1970

Agricultural Credit and Colombia's Economic Development.

William S. Becker
Louisiana State University and Agricultural & Mechanical College

Follow this and additional works at: https://digitalcommons.lsu.edu/gradschool_disstheses

Recommended Citation
https://digitalcommons.lsu.edu/gradschool_disstheses/1825

This Dissertation is brought to you for free and open access by the Graduate School at LSU Digital Commons. It has been accepted for inclusion in LSU Historical Dissertations and Theses by an authorized administrator of LSU Digital Commons. For more information, please contact gradetd@lsu.edu.
BECKER, William S., 1935-
AGRICULTURAL CREDIT AND COLOMBIA'S
ECONOMIC DEVELOPMENT.

The Louisiana State University and
Agricultural and Mechanical College,
Ph.D., 1970
Economics, general

University Microfilms, Inc., Ann Arbor, Michigan
AGRICULTURAL CREDIT AND COLOMBIA'S ECONOMIC DEVELOPMENT

A Dissertation

Submitted to the Graduate Faculty of the Louisiana State University and Agricultural and Mechanical College in partial fulfillment of the requirements for the degree of Doctor of Philosophy

in

The Department of Economics

by

William S. Becker
August, 1970
ACKNOWLEDGMENTS

The research for this study was begun during the summer months of 1965 at the Center for Studies in Economic Development of the University of the Andes in Bogotá, Colombia. The author would like to express his appreciation to the faculty and staff of the Center for their generous assistance, which made the work easier, and for their hospitality, which made it genuinely pleasurable. A special note of gratitude is due to the Trustees of the College of Charleston (South Carolina) for the financial aid which made the trip to Colombia possible.

For their help and encouragement in organizing the collected data into a reasonably readable paper, the author would like to thank the members of his committee, Dr. J. W. Duggar, Dr. W. F. Campbell, Dr. R. A. Flammang, Dr. T. R. Beard, and Dr. W. G. Haag. Appreciation must also be extended to Mr. G. Randolph Rice for his helpful suggestions concerning Chapter V. The writer, of course, assumes the final responsibility for the completed work.
# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACKNOWLEDGMENTS</td>
<td>ii</td>
</tr>
<tr>
<td>LIST OF TABLES</td>
<td>v</td>
</tr>
<tr>
<td>LIST OF FIGURES</td>
<td>vi</td>
</tr>
<tr>
<td>ABSTRACT</td>
<td>vii</td>
</tr>
<tr>
<td>Chapter</td>
<td></td>
</tr>
<tr>
<td>I. INTRODUCTION</td>
<td>1</td>
</tr>
<tr>
<td>II. AGRICULTURE, AGRICULTURAL CREDIT AND ECONOMIC DEVELOPMENT</td>
<td>9</td>
</tr>
<tr>
<td>The Role of Credit in Agricultural Development</td>
<td>15</td>
</tr>
<tr>
<td>Agricultural Credit and Land Reform</td>
<td>18</td>
</tr>
<tr>
<td>Agricultural Credit and Colombia's Economic Development</td>
<td>24</td>
</tr>
<tr>
<td>III. THE DEVELOPMENT OF PLANNED AGRICULTURAL CREDIT IN COLOMBIA</td>
<td>26</td>
</tr>
<tr>
<td>The Banco Agrícola Hipotecario</td>
<td>27</td>
</tr>
<tr>
<td>The Caja de Crédito Agrario</td>
<td>30</td>
</tr>
<tr>
<td>Other Institutions of Agricultural Credit</td>
<td>42</td>
</tr>
<tr>
<td>IV. THE STRUCTURE OF PLANNED AGRICULTURAL CREDIT IN COLOMBIA</td>
<td>45</td>
</tr>
<tr>
<td>The Credit Structure of the Caja Agraria</td>
<td>45</td>
</tr>
<tr>
<td>The Non-Use of Agricultural Credit in Colombia</td>
<td>55</td>
</tr>
</tbody>
</table>
# Chapter V. RESOURCE PRODUCTIVITY IN COLOMBIAN AGRICULTURE  

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>A Cobb-Douglas Production Function for Colombian Agriculture</td>
<td>61</td>
</tr>
<tr>
<td>Resource Adjustments in Colombian Agriculture</td>
<td>69</td>
</tr>
</tbody>
</table>

# VI. SUMMARY AND CONCLUSIONS  

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Credit Adjustment in Colombian Agriculture</td>
<td>74</td>
</tr>
<tr>
<td>Conclusion</td>
<td>81</td>
</tr>
</tbody>
</table>

# APPENDIX  

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
</table>

# SELECTED BIBLIOGRAPHY  

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
</table>

# VITA  

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
</table>
# LIST OF TABLES

<table>
<thead>
<tr>
<th>Table</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Municipalities Served by the Caja Agraria</td>
</tr>
<tr>
<td>2</td>
<td>Distribution of Caja Agraria Loans by Size</td>
</tr>
<tr>
<td>3</td>
<td>Loans of the Caja Agraria by Economic Status of Borrower</td>
</tr>
<tr>
<td>4</td>
<td>Loans of the Caja Agraria by Type of Guarantee</td>
</tr>
<tr>
<td>5</td>
<td>Loans of the Caja Agraria by Type of Economic Activity</td>
</tr>
<tr>
<td>6</td>
<td>Distribution of Caja Agraria Loans by Departments</td>
</tr>
<tr>
<td>7</td>
<td>Tropical Country and Colombian Yields per Hectare</td>
</tr>
<tr>
<td>8</td>
<td>Coefficients of Simple Correlation</td>
</tr>
<tr>
<td>9</td>
<td>Results of a Cobb-Douglas Production Function for Colombian Agriculture</td>
</tr>
</tbody>
</table>
## LIST OF FIGURES

<table>
<thead>
<tr>
<th>Figure</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Map of Colombia</td>
<td>5</td>
</tr>
<tr>
<td>2</td>
<td>Organization of the Caja Agraria</td>
<td>40</td>
</tr>
</tbody>
</table>
ABSTRACT

The Colombian economy, in recent years, has exhibited a sporadic record of growth. Its industrial development began faltering in the late 1950's when new opportunities for import substitution ceased to emerge. The country's agricultural sector, a potential source of growth for many underdeveloped nations, has not been sufficiently productive to offset the slackening industrial activity and to sustain a high level of economic progress.

The purpose of this research is to examine the theoretical and practical cases for focusing developmental efforts on Colombia's rural sector as a source of economic expansion. Improvements in agricultural productivity, it is shown, can have beneficial effects on the process of capital formation, the balance of payments, and the development of an industrial base. It is argued that the necessary productivity improvements in the agricultural sector can readily be accomplished by modifications in the provision of agricultural credit.

To establish a basis for recommending modifications in credit allocations, the present system of agricultural credit in Colombia is analyzed along two lines. First, the development and current structure of lending operations of the Caja de Crédito Agrario, Colombia's major institution providing agricultural loan funds, is examined from official records of that agency. This analysis reveals that the present loan program gives inordinate preference to cattle and coffee producers,
and has not been effective in meeting the credit needs of a large majority of Colombian peasant farmers.

The second line of approach is to compute the relative productivities of some primary agricultural inputs from a Cobb-Douglas production function, with a view towards recommending those inputs whose use should be altered. This procedure shows that agricultural production would be improved by an expanded program of agricultural credit which fosters the increased utilization of land, fertilizers, and agricultural machinery. The study concludes that a credit program based on these requirements would enable Colombian agriculture to assume a supportive position in the nation's economic development.
CHAPTER I

INTRODUCTION

Colombia, the fourth largest Latin American country in population and the fifth in land area, has a great resource potential for economic development. Its enviable position among Latin American nations has been described by the Economic Commission for Latin America:

Colombia has perhaps the best balanced economic resources in Latin America. It has plenty of arable land; climatic conditions which make possible the production of a wide variety of crops, ranging from tropical products like coffee, bananas and sugar to others, such as wheat and cotton, that require a temperate habitat; proven resources of gold, petroleum, coal and iron, the last two lying close together; and developed manufacturing centres with experienced management and labour.¹

Yet Colombia recently has had serious difficulty in mobilizing these resources toward a sustained and consistent level of economic growth. Its most significant period of economic expansion came in the late 1920's when, largely a result of booming coffee exports and a high level of public investment in basic social capital and in agriculture, it averaged a 5.2 per cent annual rate of growth.

in per capita gross product. There was a marked decline in the growth rate in the early years of the Depression, followed by a recovery which was sustained into the 1950's. This more recent expansion was primarily a result of a policy of import substitution which took advantage of dwindling supplies of manufactured goods from abroad and rising domestic demand. By the 1960's, however, import substitution had clearly been pushed to its limit and the country settled into a pattern of irregular growth which has been fluctuating about a mean level of a mere 1.6 per cent annual increase in gross domestic product.

A study by the Pan American Union has attributed the slowdown in Colombia's industrial growth to an inordinate dependence on imported raw materials for domestic manufacturing, and to a stagnation in exports. These factors, combined with fiscal difficulties in recent years, have resulted in severe inflationary pressures and recurrent balance-of-payments crises, thus further hampering growth.

Behind the above bases of the growth problem, however, lies a more fundamental cause which has its roots in a long disregard of the agricultural sector. Throughout the period since 1945 official efforts

---


5 In 1959, for example, public investment in agriculture accounted for only one per cent of total public investment, far below the minimum expenditure of nine per cent recommended by the International Bank for Reconstruction and Development. See Joint Tax Program, Fiscal Survey of Colombia (Baltimore: The Johns Hopkins Press, 1965), p. 121.
to foster economic expansion have been focused primarily on industrial activity. This emphasis on manufacturing has been partly a reflection of the trend in underdeveloped areas to what has been tellingly described as "conspicuous production," involving the fallacious notion that a country is developed because it has factories, rather than the more realistic assessment that it has factories because it is developed.

More particularly, Colombia's own relative overemphasis on industry at the expense of agriculture has been the result of a great deal of poor advice. Development policy in Colombia during the 1950's was strongly influenced by the findings and recommendations of the famous Currie Report. Currie and his associates urged the Colombian government to encourage population movements off of the land and into the cities where the additional workers would be employed on public construction projects. The hope was that the additional earnings generated by the construction activity would increase the demand for industrial output, resulting in a self-sustained process of capital formation and industrial expansion. But the Currie Plan failed to recognize that the simple withdrawal of resources from agriculture would not necessarily increase the productivity of remaining resources, and that a withdrawal was economically justifiable only after productivity had been significantly increased in that sector. Moreover, the recent record of growth and the burgeoning urban problems attendant to such a policy have effectively refuted the thesis, and have demonstrated the necessity of attacking Colombia's development problems at their source--on the land.

---

For despite recent policy predilections toward industrialization, Colombia remains a predominately agrarian nation with more than half of the population still earning its living from agricultural pursuits. Crop and livestock production continue to make the largest single contribution to national income, and are the main source of Colombia's foreign exchange earnings.

Agricultural activity in Colombia may be grouped into three relatively distinct types of production: (1) commercial farming, (2) cattle ranching, and (3) subsistence farming. Each of these exhibits special characteristics and presents special problems for development.

Commercial farming, involving the mechanized production of a single crop on a large scale, is relatively recent in Colombia, having become a significant pattern of production only in the 1950's. Prior to that time, efforts at commercial farming were restricted primarily to banana growing in the coastal regions, and to sugar cane production in the Cauca Valley. In recent years, however, commercial farming methods have been extended to cereals, cotton, and African palms.

Cattle ranching, as a rule, represents the physically largest and most popular form of agricultural operation in Colombia. This is due, in part, to the prestige enjoyed by cattlemen, and in addition to a desire to hold extensive land areas as a hedge against inflation. Large cattle ranches dominate the fertile soils of the highland plateaus, (shaded region in Figure 1) the lowlands of the northern coast, the Cauca and Magdalena valleys, and the wide stretches of the eastern Llanos. But in spite of its predominance in the agricultural scene,
FIGURE 1

MAP OF COLOMBIA
livestock production accounts for only a third of the total value of Colombia's agricultural output, as compared with two-thirds for crop production.

Subsistence farming comprises the source of livelihood for the bulk of Colombia's rural population. Most of the subsistence farms are small, ranging from two to ten acres in size, and depend primarily on family labor for their operation. A large part of the farm output is consumed by the family, surpluses being sold in the weekly regional markets. An important exception to the general pattern of subsistence farming are the coffee farms, conforming in most respects to the above description, but which are operated on a cash-crop basis.

The principal crops produced for domestic consumption in Colombia are coffee, bananas, sugar cane, corn, potatoes, and rice. As an export item, coffee is the most important crop, representing about 70 per cent of the value of all exports, and about 90 per cent of the value of agricultural exports. Bananas, tobacco, and cotton also figure importantly into Colombia's export activities.

Of the nation's total land area of more than 100 million hectares, one third, or about 35 million hectares is utilized for agricultural production.\(^7\) Cropland, including land lying fallow, accounts for only 5 million hectares, of which almost half is planted in coffee and corn. The remaining 30 million hectares are devoted to pasture, often only nominally.

One hectare equals 2.47 acres.
The above figures reveal the striking disproportion between cattle and crop production in Colombia, more striking when it is recalled that cattle production generates only a third of the total value of agricultural output while engaging almost 90 per cent of the agricultural lands. When combined with the fact that the large cattle ranches usually occupy the best lands, are often heavily capitalized, and have ready access to credit, this imbalance constitutes a serious weakness in Colombia's agrarian structure, and accounts for many of the problems of low productivity in Colombian agriculture.

It will be the purpose of this work to investigate these and other consequences of the long neglect of agriculture, and to examine ways in which the agricultural sector in Colombia might be made more productive. More specifically, this study will argue that distortions and deficiencies in the provision of agricultural credit have constituted a major barrier to the expansion of agricultural production.

This thesis will first consider the theoretical role of agriculture in economic development as stressed in certain "two-sector" models of economic development, and the function of agricultural credit in implementing a development strategy with such an orientation. This will be followed by a survey of the origins and development of institutions of agricultural credit in Colombia, and an examination of the present structure of credit granted by these institutions.

In order to investigate whether the existing credit structure is consistent with the requirements of agricultural expansion, a Cobb-Douglas production function will be fitted for the agricultural sector to determine the relative productivities of primary agricultural inputs.
On the basis of these results and other credit deficiencies noted throughout this work, some recommendations will be made for a modification of the present credit program so as to enhance agriculture's latent contribution toward Colombia's economic development.
CHAPTER II

AGRICULTURE, AGRICULTURAL CREDIT
AND ECONOMIC DEVELOPMENT

The critical question confronting Colombia, like many nations at this stage of development, is the relative emphasis which should be placed on agricultural reform and development vis-à-vis further industrial expansion.

The disappointing experience of many nations which have over-anxiously tried to industrialize at the expense of agricultural development has shown that industrial versus agricultural development is a spurious issue. Rather, the chief focus of concern should be the relationships between the two sectors, and on the possible contributions which each might make to the other. In this respect, economic development becomes synonymous with both industrial and agricultural development.

The dependence of industrial expansion on agriculture has been emphasized in recent two-sector models of economic development. W. Arthur Lewis, in his path-breaking model of this type, divided the underdeveloped economy into a capitalist (industrial) sector and

a subsistence sector, both of which were characterized by surplus labor receiving a traditional wage greater than its marginal product. Under the assumption of a marginal product in agriculture of zero, or close to zero, Lewis was able to show how industrial growth was determined by the existence of a labor surplus in agriculture: wages in the industrial sector would be kept low, permitting larger profits for reinvestment in industry and thereby accelerating the rate of capital accumulation.

Lewis, however, minimized the role of the agricultural sector, except as a source of industrial labor and as a depressant to industrial wages. Gustav Ranis and John Fei have developed a model which more fully elaborates the interdependence of the agricultural and industrial sectors. Drawing on Lewis' basis assumptions--and most importantly, that of a zero marginal productivity of labor--they describe the growth path of the labor-surplus economy as a three-stage scheme in which Lewis' analysis constitutes the first stage.

The second stage is marked by a rising marginal product of labor in agriculture so that further labor shifts to the industrial sector result in a decline in farm output and an improvement in the internal terms of trade in favor of the farm sector. As this change continues, a point will eventually be reached, the "commercialization point," where the workers migrating to industry are producing an output just equal to the wage rate. This marks the turning point into the third stage, in which overall growth becomes self-sustaining and agriculture

---

comes to be a fully commercial operation, rather than a traditional subsistence activity.

A somewhat different two-sector model has been developed by Dale W. Jorgenson. Jorgenson bases his analysis on the empirically more accurate assumption that the marginal product of labor in subsistence agriculture is initially positive, so that from the outset the migration of workers from agriculture causes farm output to decline. Thus, the barrier to development is not only a shortage of capital in the industrial sector limiting the absorption of surplus labor, but more importantly a shortage of food for the growing urban work force. As Jorgenson notes:

\[\ldots\]one of the critical parameters of the expression dividing economies into developing and stationary systems is the rate of technological progress in agriculture. If technological progress can be accelerated by the accumulation of capital in agriculture the balance between food shortage and agricultural surplus may be tipped in favor of surplus.\[5\]

Development policy must therefore concentrate on increasing agricultural productivity through means designed to foster capital accumulation in that sector.

In addition to its emphasis in the above analytical models, the case for agricultural improvement as a prelude to industrialization

---


5Jorgenson, op. cit., p. 334.
has also received substantial support from many less formal discussions of economic growth. For example, P. R. Brahmananda has argued, on the basis of the experience of India, that the food supply (as a wage good) is the principal limit on growth in that country and in most other underdeveloped nations. Brahmananda suggests that an expansion of agricultural output will ease the major restriction on the rate of development in the non-agricultural sectors. Agriculture can thus operate as "the lever which sets the ball of development rolling. It gives the big push which generates cumulative growth."  

The process by which an expansion of agricultural output can contribute to general economic development has been more clearly delineated by William H. Nicholls. It is Nicholls' contention that underdeveloped countries must reach a certain historical stage, characterized primarily by a reliable food surplus, before industrial development can take place. Once this stage is reached, however, agriculture can make the following specific contributions to economic growth: (1) it can release manpower for industry; (2) it can generate the domestic purchasing power necessary for the purchase of industrial goods; (3) it can contribute to capital formation; and (4) it can assure industrial workers their major wage good (food) at prices conducive to the profitability of new industries.


7Ibid., p. 421.

Viewed in these terms, the agricultural sector in Colombia thus possesses enormous potential for contributing to that nation's economic development. Its rural population of 7.8 million, or 51 per cent of the total in 1961, represents a sizeable source of labor. Aggregate purchasing power of the rural sector is large, as evidenced by the fact that it contributed $8 billion to gross domestic product in 1963, as compared with only $4 billion for manufacturing, and $3 billion for commerce. The sheer size of the agricultural sector is indicative of its potential as a source of capital formation which might be mobilized through taxation; it has been estimated that the present rural property tax system in Colombia could yield as much as $1 billion in tax revenue as compared with the $37.5 million actually collected from rural properties in 1960. Finally, an increase in the supply of agricultural products might correct the tendency for agricultural prices to rise faster than commodity prices in general, as they have over roughly the last decade.

In addition to the above internal contributions which agriculture could make to economic development, Johnston and Mellor have also


12 Expenditures for food in Colombia constitute a large 48.6 per cent of total consumption outlays, the third highest in all of Latin America. See United Nations, Economic Commission for Latin America, The Process of Industrial Development in Latin America, (E/CN.12/716), 1966, p. 121.
emphasized important benefits which would accrue in the sphere of foreign trade as a result of agricultural expansion. By expanding domestic agricultural production, they point out, developing nations need not draw on scarce foreign exchange reserves in order to feed the increasing population. In addition, an enlargement of agricultural exports is likely to be one of the most promising means for a developing country to augment its foreign exchange earnings. This foreign exchange aspect of agricultural development is particularly relevant for Colombia, as it has been estimated that by 1975, unless present trends are changed, the country will become a net importer of rice, wheat, beans, cocoa, and cotton, all of which are currently being produced. Furthermore, export opportunities appear to be good in corn, sugar, and potatoes—products which are expected to be produced in surplus by 1975. A carefully planned expansion of agricultural production could thus open a new area of import substitutions to replace those now faltering, and could also contribute significantly to Colombia's export earnings.

It is clear, then, that agricultural development must be both a prelude and an accompaniment to a sustained industrial expansion. Accordingly, if Colombia is to experience further industrial growth, it becomes imperative that its basic agricultural problems be examined,

---


and positive measures taken to insure that agriculture's full contribution to the establishment of industries will be made.

The Role of Credit in Agricultural Development

Any planned expansion of economic activity must first consider the mobilization of existing land, labor, and capital. In the initial stages of development, agriculture may have somewhat of an advantage over industry because it is usually possible to increase the productivity of available resources in that sector by relatively modest outlays. An important way of effecting such a mobilization is through the extension of agricultural credit facilities.

Properly conceived, agricultural credit should involve production loans primarily. The specialized nature of this type of credit has been described by one source as follows:

\[ \text{It is an economic instrument directed toward the provision of the necessary financial resources of agriculture, when the producer lacks sufficient capital of his own...}. \]

The main aim of this provision of capital is to achieve a larger or maximum productivity of the other factors of production: human labor and natural resources.\(^{15}\)

In other words, the general role of agricultural credit in economic development is to insure a fuller, more productive use of existing resources; and at least to maintain, if not expand, agricultural output while industrialization takes place.

The specific role of agricultural credit in economic development is partially explained by T. W. Schultz's "industrial-urban hypothesis."\(^{16}\)


In an attempt to explain regional disparities in agricultural development, Schultz developed a model which notes that development takes place within a specific locational matrix, centered about an industrial-urban core. This core is characterized by, among other things, relatively efficient markets for agricultural inputs and outputs. Thus an agricultural region situated in close proximity to an expanding industrial-urban center will engender within itself the necessary market linkages, including adequate credit facilities.

But Schultz's hypothesis implies that the emergence of credit and other financial institutions is a passive—though necessary—response to an existing demand, and that their growth can be expected to occur more or less automatically in the process of development. Hugh T. Patrick, characterizing this approach as a "demand-following phenomenon," suggests that in underdeveloped countries institutional factors may severely limit the spontaneous emergence of the necessary financial institutions.17

Patrick argues that in such cases credit institutions must be viewed as "supply-lending phenomena," and therefore created in advance of the demand for them. The possibility of access to supply-leading funds may have favorable psychological and expectational effects on entrepreneurs in both the agricultural and industrial sectors; the one using funds to increase agricultural supply, the other for servicing the growing demand for new agricultural inputs. In addition to the stimulation of entrepreneurial activity, supply-leading credit can also

---

facilitate the necessary transfers of resources from one sector to another.

Both the supply-leading and demand-following approaches visualize credit as a permissive factor in development. More than this, credit policy can also be a positive factor in shaping the character of agricultural expansion. If the objectives of development are clearly and explicitly defined, some form of "planned" agricultural credit, that is, a goal-oriented credit program administered by a state agency such as the Caja de Crédito Agrario in Colombia, can assure that these objectives will be met.

There are several specific ways in which a program of planned credit can implement the goals of development policy. It can be used, by specifying restrictions on the crops for which credit will be granted, to stimulate the production of crops which are currently being imported, or for which the need for imports will soon arise. It can also be used, in a like manner, to encourage the production of crops for which export demand is, or will be, high. Furthermore, agricultural credit can contribute to capital formation by encouraging and making possible rural savings (debt repayment could be a form of saving), and by broadening the base of land ownership subject to taxation. Finally, planned agricultural credit can stimulate industrial development directly through agricultural "provision" loans, granted solely for the purchase of chemicals, fertilizers, tools, and other industrial products.
An even more specialized form of planned credit, often referred to as "supervised" credit, has the same general aim and capability of the planned credit described above, but is much more limited in scope. Specifically, supervised credit attempts to guide production and to improve the productivity of individual farms, especially those of small cultivators who do not own their own land, and who do not have access to commercial credit. Supervised credit involves, in addition to the lending of money, training in all aspects of agricultural operations, and are therefore sometimes referred to as "training loans." In 1961 the Caja de Crédito Agrario in Colombia launched a pilot project of supervised credit with the assistance of the Servicio Técnico Agrícola Colombiana (STACA), and granted 122 loans of this type in the first year of the project. Although this ambitious program might theoretically have a greater impact on the shaping of agricultural development, administrative difficulties and high operating costs have relegated it to a minor position in the total structure of planned agricultural credit in Colombia.

Agricultural Credit and Land Reform

A major obstacle to the expansion and diversification of agricultural output in many underdeveloped countries lies in the system of land ownership and land use usually found in those countries. Land is often unequally distributed among the rural population, resulting


in two classes of producers--one rich and one poor--with disparate access to credit and other means of production, and with divergent productive aims and motives.

Land tenure in Colombia, as in most of Latin America, is a product of the Southern European system of land holding introduced by the Spanish conquerors, and the indigenous systems which existed at the time of conquest.20 Out of the combination of these systems emerged the two dominant patterns of present-day tenure in Colombia: latifundia and minifundia.

As elsewhere, the latifundia in Colombia are characteristically large-scale livestock-cereal operations which utilize the best agricultural lands, and are usually owned by absentee landlords. These operations are often poorly managed, invest only a minimum of capital for productivity improvements, and employ a low labor input per unit of land area.

In contrast, the minifundia system, under which the larger part of Colombia's rural population lives, is dominated by small farms, more than 55 per cent of which are less than 5 hectares in size.21 Moreover, the land they occupy is generally poor, often on mountainsides, and individual holdings are frequently fragmented. Clear titles to the land are uncommon, and production, involving a low-level technology, is primarily for subsistence rather than the market.

---


The prevailing pattern of the latifundia-minifundia tenure system in Colombia has been vividly described in microcosm by Orlando Fals-Borda in his sociological study of Saucio, a rural community of 77 peasant families in Central Colombia.22

Of the total land area of about 1,500 hectares in the community, over 80 per cent was held by three large haciendas, two of which were owned by absentee landlords. The remaining land was held by peasant families, although only 42 families possessed proper titles. The average size of the peasant holdings was a little over 2 hectares. Fragmentation of these farms was not considered to be a particular problem in Saucio as compared with the rest of the country; nevertheless, one-third of all farms consisted of from two to five separate plots.23

Potatoes, the main item of subsistence, were the peasants' principal crop, and these they cultivated with hoes and wooden plows. The local haciendas, on the other hand, were devoted almost exclusively to pasture for cattle and horses, and were maintained with relatively sophisticated farming techniques.

Apart from the potentially explosive social and political situation which such a tenure system entails, there are cogent economic justifications for an alteration in the described pattern of land holding and use. Philip Raup has noted that there is an essential difference, often overlooked, in the processes of investment and capital formation

23Ibid., pp. 71-6.
in the industrial and agricultural sectors of an underdeveloped economy.

In the industrial sector, although initial capital may be costly, accumulation is relatively rapid and the returns to investments are often dramatic. In contrast, capital formation in the agricultural sector, while no less important and often cheaper, tends to be "accretionary," that is, requiring a relatively long gestation period. In view of these differences, it is to be expected that cultivators in a system of unstable tenure such as that found in Colombia will be unwilling (and unable) to assume the cost and risk which the lengthy process of capital formation in agriculture may require. Alterations in land tenure can thus create "a new climate of expectations" for the majority of farmers, thereby providing a "major force in maximizing the accretionary formation of capital in agriculture and insuring that surpluses above subsistence are reinvested in the productive plant."25

While Raup views the problem of underinvestment in agriculture from the point of view of the landless, it must be recognized that the neglect of agricultural capital stems also from the investment and spending behavior of those with extensive landholdings. Doreen Warriner has observed that under conditions of extremely unequal land distribution, wealthy landowners tend to use their large incomes for conspicuous consumption, for the expansion of rural landholdings, for investment in urban property, or to lend at high rates of interest.


25Ibid., p. 8.
This behavior not only inhibits rural capital formation and agricultural development, but also complicates the problem of general economic development by encouraging the production and importation of luxury goods.

In addition to their critical role in the process of agricultural capital formation, changes in land tenure may have other noticeable effects on agricultural development. Land reform can contribute to a greater use of modern science and technology in agriculture by insuring that the rewards of the increased productivity will accrue to those who adopt them. It can expand the production of crops relative to the production of cattle and thus correct gross distortions in the pattern of agricultural production. Finally, land reform may expand rural employment, at least in the short run, by making available increased land areas for the use of rural workers. The latter was an important motivation behind the Colombian agrarian reform measures of 1961; in 1959, of a rural population of about 7.5 million, only 2.4 million were considered "economically active."

Whatever the economic benefits of a well-conceived land reform, however, such schemes are socially and politically difficult to enact and enforce. It has been the experience of most countries in which tenure changes have been attempted that the economically necessary program has either been diluted for the sake of political stability, or that drastic reforms have been pushed without regard to social,

---


political, or economic realities. In neither extreme case can land reform manifest its intrinsic capabilities as a contributor to economic growth.

A well-structured system of planned agricultural credit can help minimize or eliminate many of the difficulties inherent in any land reform scheme, and may aid the milder reform measures in meeting objectives which normally could not be attained. For example, the most frequently heard criticism of the Bolivian and Mexican land reforms is that in both cases there was a net decline in agricultural production immediately after the reforms, decreases which nations on the margin of subsistence could ill afford. In both instances, and especially in the Mexican reform, a lack of credit (which had previously been supplied by the wealthy landowners) is ascribed as being the chief causal factor in the decline in production.28 An expansion of agricultural credit is thus an absolute necessity for the maintenance of agricultural output at the crucial initial stages of any change in tenure arrangements. Lacking a concurrent credit expansion, any land reform program is destined for difficulties, if not failure; as a study prepared by the Central American Seminar on Agricultural Credit concluded: "there can be no successful agrarian reform without the help of credit."29


In addition to its permissive role as a support to farm output, a system of planned agricultural credit can also contribute positively to the achievement of many objectives of land reform. Specifically, it can encourage the adoption of technologically superior farming methods by specifying the cultivation requirements under which loans will be made. It can help shift the pattern of agricultural production away from livestock-cereal operations by favoring borrowers who are crop producers. Rural employment can be expanded in the short run by providing loan funds for the hiring of additional workers; over a longer period employment can be increased through the encouragement of borrowing for land purchases, thereby increasing the number of farms per head of rural population. Finally, a program of planned agricultural credit can alleviate the problem of farm fragmentation by declining to grant property loans for the purchase of separated land parcels, and by emphasizing "consolidation loans" for the purchase of contiguous lands.

Agricultural Credit and Colombia's Economic Development

It has been emphasized in this chapter that the agricultural sector is a key element in the process of economic development, shaping the rate and tenor of an underdeveloped nation's economic expansion. Colombia's neglect of capital formation and productivity improvements in agriculture has resulted in a situation where, over the decade 1958 to 1967, the rate of growth in food production failed to keep up with the rate of population growth.\(^\text{30}\) In addition, Colombia's

deemphasis of agriculture has had wider repercussions: it has aggravated the problem of foreign exchange shortages, it has been one source of the country's inflationary pressures, and it has been a major factor behind the disappointing industrial growth rate in recent years.

Further, Colombia's progress in land reform has been slow. In the five years following the passage of the Agrarian Reform Law of 1961, less than three per cent of the rural population received land titles, and of the acreage distributed under the Law, over 98 per cent involved the simple legalization of de facto property holdings or the colonization of idle public lands.  

There clearly remains a need for a more positive policy to insure the breakup of inefficient large estates and to promote a wider participation in land ownership.

Thus Colombia's future prospects for development depend heavily on a more equitable distribution of the land, and on improvements in the productivity of those resources which, in combination with land, can generate the foundation of the desired economic expansion. An effective way to realize both of these goals simultaneously would be through an expanded and rationalized program of planned agricultural credit.

---

CHAPTER III

THE DEVELOPMENT OF PLANNED
AGRICULTURAL CREDIT IN COLOMBIA

The development of institutions of planned agricultural credit in Colombia is not characterized by any single or consistent drive to create a comprehensive system of credit for the needs of Colombian agriculture, but by a series of legislative actions which have accumulated as spillovers to other economic issues, such as balance of payments difficulties and rural unrest over inequities in land tenure. Thus agricultural credit policy in Colombia is another manifestation of what Albert O. Hirschman has called the Latin American "style" in policymaking: institutions are created and problems are solved either by substituting one problem for another, or by making the solution of one problem contingent on the solution of another. ¹

The danger of this approach to the formulation of policy, Hirschman notes, is that institutions and agencies developed in this

¹Albert O. Hirschman, Journeys toward Progress (New York: Twentieth Century Fund, 1963), Chapter 4. Hirschman specifically cites land use and land reform policies in Colombia as an illustration of his thesis.
haphazard fashion often "tend to sink into a morass of inefficiency."\(^2\)

Moreover, the danger is compounded by the fact that the indirect approach to policy-making may lead to a variety of institutions whose aims and functions are unnecessary duplications or, at worst, work at cross purposes. Both of the latter problems are evident in the development of Colombia's historically dominant institutions of agricultural credit: the Banco Agrícola Hipotecario and the Caja de Crédito Agrario.

The Banco Agrícola Hipotecario

During most of the 1920's Colombia rode the waves of an economic boom, bouyed by a threefold rise in coffee exports and favorable coffee prices, the receipt of U. S. $25 million as reparations for the loss of Panama, foreign oil investments of U. S. $45 million, and U. S. $200 million in loans from American banks.\(^3\) All sectors of the Colombian economy were in the process of expansion, but agriculture was especially favored in that rural incomes were rising dramatically and unemployed rural workers were being drawn into urban areas, thereby relieving two serious perennial problems of Colombian agriculture: low farm incomes and overpopulation on the land.

The administration of President Pedro Nel Ospina, elected in 1922, wished to take advantage of the economic expansion by broadening the agricultural base from which the expansion primarily stemmed. To that end, Congress passed in 1924 Law 68 which authorized a bond issue of $2 million for the creation of the Banco Agrícola Hipotecario, a

\(^2\)Ibid., p. 5.

mortgage bank designed to stimulate the establishment of new farms, particularly coffee farms, by providing credit assistance for the purchase of new agricultural lands. Loans made by the Banco Agrícola were to range from a minimum amount of $500 to a maximum of $20,000 per loan, and in any case could not exceed 50 per cent of the market value of the mortgaged property. Loans were granted for a minimum of five years to a maximum of 20 years (the maximum was later extended to 30 years), and annual interest rates were fixed at 7.5 per cent. 4

The main shortcomings of the Banco Agrícola, in addition to the relative paucity of its financial resources, were that it placed no restrictions on the use of the money once a loan had been granted, and its limitation to 50 per cent of property values almost automatically made it a credit source for wealthy landowners. Further legislation passed in 1926 attempted to correct these deficiencies. The Bank's authorized capital was more than doubled to $5 million, and specifications were included which stated that loans had to be used exclusively for agricultural purposes and that preference would be given to ...native farmers, of legal age and heads of households, who must live on the designated farms and operate them personally. 5

This statement of preference did not, of course, guarantee financial aid to the small-scale, resident farmer, and much of the credit resources of the Banco Agrícola in its initial years was used to augment existing large rural properties.

5Ibid., p. 17.
Law 49 of 1927 created within the Banco Agrícola a Section of Agricultural Supplies; later to become one of the most successful and lasting operations of the Bank. This section was initially charged with the function of buying seeds, fertilizers, chemicals, and machinery in large quantities for later resale to small farmers. Also in that year, Law 89 provided for the formation of another division, the Section of Colonization and Immigration, which was to purchase unused land for resale to farmers at cost. The extension of existing property holdings was discouraged by the stipulation that parcels sold by this section to a single buyer could not exceed 100 hectares. The parcels were made more attractive to small purchasers by lowering the down payment requirement to 15 per cent, the balance to be paid in accordance with the Bank's regulations for ordinary mortgage loans. More than any previous measure, this represented an important step toward the use of credit to meet the land needs of the Colombian campesino.

Colombia's agricultural prosperity of the 1920's ended abruptly with the drastic break in coffee prices in 1929, and the agrarian problems of the troubled decade that followed signalled the need for a more comprehensive approach to the needs of Colombian agriculture than that being provided by the Banco Agrícola. The latter soon became relegated to a minor role in the provision of agricultural service and credit, but continued to operate as an independent entity until 1945, when the Caja de Crédito Agrario assumed its administration. Finally, in 1954, Decree 1529 ordered the liquidation of the Banco Agrícola, and its functions and assets were turned over to its administrative parent, which by that time had become Colombia's dominant institution of agricultural credit.
It is difficult to assess the quantitative importance of the Banco Agrícola in the development of Colombian agriculture, or its success in achieving the goals for which it was created. Judging from its fate, perhaps its total contribution was slight and its aims better served by other credit institutions. Yet, if nothing else, the Banco Agrícola did provide an administrative core around which other credit institutions could develop, and its mistakes could serve as caveats for other credit programs. More importantly, it was the initial effort in what was heralded to be a 30-year period of a "democratization of credit," as a former director of the Caja de Crédito Agrario put it, a period in which the first real attempts were to be made to use credit to help provide the Colombian peasant with his land and livelihood.

The Caja de Crédito Agrario

The shock of the depression of the 1930's was severely felt in Colombia. There was a drastic retrenchment in foreign loans, and the inflow of foreign investment diminished to a trickle. This necessitated a huge cutback in the formation of an industrial base and in the attendant public works programs which had accompanied that industrialization. No longer able to find and hold jobs in the cities, growing numbers of unemployed workers drifted back to the countryside where they hoped to secure some means of support.

But the rural sector was also in a process of deterioration, largely the result of the fall in coffee prices and exports. As

farm incomes fell, many peasants stopped paying rent, large numbers of squatters invaded and occupied rural estates, and a series of strikes broke out in the banana-growing regions and soon spread to other parts of the country. These outbreaks were met with increasing violence on the part of the landlords, and it became increasingly evident to the government that prompt attention had to be paid to the underlying problems of agriculture if the country was to be saved from revolution and chaos.

Among the early steps taken to ease the rural unrest was the creation of a program of short-term agricultural credit, within the framework of the Banco Agrícola. Law 57 removed the Section of Agricultural Supplies from the position of a minor division within the Bank, and granted it independent status and power. Article 21 of the Law called for:

...the creation, for a period of 50 years in the City of Bogotá, of a corporation to be named the "Caja de Crédito Agrario," which will operate under the supervision of the Superintendent of Banks, and its objective will be the provision of credit to all of the farmers of the country...7

The Caja Agraria was funded with an initial capital authorization of $10 million, already more than the Banco Agrícola was at that time receiving, to be financed by an issue of 100,000 bonds of $100 each. In an effort to garner commercial and private support of the new credit institution, some $6 million of the bonds were placed with the general public, while the government, commercial banks, and the National Federation of Coffee Growers purchased the rest.

7 Franco Arias, El Crédito, p. 22.
The principal difference in the credit policy of the Caja Agraria as compared with the Banco Agrícola was in the size, duration, and intent of the loans which the two institutions made. The Banco Agrícola, during these years, was emphasizing loans up to a maximum of $30,000, primarily for the purchase of rural property. The duration of these loans ranged from a minimum of five years up to a maximum of 30 years. The Caja Agraria, on the other hand, placed primary emphasis on relatively small, short-term loans, up to a maximum of $15,000 for no more than two years, loans which were intended mainly for the variable costs of farm operations.

The Caja Agraria began formal operations on December 5, 1931, and during its first six months granted 1,386 loans totalling $1,270,230. Of these, 1,284 (72 per cent) were considered "minor," that is, less than $2,000 each; 80 were "medium," ranging from $2,001 to $5,000; and only four were "large," or more than $5,000. Although the total number and value of loans was insignificant in relation to the nation's total need for agricultural credit, the preponderance of small loans gave ample evidence of the Caja Agraria's determination to correct the deficiency in the supply of short-term credit for small farmers.

In 1933, the year in which its official name was changed to the Caja de Crédito Agrario, Industrial y Minero, the Caja Agraria began importing agricultural tools and machinery, duty free, for resale on credit within the country. This was later to become an important credit-related function of the organization so that, for

---

8 "30 Años de la Caja Agraria, 1931-1961," Carta Agraria, Annex to No. 64, p. 4.
example, of a total of 2,665 tractors imported into Colombia in 1960, 1,378 or 52 per cent were brought in under the auspices of the Caja Agraria.9

By the late 1930's the unrest which had strangled the countryside began to subside, largely because of the efforts of President Alfonso López's reform administration, which sponsored the passage of the Land Law of 1936. This law, in effect, gave land titles to squatters on public lands and to landowners whose titles were in doubt, and made it difficult to expel squatters from private lands without ample compensation for any improvements which they might have made. The law thus made generous concessions to both factions in the land disputes, and removed much of the basis for conflict.

On the other hand, by outwardly "solving" the rural question, the Land Law of 1936 removed the agrarian sector and its fundamental problems from the immediate focus of national concern. As a result, for roughly the next decade, there were few changes in agricultural policy, especially in the area of agricultural credit, except for the creation of a section of medium and long-term mortgage credit within the Caja Agraria. This, of course, was an unnecessary change in that it merely duplicated the function of the existing Banco Agrícola. Another minor development, in 1943, was the creation of the Section of Agricultural Development, whose task it was to import and distribute improved varieties of seed, and to develop irrigation facilities in dry districts.

By the mid-1940's, the problems of wartime industrialization and inflation made the government again aware that the agricultural

9Carta Agraria, No. 150, p. 4.
sector still constituted a bottleneck in development, and attention once more was turned toward a solution of the land question and toward an improvement in the techniques of cultivation. Law 100 of 1944 attempted to satisfy further the peasants' demand for land by providing for the government procurement of privately-owned properties, usually those already invaded and occupied by squatters, for resale, on credit, to poor farmers. Credit for such purchases was to be provided by either the Banco Agrícola or the Caja Agraria.

An effort was made to increase the general level of agricultural productivity through the recently formed Section of Agricultural Development, which in 1946 sought and received a loan of U. S. $10 million from the Import-Export Bank for the further development of irrigation projects. This section also expanded its operations of bringing into the country new seeds, animals, and advanced agricultural techniques.

These efforts to improve the agrarian structure through credit policy continued into the early 1950's, mostly within the framework of the Caja Agraria, by now a known and respected financial institution, entering the period of its greatest influence and expansion. In 1953 the Caja Agraria absorbed the assets and activities of the Institute of Colonization, a favorite parcelization scheme of Rojas Pinilla which had wrecked itself through irresponsible expenditures. Two years later, Decree 1,472 turned over to the Caja Agraria the Caja Colombiana de Ahorros, a savings bank established in 1932 for the purpose of mobilizing domestic savings. Then in 1959 the administration of Alberto Lleras succeeded in passing a new parcelization law (Law 20), under which the purchase of land parcels was to be financed by the Caja Agraria. Funds for this purpose were secured by the additional
provision of the law that 10 per cent of the deposits in the country's savings banks were to be shifted to the Caja Agraria.

Given the prestige and power enjoyed by the Caja Agraria by the end of the 1950's, it was natural that this institution should play an important role in the passage and administration of the ambitious agrarian reform of 1961. The legal basis of this reform, Law 135, was the result of a growing awareness that the piecemeal reform approaches of the past had not solved Colombia's agrarian problems, the existence of which was evidenced by the fact that land invasions were still occurring and that the country was still not able to satisfy its own agricultural needs. Further, it is certain that the passage of the law was prompted by the possibility of external financial rewards under the Act of Bogotá, and as a reaction to the Cuban revolution.

Law 135 differed from earlier efforts at land reform through parcelization in that it provided for, among other things, the expropriation of privately owned, uncultivated land, for which the owner was to be paid 20 per cent of the appraised value in cash, the remainder in non-negotiable bonds. To administer the law and to finance the expropriations, the Colombian Institute of Agrarian Reform (INCORA) was organized, separate to yet within the administrative framework of the Caja Agraria. The General Manager of the Caja Agraria was to be a member of the Board of Directors of INCORA, and branch managers of the regional offices of the Caja Agraria would serve in the INCORA sectional councils organized in all department capitals. Finally, a delegate from

---

10 Hirschman, Journeys, p. 147.
each Caja Agraria branch was to participate in all deliberations of INCORA's municipal committees, which would function as agents of the departmental sectional councils. Thus the Caja Agraria permeated the structure of INCORA at all organizational levels.

Although their organizations overlapped, thereby insuring a degree of policy coordination, the Caja Agraria by no means subordinated INCORA to its own aims and policies. Some separation was assured by the generous independent financing which INCORA received under the law: that organization was guaranteed $100 million a year from the federal budget, in addition to an equal amount of revenue from bonds which it was empowered to issue. Moreover, INCORA was to assume several functions previously performed by the Caja Agraria, such as irrigation programs and parcelization projects involving supervised credit, activities which in fact had become a divergence from the Caja Agraria's primary mission of providing agricultural credit facilities.

INCORA and Law 135 itself were the immediate and publicized responses to Colombia's agrarian problems in the early 1960's, and therefore there were no dramatic changes made in the structure, resources, or functions of the Caja Agraria. Actually, in the fiscal year following the passage of the agrarian reform law, there was virtually no increase in the lending activities of the Caja Agraria,

---


12 In February, 1964, assisted by a grant of U. S. $10 million from the Alliance for Progress, INCORA initiated its program of supervised agricultural credit. By the end of that year, INCORA had granted 21,072 land titles encompassing 961,824 hectares, and had administered $31,750,777 in supervised credit to 2,556 peasant families. INCORA, Informe de Actividades, 1964 (Bogota: Imprenta Nacional de Colombia, 1965), pp. 107-109.
whereas in the three preceding years there had been an average annual expansion of 15 per cent in the value of new loans made by that institution. This slowdown proved to be temporary, however, and by the end of 1963 the Caja Agraria had resumed its former rate of growth.

By the end of 1965, the Caja Agraria had grown from a small organization with only nine credit offices in a few major cities to an extensive network of 601 credit and credit-related facilities. These offices, classified as branches or agencies depending on the agricultural importance of the area they serve and on the size of the loans which they are authorized to approve, are located in

---


14Office classifications, the maximum size of a loan which can be granted by each, and the approval authority are indicated in the following table:

<table>
<thead>
<tr>
<th>Approval Authority</th>
<th>Special Branch</th>
<th>Agency</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Type A</td>
<td>Type B</td>
</tr>
<tr>
<td>Manager</td>
<td>$37,500</td>
<td>22,500</td>
</tr>
<tr>
<td>Manager (loans for experimental clients)</td>
<td>75,000</td>
<td>45,000</td>
</tr>
<tr>
<td>Consulting Council</td>
<td>150,000</td>
<td>75,000</td>
</tr>
</tbody>
</table>

Source: Franco Arias, El Credito, p. 64.
the important population centers of all departments and national territories. As Table 1 reveals, two-thirds of the nation's municipalities were served by offices of the Caja Agraria, and the credit granted by these offices reached more than 96 per cent of all municipalities in the country.

Administrative control of the Caja Agraria is currently given to an executive board consisting of six members, appointees of the Ministry of Agriculture, the Ministry of the Interior, the National Government, the Bank of the Republic, the Society of Agriculturalists, and the Coffee Federation. The executive board, in turn, appoints a general manager who is the overall coordinator of the Caja Agraria's manifold activities.

Figure 2, a simplified organizational chart of the Caja Agraria, outlines its general structure and some of its more important functions. The Banking Division supervises all credit activities carried out through the Administrative Division and, in addition, administers a program of supervised credit, which over the period 1963-65 involved 5,000 farmers and more than $150 million in loans. The Banking Division now also constitutes an important savings institution in Colombia, dating from the Division's absorption of the Caja Colombiana de Ahorros in 1956. In 1965, this office held some 2.5 million separate savings accounts, totalling more than $734 million.

The Division of Development plays an important role in the construction and improvement of rural housing in Colombia. From 1959 to 1965 more than 60,000 families received communal credit from the

---

15Elias del Hierro, Informe de Gerencia, p. 62.

16Ibid., p. 37.
<table>
<thead>
<tr>
<th>Department of Territory</th>
<th>Number of Municipalities</th>
<th>Municipalities Receiving Credit</th>
<th>Number of Credit Offices</th>
</tr>
</thead>
<tbody>
<tr>
<td>Antioquia</td>
<td>104</td>
<td>104</td>
<td>75</td>
</tr>
<tr>
<td>Atlántico</td>
<td>21</td>
<td>21</td>
<td>14</td>
</tr>
<tr>
<td>Bolívar</td>
<td>45</td>
<td>45</td>
<td>25</td>
</tr>
<tr>
<td>Boyacá</td>
<td>127</td>
<td>125</td>
<td>46</td>
</tr>
<tr>
<td>Caldas</td>
<td>47</td>
<td>47</td>
<td>44</td>
</tr>
<tr>
<td>Cauca</td>
<td>33</td>
<td>33</td>
<td>21</td>
</tr>
<tr>
<td>Córdoba</td>
<td>22</td>
<td>22</td>
<td>21</td>
</tr>
<tr>
<td>Cundinamarca</td>
<td>115</td>
<td>109</td>
<td>95</td>
</tr>
<tr>
<td>Choco</td>
<td>17</td>
<td>13</td>
<td>5</td>
</tr>
<tr>
<td>Guajira</td>
<td>7</td>
<td>6</td>
<td>5</td>
</tr>
<tr>
<td>Huila</td>
<td>34</td>
<td>34</td>
<td>24</td>
</tr>
<tr>
<td>Magdalena</td>
<td>31</td>
<td>31</td>
<td>20</td>
</tr>
<tr>
<td>Meta</td>
<td>14</td>
<td>14</td>
<td>10</td>
</tr>
<tr>
<td>Nariño</td>
<td>49</td>
<td>46</td>
<td>24</td>
</tr>
<tr>
<td>Norte de Santander</td>
<td>35</td>
<td>35</td>
<td>26</td>
</tr>
<tr>
<td>Santander</td>
<td>75</td>
<td>75</td>
<td>47</td>
</tr>
<tr>
<td>Tolima</td>
<td>43</td>
<td>43</td>
<td>42</td>
</tr>
<tr>
<td>Valle</td>
<td>42</td>
<td>42</td>
<td>37</td>
</tr>
<tr>
<td>Others</td>
<td>47</td>
<td>30</td>
<td>20</td>
</tr>
</tbody>
</table>

Source: José Elias del Hierro, Informe de Gerencia, n.p.
FIGURE 2

ORGANIZATION OF THE CAJA AGRARIA

Department of Economic Investigations

Executive Board

General Manager

Department of Organizations and Systems

Banking Division

Financial Division

Administrative Division

Development Division

Credit Department

Accounting Department

Department of Branches and Agencies

Department of Development

Banking Services

Treasury

Department of Lands and Housing

Savings Department

Department of Agricultural Supplies

Department of Construction

Insurance Department

Department of Equipment and Maintenance

Foreign Department

Department of Agricultural Supplies

Branch

Agency

Branch

Agency

Branch

Division of Development for the purchase or construction of housing. In addition to this program, the Division of Development is now beginning, on a small scale, to construct rural housing which will be sold directly to farmers on a 15-year loan at seven per cent interest. During 1965 more than a thousand rural homes were in the process of construction under this program.\textsuperscript{17}

The Department of Agricultural Supplies, that section of the former Banco Agricola around which the Caja Agraria itself was formed in 1931, continues its original function of selling seeds, fertilizer, and machinery on credit to farmers. In 1964, the Department had fertilizer sales of $86 million, $78 million in chemicals, $31 million in pesticides, and machinery sales valued at $36 million, much of which was imported from abroad.\textsuperscript{18}

Other minor activities of the Caja Agraria presently include the preparation of economic and statistical studies pertaining to agriculture, aid in the granting and processing of titles to state lands, and the dissemination of information of interest to farmers. This information ranges from detailed plans for the construction of rural housing to an illustrated history of rice farming.

This brief sketch of the credit activities and related tasks of the Caja Agraria reveals that it is perhaps the most important agricultural institution in Colombia, and that it has sequestered many of the functions usually performed by a department or ministry of agriculture in most other countries. This particular arrangement has

\textsuperscript{17} Ibid., pp. 65-67.  
\textsuperscript{18} Ibid., p. 90.
certain advantages and certain drawbacks. The chief advantage of the separation of the Caja Agraria from the Colombian Ministry of Agriculture is that the Caja Agraria traditionally remained politically independent of the party in power, and this has given it a measure of stability and continuity not affected by changing administrations and outlooks. On the other hand, the peculiar semi-official status of the Caja Agraria means that it is not required to submit its budgets to the national government nor to the comptroller general, as do the official agricultural agencies under the Ministry of Agriculture. Moreover, because it is first and foremost an agency of credit, whatever loose administrative control there is must be exercised by the Superintendent of Banking. It is perhaps fortunate that the Caja Agraria has maintained its important position with restraint, and at the same time has done reasonably well in coordinating its own agrarian policies with those of the various ministries of agriculture.

Other Institutions of Agricultural Credit

After the Caja Agraria, the next most important source of agricultural credit are the commercial agricultural banks, such as the Banco Cafetero, founded in 1953, and the Banco Ganadero, founded in 1956. The main function of these banks is to provide loan funds for specific crops or activities, e.g., coffee and cattle, but a portion of the credit resources of these banks is devoted to other agricultural pursuits. In 1960, for example, the Banco Cafetero made loans of $78 million for coffee production, $54 million for cattle production, and $43 million for the production of other crops. In that same year, the Banco Ganadero
granted $43 million in loans for cattle-raising, and $400,000 for other agricultural purposes.

Agricultural bank credit is supplemented by credit from the non-agricultural commercial banks which, according to Law 26 of 1959, are required to make a minimum of 15 per cent of the total value of their loans available to agriculture through the Caja Agraria. In practice, commercial banks have chosen to lend a much higher percentage to agricultural endeavors; in 1961, for example, these banks granted more than $700 million or 27 per cent of their total loans to agriculture, primarily for cattle-raising and coffee production.

Still less important sources of agricultural loan funds are those public and private institutes of credit, designed to aid the production of specific crops. Among the most active are the Institute for Cotton Development, the Institute for Tobacco Development, and the Institute for Barley Development, but the volume of loans arising from these organizations is insignificant when compared with the total supply of agricultural credit.

Thus the Caja Agraria constitutes the chief source of agricultural credit in Colombia. In 1961, for example, the Caja Agraria granted almost 90 per cent of the total number of loans made to agriculture in that year. Because the Caja Agraria tends to emphasize "small loans for small farmers," it was slightly behind the agricultural and commercial banks in the total value of agricultural loans granted--42 versus 47 per cent. Nevertheless, since Law 26 channeled at least

\[\text{Franco Arias, El Crédito, p. 90.}\]
\[\text{Ibid., p. 92.}\]
\[\text{CIDCA, Inventory, p. 61.}\]
part of the commercial loans to agriculture through the Caja Agraria, that institution retains effective control over the bulk of Colombia's agricultural credit, in terms of the total value as well as the number of loans.
CHAPTER IV

THE STRUCTURE OF PLANNED AGRICULTURAL CREDIT IN COLOMBIA

As the primary source of all agricultural loans in Colombia, the Caja Agraria's policies are the most important to consider in any examination of the framework of the nation's agricultural credit. Moreover, because of its size, its prestige, and its organizational ties with the banking system, the Caja Agraria's lending policies strongly influence the policies of all other credit institutions. Thus the agricultural credit structure of the country can be considered a reflection of those lending patterns initiated and maintained by the Caja Agraria.

The Credit Structure of the Caja Agraria

The process of loan allocations through the Caja Agraria begins with a semiannual application for loan funds from local branches and agencies, based on their estimates of the local demand for credit. The Executive Board of the Caja Agraria, comparing the assembled requests with the anticipated available funds, then establishes a cupo, or quota, of loans for each branch according to broad priorities or goals which the Board regards as important. Some factors which are considered in establishing the priorities include: the domestic supply
and demand of specific products; the development of export products; industrial requirements for raw materials; and capital needs of private and governmental agricultural products. As an illustration of how these guidelines work, in 1965 the Executive Board decreed that domestic agricultural conditions were such that local agencies should favor with loans those activities which directly increased the production of basic foodstuffs and industrial raw materials. At the same time they decided to suspend, temporarily, loans for the fattening of cattle, for short-term financing of rural housing, and for refinancing debts originating from agricultural investments.

Within the established guidelines set by the Executive Board, further restrictions on the use of the cupo at the local level are formulated by the Department of Economic Investigations, which assembles data concerning optimum conditions for specific crops in various regions of the country. If it is found, for example, that rice does not do well in a certain region during the first six months of the year, a restriction might be placed on the Caja Agraria branches in that area prohibiting loans for the cultivation of rice. In this way, some technical supervision in the distribution of loans is assured.


3Carter and Bailey, Analysis of Agricultural Credit, p. 18.
Within these final categories, maturities and terms of the loans to be granted are determined by the specific nature of the loans themselves.

The Caja Agraria distinguishes between short, medium, and long-term agricultural credit. Short-term credit refers to loans which mature in a period of from three to 12 months; medium-term credit involves terms from 13 months to five years; and long-term credit consists of loans with a duration of six to 15 years, the latter being the maximum term of any loan made by the Caja Agraria. In recent years, approximately 35 per cent of the new loans made by the Caja Agraria have been short-term, 50 per cent have been medium-term, and 15 per cent have been long-term.

Short-term credit is granted for the cultivation of seasonal crops, for the maintenance of permanent crops (e.g., coffee), for the fattening of livestock for the market, and for farm improvements when the borrower's past credit record and his ability to pay make it seem likely that the loan will be repaid within the appropriate time period. Loans granted by the Caja Agraria on a short-term basis vary in maximum allowable amounts from $10,000 to $60,000, depending on the use, and carry an interest charge which is the equivalent of a six per cent annual rate. These terms compare favorably with the short-term agricultural credit policies of commercial banks, which lend for periods of 90 to 180 days at an average charge of ten per cent annual interest.

*CIDA, Inventory, p. 66. See also "Síntesis de Modalidades de Crédito de la Caja," Carta Agraria, 65 (May, 1961), pp. 2-3.
Medium-term credit is directed primarily toward the cultivation of crops requiring more than a year to mature, and toward the establishment or enlargement of animal herds. Other uses of medium-term loans include farm improvements of a permanent nature, the purchase of agricultural machinery, the construction of wells, the building of sugar mills, fishing development, and the financing of titles to common lands. The maximum amount of credit obtainable on medium term varies, depending on the use of the loan, from $10,000 to $300,000, except in the acquisition of common lands in which case the maximum amount is the estimated market value of the property. Medium-term credit is lent at an annual rate of interest of eight per cent.

Long-term credit, the least important in the Caja Agraria's overall structure of loans, is given to finance the private construction of irrigation and drainage systems, for the planting of permanent crops other than coffee, and for the purchase of rural properties. It may also be used by borrowers who have no more than $200,000 in non-property assets and less than 32 hectares of land to repay privately negotiated loans for the purchase of property, if such loans are less than one-year old. The upper limit on credit granted on a long-term basis ranges between $50,000 and $300,000 and carries an annual interest charge of nine per cent.

In recent years, the Caja Agraria has introduced two new programs of long-term credit which, by offering loans at slightly lower rates of interest, are designed to stimulate specific activities. Long-term credit can now be obtained for the establishment or enlargement of sisal plantations at an interest rate of eight per cent. Under the Caja Agraria's new rural housing program, borrowers may receive from
$4,000 to $8,000 for the construction of improvement of rural housing at five to six per cent interest, depending on the amount obtained.

These long-term credit programs, however, are as yet of minor importance in the total credit activity of the Caja Agraria. As already noted, the Caja Agraria emphasizes short- and medium-term credit (constituting about 85 per cent of the total loans made), and within that term structure tends to favor relatively small loans. For example, as shown in Table 2, in the 1960-61 fiscal year about

**TABLE 2**

**DISTRIBUTION OF CAJA AGRARIA LOANS BY SIZE**
(July 1, 1960 to June 30, 1961)

<table>
<thead>
<tr>
<th>Size of Loan</th>
<th>Number of Loans</th>
<th>Value of Loans</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than $ 100</td>
<td>524</td>
<td>$52,189</td>
</tr>
<tr>
<td>101 - 250</td>
<td>6,829</td>
<td>1,457,974</td>
</tr>
<tr>
<td>251 - 500</td>
<td>38,867</td>
<td>16,955,529</td>
</tr>
<tr>
<td>501 - 1,000</td>
<td>76,694</td>
<td>64,539,966</td>
</tr>
<tr>
<td>1,001 - 5,000</td>
<td>107,678</td>
<td>258,130,103</td>
</tr>
<tr>
<td>5,001 - 10,000</td>
<td>14,072</td>
<td>111,289,191</td>
</tr>
<tr>
<td>10,001 - 20,000</td>
<td>6,937</td>
<td>109,641,780</td>
</tr>
<tr>
<td>20,001 - 50,000</td>
<td>4,212</td>
<td>130,186,053</td>
</tr>
<tr>
<td>More than 50,000</td>
<td>163</td>
<td>15,574,408</td>
</tr>
<tr>
<td>Total</td>
<td>255,976</td>
<td>$708,127,223</td>
</tr>
</tbody>
</table>

Source: Franco, op. cit., pp. 74-75. This Table, as do Tables 3 through 6, employs 1960 data for comparability with the production function figures in Chapter V. It should be noted here that the pattern and distribution of loans in Colombia have not changed significantly in the intervening years.
42 per cent of the total number of loans made (36 per cent of the total value) were between $1,001 and $5,000. The next largest category of loans, constituting 30 per cent of the total number and nine per cent of the total value, consisted of those between $501 and $1,000.

Table 3 shows that property owners were the primary recipients of loans granted by the Caja Agraria, receiving 74 per cent of the total number and 78 per cent of the total value of loans. It is not to be inferred, however, that the majority of loans made by the Caja Agraria were secured by mortgages on rural property; actually

**TABLE 3**

**LOANS OF THE CAJA AGRARIA BY ECONOMIC STATUS OF BORROWER**

<table>
<thead>
<tr>
<th>Social Status</th>
<th>Number of Loans</th>
<th>Value of Loans ($1,000)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Property owner</td>
<td>167,950</td>
<td>454,045</td>
</tr>
<tr>
<td>Renter</td>
<td>26,942</td>
<td>74,043</td>
</tr>
<tr>
<td>Hired laborer</td>
<td>16,631</td>
<td>34,870</td>
</tr>
<tr>
<td>Sharecropper</td>
<td>10,791</td>
<td>12,212</td>
</tr>
<tr>
<td>Other</td>
<td>4,901</td>
<td>7,105</td>
</tr>
<tr>
<td>Cooperative</td>
<td>289</td>
<td>3,191</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>227,504</strong></td>
<td><strong>585,466</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Type of Guarantee</th>
<th>Number of Loans</th>
<th>Value of Loans</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agricultural pledge</td>
<td>67,334</td>
<td>$183,682,148</td>
</tr>
<tr>
<td>Livestock pledge</td>
<td>49,455</td>
<td>150,249,704</td>
</tr>
<tr>
<td>Agricultural and livestock pledge</td>
<td>6,854</td>
<td>14,176,431</td>
</tr>
<tr>
<td>Personal</td>
<td>107,290</td>
<td>206,364,264</td>
</tr>
<tr>
<td>Industrial or mining</td>
<td>328</td>
<td>1,305,018</td>
</tr>
<tr>
<td>Mortgage</td>
<td>16,805</td>
<td>125,764,197</td>
</tr>
<tr>
<td>Discounts to cooperatives</td>
<td>115</td>
<td>3,807,244</td>
</tr>
<tr>
<td>Other guarantees</td>
<td>1</td>
<td>3,101,200</td>
</tr>
<tr>
<td>Rehabilitation Decree 239</td>
<td>15</td>
<td>136,067</td>
</tr>
<tr>
<td>Personal (colonization)</td>
<td>405</td>
<td>2,622,763</td>
</tr>
<tr>
<td>Rural housing (agricultural pledge)</td>
<td>3,341</td>
<td>5,784,383</td>
</tr>
<tr>
<td>Rural housing (personal pledge)</td>
<td>1,572</td>
<td>2,086,050</td>
</tr>
<tr>
<td>Rural housing (mortgage)</td>
<td>2,275</td>
<td>7,502,611</td>
</tr>
<tr>
<td>Colonization mortgage</td>
<td>33</td>
<td>32,477</td>
</tr>
<tr>
<td>Housing for employees</td>
<td>153</td>
<td>4,462,667</td>
</tr>
<tr>
<td>Total</td>
<td>255,976</td>
<td>$708,127,224</td>
</tr>
</tbody>
</table>

Source: Franco, *op. cit.*, pp. 119-120.
as Table 4 reveals, only seven per cent of the total number of loans were backed by mortgages. Personal, crop, and livestock pledges constituted the collateral of more than 92 per cent of the loans granted.

Agricultural activities utilizing Caja Agraria credit reflect the general pattern of agricultural production in Colombia. As shown in Table 5, cattle-production, the dominant activity in terms of land

| TABLE 5 |
| LOANS OF THE CAJA AGRARIA BY TYPE |
| OF ECONOMIC ACTIVITY, 1960 |

<table>
<thead>
<tr>
<th>Activity</th>
<th>Total Value of Loans</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cattle-production</td>
<td>$292,624,355</td>
</tr>
<tr>
<td>Crop production (excluding coffee)</td>
<td>144,212,613</td>
</tr>
<tr>
<td>Coffee production</td>
<td>88,857,927</td>
</tr>
<tr>
<td>Other agricultural activities</td>
<td>94,623,467</td>
</tr>
<tr>
<td>Mining and Industry</td>
<td>3,375,281</td>
</tr>
</tbody>
</table>

Source: Caja de Crédito Agrario, Carta Agraria, No. 114, p. 3.

A borrower's first loan from the Caja Agraria is likely to be secured by some tangible pledge, but once a credit record has been established, subsequent loans may be secured by a personal note. This would explain the preponderance of loans secured by personal guarantee, most of which would be awarded to experienced borrowers. See Carter and Bailey, Analysis of Agricultural Credit, p. 15.
utilization, absorbed some 47 per cent of the total value of loans made in 1960. Coffee, the most important single crop, received about 14 per cent. Within these broad ranges of activity, specific uses of the loans included the cultivation of cropland and pasture (52 per cent of the total number of loans), cattle-raising (23 per cent), and permanent farm improvements (17 per cent). Only two per cent of the total number of loans was used for the purchase or rental of land.

The most important crops aided by credit were coffee (36 per cent of the total value of loans), rice (nine per cent), cotton (nine per cent), potatoes (eight per cent), and corn (seven per cent). The total value of loans for the above crops was about $150 million; the value for all other crops was about $65 million.\(^7\)

The distribution of loans of the Caja Agraria by departments is shown in Table 6. It can be seen that credit activities were concentrated in the departments of Boyaca', Cundinamarca, Tolima, and Antioquia, in that order. These are among the most heavily populated departments in Colombia and are, in general, the country's major agricultural regions.

By way of a summary, it might be helpful to draw from the above data a portrait of the typical recipient of a Caja Agraria loan: the borrower is most likely to be a cattle-rancher or coffee producer from the central highlands; a property owner experienced in the use of credit, and who is producing for sale in a market. This portrait

---

\(^6\) CIDA, Inventory, p. 64.

\(^7\) Elias del Hierro, Informe, n.p.
### TABLE 6

**DISTRIBUTION OF CAJA AGRARIA LOANS**
**BY DEPARTMENTS**
(December 31, 1960)

<table>
<thead>
<tr>
<th>Department</th>
<th>Number</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Antioquia</td>
<td>28,421</td>
<td>$79,576,099</td>
</tr>
<tr>
<td>Atlántico</td>
<td>3,814</td>
<td>14,186,149</td>
</tr>
<tr>
<td>Bolívar</td>
<td>12,591</td>
<td>50,901,852</td>
</tr>
<tr>
<td>Boyacá</td>
<td>37,544</td>
<td>69,121,161</td>
</tr>
<tr>
<td>Caldas</td>
<td>20,969</td>
<td>64,876,556</td>
</tr>
<tr>
<td>Cauca</td>
<td>10,261</td>
<td>23,373,777</td>
</tr>
<tr>
<td>Córdoba</td>
<td>9,822</td>
<td>42,827,657</td>
</tr>
<tr>
<td>Cundinamarca</td>
<td>37,533</td>
<td>133,540,400</td>
</tr>
<tr>
<td>Choco'</td>
<td>609</td>
<td>551,915</td>
</tr>
<tr>
<td>Huila</td>
<td>14,039</td>
<td>42,606,823</td>
</tr>
<tr>
<td>Magdalena</td>
<td>8,521</td>
<td>42,624,409</td>
</tr>
<tr>
<td>Meta</td>
<td>8,471</td>
<td>22,617,375</td>
</tr>
<tr>
<td>Nariño</td>
<td>13,745</td>
<td>26,724,704</td>
</tr>
<tr>
<td>Santander</td>
<td>26,575</td>
<td>63,878,979</td>
</tr>
<tr>
<td>N. de Santander</td>
<td>9,611</td>
<td>27,750,370</td>
</tr>
<tr>
<td>Tolima</td>
<td>29,923</td>
<td>95,814,000</td>
</tr>
<tr>
<td>Valle</td>
<td>14,662</td>
<td>60,951,137</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>287,111</td>
<td><strong>$861,923,363</strong></td>
</tr>
</tbody>
</table>

*Source: Carta Agraria, Annex to No. 56, January, 1961, n.p.*
contrasts sharply with that of the typical Colombian minifundista who produces potatoes and corn, primarily for subsistence, on land which he does not own or to which there is no clear title, and who rarely, if ever, uses credit.

The Non-Use of Agricultural Credit in Colombia

Attention has been centered thus far on the distribution and use of credit actually supplied by the Caja Agraria in Colombia. An examination of the credit needs which go unsatisfied would indicate the extent to which that institution is meeting the nation's requirements for agricultural funds.

The total number of loans granted by the Caja Agraria in the fiscal year 1960-61 was about 250,000, or about 90 per cent of the total number of agricultural loans made by all credit institutions in that year. Assuming the number of rural families in Colombia to be anywhere from about 1.5 to 2.0 million, this means that at most only 15 per cent of farm families were served by the country's formal system of agricultural credit.

The scant financial resources of the Caja Agraria relative to the nation's agricultural credit needs is the most important, but not the only reason for the limited use of loans for agricultural purposes. Many, if not most, small farmers are mistrustful of the Caja Agraria and, as Fals-Borda has noted, "still approach these offices with a certain timidity and apprehension, as if compelled by necessity and as a last resort." This reluctance to use credit

---

8Fals-Borda, Peasant Society, p. 172.
facilities is evidenced by the meager number of credit applications received by the Caja Agraria; in the year beginning July 1, 1959 for example, Colombian farmers requested a mere $800 million in loans from the Caja Agraria, of which almost $600 million was granted.9

The attitude of the Colombian peasant toward borrowing is clearly delineated by a recent study of farming in the Suarez River basin, in which 808 rural families were questioned on, among other things, their use of credit in farming operations.10 The study revealed that 74 per cent of the families interviewed used no credit whatsoever, while 17 per cent used some form of institutional credit, eight per cent borrowed from private lenders, and one per cent employed some combination of institutional and private credit. The results for the area are close to the above estimates on the non use of credit for the nation as a whole.

An interesting aspect of the Suarez River study is that families which did not use credit were asked to cite the principal reason for not seeking credit aid. Most farmers (48 per cent) responded that they had not applied for loans because they were under the impression that they lacked tangible goods of sufficient value to serve as a guarantee for a loan. Ten per cent of the farmers said that they simply disliked being in debt, six per cent felt that there was too

9CIDA, Inventory, p. 64.

10Marco Rey Carmona, and others, Estudio Agroeconómico de la Hoya del Río Suarez (Bogotá: Centro de Estudios para el Desarrollo Económico, 1965), p. 264.
much paperwork involved in applying for a loan,\textsuperscript{11} and an additional six per cent said that they had applied to the Caja Agraria for loans in the past and, having been turned down, saw no reason to apply again.\textsuperscript{12}

Whatever the factual basis of the above responses, they represent specific difficulties or misunderstandings which the Caja Agraria must attempt to overcome through a program of education in the use of credit. More generally, however, the responses are a reflection of a wider problem, observable in most peasant societies, where credit obligations typically have social dimensions which often outweigh the purely economic aspect.\textsuperscript{13} For this reason, the limited use of officially sponsored credit among the Colombian peasantry may also be attributed to the impersonality of such transactions. This further complicates the Caja Agraria's task of inducing Colombian farmers to use the available credit resources more fully, and more efficiently, to bolster the nation's agricultural production.

\textsuperscript{11}But Carter and Bailey note that 45 per cent of new clients are informed of the final action on a loan on the day of application, and 87 per cent are notified within thirty days. \textit{Analysis of Agricultural Credit}, p. 13.

\textsuperscript{12}Rey Carmona, \textit{Estudio Agroeconómico}, p. 120.

CHAPTER V

RESOURCE PRODUCTIVITY IN COLOMBIAN AGRICULTURE

The elaborate structure and manifold functions of the Caja Agraria reflect the concern of that agency for the problems of Colombian agriculture, and a desire to improve the nation's agricultural foundation. Yet in spite of these attentions, the agricultural position of the country in recent years has been deteriorating. As noted earlier, in the decade 1958-67 the rate of population growth exceeded the rate of growth in food production, resulting in a diminution in agricultural production per capita. This, in turn, has meant an increasing reliance on imported foodstuffs, and a slippage in Colombia's status as an important agricultural exporter.

Considering Colombia's natural resource endowment—extensive lands, fertile soils, and a range of climates permitting a wide variety of crops—one must conclude that the nation's agricultural problems reside not in a mere deficiency of resources, but also in the ineffective use of those resources which are available.

Colombia's relative position in agricultural production is clearly revealed by a comparison of production per hectare of various

---

1Above, p. 23.
agricultural commodities in Colombia with the average outputs of other tropical countries. As shown in Table 7, the disparities are particularly striking in the production of grains, in that Colombia's cool, fertile highlands are especially suited for the growing of wheat, barley, and corn. Also surprising is the comparatively low yield of coffee per hectare, for Colombia, the second leading producer in the world, is usually regarded as a relatively efficient producer of coffee.

**TABLE 7**

TROPICAL COUNTRY AND COLOMBIAN YIELDS

<table>
<thead>
<tr>
<th>Crop</th>
<th>1965 Highest Yield, Tropical Countries</th>
<th>1965 Colombia</th>
<th>1966 Colombia</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wheat</td>
<td>Mexico 2,470</td>
<td>900</td>
<td>1,100</td>
</tr>
<tr>
<td>Barley</td>
<td>Kenya 1,440</td>
<td>1,180</td>
<td>1,700</td>
</tr>
<tr>
<td>Corn</td>
<td>Taiwan 2,200</td>
<td>910</td>
<td>1,100</td>
</tr>
<tr>
<td>Rice</td>
<td>Peru 4,060</td>
<td>1,960</td>
<td>1,900</td>
</tr>
<tr>
<td>Sugar cane</td>
<td>Hawaii 230,000</td>
<td>41,700</td>
<td>--</td>
</tr>
<tr>
<td>Potatoes</td>
<td>Taiwan 13,100</td>
<td>7,100</td>
<td>11,300</td>
</tr>
<tr>
<td>Sesame</td>
<td>Thailand 890</td>
<td>590</td>
<td>600</td>
</tr>
<tr>
<td>Onions</td>
<td>Peru 20,800</td>
<td>9,700</td>
<td>--</td>
</tr>
<tr>
<td>Beans</td>
<td>Sudan 1,470</td>
<td>660</td>
<td>600</td>
</tr>
<tr>
<td>Bananas</td>
<td>Pakistan 30,300</td>
<td>15,600</td>
<td>10,000</td>
</tr>
<tr>
<td>Cotton seed</td>
<td>Honduras 1,430</td>
<td>710</td>
<td>700</td>
</tr>
<tr>
<td>Coffee</td>
<td>El Salvador 1,000</td>
<td>533</td>
<td>600</td>
</tr>
</tbody>
</table>

Source: Pan American Union, Domestic Efforts, p. 55.
A recent study by L. Jay Atkinson examined productivity trends in Colombian agriculture and discovered that no significant productivity improvements have been made in roughly a decade. Atkinson attributes the stagnation in agricultural productivity to two primary factors: (1) an overreliance on land expansion as a means to achieving a larger agricultural output, and (2) the use of too little capital along with the other factors of production. Specifically, with reference to the second point, Atkinson found a reduced rate of fertilizer application, and an increasing use of animal power where tractors would be more appropriate. The result has been that Colombia has moved from the position of being considerably more mechanized in agriculture than all of Latin America in 1955, to a point where, by 1964, its degree of mechanization was a great deal less than in all Latin America.

It is evident, then, that Colombia needs a reorientation of its agricultural policies to reverse some of the productivity trends that are becoming increasingly apparent. But the appropriate policies must be based on a more detailed knowledge of the nature of agricultural processes in Colombia: What are the relevant inputs? How are they related to output? What dimensions of change are necessary to achieve results? While there are several ways to approach such questions from an economic standpoint, it has been the experience of many investigators that production function studies of a nation's agriculture can be extremely fruitful in eliciting the necessary answers, and can point the way to specific recommendations for productivity improvements.


\[3\] Ibid., p. 18.
A Cobb-Douglas production function is a homogeneous function of the form

\[ Y = aX_1^{b_1}X_2^{b_2} \cdots X_n^{b_n} \]

where \( Y \) is the total output of a productive process, and the \( X \)'s refer to the relevant process inputs. The input exponents yield directly the elasticities of production, which are defined as the percentage changes in production that would result from a one per cent change in an input, other input levels being held constant. The sum of these elasticities indicates the nature of returns to scale for a particular function or, if one assumes constant returns to scale, the importance of any omitted variables.

Another characteristic of the Cobb-Douglas production function involves the marginal products of the inputs, defined as

\[ \frac{d\hat{Y}}{dX_n} = b_n \frac{\hat{Y}}{X_n} \]

and evaluated at the geometric mean of estimated output (\( \hat{Y} \)) and of each input (\( X_n \)). In a Cobb-Douglas function, the marginal products of the individual inputs may either be increasing, decreasing, or constant, but they cannot take on a multiple range of values.

Some advantages of using a Cobb-Douglas production function, over other functional forms, include its computational ease (the parameters become linear when the function is estimated in its logarithmic form,) and its convenience in interpreting elasticities of production. In addition, this function is relatively efficient in
its use of degrees of freedom, thus making it especially appropriate for investigations where a limited number of observations is available. For these reasons, the Cobb-Douglas production function has found widespread use in a variety of production studies, especially in agriculture.\textsuperscript{4}

The main limitations of the Cobb-Douglas production function are: (1) it cannot be used with satisfactory results for data where there are ranges of both increasing and decreasing marginal productivity; (2) because the curve "flattens out," it does not define a maximum output; and (3) the function is based on the assumption that each input is limitational, implying that output will be zero when any input is zero. None of these drawbacks, however, is serious enough to limit the usefulness of the Cobb-Douglas production function in a study of aggregate agricultural production, which is likely to take place within a small region of a given function. Over a time period sufficiently long to allow movements into a new range of the curve, the function itself would probably shift and would thereby reflect the new productivities. Moreover, it is doubtful that at any given moment an entire country will have reached a region of maximum production--additional resources can usually be mustered to expand output. Finally, in an actual productive process at least some of each of the defined inputs are expected to be in use, so the limitational aspect of the function would present few problems.\textsuperscript{5}

\textsuperscript{4}See, for example, Earl O. Heady and John L. Dillon, \textit{Agricultural Production Functions} (Ames, Iowa: Iowa State University Press, 1961).

\textsuperscript{5}As a practical matter, if one input within a sample is zero, the common procedure is to assign it a negligible positive value.
The production function for Colombia estimated here is based on cross-sectional data taken primarily from the 1960 national census and supplemented with other data, the source of which will be noted. The year 1960 was chosen because it is the only recent year for which cross-sectional information on a wide selection of agricultural inputs is available. It must be noted that despite the "official" nature of most of the data, their accuracy is questionable in many cases, as is true with most statistics from underdeveloped countries. For this reason there is probably a considerable degree of measurement error in the variables, and the results must be interpreted with appropriate caution.

The following variables were tested for inclusion in a Cobb-Douglas production function for Colombian agriculture:

\[ Y = \text{total value of crop output, by department} \]

\[ X_1 = \text{hectares of land in crop production, including arable land in seasonal use, land in permanent crops, and land in coffee production.} \]

\[ X_2 = \text{farm population of the department.} \]

\[ X_3 = \text{number of tractors in the department.} \]

\[ X_4 = \text{metric tons of fertilizer used.} \]

---


8 Instituto de Investigaciones Tecnológicas, Informe (Bogotá: Instituto de Investigaciones Tecnológicas, 1965), p. 17.
\( X_5 = \) total land area irrigated and/or drained.  
\( X_6 = \) agricultural credit, in pesos, supplied by the Caja Agraria.  
\( X_7 = \) number of farms in the department using animal power exclusively.

The seven independent variables described above were tested in a regression equation derived from the logarithmic transformation of a Cobb-Douglas production function. The regression of the seven factors on \( Y \) yielded a coefficient of multiple correlation (\( R \)) equal to 0.973, and a coefficient of determination (\( R^2 \)) of 0.947. This means that the seven variables together explain roughly 95 per cent of the department-to-department variation in agricultural output. The unexplained variation of five per cent may be the result of the use of an inappropriate regression equation, the omission of relevant independent variables, or the errors of measurement in the data.

An inspection of the matrix of simple correlation coefficients (Table 8) reveals that several of the assumed independent variables are highly correlated with one another, i.e., that multicollinearity exists in the regression equation. The presence of multicollinearity among the variables will cause the standard errors of the coefficients to be overestimated, and will lead to indeterminacy of the estimates.

Further, in spite of the relatively good fit of the data as measured by the coefficient of determination, "t-tests" on the seven individual variables revealed that few were significantly associated with the dependent variable in the original formulation of

---

the equation; only $X_4$ and $X_6$ were significant at the five per cent level, while $X_1$ and $X_7$ approached significance only between the 10 and 20 per cent levels.

In an attempt to improve the association of dependent and independent variables and to reduce the effects of multicollinearity, the regression was recomputed after deleting $X_2$, $X_3$, and $X_q$, the weakest explanatory terms. The new equation displayed a marked improvement in the significance of the retained variables, while the coefficient of determination was reduced only from 0.947 to 0.891. This procedure generated the following Cobb-Douglas production function in logarithmic form

$$ \log Y = 1.563 + 0.303 \log X_1 + 0.115 \log X_4 + 0.641 \log X_6 - 0.103 \log X_7 $$

$$(0.187) \quad (0.061) \quad (0.173) \quad (0.055)$$

**TABLE 8**

**COEFFICIENTS OF SIMPLE CORRELATION**

<table>
<thead>
<tr>
<th></th>
<th>Y</th>
<th>X1</th>
<th>X2</th>
<th>X3</th>
<th>X4</th>
<th>X5</th>
<th>X6</th>
<th>X7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Y</td>
<td>1.00</td>
<td>0.88</td>
<td>0.80</td>
<td>0.41</td>
<td>0.84</td>
<td>0.09</td>
<td>0.87</td>
<td>0.45</td>
</tr>
<tr>
<td>X1</td>
<td></td>
<td>1.00</td>
<td>0.88</td>
<td>0.34</td>
<td>0.89</td>
<td>0.13</td>
<td>0.73</td>
<td>0.61</td>
</tr>
<tr>
<td>X2</td>
<td></td>
<td></td>
<td>1.00</td>
<td>0.26</td>
<td>0.83</td>
<td>0.01</td>
<td>0.78</td>
<td>0.72</td>
</tr>
<tr>
<td>X3</td>
<td></td>
<td></td>
<td></td>
<td>1.00</td>
<td>0.42</td>
<td>0.62</td>
<td>0.49</td>
<td>-0.08</td>
</tr>
<tr>
<td>X4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1.00</td>
<td>0.13</td>
<td>0.67</td>
<td>0.67</td>
</tr>
<tr>
<td>X5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1.00</td>
<td>0.21</td>
<td>-0.04</td>
</tr>
<tr>
<td>X6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1.00</td>
<td>0.46</td>
</tr>
<tr>
<td>X7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1.00</td>
</tr>
</tbody>
</table>
where the standard errors are given in parentheses below each coefficient. The calculations and results from this production function are summarized in Table 9.11

The production elasticities indicate the expected percentage increase or decrease in the value of agricultural production that would be generated by a one per cent increase or decrease in the application of each resource, other input levels being held constant. For example, the figures suggest that a one per cent increase in the provision of agricultural credit would boost the value of agricultural production by 0.64 per cent, if all other resource levels were maintained. Similarly, a decrease of one per cent in the number of non-mechanized farms would raise the value of agricultural output by 0.10 per cent; such farms are primarily subsistence operations which use a large share of agricultural resources, but which contribute little, if any, to marketed agricultural output.

The sum of the production elasticities would provide an indication of the nature of returns to scale for Colombian agriculture, if it could be assumed that no relevant inputs had been omitted from the production function. Since, by design, this is not the case with the above function, no conclusions can be drawn from it regarding the character of scale returns.

11 In a regression equation constructed from cross-sectional data, there is unlikely to be serial correlation of the error term unless the samples from which the data are taken have some natural one-dimensional order. Therefore a test for autocorrelation, such as the Durbin-Watson d statistic, is not necessary for the equation estimated here. See Carl F. Christ, Econometric Models and Methods (New York: John Wiley and Sons, 1966), pp. 522, 527.
### TABLE 9

RESULTS OF A COBB-DOUGLAS PRODUCTION FUNCTION
FOR COLOMBIAN AGRICULTURE

<table>
<thead>
<tr>
<th>Production elasticities:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Land</td>
<td>0.303</td>
</tr>
<tr>
<td>Fertilizer</td>
<td>0.115</td>
</tr>
<tr>
<td>Credit</td>
<td>0.641</td>
</tr>
<tr>
<td>Non-mechanized farms</td>
<td>-0.103</td>
</tr>
<tr>
<td>Sum of elasticities</td>
<td>0.956</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sample means:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Output</td>
<td>198,690 (thousands of $)</td>
</tr>
<tr>
<td>Land</td>
<td>214,464 (hectares)</td>
</tr>
<tr>
<td>Fertilizer</td>
<td>4,840 (metric tons)</td>
</tr>
<tr>
<td>Credit</td>
<td>45,922 (thousands of $)</td>
</tr>
<tr>
<td>Non-mechanized farms</td>
<td>9,714 (number)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Average products:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Land</td>
<td>926.45 ($ per hectare)</td>
</tr>
<tr>
<td>Fertilizer</td>
<td>41,051.65 ($ per ton)</td>
</tr>
<tr>
<td>Credit</td>
<td>4.33 ($ per $)</td>
</tr>
<tr>
<td>Non-mechanized farms</td>
<td>20,453.98 ($ per farm)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Marginal products:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Land</td>
<td>279.00 ($ per hectare)</td>
</tr>
<tr>
<td>Fertilizer</td>
<td>4,693.00 ($ per ton)</td>
</tr>
<tr>
<td>Credit</td>
<td>2.76 ($ per $)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Opportunity costs:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Land</td>
<td>250.00 ($ per hectare)</td>
</tr>
<tr>
<td>Fertilizer</td>
<td>930.00 ($ per ton)</td>
</tr>
<tr>
<td>Credit</td>
<td>1.07 ($ per $)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Marginal return to opportunity cost ratios:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Land</td>
<td>1.116</td>
</tr>
<tr>
<td>Fertilizer</td>
<td>5.046</td>
</tr>
<tr>
<td>Credit</td>
<td>2.579</td>
</tr>
</tbody>
</table>
The sample means are in each case the geometric means of the dependent and independent variables, and these are used to evaluate the average and marginal products of each input. The average product of each resource is given by the mean output divided by the mean input of the appropriate resource. It should be noted that the obtained average includes the output return to all resources, and not just the return attributable to the individual resource. On the other hand, the marginal products indicate the expected increase in the value of agricultural output that would be forthcoming from the use of an additional unit of each input, the level of every other input remaining constant.

The opportunity cost of each resource, for want of a better measure, is taken to be the average market price that prevailed for the resource during the year to which the production function refers. The average market price of land is figured as the annual cost of renting one hectare of farmland. In several estimates of agricultural production costs in 1960, the Caja Agraria calculated rents somewhere between $150 and $350 per hectare, with an average of about $250. Similarly, in the study of the Río Suarez Basin referred to earlier, the investigators found rents varying between $320 and $500 per fanegada, or about $205 and $320 per hectare. Thus a figure of $250 per hectare seems to be a reasonably good estimate of land rent.

\[ ^{12} \text{Caja Agraria, Carta Agraria, Annex to No. 163, June, 1965, pp. 1-4.} \]

\[ ^{13} \text{Rey Carmona, Estudio Agroeconómico, p. 88.} \]
The average price of fertilizer, in 1960, has been more accurately measured at $930 per metric ton.\textsuperscript{14}

The opportunity cost of a peso of credit has been taken as one peso plus the annual interest charge. But since the interest rate varies principally with the term of the loan, the figure of seven per cent represents an average interest rate, weighted according to the maturity structure of the Caja Agraria's loans.\textsuperscript{15}

The ratios of marginal products to opportunity costs provide a measure, within the statistical reliability of the data, of the efficiency of resource use prevailing in Colombian agriculture. A ratio greater than one would indicate that, given the resource price and the level at which other inputs are being used, too little of the resource in question is being employed. A ratio less than one would indicate the overemployment of a particular resource. Maximum efficiency in production would occur when all marginal product to opportunity cost ratios are equal to one, that is, when the addition to the value of total output resulting from the use of an additional unit of a resource is just equal to the unit cost of that resource.

Resource Adjustments in Colombian Agriculture

The results of the production function for Colombia suggest, firstly, that agricultural output could be increased by an expansion


\textsuperscript{15}Above, p. 53.
of land use. Specifically, the findings indicate that each additional hectare of land brought into crop production would add $279 to the value of agricultural output. According to Atkinson, most of Colombia's increase in crop production in the past decade is attributable to increased acreage in cultivation.\(^{16}\) The results here indicate that there still remains the possibility for further expansion along these lines.

From the standpoint of resource productivity, however, a more significant increase in output would be forthcoming from an increased use of chemical fertilizers in Colombian agriculture, where each additional ton of fertilizer would add approximately $4,700 to the value of total output. The productivity potential of fertilizer is confirmed by Atkinson's findings of the decline in agricultural productivity in recent years, largely as a result of the reduced rate of fertilizer application.\(^{17}\)

But while an increase in fertilizer treatment would add enormous benefits to Colombian agricultural output, there are some difficulties in an expansion of its use. For one thing, domestic production of fertilizers, although increasing, has not kept up with domestic consumption. For example, in the years 1962-63 and 1963-64, the nation used 40,000 and 55,000 metric tons of fertilizer, respectively, while producing only 10,000 and 25,000 tons.\(^{18}\) The differences had to be imported, thereby contributing to Colombia's foreign exchange problems. In addition, the market price of fertilizer conceals the

\(^{16}\text{Atkinson, Agricultural Production and Technology, p. 3.}\)

\(^{17}\text{Ibid., p. 19.}\)

\(^{18}\text{United Nations, Food and Agriculture Organization, Fertilizers: An Annual Review of World Production, Consumption, and Trade, 1964, pp. 93, 97.}\)
full cost of expanding fertilizer use; such expansion would require much more widespread storage and distribution facilities than are now provided by private dealers in Colombia.

A more extensive provision of agricultural credit would also augment agricultural output, yet would entail none of these difficulties. Each additional peso of credit, the data suggests, could generate $2.76 in additional output at an interest cost of only seven per cent. In addition, well-staffed credit facilities are now in operation in all agricultural regions of the country.

Moreover, while credit is in itself productive, it might be used to influence the other needed resource adjustments in Colombian agriculture. A credit program could be designed to encourage the purchase or rental of additional agricultural lands. Similarly, a lending program could foster the greater use of fertilizers by making this a requirement for a loan, although domestic production of fertilizers would, of course, have to be increased concomitantly. It should be noted, too, that most rural credit offices of the Caja Agraria are associated with storehouses and other facilities of the Department of Agricultural Supplies, and that these could be used to widen the distribution of fertilizers and related equipment.

Finally, the agricultural credit program could further the mechanization of farm operations in Colombia, the lack of which, Atkinson notes, is yet another reason for the failure of agricultural productivity to rise.\(^\text{19}\) Using the production function data on the number of farms employing animal power as a proxy variable representing the degree of mechanization, it can be inferred from the negative

---

\(^{19}\) Atkinson, *Agricultural Production and Technology*, p. 18.
relationship between this variable and output that agricultural production would be improved by a reduction in this kind of farming. A properly structured agricultural credit program could be an indispensable aid in the conversion of subsistence farms to more mechanized operations producing marketable surpluses.
CHAPTER VI

SUMMARY AND CONCLUSIONS

It has been the purpose of this thesis to investigate the role of the agricultural sector in Colombia's economic development and, more specifically, to examine the actual and potential contribution of the nation's agricultural credit system to an enhancement of that role. After a brief introduction in which the main features of Colombian agriculture were outlined, this thesis considered the theoretical case for the supportive position of agriculture in the process of development. An examination of the literature on two-sector models of development revealed a general agreement on the crucial importance of the agrarian sector, and an expression of caution against its neglect in any planned economic expansion.

This thesis then argued that a fundamental requisite for insuring the agricultural sector's support of industrial growth was a smoothly functioning, well-planned system of agricultural credit. Chapter III investigated the historical development of institutions of agricultural credit in Colombia, a process culminating in the emergence of the Caja Agraria as the country's leading source of agricultural funds. This was followed by an outline of the present organization of the Caja Agraria and a review of its current credit and credit-related activities.
Chapter IV continued with an inspection of the lending patterns of the Caja Agraria, where loans were classified by various criteria, especially by size, maturity, and recipient. This analysis revealed that the Caja Agraria's lending activities have not been especially effective in meeting the credit needs of the small-scale subsistence farmers who comprise the bulk of Colombia's rural population.

Finally, in an attempt to probe the reasons for the generally poor performance of Colombian agriculture in recent years, Chapter V investigated the productivity of some primary agricultural inputs. Using calculations from a fitted Cobb-Douglas production function, the quantitative relationship between selected agricultural resources and Colombian crop output was determined. It was shown that certain inputs, notably land, fertilizer, and credit, were key variables in agricultural production, and that these must figure prominently in any program designed to improve Colombia's agrarian structure.

Credit Adjustments in Colombian Agriculture

Colombia has, in the Caja Agraria, a unique institution of agricultural credit. As a quasi-autonomous agency, it is unfettered by strong ties to changing national administrations.\(^1\) The freedom has permitted the Caja Agraria to engage in long-run planning and, in

\(^1\)Strictly speaking, an "autonomous agency" in Colombia is a legal entity with administrative autonomy and independent financial resources, created for the provision of a particular public service. But in the sense that the Caja Agraria is not required to submit its budget to the Ministry of Finance, as other agencies are, it enjoys even greater independence. See Joint Tax Program, *Fiscal Survey*, p. 229.
many instances, to carry out its plans. Moreover, unlike the Ministry of Agriculture which has in the past appeared to be dominated by cattle and coffee interests, the Caja Agraria has been in a position to be much more responsive to the needs of the subsistence-level crop producer.

For these reasons, the Caja Agraria can point to an impressive list of successes. In the four decades since its inception, its total capital has grown to more than $600 million and it has granted more than $12 million in agricultural loans. Testifying to the judiciousness of its lending operations, defaults on loans over the lifetime of the institution have averaged out to a mere 0.01 per cent, or only 10 centavos per thousand pesos loaned.2

The Caja Agraria is also primarily responsible for the mechanization of Colombian agriculture, especially that accomplished in the early 1960's. In 1960 alone, for example, the Caja Agraria imported 52 per cent of all tractors brought into the country. These were sold, on credit, through its 400 agricultural supply stores located in the major farming areas of the nation. Moreover, these mechanization activities are an important stimulus to domestic industry; the Caja Agraria purchased more than $100 million of manufactured agricultural supplies from Colombian firms in 1966 alone.3

In addition, the Caja Agraria has been an important element in the limited successes of the Colombian Agrarian Reform of 1961.

---

Through its related agency, INCORA, it has been indirectly involved in the distribution of land and the granting of land titles. More directly, the Caja Agraria itself supplies much of the production credit to the newly settled farmers, thereby insuring the secure tenure in land which is basic to any successful agrarian reform.

Yet, along with these achievements, there have been serious deficiencies in the Caja Agraria's provision and allocation of agricultural credit. These stem, in large part, from agricultural credit policy in Colombia being a typical product of the Latin American "style" in policymaking, with the attendant problems of duplication and inefficiency.

For example, the Caja Agraria persists in emphasizing loans to cattle ranchers and coffee producers. At best, this emphasis represents a duplication of efforts in that these activities receive ample credit services from their own credit institutions--the Banco Ganadero and the Banco Cafetero--and from the loan desks of commercial banks. At worst, this perpetuates inefficiency in agricultural production, for livestock accounts for only a third of the value of agricultural production while occupying 90 per cent of the agricultural lands; as for coffee, there is clearly a need to transform the nation's traditional position as a one-crop economy subject to the vagaries of the international market.

By focusing its efforts on cattle and coffee production, the Caja Agraria has not used its credit resources sufficiently to encourage the expanded production of rice, wheat, beans, cocoa, and cotton. As a consequence, the nation is rapidly moving from a net exporter to a net importer of these items. Similarly, greater efforts
are required to foster the production of corn, sugar, and potatoes, items in which future export opportunities appear to be good.

The Caja Agraria should also consider charging somewhat higher rates of interest on its loans. In recent years, these rates have been considerably below the average annual rate of inflation in Colombia, thus yielding a negative real rate of return on agricultural lending. While there may be cogent justifications for subsidizing the agricultural sector in the initial stages of development, a subsiary through low interest rates poses the serious danger of eroding the limited financial resources of the Caja Agraria. In addition, the present interest rate policy may lead to the uneconomical use of credit by individuals and firms that have easy access to credit at low, established rates. Finally, the existing low rates on agricultural loans may encourage the practice of borrowing larger than needed amounts ostensibly for productive purposes, thereby freeing the farmers' own funds for additional consumption expenditures.

The Caja Agraria must also use its credit power to enlarge and improve agricultural inputs. Far more credit must be made available to increase the amount of land in crop production, either through rental or purchase. In recent years, for example, only about two per cent of the Caja Agraria's loans have been used for the acquisition of new agricultural lands. Moreover, the Caja

---

Agricultural cooperation could improve the efficiency of land currently in use if it were to encourage consolidation loans to overcome the fragmentation of property holdings, now a serious and growing problem in Colombia.

Other agricultural inputs which especially need credit incentives to be increased include fertilizers and irrigation facilities. The production and use of fertilizer in Colombia have tapered off to a dangerously low level. Cropland irrigation has never been greatly encouraged in Colombia, especially by the state; by 1964 the nation had under 150,000 irrigated hectares of farmland, of which only 25,000 hectares were attributable to governmental initiative.5

In addition to the above credit reallocations by type of activity and by inputs, the Caja Agraria must also reconsider its lending program in terms of the recipients of its loans. Despite the growth of its credit activities, the fact remains that only about 15 per cent of farm families in Colombia utilize official sources of agricultural credit. And of these, those who do receive loans are usually property owners engaged in coffee or cattle production. The Caja Agraria has unwittingly fostered this problem by its inordinate emphasis on property mortgages as collateral for its loans.6

But a mere shift to more liberal policies toward loan guarantees will not alone solve the problem of inducing peasant farmers to utilize available credit; a heightened campaign of education in the use of credit is needed. The Caja Agraria actually attempted such a campaign in its pilot project of supervised loans, initiated in 1961. These


6 See above, Chapter IV, Table 3.
"training loans" proved to be extremely costly, however, and administrative difficulties prevented the program from reaching more than a handful of farmers.

In view of the factors behind the peasants' reluctance to borrow—the mistrust of governmental institutions, the impersonality of official transactions, and the dislike of paperwork—education in the use of credit might be more fruitfully approached through the sponsorship of credit cooperatives at the local level, with the Caja Agraria supplying loan funds, training, and technical assistance. A cooperative loan program, administered by the farmers themselves, would make use of the peasants' proclivity to view credit obligations as social relationships, would eliminate much of the paperwork for the individual farmer, and might have important "demonstration effects" on those farmers who initially chose to remain outside the cooperative. In addition, there is no reason to believe that a credit program administered through cooperatives could not achieve the broader credit and production goals outlined above.

In order to accomplish the broader structural changes in Colombian agriculture, however, the supply of funds to agriculture will eventually have to be increased. This aspect of the problem lies in the hands of the national government than with the Caja Agraria itself. Nevertheless, the Caja Agraria could possibly generate more funds by encouraging rural savings wherever possible; this might be accomplished by giving preferential loan treatment and reduced interest rates to farmers who maintain savings accounts in the Caja Agraria's savings branch, the Caja Colombiana de Ahorros, or by similar preferences
to individual farmers or cooperatives for investing increased incomes in real capital.

At the national level, there is a clear need for increased budget allocations to agencies of agricultural credit, and especially to the Caja Agraria, thereby channeling a greater proportion of public savings into agriculture. This increased allocation might possibly be financed by higher marketing taxes on coffee and livestock, and by augmenting—and collecting—the land taxes on large, underutilized estates.

More private savings could easily be directed into agriculture (via commercial banks) by a modification of Law 26 of 1959. At the present time, this law requires that commercial banks make a minimum of 15 per cent of the total value of their loans available to agriculture, although in recent years banks have chosen to grant as much as 27 per cent. Thus the minimum requirement could reasonably be increased to 30 or 35 per cent without causing undue dislocations. Also, the possibility should be explored of broadening Law 26 to include insurance companies and other financial institutions.

Finally, the Colombian government has not been particularly aggressive in seeking international financial assistance for agriculture. For example, in the period 1958 to 1962, total foreign assistance to Colombia exceeded U.S. $590 million, and of this amount only U.S. $23 million was specifically designated for agriculture. Given the current willingness of the World Bank and other international agencies to undertake agricultural investments, moreso

---

than formerly, this represents another potential, but limited, source of funds for agricultural improvements in Colombia.

Conclusion

At its base, the problem of economic development is one of capital formation. While it is true that ample resources, extensive markets, and a conducive social and political climate are all permissive factors in development, the fact remains that capital is the fundamental requirement for mobilizing these factors into a sustained level of increased production.

Thus an economy wishing to develop must explore all possible sources of capital formation. Too often, however, developing nations have tended to place excessive emphasis on foreign sources of capital. External aid may sometimes ease the process of capital formation, but the successful cases of development are those where reliable domestic sources of capital have been found. As Nurkse has emphasized: "... it all boils down to this: capital is made at home." 8

For many of the underdeveloped countries, the agricultural sector represents a largely untapped source of domestic capital. Specifically, improvements in agricultural production can contribute to a nation's capital formation in the following ways: (1) an increased agricultural output can lead to lower prices relative to industry, thereby stimulating industrial profits, saving, and investment; (2) rising incomes in agriculture may be channeled into investment in

---

industrial activities; and (3) a prospering agriculture may form its own capital directly, easing the farm sector's demand for capital from other areas of the economy.

Central to these contributions, however, is the implicit assumption that there will be adequate sources of finance for the expansion of agricultural production, and for the transfer of capital. Edward Nevin has observed that well-developed credit institutions, assuring a high and consistent flow of finance funds, are a minimal necessity for capital mobilization. In Nevin's words:

The flow of credit, in adequate amounts and in a logical pattern of distribution, is only one of the many vital links between, on the one hand, growth and development in the economy and, on the other hand, the activities of individual private citizens. Like all links in a chain, this particular link cannot be regarded as having superior importance in relation to any other. As with any other chain, however, a particular link in the chain of economic relationships cannot be neglected if a community is to be lifted from a state of underdevelopment to—ultimately—a high and expanding level of output through which its welfare is raised to the highest level attainable with the human and material resources with which it is endowed.9

For the Caja Agraria, there remains the challenge of providing the link between Colombia's abundant resources and its potential level of economic development.

## APPENDIX

### AGRICULTURAL DATA USED FOR ESTIMATION OF COBB-DOUGLAS PRODUCTION FUNCTION

<table>
<thead>
<tr>
<th>Department</th>
<th>Value of Crop Production (Thousands of Pesos)</th>
<th>Hectares in Crop Production</th>
<th>Farm Population</th>
<th>Fertilizer Consumption (Tons)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Antioquia</td>
<td>454,890</td>
<td>498,499</td>
<td>964,710</td>
<td>13,200</td>
</tr>
<tr>
<td>Atlántico</td>
<td>26,991</td>
<td>19,008</td>
<td>23,829</td>
<td>300</td>
</tr>
<tr>
<td>Bolívar</td>
<td>124,910</td>
<td>114,489</td>
<td>304,091</td>
<td>45,400</td>
</tr>
<tr>
<td>Boyacá</td>
<td>270,910</td>
<td>295,530</td>
<td>755,404</td>
<td>12,350</td>
</tr>
<tr>
<td>Caldas</td>
<td>609,216</td>
<td>549,230</td>
<td>530,229</td>
<td>1,600</td>
</tr>
<tr>
<td>Cauca</td>
<td>77,561</td>
<td>249,883</td>
<td>368,748</td>
<td>2,200</td>
</tr>
<tr>
<td>Córdoba</td>
<td>165,775</td>
<td>82,651</td>
<td>311,255</td>
<td>41,300</td>
</tr>
<tr>
<td>Cundinamarca</td>
<td>448,132</td>
<td>392,434</td>
<td>760,798</td>
<td>4,300</td>
</tr>
<tr>
<td>Huila</td>
<td>168,473</td>
<td>157,590</td>
<td>189,073</td>
<td>16,100</td>
</tr>
<tr>
<td>Magdalena</td>
<td>196,820</td>
<td>239,737</td>
<td>318,148</td>
<td>2,100</td>
</tr>
<tr>
<td>Meta</td>
<td>104,294</td>
<td>84,195</td>
<td>84,749</td>
<td>23,400</td>
</tr>
<tr>
<td>Nariño</td>
<td>167,764</td>
<td>251,706</td>
<td>431,017</td>
<td>23,400</td>
</tr>
<tr>
<td>Santander</td>
<td>175,920</td>
<td>334,530</td>
<td>503,121</td>
<td>9,150</td>
</tr>
<tr>
<td>N. de Santander</td>
<td>179,170</td>
<td>240,775</td>
<td>235,497</td>
<td>7,900</td>
</tr>
<tr>
<td>Tolima</td>
<td>550,253</td>
<td>471,516</td>
<td>406,778</td>
<td>22,850</td>
</tr>
<tr>
<td>Valle</td>
<td>402,042</td>
<td>461,692</td>
<td>367,994</td>
<td>50,000</td>
</tr>
</tbody>
</table>
### APPENDIX—Continued

<table>
<thead>
<tr>
<th>Department</th>
<th>Hectares</th>
<th>Value of Agricultural Loans (Thousands of Pesos)</th>
<th>Number of Tractors</th>
<th>Number of Farms Using Animal Power</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Irrigated and</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Drained</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Antioquia</td>
<td>-</td>
<td>79,576</td>
<td>165</td>
<td>32,085</td>
</tr>
<tr>
<td>Atlántico</td>
<td>1,000</td>
<td>14,186</td>
<td>149</td>
<td>157</td>
</tr>
<tr>
<td>Bolívar</td>
<td>-</td>
<td>50,902</td>
<td>798</td>
<td>1,616</td>
</tr>
<tr>
<td>Boyacá</td>
<td>16,000</td>
<td>69,121</td>
<td>472</td>
<td>121,408</td>
</tr>
<tr>
<td>Caldas</td>
<td>-</td>
<td>64,877</td>
<td>359</td>
<td>7,103</td>
</tr>
<tr>
<td>Cauca</td>
<td>10,000</td>
<td>23,374</td>
<td>622</td>
<td>30,694</td>
</tr>
<tr>
<td>Córdoba</td>
<td>-</td>
<td>42,828</td>
<td>645</td>
<td>5,733</td>
</tr>
<tr>
<td>Cundinamarca</td>
<td>14,000</td>
<td>133,540</td>
<td>1,599</td>
<td>65,585</td>
</tr>
<tr>
<td>Huila</td>
<td>10,000</td>
<td>42,607</td>
<td>511</td>
<td>17,608</td>
</tr>
<tr>
<td>Magdalena</td>
<td>15,000</td>
<td>42,624</td>
<td>1,303</td>
<td>2,379</td>
</tr>
<tr>
<td>Meta</td>
<td>-</td>
<td>22,617</td>
<td>499</td>
<td>6,432</td>
</tr>
<tr>
<td>Nariño</td>
<td>-</td>
<td>26,725</td>
<td>266</td>
<td>33,875</td>
</tr>
<tr>
<td>Santander</td>
<td>-</td>
<td>63,879</td>
<td>280</td>
<td>45,048</td>
</tr>
<tr>
<td>N. de Santander</td>
<td>-</td>
<td>27,750</td>
<td>187</td>
<td>14,401</td>
</tr>
<tr>
<td>Tolima</td>
<td>45,000</td>
<td>95,814</td>
<td>2,203</td>
<td>12,901</td>
</tr>
<tr>
<td>Valle</td>
<td>50,000</td>
<td>60,951</td>
<td>3,080</td>
<td>1,015</td>
</tr>
</tbody>
</table>

Sources of data are noted in Chapter V of the text.
SELECTED BIBLIOGRAPHY

Books


Hoerger, William G. Colombian Agricultural Credit--1965: The Caja Agraria, the Banking System and INCONA. Colombus Ohio: Agricultural Finance Center, Ohio State University, 1966.


Articles


Feder, Ernest, and Daniels, E. F. "Credito Controlado, Supervisado y Cooperativo." Economia Grancolombiana, VI (n.d.) 182-96.


Public Documents


VITA

William S. Becker was born on December 24, 1935 in New Orleans, Louisiana. He attended high schools in that city, and did undergraduate work in chemistry at Tulane University.

From 1957 to 1960, and from 1961 to 1962, he served in the U. S. Army, first as a Russian translator and cryptanalyst in Germany, then as a military intelligence specialist at Fort Hood, Texas. Intermittently, he attended Louisiana State University, receiving the B. A. in economics in 1961 and the M. A. in 1964.

He held a fellowship in the Department of Latin American Studies at Vanderbilt University from 1963 to 1965. From 1965 to 1968 he was Assistant Professor of Economics at the College of Charleston, Charleston, South Carolina. During this time he was also engaged in research activities in Colombia and in Mexico.

In September, 1968 he re-entered Louisiana State University, and was a teaching assistant in the Department of Economics from September, 1968 to May, 1970. He is now a candidate for the degree of Doctor of Philosophy at the August Commencement.
Candidate: William S. Becker

Major Field: Economics

Title of Thesis: Agricultural Credit in Colombia's Economic Development

Approved:

[Signatures]
Major Professor and Chairman
Dean of the Graduate School

EXAMINING COMMITTEE:

[Signatures]
Thomas R. Beard
R. A. Hammann
William G. Haag
William F. Campbell

Date of Examination:

July 15, 1970