percent for both periods (table 15). Exports have gained more slowly, from $47 to $57.6 million in the same periods with the agricultural portion growing from 12 to 14 percent of the total (table 16).

Opportunities for increased U.S. trade in nonfarm and farm commodities will likely result from a continued expansion in Ecuador's imports and exports in the next several years. However, U.S. import increases may be curtailed by the growing trade deficit with Ecuador and efforts of other countries to expand tropical product sales. Also, U.S. exports may face greater problems of competition from other suppliers, particularly the European Common Market, LAFTA, and the United Kingdom. Moreover, Ecuador's trade with East European countries may increase.

Imports

U.S. imports of agricultural commodities from Ecuador increased from $50 million in 1955-59 to $62.9 million in 1960-64. Because of a sharp gain in coffee, 1965 was a record year with imports of $95.4 million, but imports declined to $82.7 million in 1966.

Four commodities account for about 98 percent of the value of farm imports and 88 percent of the value of total imports from Ecuador: bananas, coffee, cocoa beans, and sugar. Bananas and sugar have increased in relative importance in recent years, while the importance of coffee and cocoa beans has declined.

Bananas

Bananas account for over one-half of all U.S. imports from Ecuador. The United States obtains all its bananas from Latin America, with Ecuador the dominant supplier. Ecuador's share in U.S. banana imports increased from 33 to 42 percent between 1955-59 and 1960-64. However, the share dropped to 34 percent and to 27 percent in the following 2 years because of increased competition from other suppliers.

U.S. banana imports from Ecuador averaged 645,900 tons with a value of $37.4 million during 1960-64. The volume of shipments hit a peak of 757,700 tons in 1963, followed by successive declines in the next 3 years.

Imports from Ecuador are not likely to soon regain the high level of 1963. Long-term prospects depend upon the success of Ecuador's efforts to meet increasing competition in both price and quality of bananas.

Coffee

The second largest U.S. import from Ecuador is coffee, accounting for about one-fourth of Ecuador's farm sales to the United States in the last 2 years. Most U.S. coffee is imported from Latin America, and Ecuador currently supplies 3 percent of this total.

Imports from Ecuador averaged 17,100 tons valued at $12.2 million in 1960-64. A record value of $24.7 million was reached in 1965, followed by some decline in the following year.

U.S. imports of Ecuadorean coffee may not continue at the high rate of the last 2 years due to shifting demand and increasing competition. U.S. imports of cheaper but less flavorous robusta coffees from Africa have gained over the Latin American arabicas because of their greater use in blending and in production of soluble coffee. Also, Ecuador's arabica coffee is of middling quality and there is no special demand for it. Finally, larger U.S. imports reflect continued overshipments by Ecuador of its ICA coffee quota starting in 1965/66.

Cocoa Beans

Cocoa beans accounted for nearly 20 percent of U.S. agricultural imports from Ecuador in 1955-59 but declined to only 8 percent in 1966. However, Ecuador still supplied 6 percent of total U.S. cocoa bean imports and 12 percent of those from Latin America in 1966.

U.S. imports of cocoa beans from Ecuador declined to 15,000 tons valued at $7.6 million in 1960-64. After a record low of $3.8 million in 1964, imports rebounded to $6.8 million in 1966.

Modest increases are likely in the short run, in view of favorable prices and increasing demand. Ecuador's criollo-type cocoa receives some preference in the United States. However, with a switch to the production of more forastero-type cocoa varieties to achieve better yields, this advantage is being lost, and a longer drying period and different curing and fermentation processes are required. Increased competition is likely in the long-run from larger producers--Ghana, Nigeria, Brazil, Ivory Coast, and the Cameroons.

Sugar

Ecuador supplied only token amounts of sugar to the United States prior to receiving a quota in 1961. Sugar now accounts for approximately 7 percent of U.S. farm imports from Ecuador, and for 1 and 2 percent of U.S. global and Latin American sugar imports, respectively.

Ecuador supplied 35,800 tons of sugar valued at $4.2 million, in 1960-64. By 1966, this had increased to 47,700 tons valued at $5.4 million. U.S. sugar imports are governed by country quotas which were first established in 1934. However, Ecuador received its initial quota of 32,659 tons for 1961. This has steadily increased to 67,668 tons for 1967 (quota and prorations as of December 31, 1967). However, Ecuador has never filled its quota and supplied only three-fourths of it in 1966. Future U.S. quotas and imports will likely increase provided that Ecuador is able to supply larger amounts of sugar.

Exports

Agricultural exports from the United States to Ecuador increased from an average of $5.6 million in 1955-59 to $7.9 million in 1960-64. A sharp increase starting in 1964 reflected gains for principal export commodities--tallow, wheat and flour, fats and oils, and cornstarch. These commodities account for over half of farm shipment and about 8 percent of total exports.

Since 1955, U.S. agricultural exports to Ecuador have included Food for Peace shipments at a fairly consistent level of about one-third of the value of farm shipments, compared with the average for Latin America of about one-fourth. However, types of such shipments were varied and the titles shared as follows for 1955 through 1966: Title I sales for foreign currencies totaled $10.8 million or 13 percent; Titles II and III relief and donations, $10.2 million or 10 percent; Title III barter, $3.5 million or 4 percent; Title IV credit sales, $5.9 million or 6 percent; and total, $30.4 million or 33 percent. Commodities have been mostly wheat and flour and fats and oils. Various relief and donation products made up most of the remainder with tallow of some importance.

Tallow

Inedible tallow accounts for about one-fifth of U.S. farm exports to Ecuador. Such shipments represent about one-fifth of U.S. tallow exports to Latin America and from 1 to 2 percent of global exports.

Exports to Ecuador averaged 3,100 tons valued at $0.8 million in 1955-59 and increased to 9,000 tons valued at $1.6 million in 1960-64. A record level of 13,600 tons valued at $2.7 million was reached in 1966. Food for Peace exports accounted for 14 percent of shipments in 1955-59 and 8 percent in 1960-64. Exports in the following 2 years were all commercial sales.

Continued gains in exports to Ecuador are likely in view of increasing needs, the competitive position of the United States, and the lack of serious competition from local tallow and detergent output. Competition is mainly from Canada and, to a lesser extent, Argentina. The United States has the advantages of offering a dependable source of supply and low freight costs than Canada. In the long run, LAFTA preferences may increase competition from Latin American countries, and increased emphasis on livestock output together with the construction of new slaughterhouses in Ecuador may reduce import demand.

Wheat

Wheat, including some flour, accounts for about one-fifth of U.S. agricultural exports to Ecuador. Ecuador is of little importance in the global market but does account for about 1 percent of U.S. wheat shipments to Latin America.

U.S. wheat exports to Ecuador averaged 18,900 tons per year valued at $1.2 million in 1955-59, and 20,200 tons valued at $1.4 million in 1960-64. A record level of 47,000 tons valued at $3.2 million was reached in 1966. Food for Peace shipments accounted for 48 percent of the value in 1955-59, 28 percent in 1960-64, 52 percent in 1965, and 68 percent in 1966. Shipments were almost entirely under Title I in 1955-59 and under barter and Title IV since 1960.

The outlook is for increased U.S. wheat exports to Ecuador although competition will continue, principally from Canada and Argentina. Argentine wheat enjoys more favorable LAFTA import duties and could become a strong competitor. Some former preference for strong, hard wheat appears to have shifted to a wider acceptance of soft wheat, which may favor the United States.

Fats and Oils

Fats and oils, largely soybean and cottonseed oil, account for about 15 percent of U.S. farm exports to Ecuador.

U.S. exports to Ecuador increased from an average of 3,100 tons per year in 1955-59 to 4,100 tons in 1960-64, although the value was the same--$1.1 million per year--in both periods. Value of exports reached a record $2.4 million in 1965 but declined to $1.6 million the following year. Soybean oil has accounted for most exports in recent years. Food for Peace shipments have been important, accounting for 66 percent of the total in 1955-59, 26 percent in 1960-64, 37 percent in 1965, and 19 percent in 1966.

Some increases in U.S. exports may occur in the next few years. However, larger cotton and edible oilseed output in Ecuador could limit such increases in the long run. Also, the planned expansion of livestock output and slaughter facilities might result in some substitution of animal fats for vegetable oils in spite of apparent preference for the latter. Efforts to increase African palm oil production in Colombia could eventually result in exports to Ecuador. Furthermore, competition for the United States may increase from Argentina and possibly Brazil as a result of LAFTA preferences.

Cornstarch

Cornstarch was not exported to Ecuador from the United States before 1960, but it represented 3 percent of total U.S. agricultural exports to Ecuador in 1960-64 and 5 percent in 1966. Ecuador currently accounts for almost a third of U.S. cornstarch exports to Latin America and 8 percent of U.S. global shipments.

Shipments to Ecuador increased from 892 tons a year, valued at $199,000 in 1960-64 to a record 3,300 tons valued at $557,000 in 1966. All were commercial shipments. The outlook is for further increases in the future, as Ecuador is relying on imports to meet growing industrial needs in the production of paper, textiles, and adhesives.

Other Exports

Other U.S. agricultural exports to Ecuador included numerous commodities all of which averaged less than $100,000 since the mid-1950's. However, leaf tobacco and breeding stock exports have been of some importance.

Tobacco exports averaged 21 tons valued at $29,000 in 1960-64. Dairy cattle exports were 60 head and beef cattle 368 head for 1964-66. Tobacco for blending, and breeding cattle for the livestock development program may show gains. Principal dairy breed imports are Holstein and Brown Swiss, and beef breeds mainly Brahma and Hereford, with Canada the strongest competitor.

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Table 1.--Ecuador: Population and population trends, 1950, 1962, and 1966 1/

Region	1950			1962			1966 2/		
	Rural	Urban	Total	Rural	Urban	Total	Rural	Urban	Total
	1,000								
Population:									
Costa	875.6	422.9	1,298.5	1,269.8	857.6	2,127.4	1,456.5	1,094.3	2,550.8
Sierra	1,370.9	485.5	1,856.4	1,526.9	744.4	2,271.3	1,607.6	865.6	2,473.2
Oriente	40.9	5.6	46.5	64.5	10.4	74.9	76.4	13.0	89.4
Galapagos	1.3	0	1.3	2.4	0	2.4	3.1	0	3.1
Total	2,288.7	914.0	3,202.7	2,863.6	1,612.4	4,476.0	3,143.6	1,972.9	5,116.5
	Percent								
Rural and urban shares of each region's population:									
Costa	67.4	32.6	100.0	59.7	40.3	100.0	57.1	42.9	100.0
Sierra	73.8	26.2	100.0	67.2	32.8	100.0	65.0	35.0	100.0
Oriente	88.0	12.0	100.0	86.1	13.9	100.0	85.5	14.5	100.0
Galapagos	100.0	0	100.0	100.0	0	100.0	100.0	0	100.0
Total	71.5	28.5	100.0	64.0	36.0	100.0	61.4	38.6	100.0
	Percent								
Regional shares of rural and urban population:									
Costa	38.2	46.3	40.5	44.3	53.2	47.5	46.3	55.5	49.8
Sierra	59.9	53.1	58.0	53.3	46.2	50.7	51.2	43.9	48.3
Oriente	1.8	0.6	1.5	2.3	0.6	1.7	2.4	0.6	1.8
Galapagos	0.1	0	3/	0.1	0	0.1	0.1	0	0.1
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
	Percent								
Rate of Growth:									
Costa	-	-	-	3.1	6.1	4.2	3.5	6.3	4.6
Sierra	-	-	-	0.9	3.6	1.7	1.3	3.8	2.2
Oriente	-	-	-	3.9	5.3	4.1	4.3	5.8	4.5
Galapagos	-	-	-	5.2	0	5.2	6.6	0	6.6
Total	-	-	-	1.9	4.8	2.8	2.4	5.2	3.4

1/ Population estimates based on census reports which vary from those in the calculation of production indices in table 10.

2/ Provisional estimates of total population are based on a rate of increase of 3.4 percent with breakdown assuming a continuation of intercensus trends of other growth rates, urbanization, and distribution. Because of apparent underreporting on the 1962 census, the 1966 population estimate is low compared to other sources, such as ECLA 5,199,000 and AID 5,250,000.

3/ Less than 0.05 percent.

Source: Republica del Ecuador, Ministerio de Economia, Direccion General de Estadistica y Censos, Primer Censo de Poblacion del Ecuador, 1950, Quito, Ecuador, 1960; Republica del Ecuador, Junta Nacional de Planificacion y Coordinacion Economica, Division de Estadistica y Censos, Segundo Censo de Poblacion y Primer Censo de Vivienda, 25 de noviembre de 1962, Quito, Ecuador. 1966 figures are Econ. Res. Serv. estimates.

Table 2.--Ecuador: Persons employed by principal sector and activity, 1950 and 1962

Sectors and activities	1950		1962		Compound annual rate of change
	Persons	Share	Persons	Share	
	1,000	Percent	1,000	Percent	Percent
Primary:					
Agriculture, forestry, hunting, and fisheries	641	53.2	802	55.6	1.9
Mining and quarrying	5	0.4	4	0.3	-1.8
Total	646	53.6	806	55.9	1.9
Secondary:					
Manufacturing industries	233	19.4	210	14.6	-0.9
Construction	27	2.2	48	3.3	4.9
Total	260	21.6	258	17.9	-0.1
Tertiary:					
Electricity, gas, water, and sanitation	1	0.1	5	0.3	14.4
Transportation, storage, and communications	27	2.3	43	3.0	4.0
Trade	70	5.8	89	6.2	2.0
Banking, insurance, and real estate	5	0.4	8	0.5	4.0
Public administration and defense	62	5.1	76	5.3	1.7
Services	134	11.1	158	10.9	1.4
Total	299	24.8	379	26.2	2.0
Total, all sectors	1,205	100.0	1,443	100.0	1.5

Source: Memoria del Gerente General del Banco Central del Ecuador Correspondiente al Ejercicio de 1964. Quito, Ecuador, 1965.

Table 3.--Ecuador: Gross domestic product at factor cost by sectors of economic activity, 1955-65 1/

Sector	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965 2/
	Million dollars 3/										
Agriculture, forestry, and fisheries	207.0	200.2	237.4	240.4	250.6	270.4	236.3	257.4	321.6	334.2	350.0
Mining and quarrying	14.0	12.1	14.0	13.3	13.7	17.8	14.5	14.8	19.9	21.0	22.2
Manufacturing industries	86.2	83.3	98.0	104.4	107.9	114.9	97.3	103.3	136.2	164.0	177.9
Construction	17.9	18.9	22.9	23.3	27.3	28.5	26.5	25.3	32.0	37.6	43.2
Electricity, gas, water and sanitation	6.3	5.8	7.2	7.5	8.1	8.7	8.2	8.9	12.1	13.2	15.1
Transportation, storage and communication	29.2	26.2	31.5	31.8	32.2	31.3	27.4	27.1	35.0	37.8	40.0
Wholesale and retail trade	72.3	67.8	78.8	80.3	80.0	84.7	71.6	73.3	95.6	103.7	118.5
Banking, insurance, and real estate	10.0	9.9	14.5	17.2	19.5	19.5	17.8	18.3	23.9	28.9	30.9
House ownership	44.2	41.4	48.6	49.6	49.8	50.1	43.8	45.3	58.3	62.3	66.8
Public administration and defense	34.8	33.4	38.1	39.0	40.2	43.0	39.9	41.6	53.3	62.1	69.1
Services	51.8	43.8	58.9	63.0	64.6	65.7	54.4	58.5	70.9	84.9	90.3
Total	573.7	542.8	649.9	669.8	693.9	734.6	637.7	673.8	858.8	949.7	1,024.0
	Percent										
Agriculture, forestry, and fisheries	36.1	36.9	36.5	35.9	36.1	36.8	37.1	38.2	37.4	35.2	34.2
Mining and quarrying	2.4	2.2	2.2	2.0	2.0	2.4	2.3	2.2	2.3	2.2	2.2
Manufacturing industries	15.0	15.3	15.1	15.6	15.5	15.6	15.3	15.3	15.9	17.3	17.4
Construction	3.1	3.5	3.5	3.5	3.9	3.9	4.1	3.8	3.7	4.0	4.2
Electricity, gas, water, and sanitation	1.1	1.1	1.1	1.1	1.2	1.2	1.3	1.3	1.4	1.4	1.5
Transportation, storage, and communication	5.1	4.8	4.8	4.7	4.7	4.3	4.3	4.0	4.1	4.0	3.9
Wholesale and retail trade	12.6	12.5	12.1	12.0	11.5	11.5	11.2	10.9	11.1	10.9	11.6
Banking, insurance, and real estate	1.8	1.8	2.2	2.6	2.8	2.7	2.8	2.7	2.8	3.0	3.0
House ownership	7.7	7.6	7.5	7.4	7.2	6.8	6.9	6.7	6.8	6.6	6.5
Public administration and defense	6.1	6.2	5.9	5.8	5.8	5.9	6.2	6.2	6.2	6.5	6.7
Services	9.0	8.1	9.1	9.4	9.3	8.9	8.5	8.7	8.3	8.9	8.8
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

1/ Current prices. 2/ Preliminary. 3/ Converted from sucres to dollars at free rates of exchange.

Sources: Memoria del Gerente General del Banco Central del Ecuador Correspondiente al Ejercicio de 1964, Quito, Ecuador, 1965; Memoria del Gerente General del Banco Central del Ecuador Correspondiente al Ejercicio de 1965, Quito, Ecuador, 1966; International Financial Statistics, International Monetary Fund, Volume XX, Number 7. July 1967, and Supplement to 1966/67 Issues.

Table 4.--Ecuador: Gross domestic product by sectors of economic activity at factor cost, 1960 sucres, 1955-65

Sector	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965 1/
	Million sucres at 1960 prices										
Agriculture, forestry, and fisheries.	3,682.7	3,904.3	4,041.1	4,086.7	4,332.3	4,731.0	4,882.8	5,302.0	5,330.9	5,360.2	5,410.7
Mining and quarrying	248.7	237.0	238.2	226.5	237.5	311.0	300.0	303.8	330.1	336.8	343.1
Manufacturing industries	1,534.3	1,625.8	1,668.4	1,774.5	1,865.4	2,011.0	2,011.4	2,127.7	2,256.7	2,631.2	2,750.4
Construction	318.3	368.0	390.1	395.9	470.9	499.0	546.7	521.9	530.4	604.3	668.6
Electricity, gas, water, and sanitation	111.5	112.2	123.2	128.6	140.7	152.0	170.5	183.6	200.4	212.1	233.7
Transportation, storage, and communications	520.0	510.4	535.9	540.8	556.6	548.0	566.7	559.2	580.5	606.9	617.7
Wholesale and retail trade	1,286.6	1,321.2	1,340.9	1,365.3	1,383.3	1,482.0	1,480.9	1,509.8	1,585.0	1,663.2	1,831.4
Banking, insurance, and real estate	177.1	193.4	247.4	291.8	336.4	341.0	367.6	377.4	396.2	464.1	477.5
House ownership	786.1	807.7	826.5	842.9	861.4	877.0	904.8	933.8	966.0	999.1	1,033.4
Public administration and defense	619.2	651.8	648.9	663.3	695.2	753.0	823.8	854.6	882.8	996.5	1,068.4
Services	921.2	853.4	1,002.0	1,070.4	1,117.2	1,150.0	1,123.8	1,205.0	1,174.4	1,361.9	1,395.6
Total	10,205.7	10,585.2	11,062.6	11,386.7	11,996.9	12,855.0	13,179.0	13,878.8	14,233.4	15,236.3	15,830.5
	Million dollars 2/										
Agriculture, forestry and fisheries	210.4	223.1	230.9	233.5	247.6	270.4	279.0	303.0	304.6	306.3	309.2
Mining and quarrying	14.2	13.5	13.6	12.9	13.6	17.8	17.2	17.4	18.9	19.3	19.6
Manufacturing industries	87.7	92.9	95.3	101.4	106.6	114.9	114.9	121.6	129.0	150.4	157.2
Construction	18.2	21.0	22.3	22.6	26.9	28.5	31.3	29.8	30.3	34.5	38.2
Electricity, gas, water, and sanitation	6.4	6.4	7.1	7.3	8.1	8.7	9.7	10.5	11.4	12.1	13.4
Transportation, storage, and communications	29.7	29.2	30.6	30.9	31.8	31.3	32.4	31.9	33.2	34.7	35.3
Wholesale and retail trade	73.5	75.5	76.6	78.0	79.0	84.7	84.6	86.3	90.6	95.0	104.7
Banking, insurance, and real estate	10.1	11.0	14.1	16.7	19.2	19.5	21.0	21.5	22.6	26.5	27.3
House ownership	44.9	46.2	47.2	48.2	49.2	50.1	51.7	53.4	55.2	57.1	59.0
Public administration and defense	35.4	37.2	37.1	37.9	39.7	43.0	47.1	48.8	50.4	56.9	61.0
Services	52.6	48.8	57.3	61.2	63.8	65.7	64.2	68.8	67.1	77.8	79.7
Total	583.1	604.8	632.1	650.6	685.5	734.6	753.1	793.0	813.3	870.6	904.6

1/ Preliminary. 2/ Converted at 17.50 sucres per dollar.

Source: Memoria del Gerente General del Banco Central del Ecuador Correspondiente al Ejercicio de 1964, Quito, Ecuador, 1965; Memoria del Gerente General del Banco Central del Ecuador Correspondiente al Ejercicio de 1965, Quito, Ecuador 1966.

Table 5.--Ecuador and Latin America: Calorie, protein, and fat consumption per capita per day 1956-58, 1959-61, projected 1970 and USDA nutritional standards

Average daily intake	Unit	Ecuador				Latin America			
		1956-58	1959-61	1970	Standard	1956-68	1959-61	1970	Standard
Calories:	Number	2,060	2,100	2,210	2,500	2,520	2,570	2,660	2,555
Proteins:									
Animal	Grams	15.5	17.4	19.4	10	24.0	23.2	24.4	10
Animal and pulse	Grams	21.2	23.8	25.5	20	33.1	32.9	34.6	20
Other	Grams	28.3	29.5	31.7	40	32.9	33.2	33.8	40
Total Proteins	Grams	49.5	53.3	57.2	60	66.0	66.1	68.4	60
Fat:	Grams	37.3	38.6	42.7	42	60.4	60.3	63.3	43

Sources: U.S. Dept. Agr., Food Balances for 24 Countries of the Western Hemisphere, 1959-61, Econ. Res. Serv., ERS-Foreign 86, August 1964, and U.S. Dept. Agr., The World Food Budget 1970, Econ. Res. Serv., Foreign Agr. Econ. Rpt. 19, Oct. 1964.

Table 6.--Ecuador and Latin America: Daily per capita food consumption by major food groups, 1956-58, 1959-61, and projected 1970

Food group	Ecuador (calories per day)						Latin America (calories per day)					
	1956-58		1959-61		1970		1956-58		1959-61		1970	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Cereal products	685	33.3	732	34.9	763	34.5	1,006	39.9	1,026	40.0	1,049	39.3
Starchy crops 2/	586	28.4	553	26.4	570	25.8	336	13.3	344	13.4	271	10.2
Sugar	229	11.1	218	10.4	225	10.2	361	14.3	375	14.6	400	15.0
Pulses 3/	94	4.6	102	4.9	109	4.9	151	6.0	160	6.2	169	6.3
Other fruits and vegetables	100	4.9	105	5.0	112	5.1	81	3.2	81	3.2	164	6.2
Fats and oils 4/	120	5.8	115	5.5	127	5.7	188	7.4	201	7.8	211	7.9
Meats, fish, eggs	123	6.0	152	7.2	172	7.8	272	10.8	250	9.8	265	10.0
Milk and cheese	122	5.9	120	5.7	134	6.0	128	5.1	128	5.0	136	5.1
Total 5/	2,060	100.0	2,100	100.0	2,210	100.0	2,520	100.0	2,570	100.0	2,670	100.0

1/ Weighted average. 2/ Includes potatoes, sweetpotatoes, yams, cassava, and bananas. 3/ Includes peanuts, treenuts, and cacao. 4/ Includes butter. 5/ Rounded to the nearest 10 calories.

Sources: U.S. Dept. Agr., Food Balances for 24 Countries of the Western Hemisphere, 1959-61, Econ. Res. Serv., ERS-Foreign 86, Aug. 1964, and U.S. Dept. Agr., The World Food Budget 1970, Econ. Res. Serv., Foreign Agr. Econ. Rpt. 19, Oct. 1964.

Table 7.--Ecuador: Land use in the area covered by the agricultural census, 1954

Land use	Costa region		Sierra region		Total 1/	
	Area	Share	Area	Share	Area	Share
	1,000 hectares	Percent	1,000 hectares	Percent	1,000 hectares	Percent
Crops:						
Annual	319.0	4.8	577.6	8.9	896.6	6.8
Perennial	290.4	4.4	24.9	0.4	315.3	2.4
Total	609.4	9.2	602.5	9.3	1,211.9	9.2
Pasture:						
Improved	383.0	5.8	137.8	2.1	520.8	4.0
Unimproved	299.6	4.5	954.9	14.6	1,254.4	9.5
Total	682.6	10.3	1,092.7	16.7	1,775.2	13.5
Fallow:	241.2	3.6	107.1	1.6	348.3	2.7
Forest and woodland:	688.4	10.4	448.0	6.9	1,136.4	8.6
Other 2/:	757.7	11.4	770.1	11.8	1,527.8	11.6
Total farm area	2,979.3	44.9	3,020.4	46.3	5,999.6	45.6
Estimated area not covered by census:	3,655.7	55.1	3,499.6	53.7	7,155.3	54.4
Estimated total	6,635.0	100.0	6,520.0	100.0	13,154.9	100.0

1/ The census excluded the Oriente region and the Galapagos Islands. 2/ Includes brush and wasteland.

Sources: Primer Censo Agropecuario Nacional, 1954. Banco Central del Ecuador, Ministerio de Economia, Banco Nacional de Fomento, Dec. 1955, Quito, Ecuador.

Table 8.--Ecuador: Number of farms and land in farms in the area covered by the agricultural census, 1954 1/

Region and farm size group	Number of farms		Land in farms	
	Units	Share	Area	Share
	Number	Percent	1,000 hectares	Percent
Costa:				
Under 5 hectares	39,533	46.7	90.5	3.1
5-19.9 hectares	24,637	29.1	269.5	9.0
20-99.9 hectares	16,426	19.4	700.0	23.5
100-499.9 hectares	3,419	4.0	685.2	23.0
500-hectares and over	650	0.8	1,234.5	41.4
Total	84,665	100.0	2,979.3	100.0
Sierra:				
Under 5 hectares	212,153	81.7	341.7	11.3
5-19.9 hectares	33,013	12.7	296.7	9.8
20-99.9 hectares	11,316	4.4	438.7	14.5
100-499.9 hectares	2,368	0.9	471.1	15.6
500-hectares and over	719	0.3	1,472.2	48.8
Total	259,569	100.0	3,020.4	100.0
Costa and Sierra:				
Under 5 hectares	251,686	73.1	432.2	7.2
5-19.9 hectares	57,650	16.7	565.8	9.4
20-99.9 hectares	27,742	8.1	1,138.7	19.0
100-499.9 hectares	5,787	1.7	1,156.3	19.3
500-hectares and over	1,369	0.4	2,706.7	45.1
Total	344,234	100.0	5,999.7	100.0

1/ Excludes the Oriente region and Galapagos Islands.

Sources: Primer Censo Agropecuario Nacional, 1954. Banco Central del Ecuador, Ministerio de Economia, Banco Nacional de Fomento, Dec. 1955, Quito, Ecuador.

Table 9.--Ecuador: Estimated fertilizer consumption and rates of increase, 1957-59, 1960-62, and 1963 with projections for 1970 and 1975

Fertilizer	Average 1957-59	Average 1960-62	1963	1970 1/		1975 1/	
				Low	High	Low	High
	1,000 tons						
Nitrogen (N)	2.8	3.0	3.2	4.0	12.0	5.0	28.0
Phosphate (P_2O_5)	1.9	2.1	2.8	3.0	10.0	4.0	25.0
Potash (K_2O)	1.4	1.7	2.7	3.0	8.0	3.0	22.0
Total	6.1	6.8	8.7	10.0	30.0	12.0	75.0
	Percent increase 2/						
Nitrogen (N)	n.a.	2.3	3.3	3.2	20.8	4.6	18.5
Phosphate (P_2O_5)	n.a.	3.4	15.5	1.0	19.9	5.9	20.1
Potash (K_2O)	n.a.	6.7	26.0	1.5	16.8	0.0	22.4
Total	n.a.	3.7	13.1	2.0	19.3	3.7	20.1

1/ Based on trends and optimal use. 2/ Compound rate of increase from previous period shown.

Source: Naciones Unidas, El uso de Fertilizantes en America Latina, Consejo Economico y Social, Oct. 1966.

Table 10.--Ecuador: Indices of area, yields, production, per capita production, and population, selected 5-year averages and annual 1960 through 1966 1/
(1957-59 = 100)

Category	Average 1955-59	Average 1960-64	1960	1961	1962	1963	1964	1965	1966	1967 2/
	Index									
Area:										
Field crops 3/	97	102	99	98	103	103	106	108	112	115
Yields:										
Field crops 3/	99	113	105	124	114	113	108	111	106	103
Production:										
Field crops 4/	96	115	104	122	117	116	115	120	119	124
Tree crops 5/	101	124	121	124	125	126	126	146	142	154
All crops 6/	100	121	115	123	122	123	122	136	134	143
Livestock products 7/	92	119	113	115	118	123	125	129	133	136
Net agriculture 8/	99	121	115	123	122	123	123	136	134	143
Net food 8/ 9/	100	120	113	120	120	123	123	131	131	138
Per capita production:										
Field crops 4/	99	102	98	111	104	99	95	96	92	93
Tree crops 5/	104	109	114	113	111	108	104	117	110	115
All crops 6/	103	107	108	112	108	105	101	109	104	107
Livestock products 7/	95	105	106	105	105	105	104	103	103	102
Net agriculture 8/	102	107	108	112	108	105	102	109	104	107
Net food 8/ 9/	103	106	106	109	106	105	102	105	101	103
Population 10/	97.0	113.3	106.3	109.6	112.9	116.8	120.7	125.1	129.2	133.6

1/ Weighted aggregative index using weights representing prices received by Ecuadorean farmers in the 1957-59 base period. 2/ Preliminary. 3/ Wheat, barley, corn, rice, sugarcane, potatoes, sweetpotatoes, kidney beans, and cotton fiber. 4/ Crops included in footnote 3 and castorbeans. 5/ Coffee, cocoa beans, and export bananas. 6/ Crops included in footnotes 4 and 5. 7/ Beef, pork, mutton, and milk. 8/ Excludes a feed deduction of 20 percent of the value of livestock production. 9/ Excludes castorbeans, cotton fiber, and coffee. 10/ Population varies from that used in table 1, but trends are similar.

Source: U.S. Dept. Agr., Indices of Agricultural Production for the 20 Latin American Countries, ERS-Foreign 44, Econ. Res. Serv., Jan. 1967, and Econ. Res. Serv. estimates.

Table 11.--Ecuador: Production of principal field and tree crops and livestock products, selected 5-year averages and annual 1960 through 1967

Crops and products	Average 1955-59	Average 1960-64	1960	1961	1962	1963	1964	1965	1966	1967 1/
	1,000 tons									
Field crops:										
Sugarcane 2/	1,166	1,887	1,596	1,701	1,813	1,966	2,360	2,100	2,352	2,420
Potatoes	271	256	187	298	250	270	275	290	220	280
Rice, paddy	137	192	175	203	209	211	164	173	204	182
Corn	148	151	160	153	150	130	160	170	175	180
Barley	87	95	91	113	83	97	89	96	95	105
Wheat	41	64	58	78	78	55	51	55	57	60
Beans, kidney	23	24	27	21	21	27	22	31	31	34
Castorbeans	16	22	20	21	22	23	26	16	11	8
Cotton fiber	2.7	3.4	2.4	2.4	3.2	2.6	6.3	5.4	4.6	5.4
Tree crops:										
Bananas 3/	1,830	2,148	2,075	2,050	2,115	2,200	2,300	2,400	2,500	2,500
Coffee	31	45	45	51	48	42	39	62	58	66
Cocoa beans	31	40	38	42	40	42	36	47	35	52
Livestock products:										
Milk 2/	138	182	165	175	185	190	193	196	199	204
Beef	33	38	39	36	37	38	39	40	41	42
Pork	12	17	17	18	18	20	20	21	22	23
Mutton	6	8	7	8	8	8	8	8	9	9

1/ Preliminary. 2/ Revised. 3/ Export type production.

Source: U.S. Dept. Agr., Indices of Agricultural Production for the 20 Latin American Countries, Econ. Res. Serv., ERS-Foreign 44, Jan. 1967.

Table 12.--Ecuador: Estimated livestock numbers, average 1956-60 and annual 1965 through 1967

Class	Average 1956-60	1965	1966 1/	1967 2/
	1,000 head			
Cattle	1,402	1,740	1,770	1,800
Sheep	1,507	1,960	2,000	2,040
Hogs	1,213	1,570	1,650	1,730
Poultry	3/3,946	5,160	5,420	5,700
	Percent increase 4/			
Cattle	n.a.	3.1	1.7	1.7
Sheep	n.a.	3.8	2.0	2.0
Hogs	n.a.	3.8	5.1	4.8
Poultry	n.a.	3.9	5.0	5.2

1/ Preliminary. 2/ Forecast. 3/ Average of two years. 4/ Compound rate of increase from previous period shown.

Sources: U.S. Dept. Agr., Foreign Agr. Serv., Foreign Agr. Cir., FLM 1-67, FLM 2-67, and FLM 6-67; FAO Production Yearbook 1961; and Agricultural Attache estimates.

Table 13.--Ecuador: Value and quantity of agricultural exports, 1960-64 average and annual 1960 through 1966 1/

Products	Average 1960-64	1960	1961	1962	1963	1964	1965	1966
	1,000 dollars							
Bananas 1/	58,604	45,267	48,664	62,306	67,833	68,951	51,453	68,701
Coffee	19,424	21,946	14,802	20,953	18,255	21,165	38,236	32,144
Cocoa beans	17,741	21,414	15,388	15,913	19,795	16,194	19,132	17,206
Sugar	4,429	918	2,529	5,967	5,614	7,115	7,304	6,508
Rice	2,472	3,717	2,961	658	3,691	1,332	0	2,970
Oilseed	2,209	1,531	2,442	2,099	2,105	2,869	1,996	1,247
Molasses, panel and other	457	312	241	558	817	358	597	524
Fruits	217	170	283	304	135	191	240	371
Pyrethrum flowers	165	132	91	57	158	389	278	158
Tagua 2/	90	92	89	95	91	84	68	52
Other agricultural	494	384	418	273	548	848	852	1,427
Total agricultural 1/	106,302	95,883	87,908	109,183	119,042	119,496	120,156	131,308
Other Exports	8,650	6,678	8,062	8,246	9,395	10,868	13,634	16,191
Total Exports 1/	114,952	102,561	95,970	117,429	128,437	130,364	133,790	147,499
	Percent							
Agricultural as percent of total	92	93	92	93	93	92	90	89
	1,000 tons							
Bananas	947	895	842	898	1,014	1,087	874	1,071
Coffee	28	31	23	33	30	25	48	43
Cocoa beans	33	36	32	32	36	29	39	32
Sugar	42	13	27	63	47	58	65	50
Rice	22	37	24	5	34	10	0	23
Oilseed	19	11	19	20	21	26	19	10
Molasses, panel, and other	24	30	13	25	30	20	55	44
Fruits	3	3	4	5	2	3	3	4
Pyrethrum flowers	1	3/	3/	3/	1	2	2	1
Tagua 2/	3	3	3	3	2	2	2	1

1/ Based on official Ecuadoran statistics without adjustment for balance-of-payments purposes. 2/ Ivory palm nuts used for carving. 3/ Less than 500.

Source: Banco Central del Ecuador, Boletin. Año XL, No. 480, Quito, Ecuador. July 1967.

Table 14.--Ecuador: Value and quantity of agricultural imports, 1960-64 average and annual 1960-66

Product	Average 1960-64	1960	1961	1962	1963	1964	1965	1966 1/
	1,000 dollars							
Wheat 2/	3,758	3,450	3,650	3,130	3,090	5,470	5,444	6,560
Oats	446	790	252	400	280	510	570	500
Other cereals and preparations	460	232	655	310	430	670	966	800
Tallow, inedible	2,088	1,502	1,582	2,033	2,062	3,259	3,330	3,950
Soybean oil	1,211	985	822	1,299	1,335	1,615	1,376	1,330
Palm oil	415	465	448	72	663	425	3	70
Other fats and oils	1,305	1,141	748	1,796	1,040	1,801	390	500
Cotton	976	260	1,169	1,120	1,010	1,320	660	260
Tobacco, unmanufactured	443	70	403	490	470	780	574	420
Milk and cream, dried	336	222	644	204	74	538	305	250
Other dairy products	124	278	161	0	25	158	170	120
Apples	97	60	30	132	126	138	113	95
Raisins	112	71	101	116	149	124	113	120
Grapes, fresh	87	123	28	81	93	110	110	100
Tomatoes and preparations	164	140	119	180	186	194	175	150
Other fruits and vegetables	260	106	23	291	446	434	430	300
Wine	124	135	94	110	121	161	108	110
Other agricultural	2,334	870	1,871	2,536	3,000	3,393	2,563	2,365
Total agricultural	14,740	10,900	12,800	14,300	14,600	21,100	17,400	18,000
Other imports	105,000	104,300	93,700	82,800	113,400	130,800	153,400	153,900
Total imports	119,740	115,200	106,500	97,100	128,000	151,900	170,800	171,900
	Percent							
Agricultural as percent of total	12	9	12	15	11	14	10	10
	tons							
Wheat	46,669	41,894	50,040	40,102	36,940	64,370	62,390	63,250
Oats	3,240	5,200	2,500	2,700	1,900	3,900	4,500	3,570
Tallow, inedible	10,756	7,334	7,119	10,053	11,814	17,459	14,072	19,540
Soybean oil	4,290	3,123	3,121	3,916	4,927	6,363	4,403	5,075
Palm oil	1,511	1,939	1,847	281	2,176	1,312	10	220
Cotton	1,416	330	1,890	1,640	1,430	1,790	850	330
Tobacco, unmanufactured	259	40	264	276	250	466	306	415
Milk and cream, dried	1,276	480	2,560	810	130	2,400	325	600
Apples	420	250	230	500	570	550	457	700
Raisins	215	141	206	220	259	247	197	220
Grapes, fresh	201	276	125	181	204	221	220	200
Wine	4	4	4	3	3	4	3	3

1/ Preliminary and partly estimated. 2/ Includes flour in wheat equivalent which averaged 8 percent by value, and 10 percent by volume in 1960-64.

Source: Republica del Ecuador, Anuario de Comercio Exterior. 1960-65; FAO, Trade Yearbook, 1966, and Econ. Res. Serv. estimates.

Table 15.--United States: Imports of agricultural commodities from Ecuador, selected 5-year averages and annual 1960 through 1966

Category	Average 1955-59	Average 1960-64	1960	1961	1962	1963	1964	1965	1966
	Thousand dollars								
Bananas 1/	23,172	37,406	30,948	27,389	34,449	39,196	55,046	55,286	48,119
Coffee	16,767	12,241	14,536	7,944	15,118	11,289	12,320	24,712	19,381
Cocoa beans	9,359	7,614	12,416	7,821	5,375	8,635	3,821	6,441	6,832
Sugar 2/	---	4,177	---	3,263	6,299	6,401	4,922	5,998	5,398
Other agricultural 3/	758	1,481	699	1,000	1,811	2,275	1,618	2,942	2,965
Total agricultural	50,056	62,918	58,599	47,417	63,052	67,796	77,727	95,379	82,695
Other products	6,037	7,874	7,182	6,418	8,258	8,223	9,291	10,305	11,605
Total imports	56,093	70,793	65,781	53,835	71,310	76,019	87,018	105,684	94,300
	Percent								
Agr. percent of total	89	89	89	88	88	89	89	90	88
	Tons								
Bananas	401,922	645,901	576,747	481,832	699,746	757,717	713,464	582,948	502,220
Coffee	16,961	17,072	19,635	12,133	22,152	17,617	13,823	30,149	25,937
Cocoa beans	12,890	15,079	22,240	17,035	12,218	16,438	7,463	14,791	13,941
Sugar	---	35,758	---	28,378	59,102	49,872	41,440	49,412	47,685

1/ Changes in unit values of imports reflect, in part, a change from imports on the stalk to imports cut from the stalk and packed in boxes. 2/ Differences in 1961-63 from table 13 are probably due to differences in methods of valuation and to time lags. 3/ Includes numerous commodities all under $100,000 in the 12-year period.

Source: U.S. Bur. Census.

Table 16.--United States: Exports of agricultural commodities to Ecuador, selected 5-year averages and annual 1960 through 1966

Commodity	Average 1955-59	Average 1960-64	1960	1961	1962	1963	1964	1965	1966
	Thousand dollars								
Tallow, inedible	806	1,584	1,221	1,279	1,463	1,678	2,279	1,927	2,660
Wheat 1/	1,233	1,359	1,254	516	765	1,625	2,634	1,363	3,224
Soybean oil	233	851	884	919	574	673	1,206	1,942	898
Cornstarch	--	199	100	103	116	249	429	535	557
Cottonseed oil	764	193	--	295	173	191	304	28	83
Other animal fats and oils	85	104	191	164	94	70	--	406	652
Infants' and dietetic food	218	273	327	269	288	258	225	251	227
Food for relief or charity	162	1,059	216	760	855	916	2,548	670	963
Other 2/	2,098	2,320	2,150	2,828	1,782	1,889	2,951	3,461	2,517
Total agricultural	5,599	7,942	6,343	7,133	6,110	7,549	12,576	10,583	11,781
Other products	41,427	49,649	48,498	41,723	38,765	48,770	70,491	66,696	68,214
Total exports	47,026	57,591	54,841	48,856	44,875	56,319	83,067	77,279	79,995
	Percent								
Agr. percent of total	12	14	12	15	14	13	15	14	15
	Tons								
Tallow, inedible	3,105	9,031	6,744	6,294	8,505	10,565	13,049	9,215	13,587
Wheat 1/	18,927	20,200	17,962	8,658	11,724	23,352	39,306	20,543	47,235
Soybean oil	756	3,196	2,924	2,889	2,087	2,864	5,216	6,972	2,916
Cornstarch	--	892	379	406	463	1,118	2,096	3,193	3,292
Cottonseed oil	2,137	529	--	777	431	539	898	66	204
Other animal fats and oils	253	506	949	742	437	401	--	1,730	3,079
Infants' and dietetic food	105	151	183	149	159	146	119	133	125

1/ Includes flour in wheat equivalent which averaged 21 percent by value and 22 percent by volume in 1960-64.
2/ Includes numerous commodities all under $100,000 in the 12-year period.

Source: U.S. Bur. Census.

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