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THE COFFEE ECONOMY OF COLOMBIA

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## SUMMARY AND CONCLUSIONS

### Colombia in World Coffee Trade

Colombia, with a level of exports of about 6 million bags per year, is the second largest coffee exporting country after Brazil, accounting for some 13 percent of the world total. This is about the same as the share held by Colombia in the early 1930's. Its share rose to substantially higher proportions of total world exports during the Second World War and in the post-war period up to about the middle 1950's, but since then Colombian export growth has failed to keep pace with that of world exports. In the pre-war period, Colombia's share of world exports advanced largely at the expense of Brazil, which was unilaterally holding exports back in an effort to sustain the price. With the weakening of world prices in the mid-1950's, Colombia joined with Brazil in efforts to support the price by restraining exports, and other coffee exporting countries expanded both production and exports at the expense of the two leaders.

During the post-war period there has been a marked shift in Colombian coffee exports from the United States to Europe, with the present position being that the volume of exports to Europe is almost as large as that to the United States. This occurred in connection with a shift in United States purchasing to cheaper sources of supply, especially to African robusta coffees. In the face of these developments, Colombia has attempted to diversify its markets as broadly as possible in Europe. In this effort, it has relied to a considerable extent on exports of coffee under bilateral payments agreements. Exports under such arrangements have increased more than four times since 1960, and now account for about 15

percent of total exports, or close to 1 million bags per year.

As these competitive difficulties have been encountered, there has been somewhat of a narrowing of the price premium over other types of coffee which has traditionally been commanded by Colombian coffee. Colombia recently participated actively in a movement under the International Coffee Agreement to narrow the margins among the price ranges established for its coffee and for other types of coffee, in application of the selective price criteria for adjustments of export quotas differentially for the several types of coffee. Colombia was not prepared to suffer cuts in its export quota in order to sustain the price for its coffee at substantial margins over those of the other types of coffee.

#### Coffee and the Economic Development of Colombia

Coffee cultivation accounts for 7-8 percent of the gross domestic product of Colombia, or about one-fourth of total farm output. It accounts for about one-sixth of the croplands under cultivation, and is carried out on more than 300,000 farms with a population of close to 2 million persons out of the total population of 19 million. Excluding taxation on coffee earmarked specifically to finance the accumulation of surplus production, coffee provides about 8-10 percent of general government revenues. Important as coffee is in these relationships, its key role derives from the fact that it is the major source by far of the country's foreign exchange earnings, accounting, even after substantial declines in the share from the mid-1950's, for close to two-thirds of the value of total exports.

With a maximum prospective growth of coffee export earnings of 2.5 percent per year as a result of the total world supply-demand relationships in this commodity, it is obvious that the maintenance of an adequate rate of

growth of the economy is dependent on a substantial expansion of other exports. In March 1967 a basic change in the country's foreign exchange regime was enacted to stimulate such an expansion of exports. Through a flexible exchange rate which would depreciate in relation to the movement of internal prices, in addition to subsidies, special credits, and promotional services, it was hoped that the goal would be achieved of raising "minor" exports, i.e., exports other than coffee and petroleum, from a level of US \$128 million in 1966 to \$300 million by 1970, compared to the projected value of coffee exports of \$340 million in the latter year. Even with such high sights for export diversification, a current balance of payments deficit was projected for 1967-1970 of about double the deficits incurred in 1961-1966, in order to support a national economic growth target of 6 percent per year. Colombia will depend on foreign aid to achieve the closing of this gap.

With a population growth rate of 3.2 percent per year, a growth rate of 6 percent is necessary in order to achieve an adequate increase in income per capita. During the period since 1950 the growth rate has averaged substantially less than that, amounting to 4.6 percent per year both over the entire period 1950-1966 and during the recent interval 1961-1966.

Agriculture, although declining relative to total national output, still accounts for about 30 percent of the total. The growth of agricultural output has been slightly lower than that of population, though it has been held back by a very slow growth of output of coffee. Excluding coffee, the agricultural showing has been slightly higher than that of population growth. Many factors are responsible for the lagging growth of agriculture, but among the outstanding ones have been the patterns of land tenure and use. The larger part of landholdings is

accounted for by a small part of the population, and this has been accompanied by a tendency toward extensive rather than intensive utilization of land. This has had an adverse affect with respect both to expansion of agricultural output and the provision of employment opportunities in agriculture for the growing population. Symptomatic of these conditions is the extent of under-employment in rural areas and unemployment in the cities. In recognition of this situation, a land reform law was enacted in 1961 and an active land reform institute, INCORA, was entrusted with its administration. The extent of land redistribution activities by INCORA has, however, been limited. During its first five years of operations, fewer than 10,000 families a year benefited from INCORA's land distribution program, compared to a growth in farm families estimated at about 40,000 per year. INCORA attributes its difficulties to Colombia's poor soils and the unsuitability of many of the large landholdings for intensive exploitation.

Although manufacturing output has increased at a higher rate than both agriculture and total output in Colombia, it has expanded employment at a much lower rate than output, because of its capital-intensive nature and low level of capacity utilization. The growth of exports of manufactures is hampered by the high costs of many manufacturing activities, which have been protected from foreign competition largely as a by-product of balance of payments import restrictions.

The employment problem resulting from the nature and pace of agricultural and industrial growth in the country bears significantly on the coffee adjustment and diversification problem. The problem of providing alternative employment to resources engaged in surplus coffee production adds to an already stubborn general problem of creation of employment opportunities in connection with the overall development of the economy.

Structure and Prospects of the Colombian Coffee Sector

Colombian coffee production at a level of about 8 million bags per year has undergone virtually no change during the past decade. The long-term growth rate since the early 1930's works out at slightly more than 2 percent per year. There is little conclusive evidence on the trend of area planted to coffee, which is now estimated to amount to about 1 million hectares, but it has apparently been stagnant or declining over the last ten years. There is similarly no evidence of significant change during that period in the estimated 2 billion coffee trees in the country. As of 1962/63, 60 percent of the coffee trees were over 15 years old, and should therefore have declining yields. It is believed that the rate of replanting is low, and therefore no significant change should be expected in the number or age composition of trees.

Close to three-fourths of total output comes from the west central section of the country, where coffee is cultivated on the slopes of the western and central ranges of the Andes mountains. Coffee was first introduced into the country to the east and north-east of this central region, but has historically shifted to the west central area. This region has the highest yields per unit of area, and is the best endowed in the country ecologically for coffee cultivation, with an optimum altitude range of 1,300-1,800 meters, and with much of the coffee lands on steep slopes. With a considerable range of climates in coffee producing regions, there is little annual fluctuation in output; adverse weather conditions in some regions tend to be offset by favorable conditions in others.

Coffee cultural practices are simple and highly labor-intensive. The national average yield is about 500 kilos of green coffee equivalent per hectare, but the potentials for increased yields are very great. An outstanding characteristic of coffee cultivation in Colombia is the small size of many of the farms. About one-third of the more than 300,000 coffee farms have less than 1 hectare each, and there has been a trend of decline in the average size of farm. The smallest farms cultivate coffee over most of their area, with an inverse relationship between the size of farm and the proportion devoted to coffee. The smallest farms also tend to be on the steepest lands, and consequently offer the most limited possibilities for alternative activities.

Monetary returns to coffee cultivation are estimated at some 3,800 pesos<sup>1/</sup> per hectare at the national average yield, counting labor as a return rather than a cost, and making no allowance for depreciation of investment. This works out to 29.25 pesos per man-day for 130 man-days of labor required to produce the average output per hectare in a year. Margins increase more than proportionately with increases in yields. In one extreme case of a farm visited by the mission, in which the most advanced cultivation techniques are applied, the yield is as much as 7,000 kilos per hectare, and the return on investment is estimated to be as high as 66 percent. Changing over to the advanced production practices (new varieties of trees, high density per unit of area, heavy application of fertilizers, and growth without shade) requires investment, and is held back because of the high cost of credit and the risks involved in such investment.

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<sup>1/</sup> 16.25 pesos = US \$1.

The 40-year old National Federation of Coffee Growers, a private body representing the interest of coffee producers, is the pivotal agency in the carrying out of the coffee policy of the country. This agency constitutes a remarkable example of organization and stability. It has had only two general managers during its entire history, and employs some 2,800 persons. By arrangement with the government, it carries out Colombia's obligations under the International Coffee Agreement. Its purchases of coffee, amounting to 60-70 percent of the total crop, at support prices fixed in agreement with the government, constitute the basic factor in internal price policy. The Federation is the agency which buys and stores surplus coffee, which it finances primarily through the proceeds of a 19 percent "coffee retention" tax, entrusted to it by the government for this purpose. The Federation's storage facilities for coffee represent close to half of the country's total storage capacity for agricultural products.

The Federation support price for coffee is fixed by a committee consisting of the Federation's General Manager, the Manager of the Central Bank, and three Ministers of the National Government - Finance, Agriculture, and Development. The price is, of course, influenced greatly by the level of taxation, which is applied at the point of export and amounts to slightly more than 40 percent of the export value, including the 19 percent "retention" tax. The principal element in taxation besides the retention tax is an export tax, which now (February 1968) amounts to 22.25 percent. The export tax was imposed in March 1967 at the time of basic modification of the exchange regime, in replacement of a penalty export rate that applied to coffee; it was initially established at a rate of 26 percent, with the provision that it was to decline by one-fourth of 1 percentage point per month until it settled at 20 percent in December 1968. At the same time,

the export rate applicable to coffee was established as the same "certificate" rate applicable to exports generally, and the certificate rate was left to fluctuate in the market. Thus, while the export tax rate was to decline steadily, the peso proceeds from coffee exports by virtue of the exchange rate were also to increase; indeed the certificate rate rose by 20 percent from 13.50 pesos per dollar in March 1967 to 15.70 pesos in November 1967. The Federation support price for coffee was raised by some 18 percent during that period. The rationale for this policy is to improve the terms of trade for coffee producers relative to their position in 1962, and to keep private exporters from selling too cheaply in international markets. The government is aware of the need, however, to balance against these objectives the undesirable effect of incentives for expansion of coffee output. The net effect of the opposing tendencies of supporting the income of coffee growers and applying a high rate of taxation on coffee exports, which have been at work for some time, has been the low rate of growth in coffee output.

Colombia nevertheless has accumulated substantial surplus stocks of coffee. The stock accumulation is reported to have begun in 1959/60, and to have risen to 5.3 million bags at the beginning of the coffee year 1967/68, i.e., as of October 1, 1967, of which some 4.7 million bags are considered to be surplus. The annual average accumulation during the 8-year period 1959/60-1966/67 was about 600,000 bags, though the rate of accumulation stepped up during the last three years of the period to about 950,000 bags per year. With only a modest rate of growth of output, the surpluses have resulted from restrictions on exports, particularly under the International Coffee Agreement.

Projections of Colombian surpluses through 1972/73, the period for which the International Coffee Agreement is now being extended, range from a high estimate of about 800,000 bags per year to a low estimate of about 500,000 bags per year. By the end of the period, i.e., in the year 1972/73, the high estimate surplus would still be some 720,000 bags, but the low estimate surplus would amount to only some 200,000 bags. The factor accounting for the difference in the high and the low estimates is the assumption concerning production growth: a growth rate of 2 percent per year is assumed for the high estimate and 1 percent for the low estimate. The essential reason for the lower surpluses projected in either case compared to the last three years is a more satisfactory rate of growth of exports.

Solution of the long-run coffee adjustment problem is thus heavily dependent on internal policy to keep the growth rate of output within the limit of 1 percent per year. At a growth rate of 2 percent per year, a rate of annual surpluses of some 800,000 bags will most likely continue. Such a rate of surplus, at the present national average yield of 500 kilos per hectare requiring some 130 man-days of labor to produce, would seem to make redundant the labor of some 50,000 persons, assuming no change in existing under-employment, and the cultivation of some 100,000 hectares.

#### The Coffee Diversification Problem

The only concerted effort carried out in Colombia thus far aimed at diversifying economic activity in the coffee sector is the Caldas Regional Development Program formulated for execution during the period 1964-1968. However, this program did not have as a goal a cut-back in coffee production. Aimed at the principal coffee producing region of the country, its objectives were to increase the overall growth rate of the region and to reduce its dependence on coffee by limiting the growth of

coffee output relative to that of other agriculture and industry. There was a stated goal of reducing coffee acreage by less than 10 percent, but none with respect to coffee output except to keep it "within the limits of the domestic and export markets". By the middle of 1967 less than half of the total investments formulated for the program had been carried out. As for agricultural credit, which constituted a main element in the program, some 3,000 farms, or some 5 percent at most of those in the region, received supervised loans, some intended for coffee rationalization and others to finance livestock and crops other than coffee. While the incomes of the farmers benefited may have increased, the effect on coffee appears to have been some increase in output by the farmers involved, precisely as their incomes increased and were partly plowed back into coffee. The problem of making alternative activities at least as attractive financially as coffee has not been met, though the program has introduced some elements to offset the traditional coffee bias in the region.

In recognition of the need to do more than merely combat the "coffee mentality" in the country and diversify the sources of income of coffee farmers, the Colombian Government constituted a committee in 1966 to formulate a pilot coffee diversification project to be undertaken after completion of the Caldas program. In the work which has thus far been done on this project, there is included a goal of reduction of coffee output in addition to merely a reduction in acreage. The goal is a reduction of somewhat more than 300,000 bags per year, which would go only part way in meeting the surplus problem under the high estimate projection cited above, though it would meet the problem on the low estimate basis by 1971/72. However, the pilot project is once again aimed at the principal

coffee producing region of the country, and it is not yet clear how coffee yields will be kept from increasing and not offsetting the reduced acreage, particularly under the national policy of increasing the incomes of coffee farmers.

The basic problem in coffee diversification in Colombia, in the sense of replacement of some of the coffee output by other economic activities, is that the policy of support of coffee prices, while holding increases in output in check, has not resulted in an adjustment of output to the total marketing possibilities. At the same time, steps to make alternative activities at least as remunerative as coffee production have not been pursued with sufficient vigor to be effective. The value of coffee surpluses being accumulated amounts to about 425 million pesos per year, which may be taken as a measure of the wasted effort from the viewpoint of the national economy.

The elimination of some coffee output and its replacement by other economic activities have to be pursued jointly. In considering how to achieve this, decisions have to be taken with respect to the regions of the country and the types of farmers to be included in any diversification program.

The problem of relative efficiency in coffee production of both regions and types of farmers has more than one dimension. Consideration has to be given not only to the relative efficiencies in coffee production itself but to the relative opportunity costs of coffee production, i.e., the relative efficiencies in alternative activities. Looked at in this way, it is not necessarily clear that the principal coffee producing region of the country is the one where the diversification should be carried out. This region appears to be at the same time the most efficient in coffee production and the prospectively least efficient for alternatives. As

regards the types of farmers, where the most convenient distinction that can be made is by size of farm, it is by no means clear which are the most efficient in coffee production. When introducing the opportunity cost element, it appears a priori that diversification should be aimed at the larger farmers rather than the small ones. Such an efficiency criterion coincides with considerations of equity, involving the undesirability of eliminating for the small farmer even the present low level of returns for his effort in exchange for still bleaker alternatives.

The cost of coffee diversification would, of course, be dependent on the decisions that have to be made with respect to the most appropriate alternative activities to be induced. Short of estimates which have to be made in detail on the basis of such decisions, a general order of magnitude may be obtained by applying very rough factors of amounts of investment required per worker for alternative activities. Such a procedure yields an estimate of 1.5-2.0 billion pesos to employ the 50,000 displaced workers previously mentioned, which is equivalent to about five years of the annual cost of buying and storing surplus coffee and is about equal to the magnitude in present values of the 5-year Caldas investment program.

The basic need for a coffee diversification strategy is to formulate a program of cut-backs in coffee and of alternative employment for the resources displaced, by both region or regions and types of farmers, to be worked out by application of opportunity cost principles. The diversification activities could include alternative activities on coffee lands as well as agricultural, forestry, industrial, and public works activities near the coffee regions.

In order to induce cut-backs in coffee production, fiscal mechanisms might be considered, such as differential taxation on large farmers in the region or regions selected for diversification. The taxes could be related to such criteria as size and characteristics of farm, or relative returns to coffee and prospective alternatives per unit of area.

One of the weakest areas to date in coffee diversification activities in Colombia, and indeed in agricultural development generally, has been that of providing support through guaranteed prices and marketing outlets. Much more will have to be done in this area to solve the problems in both cases.

To meet the costs of a diversification program, as a minimum present taxes on coffee should be maintained, including the retention tax, even if and as surpluses and the need to finance them decline. As the need for financing of surpluses declines, a pool of funds would thus gradually be created out of which to finance diversification. Furthermore, there would be some added revenues concurrently resulting from the differential tax imposed on the larger farmers. In addition, Colombia would have resources available for diversification arising from its participation in the International Coffee Diversification Fund, which has been agreed to by the International Coffee Organization.

The decisions to be faced in working out a coffee diversification strategy in Colombia are thus difficult ones to make and carry out. However, they are no more difficult than those involved in the general strategy required to meet the country's stubborn problems of employment creation, income growth, and general economic diversification, in connection with which there is considerable satisfaction in the international community with the policy directions being pursued. Furthermore, hope that the country will be prepared to adopt the measures required for solution

of the coffee adjustment problem can be derived from the prudence and responsibility with which it has managed its coffee policies in the past, and from the relatively small magnitude of the problem compared to a number of other countries and in the context of its overall economy.

## CHAPTER I

### COLOMBIA IN WORLD COFFEE TRADE

#### Share in World Coffee Exports

Colombia currently accounts for approximately 13 percent of the volume of world coffee exports. This is about the same as the share it had in the early 1930's, but represents a substantial decline from appreciably greater shares it achieved in subsequent periods. As indicated through the 5-year averages contained in Table 1, Colombia's share in world coffee trade steadily advanced into the late 1930's, and into the period following World War II, until it reached peaks in the mid-1950's when the sellers' market for coffee prevailed to the greatest extent. With the weakening of markets that set in after the mid-1950's, Colombia's share started a steady decline to the current level.

Table 1

#### Colombian and World Coffee Exports, 1930-1966, 5-Year Averages

(green coffee, millions of bags of 60 kilos each)

|         | (1)<br><u>Colombia</u> | (2)<br><u>World</u> | (3)<br><u>(1) as % of (2)</u> |
|---------|------------------------|---------------------|-------------------------------|
| 1930-34 | 3.2                    | 26.0                | 12.3                          |
| 1935-39 | 4.0                    | 28.0                | 14.3                          |
| 1947-51 | 5.1                    | 31.2                | 16.3                          |
| 1952-56 | 5.7                    | 34.0                | 16.8                          |
| 1957-61 | 5.7                    | 40.0                | 14.3                          |
| 1962-66 | 6.1                    | 47.0                | 13.0                          |

Source: Appendix Table I.

This is shown even more dramatically by data relating to individual years, contained in Appendix Table I. A prewar peak share for Colombian exports of 17 percent of the world total was attained in 1938. In a number of years during the abnormal period of World War II, Colombia's share was at 20 percent or above, reaching 29 percent in 1943. The country's share declined somewhat during the early postwar years, but later recovered, reaching a peak of 20 percent in 1954. Since then, Colombia's exports have failed to keep pace with world exports, and its share has declined to the present level. Colombia's share in the basic export quotas of the current International Coffee Agreement has been 12.9 percent. At the Eleventh Session of the International Coffee Council held from November 20 to December 4, 1967, Colombia's share of basic quotas for the new Coffee Agreement to extend through 1972/73 was fixed at 12.7 percent.

During the period of sharp decline in world coffee prices in the 1930's, Colombia's production and exports both advanced. Its share in world exports also advanced, at the expense of Brazil which was carrying out a unilateral effort to sustain world prices by restricting exports. With the fall of peak coffee prices after the mid-1950's, Colombia increasingly joined with the other major producer, Brazil, in restricting exports in an effort to sustain prices. Colombia and Brazil took the lead starting in 1957 in arranging several annual international coffee agreements designed to restrict exports and support the market. The Brazil-Colombia leadership eventually led to the existing International Coffee Agreement. The market support action by Brazil and Colombia was, of course, partly instrumental in causing the increase in production and exports of other countries which has occurred

over the last fifteen years. The cost to Colombia of acting to achieve some stability of world coffee prices has thus been a gradual reduction in its share of world exports.

#### Destination of Exports

There have been several marked changes in the pattern of export destinations for Colombian coffee during the postwar period. Taking the entire period of some 20 years, there has been a sharp shift in the destination of sales from the United States to Europe. Since the beginning of the present decade, there has also been a large increase in sales of coffee under bilateral payments agreements. Sales under the provisions of such agreements now constitute about 15 percent of the volume of total coffee shipments. Such sales appear to be made at prices somewhat higher than the New York spot price, but Colombia must surely be paying higher prices in return for goods imported under these agreements than it would under more freely competitive circumstances. Markets to which coffee is sold under bilateral payments agreements include both countries which are "traditional" Annex A quota markets under the International Coffee Agreement, as well as "new" Annex B non-quota markets. Taking the Annex B exports as a whole, both to payments agreements countries and to countries whose foreign exchange is convertible, Colombian exports have increased to some extent, though less markedly than they have under bilateral payments arrangements, and such sales to non-traditional markets now constitute only about 3 percent of the total volume of Colombian exports.

The broad geographic distribution of exports over the entire postwar period is indicated in Table 2. The decline to the United States has been marked in both absolute and relative terms, and the reverse has occurred with respect to Europe. Exports to the United States went down from 4.4 million bags per annum as an average in the first five postwar years, or 94 percent of Colombia's total exports, to 2.8 million bags in 1966/67, which represent half of total exports. Exports to Europe in the latter year, at 2.5 million bags, were almost equal to the total for the United States.

Table 2

Colombian Coffee Exports, Major Regional Distribution,  
5-Year Averages 1946/47-1965/66, and 1966/67

(green coffee, millions of bags of 60 kilos each)

|                    | <u>1946/47-</u><br><u>1950/51</u> | <u>1951/52-</u><br><u>1955/56</u> | <u>1956/57-</u><br><u>1960/61</u> | <u>1961/62-</u><br><u>1965/66</u> | <u>1966/67</u> |
|--------------------|-----------------------------------|-----------------------------------|-----------------------------------|-----------------------------------|----------------|
| U.S.A.             | 4.4                               | 4.9                               | 4.3                               | 3.6                               | 2.8            |
| Europe             | 0.2                               | 0.7                               | 1.1                               | 2.2                               | 2.5            |
| Other<br>countries | 0.1                               | 0.2                               | 0.1                               | 0.3                               | 0.3            |
| Totals             | <u>4.7</u>                        | <u>5.8</u>                        | <u>5.5</u>                        | <u>6.1</u>                        | <u>5.6</u>     |

Source: Coffee Federation

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The increase in exports to Europe has been widely spread among a number of markets. The principal outlets are: the Federal Republic of Germany, Sweden, Spain, the Netherlands, and Finland. Other significant European markets are Belgium, Poland, East Germany, the United Kingdom, Italy, Denmark, Norway, and Switzerland.

Outside of the United States and Europe, Canada, Japan and Argentina are by far the principal markets. Exports to Canada have varied little over the postwar period, and continue at 100,000-150,000 bags per year. Exports to Japan and Argentina, on the other hand,

which were insignificant through most of the 1950's, have recently picked up, despite strong competition from other suppliers, and are now some 60,000-70,000 bags per year each.

The shift in exports from the American to European markets, and the spread in sales in the latter markets are to some extent the result of Colombia's deliberate marketing policy of distributing its coffee as widely as possible and of gaining good positions in markets with the greatest growth potential. While very important, the United States market has appeared to have a less favorable outlook with respect to growth than some of the others, and the conditions of the American coffee trade have led to a shift of United States purchases to cheaper sources of supply, with less concern for the quality of coffee produced. Colombia's reaction to this situation has been to maintain insofar as possible a substantial flow of coffee to the United States but to put the weight of its export promotion on more discriminating and promising European markets.

By the mid-1960's, Colombia had reached the situation in which its coffee exports are distributed among the major markets to an extent roughly comparable with the importance of the various markets in the total of world imports. This phenomenon is illustrated in Table 3.

The classification of Colombian exports by quota and non-quota markets of the International Coffee Agreement and by types of payments agreements is indicated in Table 4, and the principal countries with which Colombia has bilateral payments arrangements for coffee exports are indicated in Table 5. The largest part of trade is conducted in terms of convertible currency, mainly with North America and Europe. Most of the increase in coffee exports under bilateral payments agreements

has been to Annex A quota markets. The principal ones are Spain, Finland, and East Germany, followed at some distance by Denmark, Argentina, and Czechoslovakia.

Table 3

Distribution of Colombian Coffee Exports by Specified Markets, and Share of the Markets in World Total

|                      | COLOMBIAN COFFEE EXPORTS   |                    | TOTAL COFFEE IMPORTS       |                          |
|----------------------|----------------------------|--------------------|----------------------------|--------------------------|
|                      | (1964/65-1965/66 average)  |                    | (1965/66 average)          |                          |
|                      | '000 bags of 60 kilos each | % of total exports | '000 bags of 60 kilos each | % of total world imports |
| U.S.A.               | 3,260                      | 55.6               | 20,169                     | 42.6                     |
| E.E.C.               | 1,322                      | 22.5               | 12,626                     | 26.7                     |
| Other Western Europe | 356                        | 6.1                | 2,538                      | 5.4                      |
| Northern Europe      | 534                        | 9.1                | 4,838                      | 10.2                     |
| Other                | 393                        | 6.7                | 7,187                      | 15.1                     |
| Totals               | 5,865                      | 100.0              | 47,358                     | 100.0                    |

Sources: Coffee Federation and Tripartite Coffee Study.

In the Annex B markets, Poland has played the major role as regards exports under bilateral payments agreements, and Japan is the sole convertible currency market. Exports to the U.S.S.R. are not

carried out under any broad payments agreements, but on a barter basis, i.e., involving an exchange of coffee for specific Soviet products<sup>1/</sup>.

Taking coffee exports under bilateral payments agreements as a whole, exports amount to close to 1 million bags per year, most of which goes to Spain, Finland, and East Germany. The Federation has found these schemes useful as an instrument to stimulate coffee exports. The agreements are negotiated and implemented by the Federation together with the Central Bank of Colombia. The increase in exports under these agreements has been more than fourfold since 1960.

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<sup>1/</sup> For example, it was reported early in 1968 that Colombia had signed an agreement with the U.S.S.R. involving the exchange of some 18,700 bags of coffee for 50 Soviet trolley buses. The price for the coffee was apparently 46.5 cents per lb., or about 10 percent higher than the New York spot price. It was also reported, however, that the Soviet buses, at a price of some \$23,000 each, cost more than similar buses available from Canada and the United States. The 18,700 bags of coffee involved compare with shipments to the U.S.S.R. of 7,000 bags in 1964/65 and 5,000 bags in 1965/66.

Table 4

Exports of Colombian Coffee to Annex A and Annex B  
Markets by Trade Practice, 1960/61-1965/66

(green coffee, thousands of bags of 60 kilos each)

|  | <u>1960/61</u> | <u>1961/62</u> | <u>1962/63</u> | <u>1963/64</u> | <u>1964/65</u> | <u>1965/66</u> |
|--|----------------|----------------|----------------|----------------|----------------|----------------|
| <u>ANNEX A</u> <sup>a/</sup>                   |                |                |                |                |                |                |
| Convertible                                    | 5,827          | 5,274          | 5,757          | 6,075          | 5,207          | 4,962          |
| Bilateral payments<br>agreements <sup>b/</sup> | 241            | 357            | 476            | 580            | 644            | 678            |
| <u>ANNEX B</u> <sup>a/</sup>                   |                |                |                |                |                |                |
| Convertible <sup>c/</sup>                      | 46             | 52             | 63             | 59             | 35             | 69             |
| Bilateral payments<br>agreements <sup>d/</sup> | 28             | 14             | 43             | 31             | 43             | 80             |
| Barter <sup>e/</sup>                           | 3              | -              | -              | -              | 7              | 5              |
| Totals   | <u>6,145</u>   | <u>5,697</u>   | <u>6,339</u>   | <u>6,745</u>   | <u>5,936</u>   | <u>5,794</u>   |

a/ There are some discrepancies between these figures and those reported by the International Coffee Organization; cf. Chapter III, Table 13.

b/ Argentina, Bulgaria, Chile, Czechoslovakia, Denmark, East Germany, Finland, Spain and Yugoslavia.

c/ Japan.

d/ All Annex B countries, except Japan and U.S.S.R.

e/ U.S.S.R.

Source: Coffee Federation.

Table 5

Colombian Coffee Exports under  
Bilateral Payments Agreements, 1960-1966

(green coffee, thousands of bags of 60 kilos each)

|      | <u>Spain</u> | <u>Finland</u> | <u>East Germany</u> | <u>Poland</u> | <u>Denmark</u> | <u>USSR</u> | <u>Others</u> | <u>Totals</u> |
|------|--------------|----------------|---------------------|---------------|----------------|-------------|---------------|---------------|
| 1960 | 33.3         | 51.8           | 23.6                | -             | 26.5           | 3.3         | 59.1          | 197.6         |
| 1961 | 100.2        | 89.3           | -                   | -             | 25.0           | -           | 64.4          | 278.9         |
| 1962 | 204.9        | 104.8          | 31.5                | -             | 32.2           | -           | 83.1          | 456.5         |
| 1963 | 250.4        | 104.2          | 36.0                | 28.7          | 32.6           | -           | 85.3          | 537.2         |
| 1964 | 235.1        | 146.5          | 80.0                | 34.6          | 37.1           | -           | 47.6          | 580.9         |
| 1965 | 300.2        | 154.3          | 78.7                | 50.4          | 44.7           | 11.7        | 73.8          | 713.8         |
| 1966 | 333.6        | 206.1          | 121.8               | 84.2          | 53.3           | 33.3        | 46.2          | 878.5         |

Source: Coffee Federation.

### Competitive Factors

Colombia has established a reputation in the world coffee trade for constantly good quality, steadiness in supply availabilities, and an elaborate and efficient marketing structure. The country is reported to have had no difficulty in filling its quotas under the International Coffee Agreement. However, one reason for its need to resort to bilateral payments agreements to market coffee even in quota countries may be that it has been running into some competitive difficulties. This is also reflected in its sharp relative loss of standing in the large U.S. market, as well as in some move toward narrowing of the price premiums traditionally enjoyed by Colombian coffee relative to other mild coffees, to Brazilian coffee, and to the robusta coffees of Africa.

The absolute and relative declines in Colombian exports to the United States have been accompanied by a substantial change in the composition of imports into that market by types of coffees and geographic origin, particularly since the early 1950's<sup>1/</sup>. Colombia's share of U.S. imports diminished from 21 percent as an average for 1950-52 to 12 percent in 1966. A decline of a similar order of magnitude occurred in the share of Brazil in U.S. imports between the two periods (from 52 percent to 30 percent). The declining shares of Colombia and Brazil were taken up by a substantial increase particularly in the share of African coffees in that market, and even by some increase in the share of other mild coffees from the Western Hemisphere. The share of robusta coffees in the U.S. market increased from 2-3 percent in 1950-52 to as much as 28 percent in 1966; the share of unwashed arabica from Ethiopia increased from 1 percent to 4

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<sup>1/</sup> "Development of U.S. Coffee Consumption, Analysis and Forecasts", prepared for Tripartite Coffee Study by Gertrud Lovasy and George Kawata.

percent; and the share of "other milds" from 22 percent to 25 percent. The change in the composition of U.S. imports reflects the trend of increase in the marketing of soluble coffees and a general trend of use of less expensive types of coffee, even in regular blends.

The price premiums enjoyed by Colombian coffee over other types of coffee, based on the relative unit values of imports into the U.S., are illustrated in Table 6. Thus, the unit values of imports from Colombia have exceeded those of other mild coffees by a range of 2-9 cents per lb. during the period 1953-66; they have exceeded those of imports from Brazil by a range of 3-19 cents per lb; and they have exceeded those of imports of robusta coffees by a range of 10-29 cents per lb.

Under the scheme introduced into the International Coffee Agreement in the coffee marketing year 1966/67 of partial adjustment of quotas of four different categories of coffee on the basis of price movements outside a range separately established for each type, the premiums fixed for Colombian coffee relative to the ranges of the other three types, as indicated in Table 7, were as follows: 3 cents per lb. over other mild arabicas, 6 cents per lb. over Brazilian coffee and other unwashed arabicas, and 13 cents per lb. over robustas. This system resulted in a cut in the Colombian quota for that year of 360,000 bags because of declines in the price for Colombian coffee below the floor established. This led to a great resistance on the part of Colombia in negotiations under the Agreement to continuation of the selective price ranges, particularly at these levels. Though the system was continued in the coffee year 1967/68 and has been incorporated in the new Coffee Agreement, the premiums of the Colombian range over those of the

Table 6

U.S. Import Unit Values of Coffee, by Main Types, 1953-1966

(cents per lb.)

|      | <u>Colombia</u> | <u>Other milds<sup>a/</sup></u> | <u>Brazil</u> | <u>Robustas<sup>b/</sup></u> | <u>Colombian premiums over</u> |               |                 |
|------|-----------------|---------------------------------|---------------|------------------------------|--------------------------------|---------------|-----------------|
|      |                 |                                 |               |                              | <u>Other milds</u>             | <u>Brazil</u> | <u>Robustas</u> |
| 1953 | 55.9            | 50.2                            | 52.9          | 46.0                         | 5.7                            | 3.0           | 9.9             |
| 1954 | 71.0            | 63.5                            | 64.8          | 55.4                         | 7.5                            | 6.2           | 15.6            |
| 1955 | 62.6            | 53.9                            | 47.7          | 37.8                         | 8.7                            | 14.9          | 24.8            |
| 1956 | 61.8            | 59.4                            | 46.1          | 34.6                         | 2.4                            | 15.7          | 27.2            |
| 1957 | 63.6            | 54.8                            | 44.9          | 34.3                         | 8.8                            | 18.7          | 29.3            |
| 1958 | 51.8            | 44.8                            | 41.2          | 36.0                         | 7.0                            | 10.6          | 15.8            |
| 1959 | 45.0            | 37.8                            | 32.1          | 27.6                         | 7.2                            | 12.9          | 17.4            |
| 1960 | 43.4            | 37.5                            | 32.6          | 21.8                         | 5.9                            | 10.8          | 21.6            |
| 1961 | 41.9            | 34.8                            | 32.2          | 19.4                         | 7.1                            | 9.7           | 22.5            |
| 1962 | 39.5            | 32.9                            | 30.1          | 19.1                         | 6.6                            | 9.4           | 20.4            |
| 1963 | 37.8            | 32.1                            | 29.7          | 23.2                         | 5.7                            | 8.1           | 14.6            |
| 1964 | 45.5            | 41.5                            | 39.6          | 32.7                         | 4.0                            | 5.9           | 12.8            |
| 1965 | 45.4            | 41.4                            | 39.9          | 25.6                         | 4.0                            | 5.5           | 19.8            |
| 1966 | 45.6            | 39.7                            | 36.8          | 29.0                         | 5.9                            | 8.8           | 16.6            |

<sup>a/</sup> Weighted average of import unit values for Latin American milds.

<sup>b/</sup> Weighted average of import unit values for major African and Asian sources of supply.

Source: Lovasy and Kawata, op. cit.

Table 7

Indicator Price Ranges for Selective Partial Quota Adjustments  
under International Coffee Agreement, 1966/67 and 1967/68

(US cents per lb., ex-dock New York)

|  | <u>1966/67</u> |                | <u>1967/68</u> |                |
|--|----------------|----------------|----------------|----------------|
|  | <u>Floor</u>   | <u>Ceiling</u> | <u>Floor</u>   | <u>Ceiling</u> |
| Mild arabicas <sup>a/</sup>                                | 43.50          | 47.50          | 38.75          | 42.75          |
| Other mild arabicas <sup>b/</sup>                          | 40.50          | 44.50          | 37.25          | 41.25          |
| Unwashed arabicas <sup>c/</sup>                            | 37.50          | 41.50          | 35.25          | 39.25          |
| Robustas <sup>d/</sup>                                     | 30.50          | 34.50          | 30.50          | 34.25          |
| Excess of range for mild arabicas over other mild arabicas |                | 3.0            |                | 1.50           |
| Excess of range for mild arabicas over unwashed arabicas   |                | 6.0            |                | 3.50           |
| Excess of range for mild arabicas over robustas            |                | 13.0           |                | 8.25-8.50      |

a/ Colombian "Mams".

b/ Arithmetic average of Salvadoran Central Standard, Guatemalan Prime Washed, and Mexican Prime Washed.

c/ Santos 4.

d/ Arithmetic average of Angolan Ambriz 2AA and Ugandan Native Standard.

Source: International Coffee Organization.

other three types were sharply reduced in 1967/68, as follows:  
relative to other mild coffees, from 3 cents to 1.5 cents per lb.;  
relative to Brasils and other unwashed arabicas, from 6 cents to 3.5  
cents; and relative to robustas, from 13 cents to 8.25-8.50 cents.  
The general position of Colombia has been against any such selectivity  
system at all, and for a situation of free price competition among the  
different types of coffee. Colombia has apparently been unable to  
compete effectively with the other types of coffee  
at wide margins of premium for its own coffee under the prevailing  
conditions of demand, and it is not prepared to suffer cuts in its  
quota in an effort to sustain such margins.

Table I

Colombian and World Coffee Exports, 1930-66

(green coffee, thousands of bags of 60 kilos each)

| Calendar years | (1)<br>Colombia | (2)<br>World | (3)<br>(1) as % of (2) |
|----------------|-----------------|--------------|------------------------|
| 1930           | 3,173           | 23,924       | 13.3                   |
| 1931           | 3,039           | 25,756       | 11.8                   |
| 1932           | 3,185           | 27,911       | 11.4                   |
| 1933           | 3,327           | 22,624       | 14.7                   |
| 1934           | 3,085           | 26,411       | 11.7                   |
| 1935           | 3,768           | 25,297       | 14.9                   |
| 1936           | 3,942           | 27,166       | 14.5                   |
| 1937           | 4,178           | 27,686       | 15.1                   |
| 1938           | 4,273           | 25,357       | 16.9                   |
| 1939           | 3,773           | 30,039       | 12.5                   |
| 1940           | 4,443           | 29,041       | 15.3                   |
| 1941           | 2,912           | 23,390       | 12.4                   |
| 1942           | 4,310           | 21,135       | 20.4                   |
| 1943           | 5,252           | 18,219       | 28.8                   |
| 1944           | 4,923           | 22,765       | 21.6                   |
| 1945           | 5,150           | 26,111       | 19.7                   |
| 1946           | 5,662           | 27,623       | 20.5                   |
| 1947           | 5,338           | 29,304       | 18.2                   |
| 1948           | 5,588           | 28,592       | 19.5                   |
| 1949           | 5,410           | 32,116       | 16.8                   |
| 1950           | 4,472           | 34,164       | 13.1                   |
| 1951           | 4,793           | 31,858       | 15.0                   |
| 1952           | 5,032           | 32,328       | 15.6                   |
| 1953           | 6,632           | 35,194       | 18.8                   |
| 1954           | 5,754           | 29,128       | 19.8                   |
| 1955           | 5,867           | 34,046       | 17.2                   |
| 1956           | 5,070           | 39,353       | 12.9                   |
| 1957           | 4,824           | 35,872       | 13.4                   |
| 1958           | 5,441           | 35,976       | 15.1                   |
| 1959           | 6,413           | 42,241       | 15.2                   |
| 1960           | 5,938           | 42,763       | 13.9                   |
| 1961           | 5,651           | 43,227       | 13.1                   |
| 1962           | 6,561           | 45,906       | 14.3                   |
| 1963           | 6,134           | 48,579       | 12.6                   |
| 1964           | 6,412           | 46,268       | 13.9                   |
| 1965           | 5,652           | 43,717       | 12.9                   |
| 1966           | 5,566           | 50,339       | 11.1                   |

Source: Tripartite Coffee Study

Table II

Colombian Coffee Exports, by Principal Destinations, 1946/47-1965/66

(green coffee, thousands of bags of 60 kilos each)

|                      | 1946/47 | 1947/48 | 1948/49 | 1949/50 | 1950/51 | 1951/52 | 1952/53 | 1953/54 | 1954/55 | 1955/56 | 1956/57 | 1957/58 | 1958/59 | 1959/60 | 1960/61 | 1961/62 | 1962/63 | 1963/64 | 1964/65 | 1965/66 |
|----------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| United States        | 4,923   | 3,082   | 5,138   | 4,253   | 4,430   | 4,403   | 5,080   | 5,942   | 4,150   | 5,109   | 3,601   | 4,104   | 4,823   | 4,413   | 4,545   | 3,721   | 4,058   | 3,914   | 3,452   | 3,068   |
| Canada               | 177     | 192     | 211     | 154     | 130     | 131     | 183     | 161     | 81      | 126     | 130     | 82      | 82      | 134     | 111     | 136     | 126     | 133     | 117     | 121     |
| Fed. Rep. of Germany |         |         | 2       | 69      | 167     | 300     | 191     | 395     | 296     | 424     | 163     | 340     | 629     | 621     | 597     | 727     | 842     | 890     | 882     | 869     |
| East Germany         |         |         |         |         |         |         |         |         |         |         |         |         | 8       | 25      | 13      | 7       | 49      | 40      | 101     | 67      |
| Belgium              | 32      | 30      | 43      | 36      | 33      | 38      | 55      | 80      | 53      | 56      | 53      | 66      | 70      | 79      | 51      | 62      | 66      | 143     | 113     | 145     |
| Spain                |         |         |         |         |         |         |         | 18      | 35      | 81      | 33      | 38      | 29      | 50      | 67      | 118     | 204     | 259     | 367     | 234     |
| Finland              |         | 58      | 87      | 54      | 12      | 17      | 4       | 10      | 66      | 39      | 39      | 22      | 43      | 51      | 62      | 98      | 113     | 171     | 75      | 205     |
| Netherlands          | 87      | 3       | 10      | 10      | 14      | 5       | 68      | 118     | 63      | 94      | 39      | 73      | 109     | 199     | 96      | 118     | 161     | 266     | 239     | 232     |
| United Kingdom       | 7       | 1       |         |         | 1       |         | 10      |         | 3       | 11      | 4       | 6       | 19      | 55      | 117     | 50      | 49      | 116     | 33      | 63      |
| Italy                | 11      | 6       | 10      | 11      | 5       | 2       | 27      | 54      | 19      | 71      | 55      | 20      | 23      | 32      | 47      | 94      | 59      | 89      | 42      | 57      |
| Norway               |         |         |         |         |         |         |         |         | 2       |         |         |         | 26      | 15      | 19      | 21      | 27      | 62      | 16      | 42      |
| Poland               |         |         |         |         |         |         |         |         |         |         |         |         |         |         | 12      |         | 29      | 17      | 26      | 76      |
| Sweden               | 56      | 26      | 39      | 30      | 53      | 68      | 86      | 89      | 116     | 131     | 116     | 149     | 163     | 185     | 180     | 202     | 223     | 299     | 263     | 282     |
| Denmark              |         |         |         |         | 1       |         | 17      | 6       | 8       | 12      | 9       | 25      | 26      | 27      | 28      | 29      | 34      | 40      | 33      | 55      |
| Switzerland          | 13      | 12      | 6       | 44      | 27      | 11      | 14      | 17      | 4       | 18      | 3       | 22      | 15      | 9       | 17      | 102     | 104     | 58      | 26      | 33      |
| Japan                |         |         |         |         | 3       | 3       | 3       | 4       | 4       | 13      | 8       | 11      | 23      | 36      | 46      | 52      | 63      | 59      | 35      | 69      |
| Argentina            |         | 1       | 12      |         |         |         |         |         |         |         |         |         |         | 1       | 2       | 4       | 13      | 32      | 21      | 56      |
| Other countries      | 34      | 10      | 4       | 18      | 27      | 4       | 41      | 29      | 23      | 62      | 11      | 33      | 83      | 86      | 135     | 156     | 119     | 147     | 95      | 120     |
| Totals               | 5,340   | 3,421   | 5,564   | 4,679   | 4,903   | 4,982   | 5,779   | 6,925   | 4,865   | 6,247   | 4,264   | 4,991   | 6,166   | 5,020   | 6,145   | 5,697   | 6,339   | 6,745   | 5,936   | 5,794   |

Source: Coffee Federation

## CHAPTER II

### COFFEE AND THE ECONOMIC DEVELOPMENT OF COLOMBIA

Coffee cultivation, transport, and marketing constitute the single most important activity in the Colombian economy. Coffee cultivation alone accounts for about a fourth of total farm output, or about 7-8 percent of total gross domestic product. The role of coffee in total output of goods and services is, of course, even greater if the related processing, storage, transport, marketing, and financial activities are taken into account. Coffee acreage accounts for about a sixth of the total croplands (annual crops including fallow land, plus tree crops), and consists of more than 300,000 farms. The farm families engaged in coffee production comprise close to 2 million persons, i. e., 10 percent or slightly more of the total population. The really crucial role of coffee in the economy derives, however, from the fact that it constitutes the country's major source of foreign exchange.

#### Structure and Growth of Domestic Product

The slow long-term growth of coffee production has, nevertheless, resulted in a reduction in its role in total national output. In this, it has shared in the relative decline of agriculture. The proportion of gross domestic product originating in agriculture declined from 38 percent in 1950 to 30 percent in 1966. Agriculture's loss of 8 percentage points was accompanied by gains in manufacturing (from 15 percent of gross domestic product in 1950 to 19 percent in 1966) and services (transport, communications, electric power, gas, water, government, and other services rose from a combined total of 25 percent of GDP in 1950 to 29 percent in 1966).

Table 8

Average Annual Growth Rates and Composition of the  
Gross Domestic Product by Sector of Origin, 1950-1966

(percentage)

|                            | Average Annual Growth Rates <sup>a/</sup> |         |         |      |      | Composition |       |       |
|----------------------------|---|---------|---------|------|------|-------------|-------|-------|
|                            | 1950-56                                   | 1956-61 | 1961-66 | 1965 | 1966 | 1950-66     | 1950  | 1966  |
| Gross Domestic Product     | 5.1                                       | 4.1     | 4.6     | 3.2  | 5.3  | 4.6         | 100.0 | 100.0 |
| Agriculture                | 2.7                                       | 3.6     | 2.9     | -0.1 | 5.4  | 3.1         | 37.8  | 29.9  |
| Fishing and Hunting        | 7.3                                       | 17.4    | 8.3     | 6.6  | 5.4  | 10.7        | 0.1   | 0.3   |
| Forestry                   | 7.6                                       | 3.6     | 3.8     | 10.0 | 3.3  | 5.1         | 0.3   | 0.3   |
| Mining                     | 5.1                                       | 3.6     | 4.9     | 7.4  | -2.6 | 4.6         | 3.5   | 3.5   |
| Manufacturing              | 7.1                                       | 5.9     | 5.9     | 4.7  | 7.4  | 6.4         | 14.8  | 19.3  |
| Construction               | 10.8                                      | 1.7     | -0.6    | -5.8 | -1.0 | 4.3         | 2.7   | 2.5   |
| Commerce                   | 5.1                                       | 3.8     | 4.9     | 4.2  | 5.4  | 4.6         | 15.7  | 15.7  |
| Transport                  | 9.2                                       | 2.7     | 4.4     | 2.8  | 6.3  | 5.6         | 5.0   | 5.9   |
| Communications             | 9.9                                       | 8.4     | 10.8    | 11.2 | 7.2  | 9.7         | 0.4   | 0.8   |
| Electric Power, Gas, Water | 10.0                                      | 9.3     | 9.0     | 9.2  | 2.8  | 9.5         | 0.5   | 1.0   |
| Government                 | 5.5                                       | 4.3     | 5.5     | 5.5  | 3.9  | 5.1         | 4.6   | 5.0   |
| Other                      | 5.2                                       | 6.8     | 3.6     | 5.9  | 5.6  | 5.2         | 14.6  | 15.8  |

a/ With respect to previous year or over indicated period. Based on data in constant 1958 prices.

Source: Based on data from Banco de la Republica.

Total gross domestic product increased during the period 1950-1966 at an annual rate of 4.6 percent in real terms, or only slightly more than the high rate of population increase of some 3.2 percent per year. The years 1950-1956 of sharply increased prices and exchange earnings of coffee recorded the highest annual rate of growth of national output during the entire period, viz. 5.1 percent. The subsequent period 1956-1961 of reduced coffee prices and readjustment from the policy mismanagement of the military dictatorship in 1953-1957 recorded a decline in the annual growth rate to 4.1 percent. The period since then, from 1961 to 1966, was one of slight revival, to an annual growth rate of 4.6 percent, or the same as the long-term average. The new Administration which took office in August 1966 has formulated as a goal an annual growth rate of GDP of 6 percent in real terms.

Agricultural output has increased at a lower rate than total domestic product. Over the entire period 1950-1966 it has barely kept pace with population growth, and the annual growth of agricultural output in the most recent period 1961-1966 has been somewhat slower still (2.9 percent)<sup>1/</sup>. Manufacturing output, on the other hand, has substantially outstripped total output. Its growth rate was 6.4 percent over the entire period 1950-1966, though it slowed down in recent years. Still higher growth rates characterized the sectors of transport, communications, electric power, gas, and water supply, reflecting the emphasis on these sectors of public investment in the postwar period.

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<sup>1/</sup> However, the growth of total agricultural output has been held back by the slow growth of coffee, which accounts for about a fourth of the total. Agricultural output ex-coffee has grown somewhat faster than population.

## Agriculture

The agricultural development of Colombia has been influenced to an unusual degree by topography. The three ranges of the Andes, stretching northwards, divide the country into distinct regions, communication between which is difficult and costly. Over half the country, comprising the Llanos and the Amazonian hinterland to the East and Southeast, contains only about two percent of the 19 million people who comprise the nation; soils and climatic conditions are rather poor and access is difficult. The forested narrow coastal belt on the Pacific with its very heavy rainfall, and the upper levels of the cordilleras, rising to over 15,000 feet, also are very sparsely populated.

It is in the northern coastal region, the central valleys and slopes of the Andes, and the high plateau of Bogota where the population is concentrated and most agricultural activity occurs. These agricultural regions represent a small proportion of the total land area. Geography has thus imposed a distinctive regional pattern of development, and has impeded mobility within the country.

Although the share of agriculture in gross domestic product has declined to about 30 percent, the proportion of the total population dependent on agriculture is still close to half. Despite its falling share, agriculture and the associated economic activities still largely determine the pattern and pace of growth in Colombia. Agricultural production, marketing and processing together may account for close to 60 percent of GDP.

During recent years, livestock production has grown considerably faster than the population, while crop production has lagged seriously behind. Production of food for domestic consumption, in particular, has,

in many instances (beans, corn, potatoes, wheat), become virtually stagnant. In other words, the poor performance of agriculture as a whole reflects largely the slow increase in output of basic foodstuffs<sup>1/</sup>. As a result, imports of food and other agricultural commodities in recent years have amounted to 10-15 percent of the value of total imports.

Table 9

Growth of Agricultural Production, 1958-1965

(percent increase in volume over the period)

|                                  |       |
|----------------------------------|-------|
| Total agricultural output        | 20.5  |
| Livestock                        | 27.4  |
| Crop production                  | 16.4  |
| Domestically consumed food crops |       |
| Rice                             | 39.1  |
| Beans                            | -40.3 |
| Corn                             | 5.8   |
| Potatoes                         | 8.9   |
| Plantain                         | 22.5  |
| Wheat                            | -28.6 |
| Population                       | 23.0  |

Source: Banco de la Republica, Cuentas Nacionales.

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<sup>1/</sup> This is reflected in retail price indexes. During the period 1958-1966 food prices increased 155 percent, whereas the cost of living index, although heavily weighted by food, rose by 142 percent.

The food supply problem, in turn, is intimately related to the way the land is used and the closely associated land tenure conditions<sup>1/</sup>. According to the agricultural census of 1960, over half of the agricultural land in the Andean and Caribbean regions is fallow or in natural pastures, while only 15.7 percent is cultivated. In other words, nearly four times as much land is devoted to extensive grazing of cattle<sup>2/</sup>, as is devoted to crops. Moreover, the cattle frequently occupy the relatively flat lands in mountainous areas and, in company with the large-scale commercial agricultural enterprises producing for export (e.g. sugar), the broad river valleys; food production for domestic consumption is largely confined to the steeper slopes of the hills and mountains on small farms.

Agricultural land is highly concentrated in a few hands. Data in a report by the Inter-American Committee on Agricultural Development referring to 1960 indicate that in the Andean region 5.3 percent of the agricultural exploitations account for 67.9 percent of the land, while at the other extreme, farms of under 5 hectares which represent 63.5 percent of the exploitations, account for only 1.7 percent

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<sup>1/</sup> There are, of course, numerous other factors which have impeded Colombian agriculture development, including inadequacies in official planning, research and extension, marketing and infrastructure supports, scarcity of credit, and antiquated methods and poor management. See IBRD, A Review of INCORA and its Program in Colombia, October 26, 1967.

<sup>2/</sup> On average, there is only 0.9 head of cattle per hectare.

of the land<sup>1/</sup>. The distribution of land in the less densely populated Caribbean region is equally skewed. Even these figures, however, greatly understate the extent to which the land is controlled by a relatively small number of individuals. The data refer to the distribution of farm size, not the distribution of farm ownership. Many persons may own more than one farm or exploitation.

Furthermore, the data on the distribution of land by farm size fail to take into account the large and growing number of landless agricultural workers. Some of these laborers become permanent hired hands on the larger exploitations while an increasing number are forced to become migrants, moving from one harvest to another. The authors of the CIDA report estimated that in 1960 about 8.6 percent of the agricultural labor force was landless<sup>2/</sup>; the proportion is probably higher today. Some observers estimate that 300,000 families, i.e., close to 2 million people, are in this position. These people have a standard of living roughly comparable to a smallholder or "minifundista".

The influence of the tenure system upon the way land is used is seen in the table below. The "minifundistas" tend to cultivate a very large proportion of their land, in spite of the fact that their land frequently is located on very steep and eroded terrain, and leave little over a third in pastures and woods. The large landholders

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1/ Comite Interamericano de Desarrollo Agricola (CIDA), Tenencia de la Tierra y Desarrollo Socio-Economico del Sector Agricola en Colombia, 1966, p. 72.

2/ Ibid, p. 135.

or "latifundistas", in contrast, cultivate less than 6 percent of their land, and two-thirds of their land is fallow or devoted to livestock. Thus, most of the food produced in Colombia is provided by a large number of small farmers who between them own only a fraction of the agricultural land. Over 70 percent of the agricultural surface is held in the form of "latifundia", yet these farms account for only 28 percent of the land under cultivation.

Table 10  
The Use of Agricultural Land, 1960

(percent)

|              | <u>Total Agricul-<br/>tural land</u> | <u>Cultivated<br/>surface</u> | <u>Fallow and<br/>natural pastures</u> | <u>Woods and<br/>mountains</u> |
|--------------|--------------------------------------|-------------------------------|--|--------------------------------|
| Minifundia   | 100                                  | 62.5                          | 32.0                                   | 5.5                            |
| Family farms | 100                                  | 29.1                          | 49.4                                   | 21.5                           |
| Latifundia   | 100                                  | 5.7                           | 65.8                                   | 28.5                           |

Source: Based on data from CIDA, op. cit., p. 139.

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In social terms, the land tenure reflects great inequalities in income and wealth. In economic terms, the tenure system has led to inefficiency and slow growth, to both underutilization of most of the land and to unemployment of labor. The poor utilization of land and labor is further aggravated by the concentration of nearly all other resources in the hands of those least inclined to make productive use of them. For example, a disproportionate part of the agricultural credit

goes to only a minority of borrowers<sup>1/</sup>.

It is generally recognized that additional agricultural output could be achieved by redistributing the land held in large holdings to those who could make best use of it, viz., to the growing number of under-employed rural workers. Thus, through the machinery established by Law 135 of 1961, a land reform is in the process of being executed. This program is being administered by the Colombian Agrarian Reform Institute, INCORA, a new agency established for this purpose.

Progress in the redistribution of land, has, however, been slow. After five years of operations, INCORA had acquired 1.9 million hectares and given land titles for 1.7 million hectares to 47,688 rural families<sup>2/</sup>. In other words, fewer than 10,000 families a year benefited from the program, compared to a growth in farm families estimated at about 40,000 per year<sup>3/</sup>.

INCORA attributes its difficulties to Colombia's poor soils. According to its investigations, only 2.8 million hectares or 2.4 percent of the total area of the country, are suitable for intensive farming; the remainder, apparently, is suitable largely for pasture or is in forests<sup>4/</sup>. The expansion in agricultural production which it has been possible to achieve appears to have come primarily from an increase in productivity on existing land, rather than from an extension of area. This has not been accompanied

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1/ C.A. Fernandez, La Estructura del Credito Agricola en Colombia, 1962, pp. 41-42, estimated that 52 percent of the credit goes to only 10 percent of the borrowers.

2/ INCORA, 5 Años de Reforma Social Agraria, Informe de Actividades en 1966, p. 13.

3/ INCORA estimate; INCORA further estimates that 800,000 of the country's 2 million farm families are "surplus" in the sense that the present level of production could be maintained without them.

4/ INCORA, Informe de Actividades en 1965.

by a corresponding increase in labor requirements, and at the same time has widened the gap in productivity between large and small farmers, thus putting the latter into an increasingly less favorable competitive position.

### Manufacturing

The relatively rapid growth of manufacturing output has occurred largely as part of a process of import substitution in consumer goods under protectionist policies. The share of consumer goods in imports declined from 21 percent in 1950 to about 5 percent in 1966. As a result of the protectionist policies and the orientation toward import substitution, most industries - with the outstanding exception of the old and highly developed cotton textile industry - are relatively inefficient and high-cost producers. For this reason as well as because of the maintenance until recently of overvalued exchange rates, little has been accomplished by way of expansion of exports of manufactures. In 1963-1965 such exports averaged only about 4 percent of total exports. Great emphasis is, however, now being placed on the expansion of exports of manufactured goods. The policy instruments being used to this end include the recent move toward more favorable exchange treatment, discussed in greater detail below, negotiations for the broadening of markets through the formation of regional and sub-regional more highly integrated economic blocs within Latin America, expansion of credit availabilities, and public-private consultations aimed at increasing industrial efficiency.

The expansion of industrial output has not been matched by a corresponding increase in industrial employment. The proportion of total employment in manufacturing industries declined from 15 percent in 1960 to 13 percent in 1964<sup>1/</sup>. Between the two census periods, 1951 and 1964,

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1/ F.H. Cardoso and J.L. Reyna, "Industrialización, Estructura Ocupacional y Estratificación Social en América Latina", mimeo, August 23, 1966, Santiago, Chile, p. 13; Departamento Administrativo Nacional de Estadística, (DANE), Census of Population, July 1964, Bogotá.

industry was able to create only 196,000 new jobs, as compared to the current annual increase in the labor force of about 190,000 persons.

In the last five years the industrial labor force has increased, on the average, only about 1 percent per annum. Employment in several manufacturing activities has actually declined, e.g., tobacco products, shoes, wood products and furniture, rubber products and chemical products<sup>1/</sup>. In other words, industrial employment has failed to keep up with the population increase; even less has it been able to reduce the backlog of unemployed workers and absorb the influx of labor from the countryside.

The lag in industrial employment relative to increased output of manufactures reflects a trend toward capital intensity in industry. This has been responsive to overvalued exchange rates which have cheapened the importation of capital goods, to the problems associated with the management of personnel and with the requirements of labor legislation, to the transplantation of capital-intensive techniques from industrial countries, and to interest rates which have been low relative to the degree of inflation<sup>2/</sup>. The capital-intensive nature of manufacturing coupled with a low degree of capacity utilization means that it would be possible for output to expand steadily for a number of years without a proportionate effect on the level of employment.

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1/ DANE, Boletín Mensual de Estadística occasionally publishes data on employment for about 20 manufacturing industries.

2/ The last-named factor is beginning to be realized by Colombian authorities. Recently a measure was adopted to increase credit to industry through the use of reserves of the Colombian Social Security Institute. Constant value bonds are issued in exchange for the reserves. A part of the reserves is channeled through the government-owned Industrial Development Institute (IFI). To compensate for inflation, IFI charges interest of 15 percent per annum on loans out of these reserves, of which 8 percentage points are an adjustment for inflation.

### Population Growth and Employment

In recent years the rate of growth of population has been about 3.2-3.3 percent per annum. The rate of increase still appears to be accelerating and instantaneous rates of 3.5 percent are sometimes cited<sup>1/</sup>. Moreover, in connection with the problem of achieving an adequate growth of income per capita, the age structure of the population is extremely unfavorable, i.e., there is a high ratio of dependents to members of the active labor force<sup>2/</sup>.

The high rate of population growth creates serious problems of employment. As regards agriculture, the employment problems can be attributed in large part, first to the slow rate of growth of agricultural output relative to the increase of the rural population and, second, to the inadequate tenure system which encourages labor-intensive techniques of production. The population increase occurs predominantly in the "minifundia" areas where population density already is extremely high. Employment opportunities are strictly limited in the vast "latifundia" areas. Thus the growing rural population leads, first, to increased fragmentation of holdings in the "minifundia" areas, second, to an increase in the landless rural proletariat and the migrant labor force, and third, to increased rural underemployment.

Studies of the Roldanillo-La Union area in the Valle del Cauca provide some indication of the extent of underemployment on smallholdings.

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<sup>1/</sup> For example, in a Ministry of Health document, "Características Generales de la Población Colombiana", by H. Mendoza Hoyos, mimeo., Bogota, August 9, 1967, p.1.

<sup>2/</sup> According to the population census of 1964, 44 percent of the population is under 15 years of age and 5 percent is above 65.

Surveys indicate that in this region only 15.2 percent of the available family labor can be employed on farms of 1.6-7.5 "plazas", and 42 percent could be used on farms between 7.6 and 15 "plazas"<sup>1/</sup>.

The declining employment opportunities in agriculture have led to substantial migration to urban areas. Between 1951 and 1964 the fifteen major cities with a population greater than 100,000 persons increased at an average rate of 5.15 percent per year. This is very rapid even by Latin American standards.

Table 11

Growth of Major Cities, 1951-1964

(percent per annum)

|              |      |           |       |
|--------------|------|-----------|-------|
| Armenia      | 6.69 | Ibague    | 7.18  |
| Barranquilla | 6.52 | Manizales | 6.66  |
| Bogota       | 3.76 | Medellin  | 4.98  |
| Cali         | 4.68 | Pasto     | 10.30 |

In many cases, those migrating to the cities became openly unemployed<sup>2/</sup>; more often, they entered service activities and increased the amount of underemployment in that sector. Only a minority was able to find employment in industry.

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<sup>1/</sup> CIDA, op. cit. p. 156; one "plaza" = 0.64 hectare.

<sup>2/</sup> The Universidad de los Andes undertakes periodic sample surveys of unemployment in Bogota ("Resultado de las encuestas sobre desempleo en Bogota", mimeo). Results for recent years are as follows:

|       |      |       |
|-------|------|-------|
|       | 1963 | 7.9%  |
|       | 1964 | 7.3%  |
|       | 1965 | 8.9%  |
| Sept. | 1965 | 9.7%  |
|       | 1966 | 10.1% |
| Sept. | 1966 | 9.6%  |
| Sept. | 1967 | 10.6% |

### Coffee and Government Revenues

As explained in Chapter III, internal coffee prices in Colombia are kept well below world market prices by a system of taxation that amounts to about half of the external price. A large part of these tax proceeds, however, is used to finance the retention of coffee as well as investments and services in coffee regions carried out through the National Coffee Growers' Federation. The portion retained by the Central Government consists primarily of all but 4 percentage points of the export tax on coffee (only one of the several taxes on coffee); the Central Government portion thus amounted to 19 percent of the value of exports in December 1967 and is scheduled to decline to 16 percent by December 1968. The export tax, adopted in March 1967 at the time the general system of exchange rates was changed, replaced an earlier system of a penalty exchange rate for coffee which yielded tax proceeds through a differential between that rate and import rates. The proceeds of the differential were used in part to subsidize certain imports, to defray some expenditures of the Central Bank, and to repay some debt of the Central Government to the Central Bank. These expenditures were not included in the current operating budgets of the Central Government, and the proceeds that were available for general governmental expenditures constituted only a part of the total. This accounts for the substantial variations in the amounts of the coffee differential proceeds that appear in the current operating accounts of the Central Government, ranging from 17 percent of total current account income in 1963 to 6 percent in 1966. By the same token, the ratio of these proceeds to investment expenditures of the Central Government also ranged widely, from as much as 49 percent in 1963 to 19 percent in 1966.

It is understood that in the future the entire proceeds of the export tax on coffee allocated to the Central Government will be available for general expenditures. On this basis, Central Government revenues from that tax are estimated to amount to 8-10 percent of its total current account income, or somewhat more than the share of coffee cultivation in GDP. The significance of the revenue from the coffee tax is greater in relation to investment expenditures of the Central Government (about a fourth) or to total public investment (about 15 percent). Total public investment, however, accounts for only slightly more than a third of total gross fixed investment in the economy, which is estimated to amount to about 17-20 percent of GDP, so that the role of coffee taxation in the financing of total investment is quite limited. As stated at the outset, it is as a foreign exchange earner that coffee plays the most crucial role in the economy.

#### Coffee and the External Sector

Although the value of coffee exports in relation to total exports has declined during the postwar period, primarily because of the combination of a slow growth in volume and a decline in prices particularly during the last 10-15 years, it still accounts for close to two-thirds of the total. The ratio rose from about 77 percent in 1948-1950 to a peak of about 82 percent in 1954-1956, and by 1964-1966 it had declined to some 65.6 percent. Thus, exports still largely depend on coffee, and imports - in spite of considerable foreign aid - still must be financed largely from export earnings. Increased investment depends in turn upon increasing imports of capital goods, and growth depends upon the rate of accumulation of capital. Furthermore, increased output is to a large extent dependent on increased imports of raw materials and intermediate goods. Thus, economic development in Colombia, as in many other less developed countries, is highly sensitive to the trend of exports.

From 1958 to 1966 exports rose by only 11 percent, from \$497.1 million in 1958 to \$551.5 million in 1966, or less than 1.4 percent per annum. This means that exports per capita declined by 1.8 percent a year, and the consequence was a decline in the per capita availability of imports.

During the period 1961-1966 Colombia ran persistent balance of payments deficits on total current account, averaging about \$135 million per year. These deficits were financed by an inflow of capital and by utilization of international reserves. Much larger deficits, amounting to an annual average of about double the average deficits of 1961-1966, or slightly more than \$270 million, are projected for 1967-1970. These balance of payments projections were made to support the goal of 6 percent annual growth of GDP. The imports were projected on the basis of the historical imported components of the principal macro-economic variables, such as the ratio of imports of intermediate goods to GDP and of imports of capital goods to gross fixed investment. The projections of exports assume a considerable effort of promotion of exports other than coffee and the maintenance of an exchange rate policy that will produce rates that could be considered as "equilibrium" rates. Coffee exports were projected at an annual volume growth rate of 2.5 percent and at the average 1967 New York price. It is thus obvious that, under the most favorable circumstances, Colombia will be dependent on a considerably stepped up volume of capital imports to maintain a satisfactory rate of economic growth.

Exchange rate policies designed to stimulate exports have been introduced. The system adopted in March 1967 is a step toward a unified exchange rate system. On that date two exchange markets were established: an exchange certificate market and a capital market.

The capital market rate is fixed at 16.25-16.30 pesos per U.S. dollar and applies to trade in invisibles and capital transactions:

The exchange certificate rate, however, is a fluctuating one. It started at 13.50 pesos per U.S. dollar in April 1967, and by the end of November 1967 had moved to 15.70 pesos. It applies to major imports. Exports other than coffee, petroleum and cattle hides also are traded at the certificate rate, and in addition, receive a 15 percent subsidy. Coffee is traded at the certificate rate less the export tax.

This is clearly an attempt to increase the volume of minor exports. Minor exports have, in any case, been rising rapidly in the last few years, viz: from \$70 million in 1960 to \$128 million in 1966, or from 14.0 percent of total exports to 23.2 percent. Moreover, studies have shown that the minor exports are quite responsive to variations in the exchange rate, provided devaluation does not result in rapid inflation<sup>1/</sup>. Thus, one can anticipate that the combination of a flexible exchange rate and a 15 percent subsidy should lead to a further rise in these exports. The Government's target is a value of \$300 million for minor exports by 1970, compared to a projected value of \$340 million for coffee exports.

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<sup>1/</sup> J. Sheahan and S. Clark, "The Response of Colombian Exports to Variations in Effective Exchange Rates", Research Memorandum No. 11, Williams College, June 1967, mimeo.

CHAPTER III

STRUCTURE AND PROSPECTS OF THE COLOMBIAN COFFEE SECTOR

Trends of Overall Production, Planted Area, and Tree Numbers

The available data on Colombia's coffee production show a current level of output of close to 8 million bags of green coffee per year. The long-term growth of output to this level from the early 1930's, when output amounted to about 3.5 million bags, has proceeded at an annual rate of approximately 2.3 percent. However, there appears to have been virtually no change in the current level during the last decade. There was a sharp increase in the level of output from the early 1930's through the Second World War. Output in 1946/47 was approximately 6.2 million bags, compared to the 3.5 million bag level of the early thirties. Thereupon, a new plateau appears to have been maintained for the succeeding ten years, after which another jump seems to have occurred to the current plateau which has prevailed for the last ten years.

The basic series for production data in Colombia is that published by the Coffee Federation. The Federation figures are arrived at essentially as a summation of exports, domestic consumption, and stock accumulations. Long-term series on Colombia's coffee production are also published by the U.S. Department of Agriculture. The latter series differs from the Federation's series for certain individual years, but it bears out the observations concerning the trends of output which have been noted above.

For certain individual years, there are still other data available, based on special investigations which have been carried out. In 1955/56, a joint UN Economic Commission for Latin America/FAO coffee survey was carried out in Colombia, and the production figure it yielded for that year was 6.1 million bags, or about midway between the

5.6 million bag estimate of the Federation and the 6.8 million bag estimate of the U.S. Department of Agriculture. In 1960 the Statistical Department of the National Government of Colombia carried out an agricultural census, and the figure it yielded for coffee output was 6.8 million bags, or substantially less than the 7.8 million bags estimated by the Federation and the 8 million bags estimated by the U.S. Department of Agriculture. In 1965 the Statistical Department carried out a sample survey of Colombian agriculture, and the figure for coffee output was once again well below the other estimates: 6.1 million bags compared to the 7.9 million bag estimate of the Federation and the 7.6 million bag estimate of the U.S. Department of Agriculture. These varying estimates for individual years provide no basis for putting into question the observations concerning long-term trends since they provide neither comparability nor continuity.

Elements that conceivably might be omitted from the Coffee Federation's production series, which is essentially based on output reaching commercial market channels, could include consumption on coffee farms themselves and amounts of crops not harvested but simply left on the trees or lost in the field. Coffee Federation technicians estimate that unharvested coffee together with unregistered local consumption of farm families may amount to up to 5 percent of the registered crop in any one year. This would mean approximately 400,000 bags at the current level of output, consisting perhaps of 150,000 bags of unregistered farm consumption<sup>1/</sup>, plus unharvested coffee to the extent of 200,000-300,000 bags. This perhaps provides some measure of the extent to which

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<sup>1/</sup> By 2.5 million persons at a level of per capita consumption of 3.8 kilos per year, i.e., 9.5 million kilos which, divided by 60, equals 158,333 bags.

Table 12

Coffee Production, 1930/31-1966/67, Selected Years

(thousands of 60-kilo bags of green coffee)

|         | <u>Federation</u> | <u>USDA</u> |
|---------|-------------------|-------------|
| 1930/31 | 3,374             | 3,367       |
| 1936/37 | 4,369             | 4,197       |
| 1946/47 | 6,158             | n.a.        |
| 1950/51 | 5,038             | n.a.        |
| 1951/52 | 6,711             | 6,711       |
| 1952/53 | 6,405             | 6,405       |
| 1953/54 | 6,719             | 7,083       |
| 1954/55 | 6,285             | 6,405       |
| 1955/56 | 5,584             | 6,800       |
| 1956/57 | 6,086             | 6,500       |
| 1957/58 | 7,806             | 7,800       |
| 1958/59 | 7,442             | 7,700       |
| 1959/60 | 7,684             | 8,000       |
| 1960/61 | 7,500             | 7,700       |
| 1961/62 | 8,035             | 7,800       |
| 1962/63 | 7,500             | 7,500       |
| 1963/64 | 7,800             | 8,200       |
| 1964/65 | 7,900             | 7,600       |
| 1965/66 | 8,200             | 8,200       |
| 1966/67 | 7,800             | 7,600       |

Source: Appendix Table III.

output could be deliberately expanded in the short run in response to incentives, though these coffees are probably of a relatively low quality. Under the best of circumstances, the margin for such short-run expansion thus seems to be quite limited.

The official Federation data show a total area planted to coffee of some 810,000 ha. in 1966/67, a level which has remained unchanged during the last five years. Indeed, over a somewhat longer period, there is reported to have been a decline in acreage, from 840,000 ha. in 1958/59. There was nevertheless a reported increase of about 8 percent in acreage between 1955/56, the year of the UN ECLA/FAO survey, when it was reported as 777,000 ha., and 1958/59.

Table 13

Area Planted to Coffee, 1955/56-1966/67, Selected Years

(thousands of hectares)

|         |       |
|---------|-------|
| 1955/56 | 776.8 |
| 1958/59 | 840.0 |
| 1959/60 | 836.0 |
| 1960/61 | 831.5 |
| 1961/62 | 824.1 |
| 1962/63 | 810.0 |
| 1963/64 | 813.1 |
| 1964/65 | 812.0 |
| 1965/66 | 811.4 |
| 1966/67 | 810.6 |

Source: Coffee Federation

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It may be noted that the reliability of data on planted area is subject to even greater doubt than that on output, which at least can be built up from the somewhat more easily measurable data on commercial marketings and stocks. Indeed, area data from the censuses and surveys of the National Government's Statistical Department are seriously at variance with the data reported by the Federation.

Thus, the area figure from the 1960 census of the Statistical Department is 968,000 ha., compared to 832,000 ha. reported by the Federation for 1960/61; and the area figure from the Statistical Department's sample survey of 1965 is 965,000 ha., compared to the Federation figure of 811,000 ha. for 1965/66.

One reason for the difference between the Statistical Department and Federation estimates of planted area may be more adequate coverage by the Statistical Department. The Federation data are based on the 1955/56 master sample designed for purposes of the ECLA/FAO survey, whereas the Statistical Department sample base has been revised more recently. The official Federation figures may, therefore, not cover some areas of recent planting. Recent limited field checks by Federation personnel tend to confirm the Statistical Department figures on planted area, rather than the Federation's own published figures. The planted coffee area in Colombia may thus be approximately 1 million ha. at present.

There appears, nevertheless, to be little conclusive evidence to contradict the Federation estimate of stagnant or declining area planted to coffee during the last decade. The ECLA/FAO survey found some 85,000 ha. of new plantings for 1956. The 1960 census does not report new coffee plantings, and the recent national sample surveys of the Statistical Department give 56,000 and 64,000 ha. of new plantings, respectively, for 1964 and 1965. Even though the latter two figures may be correct, it is believed that any expanded coffee plantings that took place were in lower yielding areas of the country such as the Departments of Magdalena, Boyacá, and Caqueta, so that any increase in production that might be forthcoming would not be proportionately as great.

In order to provide more reliable data on coffee area, the Coffee Federation has started a project involving the use of aerial photography techniques, which it is hoped may be completed by 1970. This would also provide the basis for a better estimate of tree numbers.

The latest estimate of tree numbers by the Federation is 2,025 million trees for 1962/63, and the fragmentary data which are available on this subject indicate no change in total tree population during recent years. The ECLA/FAO survey in 1955/56 estimated the national figure at 1,938 million trees, and the Federation subsequently estimated the number at 2,100 million trees in 1958/59.

The latest figures available on the age composition of the tree population also date from 1962/63 and are as follows:

Table 14

Age Composition of Coffee Trees in 1962/63

| (1)<br><u>Age Bracket</u> | (2)<br><u>Years planted</u> | (3)<br><u>Percentage of total</u> | (4)<br>Average yearly replanting rate during each 3-year period<br>$(3) \div 3$ |
|---------------------------|-----------------------------|-----------------------------------|---|
| 1- 3 years                | 1961-63                     | 8.0                               | 2.6   |
| 4- 6 "                    | 1958-60                     | 11.0                              | 3.6   |
| 7- 9 "                    | 1955-57                     | 7.5                               | 2.5   |
| 10-12 "                   | 1952-54                     | 7.5                               | 2.5   |
| 13-15 "                   | 1949-51                     | 6.0                               | 2.0   |
| over 15 "                 | before 1949                 | 60.0                              | --  |

Source: Coffee Federation

These figures show that 60 percent of the trees were over 15 years old and could be expected to have declining yields per tree. For the predominant variety of coffee tree in Colombia, namely the "typica", yields increase gradually up to an age of 12-15 years and then decrease, more or less rapidly depending on the care given to the plantation.

No direct data are available on the yearly replanting rate or on changes in the rate over time. If, as has been suggested above, the total tree population did not change significantly from 1949 to 1963, it can be inferred from the figures cited on age composition in 1962/63 that during the period 1949-1963 the yearly replanting rate averaged 2.6 percent, since 40 percent of the trees were replaced over a period of 15 years. In considering the data by successive three-year periods since 1949, as is done in the table, there is no indication of any significant deviation from this average during any of the three-year periods.

It may be noted, furthermore, that there is no clear correspondence between the number of coffee trees and total output. There is both a negative and positive correlation in the country, depending upon the nature of techniques employed and ecological conditions, between tree density and coffee yields per tree. Coffee plantings in the optimum producing areas in the country average a lower tree density but have a much higher yield per tree than those in the outlying areas. On the other hand, the most modern coffee farms in the optimum producing areas use a high tree density in combination with other advanced coffee production techniques to achieve very high yields per tree.

The fragmentary nature of the data available makes it difficult to relate trends in production to those in acreage and tree numbers. One benchmark that may be used is data available from a coffee census carried out in 1932 by the Coffee Federation compared to the most recent data cited above. Such a comparison shows that production over the long run has grown at a lower rate (2.3 percent) than either area (3.0 percent) or tree numbers (3.9 percent) indicating a decline in yields both per hectare and per tree, as indicated below:

|  | <u>Production</u><br>(000 bags) | <u>Area</u><br>(000 has.) | <u>Tree Nos.</u><br>(thousands) |
|--|---------------------------------|---------------------------|---------------------------------|
| 1932 Census  | 3,461                           | 356.5                     | 531                             |
| 1966/67 data<br>(best estimates)                       | 7,800                           | 1,000.0                   | 2,000                           |
| Annual growth rate<br>during the 35 years<br>1932-1967 | 2.3%                            | 3.0%                      | 3.9%                            |

#### Regional Distribution of Coffee Cultivation

Coffee is grown in Colombia almost exclusively on the slopes of the three cordilleras which cross the country in a north-south direction. The main coffee growing area is located on the slopes of the Central and Western Cordilleras with the Departments of Caldas, Quindio and Risaralda<sup>1/</sup> as its center. This central area extends into the adjacent Departments of Antioquia, Valle and Tolima, and produces currently 70-75 percent of the total coffee crop of the country. The area is rather homogeneous in climatic and soil conditions.

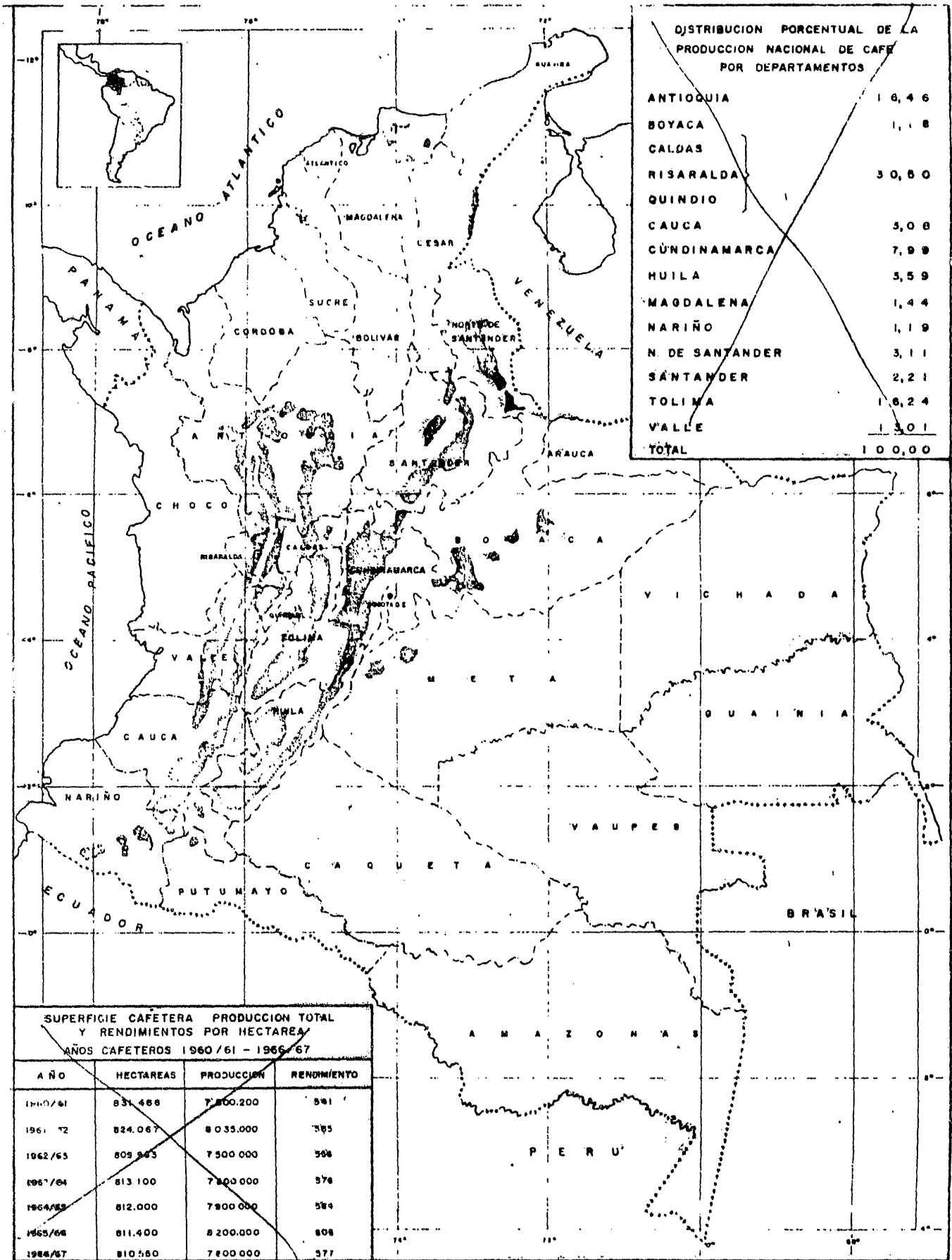
Much less important coffee growing areas are located in the southern part of the Western Cordillera in the Departments of Nariño and Cauca and on the slopes of the Eastern Cordillera in the Departments of Cundinamarca, Huila, Boyaca, Santander and Norte de Santander. An isolated coffee growing area is situated on the slopes of the Sierra Nevada de Santa Marta in the Department of Magdalena. More recently coffee has been grown to a small extent in the Department of Meta (see map attached).

Coffee was introduced into Colombia from Venezuela during the middle of the 18th century. It was first cultivated on a commercial scale in Norte de Santander in the beginning of the 19th century and from there

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<sup>1/</sup> In 1966 the Department of Caldas was divided into these three departments.

(Better map to be produced by Tripartite Coffee Study: date and legend to be added)



DISTRIBUCION PORCENTUAL DE LA PRODUCCION NACIONAL DE CAFE POR DEPARTAMENTOS

|                 |        |
|-----------------|--------|
| ANTIOQUIA       | 16,46  |
| BOYACA          | 1,18   |
| CALDAS          |        |
| RISARALDA       | 30,60  |
| QUINDIO         |        |
| CAUCA           | 5,08   |
| CUNDINAMARCA    | 7,99   |
| HUILA           | 3,59   |
| MAGDALENA       | 1,44   |
| NARIÑO          | 1,19   |
| N. DE SANTANDER | 3,11   |
| SANTANDER       | 2,21   |
| TOLIMA          | 16,24  |
| VALLE           | 13,01  |
| TOTAL           | 100,00 |

SUPERFICIE CAFETERA PRODUCCION TOTAL Y RENDIMIENTOS POR HECTAREA AÑOS CAFETEROS 1960/61 - 1966/67

| AÑO     | HECTAREAS | PRODUCCION | RENDIMIENTO |
|---------|-----------|------------|-------------|
| 1960/61 | 831.486   | 7.000.200  | 841         |
| 1961/62 | 824.067   | 8.035.000  | 975         |
| 1962/63 | 809.863   | 7.500.000  | 926         |
| 1963/64 | 813.100   | 7.800.000  | 959         |
| 1964/65 | 812.000   | 7.900.000  | 973         |
| 1965/66 | 811.400   | 8.200.000  | 1011        |
| 1966/67 | 810.560   | 7.800.000  | 951         |

FUENTE: Federacaté - Gaceta Técnica

it spread south along the cordilleras.

Available data on the regional pattern of coffee production for various years are summarized in the table below.

Table 15

Regional Pattern of Coffee Production

|              | (1)<br>Census      | (2)<br>ECLA/FAO<br>1955/56 | (3)<br>Census<br>1960 | (4)<br>Sample Survey<br>1965 | (5)<br>Federation<br>1966/67 Estimate |
|--------------|--------------------|----------------------------|-----------------------|------------------------------|---------------------------------------|
|              | (percent of total) |                            |                       |                              |                                       |
| Antioquia    | 17.9               | 16.2                       | 15.0                  | 14.0                         | 17                                    |
| Boyaca       | 0.7                | 0.8                        | 2.5                   | 1.5                          | 1                                     |
| Caldas       | 29.1               | 31.8                       | 28.8                  | 35.6                         | 31a/                                  |
| Cauca        | 1.6                | 2.6                        | 4.8                   | 4.4                          | 3                                     |
| Cundinamarca | 11.7               | 7.8                        | 8.0                   | 5.3                          | 8                                     |
| Huila        | 1.5                | 4.2                        | 2.9                   | 4.9                          | 4                                     |
| Magdalena    | 0.6                | 1.3                        | 1.3                   | 4.1                          | 1                                     |
| Nariño       | 0.5                | 0.7                        | 2.0                   | 0.5                          | 1                                     |
| Santander N  | 7.8                | 2.8                        | 4.4                   | 2.7                          | 3                                     |
| Santander S  | 4.3                | 2.3                        | 3.8                   | 4.1                          | 2                                     |
| Tolima       | 13.0               | 15.2                       | 12.4                  | 9.7                          | 16                                    |
| Valle        | 10.3               | 13.6                       | 13.5                  | 12.4                         | 13                                    |
| Other areas  | 1.0                | 0.7                        | 0.6                   | 0.8                          | -                                     |
| Colombia     | 100.0              | 100.0                      | 100.0                 | 100.0                        | 100                                   |

a/ Caldas, Risaralda, and Quindio combined.

- Sources: (1) International Institute of Agriculture, The World's Coffee, (1947), p. 221.
- (2) UN and FAO, Coffee in Latin America, Vol. I, (1958), p. 23.
- (3) Departamento Administrativo Nacional de Estadística (DANE), Directorio Nacional de Explotaciones Agropecuarias (Censo Agropecuario - 1960).
- (4) DANE, Eucuesta Agropecuaria Nacional 1965.
- (5) Coffee Federation.

Although the reliability of the data in Table 15 is questionable, they give some indications of a long-term pattern in coffee development. The center of production is moving increasingly toward the relatively new and ecologically well-suited central western coffee area and away from

the eroded and marginally too dry regions in the east and northeast.

The Caldas-Valle area, in particular, seems to have strengthened its relative position in the past 35 years, increasing its proportion from some 40 percent to close to 50 percent of the national crop. On the other hand, there seem to have been consistent declines in older producing areas such as in the two Santander departments and in Cundinamarca. The 1932 weight of the latter three areas of almost one-fourth of total output declined to about one-eighth by the mid-1960's. Small but significant production gains are shown by the Departments of Boyaca, Cauca, Huila, Magdalena and Meta (the latter is not shown separately) which, together, increased their share from about 5 percent of total production in 1952 to 10-15 percent in recent years. The long-term decline in the proportion reported for Tolima through 1965 has a special explanation, in that it was probably related to the political unrest which plagued this region for many years. The latest reports indicate a substantial recovery of coffee growing in Tolima. These shifts signify roughly a displacement of coffee growing in Colombia from the east of the country to the west and also from the north to the south.

In very general terms it can be said that the central coffee growing areas have the best natural conditions for coffee growing. They have good soils, rainfall is above 2,000 mm and is seasonally well distributed. To the north and south of this area, climatic conditions become less favorable mainly due to the seasonal rainfall distribution. This is documented by the very low yields in Santander and Norte de Santander in the north and Cauca and Nariño in the south.

Within the central coffee growing area, ecological marginality for coffee growing is determined mainly by altitude. Elevations from 1,300 to 1,800 m are most favorable for the production of good quality

coffee. This optimal altitude belt often coincides with the steep slopes of the Andes and many of the plantations are on steep land often with gradients up to 60 percent.

Coffee yields by departments are summarized in the table below for 1955/56 and 1965. These data should be taken as illustrative, and do not represent any significant changes over time since the bases of their calculation are not comparable.

Table 16

Coffee Yields by Departments, 1955/56 and 1965

(kilos of green coffee equivalent per ha.)

|                    | <u>1955/56</u> | <u>1965</u> |
|--------------------|----------------|-------------|
| <u>North</u>       |                |             |
| Magdalena          | 360            | 580         |
| Norte de Santander | 377            | 288         |
| Santander          | 411            | 328         |
| <u>Center</u>      |                |             |
| Antioquia          | 565            | 472         |
| Boyaca             | 309            | 511         |
| Caldas             | 680            | 738         |
| Cundinamarca       | 330            | 447         |
| Tolima             | 517            | 337         |
| Valle              | 621            | 593         |
| <u>South</u>       |                |             |
| Cauca              | 420            | 376         |
| Huila              | 397            | 550         |
| Nariño             | 191            | 254         |

Sources: ECLA/FAO Coffee Survey for 1955/56; DANE, Encuesta Agropecuaria Nacional, for 1965.

Conditions of Coffee Cultivation

The physical conditions of coffee cultivation in Colombia are favorable, and lend themselves to potentially large increases in output over the long run, as well as to considerable stability in the output from year to year. Though the best coffee soils are those which are dominant in the central coffee area (except perhaps Tolima), soils are nowhere a limiting factor in the entire coffee growing area, which stretches from north to south over some 1,000 kilometers. The location of the coffee growing area, from latitude 1° north to 11° north, produces a pattern of rainfall distribution which results in two harvests of coffee during the year in most of the regions and consequently a harvesting of coffee virtually all year round. As indicated in Table 17, the main harvests in Antioquia and Caldas occur during the last quarter of the calendar year, and in Quindio, Tolima and Valle in the second quarter of the year, with the secondary harvests approximately the reverse in these two groups of departments. The pattern of climatic conditions is also responsible for the very small fluctuations in yearly coffee production; generally when weather conditions are unfavorable in one area, they are favorable in others, and total production tends to be stabilized. During the ten-year period ended in the coffee year 1966/67, the largest crop was only about 10 percent greater than the smallest one (see Table 12), with only negligible changes in the area planted to coffee. In Brazil, for a comparable period of time, the largest crop was 150 percent higher than the smallest one.

The normal planting distance on coffee farms is 3.2 x 3.2 meters, which results in a density of about 1,000 trees per ha.

Table 17  
Coffee Harvest Calendar

| <u>Departments</u> | <u>Main harvest</u> | <u>Secondary harvest</u> |
|--------------------|---------------------|--------------------------|
| <u>North:</u>      |                     |                          |
| Magdalena          | November-January    | -                        |
| Santander          | September-December  | -                        |
| <u>Center:</u>     |                     |                          |
| Antioquia          | October-January     | March-June               |
| Caldas             | October-December    | April-June               |
| Quindio            | March-May           | October-December         |
| Tolima             | March-June          | September-January        |
| Valle              | March-May           | September-October        |
| <u>South:</u>      |                     |                          |
| Nariño             | May-July            | January                  |

Maintenance consists usually of two to three weeding per year. The plantations are rather heavily shaded. Guamo (Inga edulis) serves as permanent shade. The shade has to be constantly adapted through removal and replanting and pruning of shade trees. Most coffee plantations are interplanted with plantain which provides additional shade, trash for mulching, and an additional crop. The use of cover crops for erosion control and green manure is not common. Formation and pruning of the tree consists of cutting the young tree at a height of about 1.6 m which leads to an umbrella shape. All suckers are regularly eliminated and on older trees the dead wood is removed every year.

The small amount of manure available in the form of compost from coffee pulp and other sources is given to newly planted trees or used in the nursery only. It is estimated that about one-eighth of all coffee plantings receives some kind of fertilization, but most of it is from the organic sources indicated. The use of chemical fertilizers is very limited, because of the lack of working capital and skilled management among small farmers, probably reaching less than 3 percent of the planted area. Colombia has no coffee pest or disease problems of economic significance and the expenses for plant protection in coffee plantations are insignificant.

These traditional cultural practices, simple and highly labor-intensive, are still in use on the great majority of coffee farms in Colombia. The Coffee Federation has developed cultural methods which give substantially higher yields. These are discussed in a subsequent section dealing with the inputs, costs, and returns of coffee cultivation in

the country. The traditional methods give a national average yield estimated for 1966/67 at 577 kilos of green coffee per hectare, based on Federation estimates of total output and acreage (see Tables 12 and 13. The yield would be lower (468 kilos) if the suggestion noted above that total coffee acreage amounts to perhaps 1 million hectares is correct. In any case, the general order of magnitude of yield appears to be in the neighborhood of about 500 kilos per hectare.

Fitting in with these characteristics of coffee cultivation - high labor-intensity and low, and not increasing, yields - is the pattern of size of coffee farms. Coffee production in Colombia has to a large extent always been the activity of small family-operated and family-owned farms. Coffee cultivation has characteristically been extended throughout the country through land settlement by small farmers. Wherever climate seemed to permit it, coffee was planted as the first cash crop in the place of original forests. Under various laws the settlers could claim ownership of the lands thus improved and, even today, one of the important activities of INCORA, the agrarian reform agency, consists of the definitive allocation of title to agricultural, including coffee, squatters. The Colombian coffee farmer has traditionally lived on the land he works, and, considering the pattern of settlement, the size of coffee farms has to a considerable extent remained small, determined by the working capacity of the farmer and his family.

Only inadequate data on the distribution of coffee farms by size throughout the country exist, and these are presented in Table 18. The Coffee Federation estimates that there were some 300,000 coffee farms in 1965/66, and estimates the average size per farm to be under 3 hectares. As many as one-third of the total number were farms of less than 1 hectare each.

The number of such very small farms has increased over the last decade at the same rate as the total number of coffee farms, despite the injunction since the adoption of the current agrarian reform law in 1962 against the subdivision of farms of less than 3 hectares. As indicated in the table, there has apparently been some decrease in the average size of coffee farms over this period.

Table 18

Distribution of Coffee Farms by Size, National Totals

|  | <u>1955/56</u> | <u>1965/66</u> |
|--|----------------|----------------|
| Less than 1 ha. - no. of farms         | 77,245         | 109,670        |
| 1 - 50 ha. - "                         | 135,148        | 191,017        |
| Over 50 ha. - "                        | 577            | 843            |
| Total - "                              | 212,970        | 301,530        |
| Total area planted to coffee (000 ha.) | 777            | 811            |
| Average size per farm (ha.)            | 3.65           | 2.69           |

Source: Coffee Federation

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Detailed data on farm size exist for the leading coffee Department of Caldas (i.e., the former Department of Caldas, encompassing that Department as well as the two new Departments of Risaralda and Quindio, which, together accounted for about one-third of total coffee output in the country), compiled recently by the Development Program for Caldas. The conditions prevailing in Caldas are similar to those in the neighboring important coffee Departments of Antioquia, Valle, and Tolima so that these data can be considered as representative for the central coffee growing area as a whole.

As indicated in Table 19, half of the coffee farms in that area had an average size of 3.5 ha. or less and as many as 90 percent of the

total had an average area of 15 ha. or less. The farms up to 15 ha. in size account for only somewhat more than 40 percent of the total area of coffee farms, but have as much as about two-thirds of the area planted to coffee on these farms. The ratio of area planted to coffee to total farm area generally declines quite regularly as the size of farm increases. Smaller farms, up to 3.5 ha., devote about two-thirds of their land to coffee; farms averaging between 4.5 ha. and 15 ha. devote about half of their land to coffee; and the ratio continues to decline with the very large farms devoting only a small minority of their total lands to coffee.

The small farmers in fact grow virtually no other crops than coffee, not even food crops for their own consumption, except for plantain which serves as shade for the coffee. In this respect the small coffee growers in Colombia differ from smallholders in other coffee growing countries, such as Guatemala, where the smallholders are essentially subsistence farmers but grow some coffee in addition to food crops. Dependent as they are on purchases of food, these small Colombian farmers are highly vulnerable to coffee price fluctuations. On middle sized farms, land not planted to coffee is devoted mostly to sugarcane, cassava, or pasture. The very large farms are essentially livestock farms which also grow some coffee.

The smallholdings are located mostly on the steepest land on the mountain slopes. The middle sized farms, occupying the best coffee land with respect to both topography and altitude, are to be found on the foothills. The largest farms are mostly in the valleys or plateaus on relatively flat land, and some are either too low for good coffee production or are situated above 1,800 meters, the upper altitude limit for coffee growing.

Table 19

Department of Caldas - Number and Size of Coffee Farms and Area Planted to Coffee, 1965

| Average size<br>(ha.) | Number<br>of<br>farms | % of total<br>farms | Total area<br>(ha.) | % of total<br>area | Area planted<br>to coffee<br>(ha.) | % of total<br>coffee<br>area | Average area<br>planted to<br>coffee<br>(ha.) | % of farm<br>planted to<br>coffee |
|-----------------------|-----------------------|---------------------|---------------------|--------------------|------------------------------------|------------------------------|---|-----------------------------------|
| 0.25                  | 2,640                 | 4.4                 | 660                 | 0.1                | 458                                | 0.2                          | 0.17  | 68                                |
| 0.75                  | 3,660                 | 6.2                 | 2,745               | 0.4                | 1,759                              | 0.7                          | 0.48  | 64                                |
| 1.5                   | 7,920                 | 13.4                | 11,880              | 1.8                | 7,672                              | 3.2                          | 0.97  | 65                                |
| 2.5                   | 8,400                 | 14.2                | 21,000              | 3.1                | 13,374                             | 5.7                          | 1.60  | 64                                |
| 3.5                   | 6,961                 | 11.7                | 24,364              | 3.7                | 17,358                             | 7.3                          | 2.49  | 71                                |
| Sub-totals            | <u>29,581</u>         | <u>49.9</u>         | <u>60,649</u>       | <u>9.1</u>         | <u>40,621</u>                      | <u>17.1</u>                  | <u>1.37</u>                                   | <u>67</u>                         |
| 4.5                   | 5,221                 | 8.8                 | 23,495              | 3.5                | 13,340                             | 5.7                          | 2.56  | 57                                |
| 7.5                   | 12,422                | 20.9                | 93,165              | 14.0               | 50,863                             | 21.5                         | 4.09  | 55                                |
| 15.0                  | 6,879                 | 11.6                | 103,185             | 15.5               | 47,221                             | 20.0                         | 6.86  | 46                                |
| Sub-totals            | <u>24,522</u>         | <u>41.3</u>         | <u>219,845</u>      | <u>33.0</u>        | <u>111,424</u>                     | <u>47.2</u>                  | <u>4.54</u>                                   | <u>51</u>                         |
| 25.0                  | 2,081                 | 3.5                 | 52,025              | 7.8                | 18,856                             | 8.0                          | 9.06  | 36                                |
| 35.0                  | 1,172                 | 2.0                 | 41,020              | 6.1                | 18,511                             | 7.8                          | 15.80   | 43                                |
| 45.0                  | 259                   | 0.4                 | 11,655              | 1.8                | 3,898                              | 1.7                          | 15.05   | 33                                |
| Sub-totals            | <u>3,512</u>          | <u>5.9</u>          | <u>104,700</u>      | <u>15.7</u>        | <u>41,265</u>                      | <u>17.5</u>                  | <u>11.75</u>                                  | <u>39</u>                         |
| 75.0                  | 942                   | 1.6                 | 70,650              | 10.5               | 23,806                             | 10.1                         | 25.27   | 34                                |
| 150.0                 | 392                   | 0.7                 | 58,800              | 8.9                | 9,166                              | 3.9                          | 23.38   | 16                                |
| 350.0                 | 301                   | 0.5                 | 105,350             | 15.9               | 7,385                              | 3.1                          | 24.54   | 7                                 |
| 750.0                 | 30                    | 0.1                 | 22,500              | 3.4                | 2,074                              | 0.9                          | 69.13   | 9                                 |
| 1,750.0               | 6                     | -                   | 10,500              | 1.6                | 215                                | 0.1                          | 35.83   | 2                                 |
| 2,500.0               | 5                     | -                   | 12,500              | 1.9                | 200                                | 0.1                          | 40.00   | 2                                 |
| Sub-totals            | <u>1,676</u>          | <u>2.9</u>          | <u>280,300</u>      | <u>42.2</u>        | <u>42,846</u>                      | <u>18.2</u>                  | <u>25.56</u>                                  | <u>15</u>                         |
| Grand totals          | <u>59,291</u>         | <u>100.0</u>        | <u>665,494</u>      | <u>100.0</u>       | <u>236,156</u>                     | <u>100.0</u>                 | <u>3.98</u>                                   | <u>35</u>                         |

Source: Development Program for Caldas.

The National Federation of Coffee Growers and the Marketing Structure

The National Federation of Coffee Growers is the pivotal agency in the carrying out of the coffee policy of the country. Though it does not have a monopoly of internal or external marketing of coffee as in the case of the British-type marketing board, it approaches such status. Through a network of agencies in the coffee departments, the Federation stands ready to buy from farmers coffee which meets its specifications, without limit at fixed prices. The Federation in practice exports only a minor portion of total coffee exports from the country, but it shares in internal purchases of coffee to a much greater extent; much of the coffee exported by private parties is purchased by them from the Federation. The Federation is the only agency which handles the storage of surplus coffee, and is virtually the only agency which carries out storage to any extent. The Federation is dominant in the marketing of coffee for domestic consumption. It also has been designated by the government to carry out Colombia's obligations under the International Coffee Agreement. In this connection, it issues certificates of origin for coffee exports, handles the export stamps, reports in detail to the ICO, and, in general, supervises and regulates coffee exports within the allotted quotas. Furthermore, the Federation has a monopoly for all Annex B (non-quota) exports, for exports under bilateral payments agreements, and in the export of aged coffees.

The Federation was established in 1927 as a private body, representing the interests of all coffee producers. It has, nevertheless, close relations with the government. Under contract with the government, besides supervising exports pursuant to the provisions of the International Coffee Agreement, it operates the National Coffee Fund, the device used to finance

the purchase and storage of surplus coffee. The internal price for coffee paid by the Federation is fixed by a committee consisting of the General Manager of the Federation, the Manager of the Central Bank, and the Ministers of Finance, Agriculture, and Development. The top executive body of the Federation is an eleven-member National Committee, which meets every week. The Committee, besides six members elected by the Coffee Congress of the Federation, includes five governmental representatives ex officio: the Ministers of Finance, Agriculture, Development, and Foreign Affairs and the Manager of the government-owned agricultural bank, the Caja Agraria.

Despite its close links to the government, the Federation has achieved a remarkable record of stability and continuity of its personnel, outside the vagaries of the political arena. During its life of some 40 years, it has had only two general managers. Its personnel corps, consisting currently of some 2,800 persons, is operated on a career basis, under conditions more favorable than those which prevail in the civil service.

The general assembly of the Federation is a National Coffee Congress, which normally convenes every two years. The Congress elects the six members of the Federation who serve on the executive National Committee, cited above. The National Committee names 12 departmental committees, through which the Federation's functions in marketing as well as in extension work, and in the construction of infrastructure facilities, are carried out. Besides its network of agencies in the principal cities, towns, and ports in the country involved in the marketing of coffee, the Federation maintains offices abroad, in Brussels, Rome, Madrid, Copenhagen, Tokyo, New York, and Buenos Aires, as well as in key embassies in other countries.

The level of the operating budget of the Federation is close to 175 million pesos (about US \$11 million); it amounts to 173.6 million pesos for 1968. Of the total, 124.1 million pesos were budgeted in 1968 for extension work and infrastructure through the regional coffee growers' committees. The extension service of the Federation is the largest of its kind in Colombia, comprising a total field personnel of 512 (in 1965), including 77 agronomists, 7 veterinarians, and 31 home economists. The infrastructure program in the coffee regions involves the construction of penetration roads, schools, and water supply facilities. A total of 13.7 million pesos was budgeted in 1968 for the Chinchiná experiment station of the Federation.

The sources of funds for the operating budget of the Federation are principally the proceeds of sales of low quality "pasilla" coffees, which are contributed as a tax by private exporters (6 percent of the volume of their sales), the proceeds of 4 percentage points out of the export tax on coffee, and contributions from the National Coffee Fund for contractual services rendered.

In addition to this operating budget, the Federation administers the National Coffee Fund under contract with the government. Using principally the proceeds of the coffee retention tax, currently amounting to 19 percent of the value of exports, and having recourse to borrowing from the Central Bank, the National Coffee Fund finances the purchase and storage of surplus coffee. In addition, the Fund has over the years entered into other activities, directly or indirectly related to the coffee industry. Thus the Federation, through the Fund, fully owns a commercial bank, the Banco Cafetero; holds 80 percent of the capital of a shipping company, the Flota Grancolombiana; and it has substantial interests in the government agricultural bank, the Caja Agraria, and in several of the regional industrial finance corporations recently established in the country. Other capital interests include Café Colombia S.A. of Buenos Aires, a coffee roasting plant; and the Colombian Center of New York, a public relations agency.

The Federation appears to have become more active as an internal coffee buyer over the past decade. In 1966, the Federation bought 70 percent of the crop, and in 1967 the proportion was expected to be over 60 percent. No precise information is available for the 1950's, but it is thought that the Federation, on average, purchased much less than half of the crop during that period. The maximum proportion of Federation purchases is estimated at some 85 percent in any year so far.

In addition to private traders, coffee marketing cooperatives in the main producing areas have gained some importance in recent years. It is estimated that almost 20 percent of primary coffee marketing and processing was handled by cooperatives in 1967. Although still handling only a small part of total coffee marketings, these cooperatives nevertheless account for the vast majority of all cooperative marketing activities in the country; they are estimated to represent about 80 percent of the turnover of all marketing cooperatives. The growth of cooperatives has been actively stimulated by the Federation. They are initially financed by it and their management is supervised until they can carry on themselves. The cooperatives have thus far not engaged in export operations; their activity consists for the most part of the purchase of coffee of below Federation standard and the upgrading of such coffee for sale to the Federation.

Private exporters play a preponderant role in the export process. Since the beginning of the present decade, they have handled <sup>on the average</sup> some 70 percent of export sales and there is no trend of change in this proportion, as indicated in Table 20. The Federation has handled 22-33 percent of coffee exports in the years since 1959. On the whole, sales to the U.S. market, which consist of more uniform types of coffee, are effected by private exporters, whereas the Federation plays a dominant role in the more complex and heterogeneous European markets. The Federation's active role in European

Table 20

Proportion of Coffee Exports by Federation  
and by Private Traders, 1959-1966

(percentages)

|      | <u>Federation</u> | <u>Private Traders</u> |
|------|-------------------|------------------------|
| 1959 | 23.5              | 76.5                   |
| 1960 | 31.8              | 68.2                   |
| 1961 | 33.0              | 67.0                   |
| 1962 | 25.6              | 74.4                   |
| 1963 | 25.1              | 74.9                   |
| 1964 | 22.7              | 77.3                   |
| 1965 | 31.6              | 68.4                   |
| 1966 | 31.8              | 68.2                   |

Source: Coffee Federation

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markets derives from its policy of spreading coffee sales as widely as possible among national markets and of establishing its product in the areas of greatest consumption growth. Furthermore, the Federation handles all exports effected under bilateral payments agreements and all exports of aged coffees. Exports of coffee under bilateral payments agreements have risen sharply during recent years, and currently amount to close to 1 million bags per year, mostly to Spain, Finland, and East Germany. Similarly, the export of aged coffees, drawn from retention stocks, is reported to amount to the considerable sum of 800,000 bags per year, both to the United States and to certain Western European countries.

The domestic market for coffee, which amounts to some 1.2 million bags per year, is controlled by the Federation to the extent of some three-fourths. Domestic consumption is currently composed to the extent of 75 percent of export quality and 25 percent of "pasilla" or inferior grades. In order to keep a clear distinction between the inferior grades and the export grade, the former type of coffee circulates in a

partially roasted form. The retail price of coffee destined for domestic consumption is fixed at a level which corresponds approximately to the Federation support price for parchment coffee, i.e., about half of the world price.

The Federation presently owns eleven coffee hulling plants, with a total rated two-shift capacity of approximately 1.5 million bags, or about one-fifth of total annual hullings. Since the Federation handles a much larger share of internal purchases and a somewhat larger share even of exports, hulling services are contracted to a considerable extent with privately owned mills. The Federation is in the process of expanding its own coffee hulling capacity.

The Federation is practically the only agency in Colombia which stores coffee. In 1965 a wholly-owned subsidiary of the Federation was established to manage the storage operation, previously carried out directly by the Federation. The subsidiary, Almacafe S.A., is owned jointly by the Federation, the Banco Cafetero, and the regional coffee growers' committees.

Almacafe has warehouses in 57 different localities in the country, with a total storage capacity at the end of 1966 of 6.2 million bags of green coffee equivalent, or some 400,000 tons of parchment coffee. The enterprise's own premises account for 5.6 million bags of this capacity, and the balance consists of rented space. The storage capacity used by Almacafe represents close to half of the country's total available storage space for agricultural commodities, as shown by the following estimates of storage capacity at the end of 1966:

|                 | <u>Tons</u>    |
|-----------------|----------------|
| State-owned     | 152,000        |
| Privately owned | 278,000        |
| Almacafe        | <u>400,000</u> |
| Total           | 830,000        |

With coffee stocks of over 5 million bags of green coffee, Almacafe currently operates at near capacity levels. It plans to keep adding storage capacity to handle annually produced surpluses, which amount currently to about 800,000 bags. Storage capacity may, however, be used for other commodities besides coffee.

In October 1967, the Federation inaugurated the world's first large coffee silo, for bulk storage rather than storage in bags. This installation, located in Medellín, has a capacity of 30,000 tons of parchment coffee, or alternatively, of 42,000 tons of wheat or 38,000 tons of corn. Its cost, equivalent to close to US \$2 million, of which about 30 percent was for the site, is expected to be recovered in less than 5 years by savings on bags and handling charges.

#### Inputs, Costs, and Returns of Coffee Cultivation

Comprehensive data on inputs, costs, and returns of coffee cultivation in Colombia, by size of farm, location, or ecological conditions, are not available. Some idea of the pattern of inputs and returns may, however, be obtained from partial data supplied by the Coffee Federation for production of coffee at different yields per hectare. These data are summarized in Table 10.

The data summarized in the table give the situation as of September 1967. Variations are indicated for levels of yield of green coffee equivalent per hectare, ranging from 300 kilos to 1,500 kilos. The national average yield, it will be recalled, is estimated to be about 500 kilos per hectare. Field maintenance, consisting of weeding, replanting and pruning, and shade management, is assumed to be constant per hectare at the varying levels of yield. The inputs which vary with the yield are harvesting and processing, and the application of fertilizer.

Harvesting and processing require 1.5 man/days for each 10 kilos of green coffee. Fertilizer starts being applied only at yields of 600 kilos, i.e., at yields above the national average. The labor requirement for application of fertilizer consists of 5 man/days per application. Each application amounts to 200 kilos.

Labor inputs are translated into labor costs at the wage rate of 17 pesos per man/day. The factor for the cost of fertilizer (12-12-17) is 1,640 pesos per ton.

The unit price for calculation of revenue is the support price paid by the Federation for parchment coffee meeting its specifications. This price was 767.50 pesos per "carga" of 125 kilos in September 1967, or 6.14 pesos per kilo. This price is applied to yields 25 percent greater than those indicated in the table for green coffee equivalent; the ratio between units of parchment coffee and green coffee is 5:4.

As can be seen from the table, the gross margin of coffee cultivation at the national average yield of 500 kilos of green coffee is about 1,500 pesos per hectare. These calculations make no allowance for depreciation of investment. On the other hand, the cost of labor, which represents the remuneration of the farmers' own labor on the many small coffee farms prevalent in the country, amounts to some 2,300 pesos per hectare and should be added to the gross margin to obtain total returns to the farmers on small farms. The total of about 3,800 pesos amounts in dollar terms to about US \$235 at the present rate of exchange for 130 man/days of labor, or about US\$1.80 per man/day. This assumes, of course production of coffee of Federation grade.

It can also be noted that within this range of yields gross margins increase more than proportionately in relation to the increase in yields. Thus, as yields increase five-fold from 300 kilos to

Table 21

Inputs and Returns for Coffee Cultivation, by Varying Yields per Hectare, September 1967

|                           | Yields in green coffee equivalent |              |            |              |            |              |            |              |             |               |
|---------------------------|-----------------------------------|--------------|------------|--------------|------------|--------------|------------|--------------|-------------|---------------|
|                           | 300 kilos                         |              | 400 kilos  |              | 600 kilos  |              | 900 kilos  |              | 1,500 kilos |               |
|                           | man-days                          | pesos        | man-days   | pesos        | man-days   | pesos        | man-days   | pesos        | man-days    | pesos         |
| Field maintenance         | 54                                | 918          | 54         | 918          | 54         | 918          | 54         | 918          | 54          | 918           |
| Harvesting and processing | 45                                | 765          | 60         | 1,020        | 90         | 1,530        | 135        | 2,295        | 225         | 3,825         |
| Application of fertilizer | -                                 | -            | -          | -            | 5          | 85           | 10         | 170          | 25          | 425           |
| <u>Total labor</u>        | <u>99</u>                         | <u>1,683</u> | <u>114</u> | <u>1,938</u> | <u>149</u> | <u>2,533</u> | <u>199</u> | <u>3,383</u> | <u>304</u>  | <u>5,168</u>  |
| Cost of fertilizer        |                                   | -            |            | -            |            | 328          |            | 656          |             | 1,640         |
| <u>Total costs</u>        |                                   | <u>1,683</u> |            | <u>1,938</u> |            | <u>2,861</u> |            | <u>4,039</u> |             | <u>6,808</u>  |
| <u>Revenue</u>            |                                   | <u>2,303</u> |            | <u>3,070</u> |            | <u>4,605</u> |            | <u>6,908</u> |             | <u>11,513</u> |
| <u>Gross margin</u>       |                                   | <u>620</u>   |            | <u>1,132</u> |            | <u>1,744</u> |            | <u>2,869</u> |             | <u>4,705</u>  |

Source: Coffee Federation

1,500 kilos, gross margins increase almost eight-fold, from 620 pesos to 4,705 pesos.

The most important input by far in coffee cultivation in Colombia, as has been suggested, is labor. From information gathered in the central coffee growing area, it appears that in farms with up to 1 hectare of coffee, most of the labor is provided by the farm family. In farms with 1-3 hectares of coffee, most of the field maintenance is done by the farm family, but hired labor is used for about one-half to two-thirds of the harvesting. Beyond that, the proportion of hired labor in relation to family labor increases rapidly with the size of the coffee plantations. Farms of 4 hectares and above have to depend largely on hired labor. Permanent labor is employed for field maintenance in such cases, but there is naturally a large amount of seasonal labor employed for harvesting. In the central coffee growing area, migrant workers come mostly from the lowlands of Antioquia, Choco, and Valle. Because of the variations of the harvest seasons previously noted, migrant workers find employment as coffee pickers for 5-6 months of the year. The same labor force provides the seasonal labor requirements for cane and cotton harvests in the Cauca Valley.

It is technically feasible to raise coffee yields in Colombia substantially. The potential is great as a result not only of methods developed by the Federation through its research facilities, but also because of its large staff engaged in extension work. The advanced agricultural methods which have been developed involve mainly: replacing the "typica" variety by "bourbon" or "caturre", which have higher yields; increasing the density of trees per hectare from 1,000 to 2,500 or more; removal of shade; and heavy application of fertilizers. On a privately operated commercial coffee farm near Manizales, a yield of 7,000 kilos of

green coffee equivalent per hectare is obtained, i.e., almost 15 times the national average. Coffee technicians in Colombia feel that yields could be raised economically even to about 10,000 kilos per hectare.

A rough estimate of the return on the 7,000 kilos per hectare farm near Manizales yields the very high figure of about 66 percent on the value of investment, and 37 percent on the gross revenue. The estimate has been made on the following basis (per hectare):

|   | <u>Pesos</u> |
|---|--------------|
| Replacement value of land and improvements  | 30,000       |
| Annual production cost, including depreciation  | 34,000       |
| Revenue, 7,000 kilos green coffee equivalent<br>(8,750 kilos parchment coffee) @ 6.14 pesos<br>per kilo of parchment coffee | 53,725       |
| Margin in pesos   | 19,725       |
| Margin as proportion of gross return  | 37%          |
| Margin as proportion of investment  | 66%          |

It should be noted, of course, that this high-yielding farm represents truly exceptional conditions of climate, location, technique, and management. Such conditions do not prevail generally. Though there are no conclusive data on the net economic returns at various levels of coffee yield, it nevertheless appears that at more manageable levels above the national average, say, up to about 1,500 kilos per hectare, it is profitable to raise coffee yields substantially. And this is the situation at the current level of farm prices, after making allowance

for the substantial degree of taxation of coffee in Colombia, which insulates the internal price from the international market price so that the internal price is only about half the international price.

The question then arises as to why there has not been a marked trend in Colombia toward higher coffee yields per hectare. One of the reasons is the need for capital and the risk involved in changing over to the new cultivation methods. It is estimated that the conversion of traditional plantations to the new cultivation methods takes about five years and involves an investment cost of about 12,000 pesos per hectare. Such investments are clearly beyond the capabilities of small coffee farmers, and there is little credit available in the country at reasonable cost for such investment, as a result of official policies which have kept bank credit for coffee to restricted levels<sup>1/</sup>.

Furthermore, the combination of increasing labor costs in the highly labor-intensive activity of coffee cultivation and national policies which have limited increases in the internal price paid for coffee, has also discouraged intensification of coffee cultivation. The cost of labor at 17 pesos per man/day as of September 1967, used in the calculations

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<sup>1/</sup> It is estimated, on the basis of data available in the annual and monthly reports of the Central Bank, that outstanding credit for coffee cultivation of the commercial banks combined plus the Caja Agraria amounts to about 5 percent of their total portfolios at the end of 1966, compared to the share of coffee cultivation in total gross domestic product of 7-8 percent.

above, was about two and a half times as great as the average cost reported by the Federation of 6.61 pesos per man/day for 1961; the support price of 6.14 pesos per kilo of parchment coffee paid in September 1967, on the other hand, was only somewhat more than one and a half times as great as the price of 3.78 pesos per kilo in 1961. Also as a matter of deliberate policy, the extension service of the Federation is not actively promoting coffee rationalization, so as not to aggravate the problem of surpluses which exists even under the traditional methods of cultivation.

#### Formation and Trend of Internal Coffee Prices

In the last analysis, the price paid to coffee producers is a function of the export price less the taxation applied - which is all imposed on exporters - less, of course, the costs of transport, hulling, handling, and the margins of exporters. The principal variable under the control of the government is taxation. The support price paid by the Federation is fixed in the light of these elements, except for the extent to which the government is prepared for the Federation to pay higher prices than warranted by these elements, in order to affect favorably the income position of producers as well as to sustain the export prices at which private exporters are induced to sell. When the government has been prepared for the Federation to incur such losses, as occurred to a considerable extent from 1962 through 1966, the losses have been financed largely by credits from the Central Bank, which have an inflationary impact and result in a transfer of income from other sectors to the coffee sector of the economy.

The prices received by coffee growers from private traders are generally about 5 percent below the Federation support level for coffee of

Federation quality. The reason is that private traders offer services not available from the Federation, such as credit, transport, and grading.

The present (February 1968) support price of the Federation is 847.50 pesos per "carga" of 125 kilos of parchment coffee, while private traders pay 820 pesos for the same grade. Assuming, as has been previously suggested, that Federation purchases account for 60 percent of total internal purchases (about the proportion expected in 1967), the weighted average price received by growers is 824.50 pesos per carga of parchment coffee of Federation grade. An equivalent weight of green coffee, which is worth 25 percent more than parchment coffee, would be valued at 1,030.63 pesos, or 8.25 pesos per kilo. This is equivalent to about US \$0.23 per lb. or slightly more than half of the current New York spot price for Colombian coffee of about US \$0.43 per lb. Part of the reason for the difference, is of course, transport, handling, and hulling costs as well as traders' margins, but the main reason for the difference is the level of taxation<sup>1/</sup>.

The level of taxation of coffee exports currently amounts to slightly more than 40 percent of the export value. Taxation consists of the following components:

- 1) An ad valorem export tax applied to the local currency equivalent of the export price. This was first imposed in March 1967, when the Colombian exchange system underwent a basic modification designed to bring about a greater uniformity of exchange rates and to allow them to fluctuate in relation to increases in the internal price level.

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<sup>1/</sup> The marketing margin within Colombia is estimated to amount to 14 percent of the export price; maritime transport is estimated to amount to 5 percent of the New York price.

The export tax replaced an exchange differential which previously prevailed, between a penalty exchange rate applied to coffee exports and higher rates that applied to imports. The tax was first imposed at the rate of 26 percent, with a provision that it was to decline by a quarter of 1 percentage point each month, until it reached a level of 20 percent in December 1968, at which rate it was to remain fixed. At present (February 1968), the rate is 22.25 percent.

- 2) A "retention" tax of 19 percent of the volume of green coffee exports, paid by exporters in the equivalent volume or cash value of parchment coffee. This tax has as its essential purpose the financing of the accumulation of annual coffee surpluses. It is paid only by private exporters, and corresponds approximately to the volume of the surplus. If private exporters account for about 70 percent of total exports, i.e., if they account for about 4 million bags of green coffee per year, the 19 percent rate comes close to 800,000 bags per year.
- 3) A "pasilla" tax of 6 percent of the volume of exports, paid by exporters in the same volume of "pasilla" or low grade coffees. Since the value of such coffees is less than the value of export coffee, this tax represents correspondingly less than 6 percent of the value of exports.
- 4) A tax of 25 Colombian cents per 70-kilo bag of coffee exported, which amounts at present levels to only a very small fraction, about 0.03 percent, of the value of exports.

5) Another small tax that arises from the requirement that private exporters surrender exchange for coffee exports to the Central Bank at a fixed price, which generally slightly exceeds the actual market price for coffee.

The purpose of this provision is to prevent underinvoicing of coffee exports. To make up the difference between the surrender price and the actual market price, the exporters must go into the foreign exchange market and purchase dollars at the capital market rate (16.30 pesos per dollar), which has been higher than the certificate rate of exchange applicable to coffee exports (15.70 pesos per dollar in November 1967).

The components of taxation thus amounted to somewhat more than 45 percent when the new system was instituted in March 1967, and will decline to somewhat more than 39 percent when the ad valorem export tax settles to its permanent level in December 1968. At the same time that this decline in taxation has been occurring, the peso proceeds per dollar of exports have been increasing under the new exchange regime by virtue of the depreciation of the certificate rate of exchange. The new system started with a certificate rate of 13.50 pesos per dollar, and this had increased by about 20 percent to 15.70 pesos per dollar in November 1967.

The increase in the peso earnings per dollar of exports under the new exchange regime has made it possible to increase the prices paid to coffee growers, both by the Federation and by private traders. It has also improved the financial position of the Federation and consequently

eliminated the inflationary impact of its operations<sup>1/</sup>. The Federation support price has been raised from the level of 715 pesos per carga of parchment coffee which prevailed before the adoption of the new exchange regime to 847.50 pesos by February 1968, or by some 18 percent. This policy has had the twin objectives of restoring the real value of earnings by coffee growers, taking into account increases in the cost of living, to the level that prevailed in 1962<sup>2/</sup>; and of inducing private exporters to sustain the export price at which they sell. The government recognizes that these objectives must be balanced against the undesirable effect of providing incentives to growers for expanding coffee output.

The long-term evolution of the internal terms of trade of coffee, on the other hand, has been more favorable to coffee, as shown in Graph 1. Since 1930, internal wholesale prices for coffee have advanced more than the general price index for all commodities. Starting both indices on a pre-World War II base, coffee prices in 1966 were approximately 50 percent higher than they would have been if they had merely followed the country's general price trend, as reflected by the

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<sup>1/</sup> By the end of 1967 the Federation had been able to reduce by almost 25 percent its end-of-1966 indebtedness to the Central Bank of 1 billion pesos, and it had also been able to reduce somewhat its end-of 1966 external indebtedness of some US \$90 million.

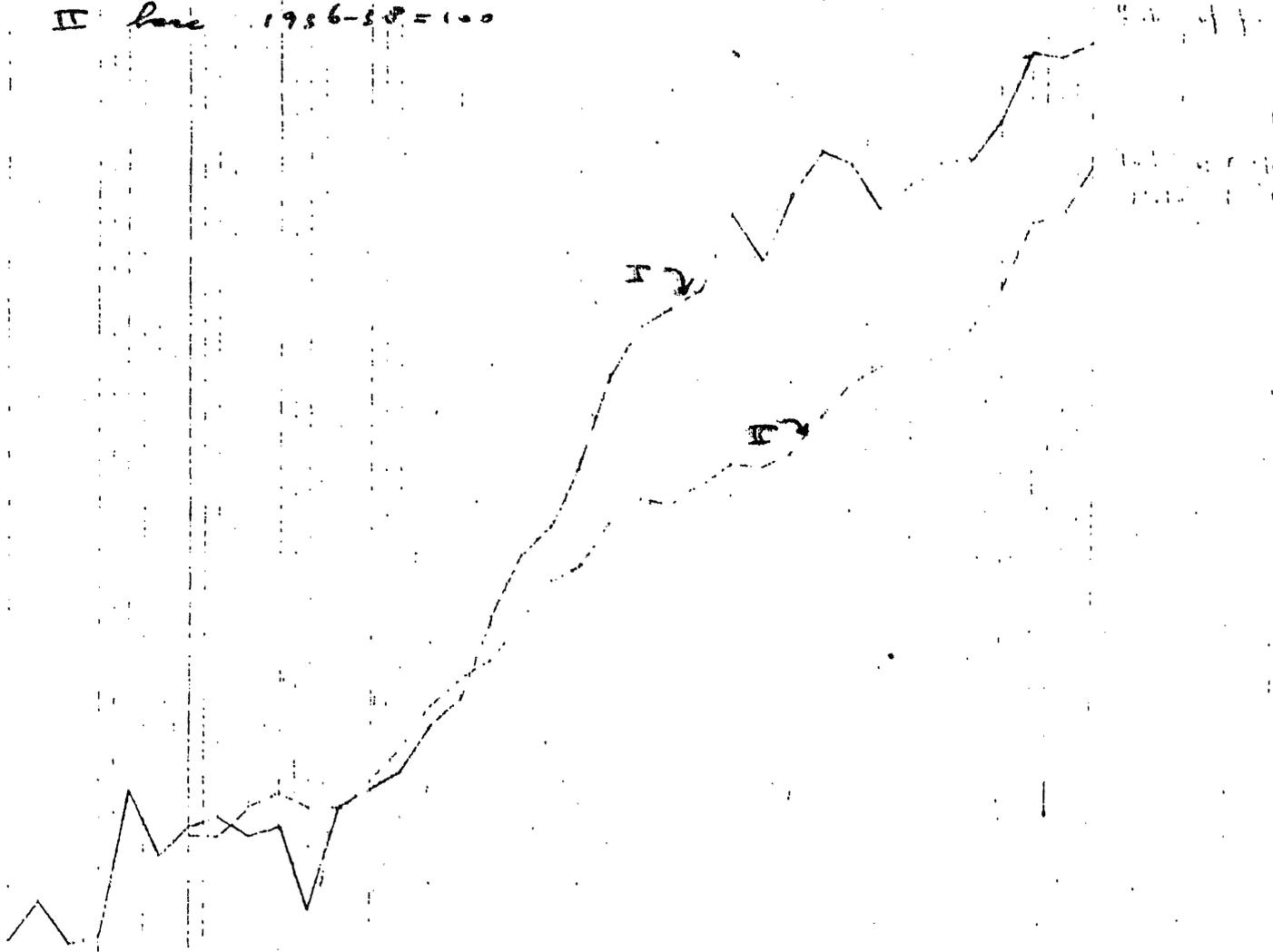
<sup>2/</sup> The present Federation support price of 847.50 pesos per carga of parchment coffee is about 75 percent higher than its average support price of 483.75 pesos in the coffee year 1961/62; on the other hand, the national index of consumers' prices (to workers) in December 1967 was 108 percent greater than the average for the calendar year 1962.

Graph 1  
Colombia: Indices of domestic coffee prices and c.o.l.

(Better copy being produced by Tripartite Coffee Study)

I base 1934-38 = 100

II base 1956-58 = 100



- 21 -

Source: Appendix Table II.  
~~I - Estadística Política Exterior~~  
~~II - IMP, S.F.S.~~

cost-of-living index. The relative losses suffered by coffee since the mid-1950's have not wiped out this advantage despite the fact that about half of the maximum advantage reached in 1957 was lost in subsequent price developments.

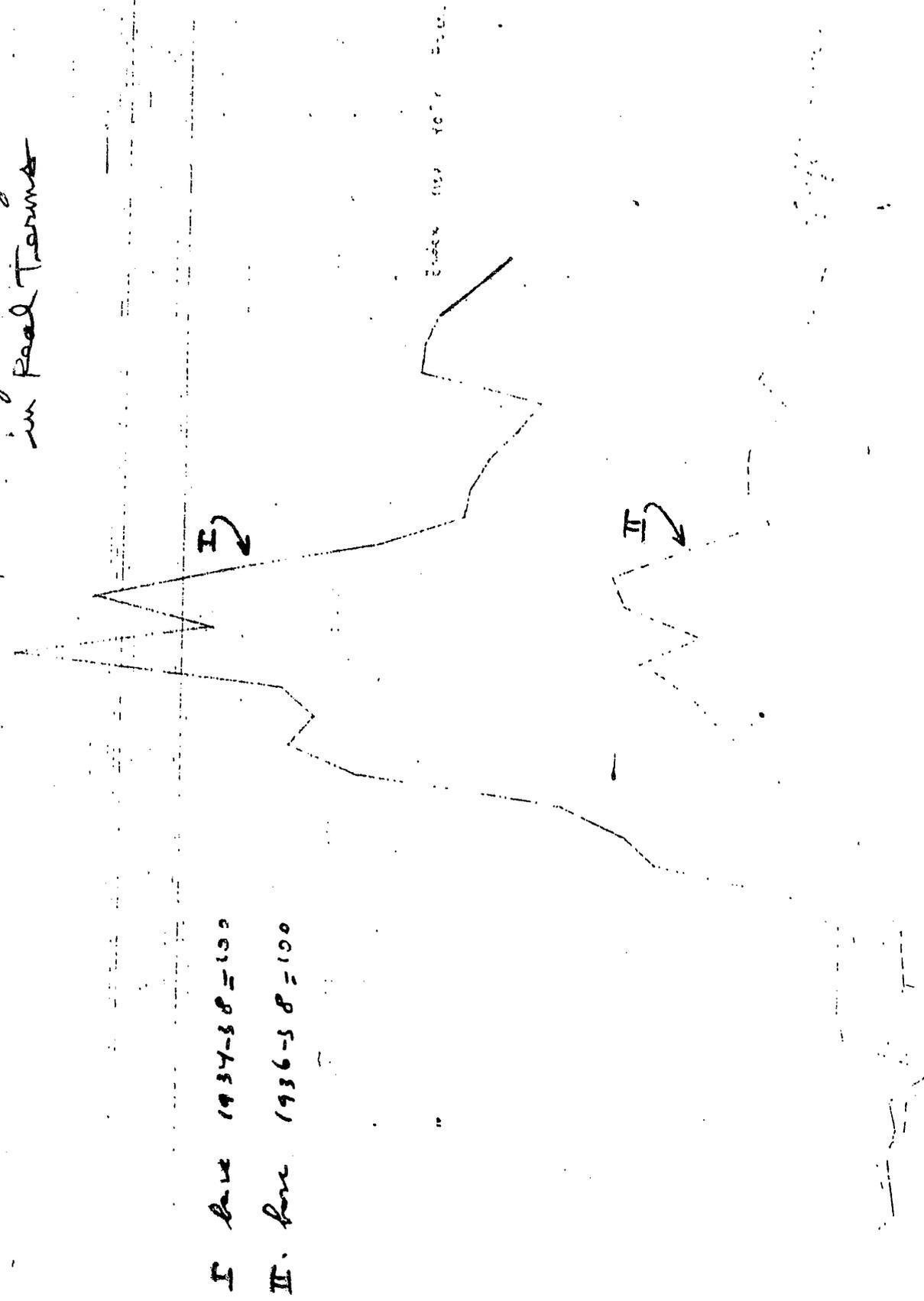
Graph 2 shows how internal prices, adjusted for increases in the general price level, have been separated from the world price trend for coffee in dollars, at least since 1940. This comparison shows a gradually increasing "gap" between the internal and the external prices of Colombian coffee. It is particularly instructive that the extreme fluctuations of world coffee prices in the mid-1950's were less sharply reflected in their domestic impact. In the absence of internal support, domestic fluctuations would almost certainly have been even greater than external price fluctuations, because of the stickiness of freight costs and of trade margins<sup>1/</sup>. Similarly, the sharp fall in world prices between 1956 and 1958 was absorbed in a much more moderate way on the internal market. The most recent experience is that neither the 1963-1964 rise, nor the subsequent decline in world prices has been passed on fully to the Colombian coffee grower (it is assumed that producer prices follow the internal wholesale price trend for coffee).

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<sup>1/</sup> If the world price were to fall from 100 to 80, and freight and trade margins were, as is most likely, to remain unchanged at 20, the total decline of 20 would affect the farmers. The latter would then experience a price fall from 80 to 60, or 25 percent as a result of a 20 percent fall in world prices.

Colombia: Indices of Coffee Prices, N.Y., and domestic ~~wholes~~ ~~prices~~ ~~reflected by~~ ~~cost~~ of coffee in Real Terms

(Better copy being produced by Tripartite Coffee Study)



I base 1934-38 = 100

II base 1936-38 = 100

Appendix Table I.

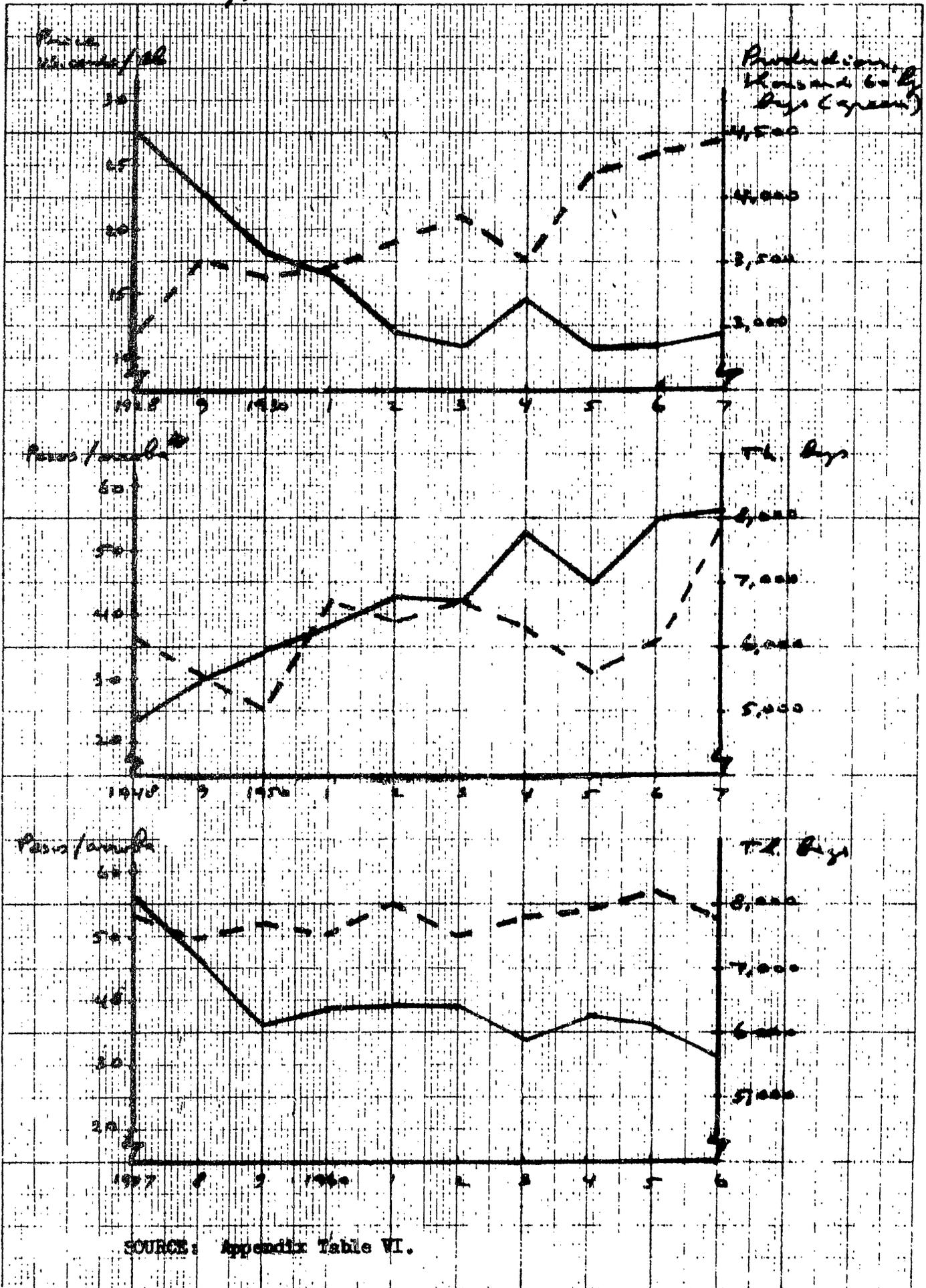
Source: I. ~~1934-38~~, II ~~1936-38~~, ~~Latin American~~ ~~prices~~ ~~reflected by~~ ~~cost~~ of coffee in Real Terms. I.F.S.

It is of interest to note the cyclical effect of price movements on production, depicted in Graph 3. During the period of declining prices in the 1930's, production tended to advance steadily, presumably because the numerous small producers were attempting to compensate for the falls in price by expanding volume. This is, of course, not an unusual phenomenon in agriculture, and indeed has constituted the rationale for government action in developed countries such as the United States to support agricultural prices in an attempt to improve the terms of trade of farmers vis-a-vis the rest of the economy. The rising prices of the 1950's appear to have induced, with a time lag, an increase in output to a new plateau reached toward the latter part of the decade, a plateau which has persisted to the present. The time lag is, of course, plausible on the basis of the number of years before newly planted trees begin to bear. The declining prices since the late 1950's have been accompanied by only a small growth of production.

Colombia: Coffee Prices and Production in Selected Periods

GRAPH 3

-74-



SOURCE: Appendix Table VI.

The policy of aiming at some degree of stabilization of internal coffee prices and of incomes of coffee farmers may have constituted some encouragement to production, but the extent of taxation and of other policies to keep the expansion of coffee output in check such as restraints on credit, cannot be ignored. The net effect of the two sets of factors working in opposite directions - policies of income stabilization on the one hand, and policies of limited incentives on the other - has been a growth in output which has been slow at best. It should, furthermore, be borne in mind that the growth pattern of coffee in Colombia is, to a considerable extent, the result of natural and structural factors, such as the predominance of smallholders using primitive techniques, and the absence of areas where production could be increased rapidly and spectacularly, as occurred in the Parana region of Brazil.

#### The Coffee Adjustment Problem

The Coffee Federation reports that it started accumulating stocks to an appreciable extent during the coffee year 1959/60. It opened that year, on October 1, 1959, with stocks of approximately 250,000 bags. The corresponding figure for the opening of the 1967/68 coffee year, i.e., for October 1, 1967, was 5.3 million bags. The latter amount is said to include working stocks to the extent of 600,000 bags, equivalent to 1 month's exports plus domestic consumption. Thus, the surplus stocks said to have accumulated amount to some 4.7 million bags, compared to the levels of annual output of about 8 million bags and of exports of close to 6 million bags. During the 8-year period 1959/60-1966/67, the average annual accumulation of surplus stocks therefore

amounted to about 600,000 bags. The rate of accumulation, however, stepped up during the last three years, 1964/65-1966/67, to about 950,000 bags per year.

The reported movement of stocks is compared with production and distribution in a coffee balance sheet presented in Table 22. The balance sheet has been worked out on the basis of information supplied by the Federation. It may be noted that the reported addition to stocks falls short of the apparent addition to stocks over the 8-year period, based on a confrontation of the figures of production, domestic consumption, and exports, to the extent of close to 1 million bags.

Assuming that the figures on production are correct, those reported for domestic consumption and for exports must therefore be too low. The series on domestic consumption does, indeed, present some peculiarities; no increases at all are reported for the first five years of the period, and a sharp decline is shown for one of the years (1960/61). As regards exports, the figures, of course, do not take into account contraband exports. The substantial taxation on coffee exports and the requirement that foreign exchange earned from exports be surrendered to the Central Bank have provided a strong incentive for such illegal exports. It is thought that, despite serious official efforts to control the illegal traffic, contraband exports still amount to some 200,000 bags per year. This would explain the discrepancy on the average between the reported addition to stocks during the 8-year period and the apparent addition, based on the figures for production, domestic consumption, and registered exports, of close to 1 million bags, though there are marked peculiarities which defy such an explanation for a number of individual years.