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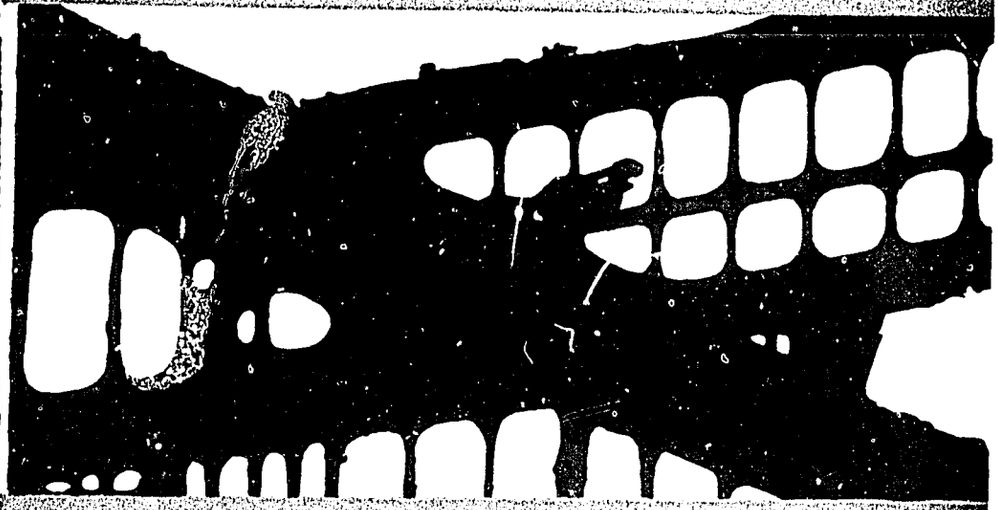

The CVC: Challenge to Underdevelopment and Traditionalism

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THE CVC

Challenge to Underdevelopment and Traditionalism

To the memory of
Ciro Molina-Garcés, philosopher,
dreamer, and man of action to whom
the CVC owes so much.

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THE CVC

Challenge to Underdevelopment and Traditionalism

by

Antonio J. Posada F.

and

Jeanne Anderson Posada

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I

Introduction

On October 22, 1964, the tenth anniversary of the founding of the Autonomous Regional Corporation of the Cauca Valley (CVC) was celebrated. This decentralized, administratively autonomous agency, established for the purpose of promoting the unified development of the natural resources of the Upper Cauca River Valley in Colombia, was a type of organization entirely new to the experience of the country. The occasion of this anniversary brought with it a natural desire to take stock of accomplishments, to re-evaluate purposes and goals, and to attempt an analysis of the impact of this decade of administrative experience upon the economic, political, administrative, and social institutions of the Cauca Valley and Colombia. With this objective in mind, the Land Tenure Center of the University of Wisconsin, supported by the Agency for International Development of the United States (AID), expressed an interest in a detailed study of this important Colombian regional organization in order to determine (1) the effectiveness of this type of agency as an instrument of social change, particularly with respect to changes in land tenure and land use as they affect agricultural and livestock production; (2) the degree to which this experience might be offered as a model for other regions in the process of development, in Colombia, as well as in other countries of Latin America; and (3) the pitfalls which might possibly be avoided by others attempting the same task, together with explanations provided by CVC experience for the obstacles. The CVC considered this interest on the part of North American research agencies fully justified, and offered to provide to the Land Tenure Center and its staff all the information and cooperation necessary for the completion of this study. This work is the result of these cooperative efforts.

Throughout this research attention was concentrated on the search for answers to questions such as: What special combination of political, economic, social and physical factors indicated the need for a Colombian TVA? What individuals played a special role in foreseeing this need and what means did they use in attaining their objective? How was approval of a modern, decentralized authority achieved within a centralist unitary government structure and in a region whose social order is still characterized as largely traditional? What combination of special interests were responsible for the delay in the initiation of projects under this unified

plan and how were they neutralized? What has been the value of the CVC as an instrument for promoting social and economic development, for stimulating "grass roots" cooperation — an ideology which on Colombian soil became translated as "acción comunal", or community action — and for strengthening local government achievements? To what extent has the CVC correctly analyzed and met the key problems of the region? Has it been successful in achieving general recognition as a promoter of general welfare? What are the specific accomplishments for which the CVC has been directly responsible and what new administrative procedures and economic and social processes, such as changes in land tenure and land use patterns, has it generated? How was the Corporation able to finance its varied and ambitious projects? What is the degree of present acceptance of the CVC pattern of action, and what are its future prospects?

In the chapters that follow, the authors feel that they have suggested answers to these and other questions through an analysis of (a) the economic, social, political, and physical conditions of Colombia, and the Cauca Valley in particular (Chapter II), and of (b) the process of creation, functioning, and work methods of the CVC and the resistances which it has had to overcome (Chapter III); of a relatively detailed description of (c) the CVC plans and programs (Chapter IV) and its accomplishments toward these goals (Chapter V); of (d) a historical-analytical recount of its financial tribulations and uncertainties (Chapter VI); and of (e) a discussion of the internal organizational scheme of the Corporation (Chapter VII). Finally, a summary analysis and evaluation of (f) the results which in their judgment are revealed by the matters discussed in the preceding chapters (Chapter VIII).

While not underestimating the value and importance of the aid and encouragement provided the CVC by foreign technical assistance experts, especially David E. Lilienthal, who gave so generously of his knowledge and experience for a long period and at times without remuneration, we wish to emphasize here the crucial variable of the presence of an indigenous modernizing elite who served as the initiators and counterpart in a cooperative enterprise. It is only this all-important counterpart to the team, we believe, which makes for the success of initiated cultural and economic change and development. There are innumerable instances throughout Latin America, Asia, and Africa, of development plans just as functional and well-structured, designed for physical environments no more hostile than the tropics and rugged topography of Colombia, but which, nevertheless, were stillborn. Why the CVC in Colombia developed with reasonable success, while other regional development plans remained locked away in the file drawers of bureaucrats, is the theme of this study.

In addition to the wealth of material which is now available on the TVA and other foreign regional development projects, and of general theoretical works on unified regional planning and administration, all of

the general and specialized studies of Colombia and the Cauca Valley available were consulted. Especially valuable were the numerous reports, memoranda, minutes of Board meetings, correspondence, and internal documents of the CVC, which facilitated access to these materials without restriction to the authors. Further, the life-long experience and personal involvement of one of the authors with the Valley region, its key innovators, and its problems, together with his employment by the CVC either directly or in a consultant capacity, throughout almost its entire decade of existence, has been of great help in achieving insights and evaluation of the special problems which the CVC has had to confront.

The authors also wish at this time to give credit and acknowledgement to persons and agencies that have specially contributed to making this study possible. First and foremost, the Land Tenure Center of the University of Wisconsin, particularly Professors Raymond Penn and Jacob Beuscher, who made possible the time and freedom from pressure necessary for this study and provided much encouragement and stimulation. The authors are extremely grateful to Bernardo Garcés Córdoba, Executive Director of the CVC from its inception, for his generous provision of access to materials and for his helpful advice and suggestions. Rafael Pino, Chief of the Fiscal Division of the CVC, has collaborated in the preparation of special tables needed. Dr. Luigi Laurenti, economist of the International Bank for Reconstruction and Development assigned to CVC, Emilio Palacín, Head of the CVC Extension Service, and Francisco Montoya, Farm Management consultant of FAO assigned to CVC, have also been most helpful in providing materials and comments in their respective fields. David E. Lilienthal, former Director of TVA and consultant to the CVC during its "difficult years", and Professor Emeritus John Merriman Gaus of Harvard University, were most generous in offering valuable suggestions and criticisms of drafts of the manuscript. Finally, gratitude is expressed for the faithful help of Miss Elvia Gutiérrez, research assistant, and Miss Beatriz Durango, bi-lingual typist. Full responsibility for the contents of this work, however, including whatever shortcomings and errors it may contain, rest with the authors.

Cali, September 1964.

II
Transitional Colombia: The Background

To explain the emergence and prospects and evaluate the impact of such progressive, enlightened institutions for unified resource development as the CVC is difficult without first placing it in its environmental context —a Latin American country in the process of violent change and upheaval, where the forces of traditionalism and modernism are doing constant battle, were development is often grotesquely uneven, and where institutions are undergoing grave stresses and strains, with precarious commitment to democratic procedures.

This chapter will describe the economic, social, and political conditions of Colombia, and particularly those of the Cauca River Valley. It is an environment with a balance that is physically favorable to development, but in general institutionally unfavorable. The final creation of the CVC in fact took place during one of Colombia's most critical periods, during a military dictatorship which had followed a period of nascent civil war. Social problems then, as now, were explosive; the governing institutions traditionally centralist and often authoritarian; and consensus and participation favoring democracy very limited. Yet the physical and social resources of the Cauca River Valley promised much. In evaluating the progress and development of the CVC, therefore, it is hoped that it will be possible to provide some evidence as to whether the forces for change, development, and democracy, or those of retrogression, stagnation, and dictatorship are more likely to triumph in Colombia; to indicate what new configuration or special combination of the political, economic, and social factors in Colombia may be shaping the broad outlines of the future directions of its development; and finally, to discover what lessons can be learned from the experience and problems of this transitional society which might be applied in other developing areas.

It is more appropriate, perhaps, to use experience of a contemporary developing nation such as Colombia, to discover these lessons, than that of the already industrialized nations: For while the developmental experience of the latter may be extremely valuable for understanding the general process of industrialization, by no means can one suppose that those nations which face problems of technological and social development today can, even if they would wish to, follow precisely the same methods or chronological order and achieve the same results. Even though the social

problems accompanying industrial and agricultural development may be similar, political, economic and social conditions in the developing nations of today are very different from those that Britain and the United States faced during the comparable early transitional stages of their industrialization process. In addition to vastly different political and cultural heritages, the pressure for, and often the pace of change and adjustment today is vastly accelerated. There is no time for the gradual, pragmatic, and individualistic solutions employed successfully before. Demands upon public institutions are far greater and more urgent. Communications technology has brought about the worldwide dissemination of knowledge of a standard of living heretofore undreamed of by the masses of the populations. For the first time in history, too, the thought of an economy based upon plenty rather than scarcity becomes a possibility of the near future: a concept which challenges the classical precepts of economics and philosophy. The implications of the revolution of automation for the planning process ought also to be considered, for it may well happen that some of the traditional stages in the industrialization process will be partially skipped in these underdeveloped nations. And at the same time that awareness of these revolutions in thought and tecnnology is being filtered into the less developed world, these countries are in the midst of a population explosion; and both peoples and nations are becoming more numerous and impatient. This makes it ever more difficult to bridge the widening gap between these industrially and institutionally underdeveloped countries and the more advanced nations. If that gap is ever to be closed, without recourse to violent revolution, new and imaginative approaches and methods will be required, based on careful planning, on a vast scale and using all the public and private, human, cultural, and material resources available.

It is to their credit that a number of farsighted leaders in some of the developing nations have realized this need for unified planning and have made beginnings in that direction. The story of the creation and development of the CVC in Colombia is the study of such beginnings in one beautiful fertile subtropical valley.

Unfortunately, it is not merely the physical endowment of a country that determines growth or stagnation, however rich in resources and favorable climate that country may be, but rather how and what use man makes of these advantages. While the physical environment of a nation is an important initial determinant in predisposing the general direction of man's development, of far greater importance is the cultural environment —that combination of ways of living, habits, social institutions, and values— in achieving the interdependent objetives of successful, efficient adaptation and utilization of resources, an adequate rate of growth, the preservation of freedom, and the fostering of the general welfare. Therefore, both aspects of the Colombian environment will be discussed in this chapter: first, the physical setting; then with greater emphasis and detail, the social variables; and finally the political and institutional history gener-

ated by the factors. The section following will then provide a close up of the Cauca Valley region and the influence of these factors on its development.

A. THE PHYSICAL ENVIRONMENT

1. *Geography and Resources*

Colombia, privileged with coastlines facing both the Caribbean Sea and the Pacific Ocean, is about the size of Texas, or the Iberian Peninsula and France combined. Only the Western third, the rugged, mountainous third, interlaced by high, mild, valleys, has, until very recently, been considered habitable according to Western standards of living, since the country lies squarely in the Equatorial Zone. In spite of its tropical location, however, Colombia enjoys a wide gamut of climates. Yet they are vertical climates, not seasonal ones: *tierra fría*, from 6,000 to 9,000 feet; *tierra templada* from 3,000 to 6,000 feet; and *tierra caliente*, at sea level. Because of this variety of climates and soils and plentiful rainfall, Colombia can produce almost every known variety of fruit, vegetable, grain, fiber crop, and domesticated animal. And mineral, forest, and water power resources are plentiful, well distributed, and varied, but still largely unexploited. The three principal, very high north-south mountain barriers discourage communication and exchange and create isolated areas, fostering intense regionalism. Only in recent years, due to air travel and the late construction of a national highway system, has physical, economic and political integration of the country become an increasing reality.

2. *Population*

a. Rates. The present population of Colombia is about 17½ million, [1] at a growth rate of 3 2 percent per annum, [2] one of the highest in Latin America [3]. The GNP growth rate is, however, only about 4.8 percent per annum (2 percent per capita) [4] creating a progressively deteriorating standard of living. And this deteriorating standard has most seriously affected the middle and lower classes. The gap between the wealthy and

1 Reported in *El Tiempo*, Bogotá, September 28, 1965, p. 1. The complete 1964 Population and Housing Census was taken on July 15, 1964, but it will be sometime before definitive data are available.

2 *Ibid.*, p. 1.

3 And the population of Central and South America is growing *two to three times as fast* as the population of Mainland China. Cf. T. Lynn Smith, "The Growth of Population in Central and South America", *Study of Population and Immigration Problems*. Committee of the Judiciary, U. S. House of Representatives, Washington, D. C. 1963, p. 142.

4 Banco Interamericano de Desarrollo. *Fondo Fiduciario de Progreso Social: Segundo Informe Anual, 1962*. Washington, D. C., 1963, p. 238, based on the estimate of OAS in *Estudio Económico y Social de América Latina*, Washington, D. C., 1961.

the poor grows wider day by day. In 1951, illiteracy was 44 percent. If one also includes functional illiterates (those with one year or less of primary school), the figure jumps to 77 percent [5]. There is every reason to believe that the situation has deteriorated rather than improved since then; for despite rapid school construction, the population has increased even more rapidly.

b. Urban-Rural Distribution. Colombia has always been somewhat different from other countries of Latin America in that its urban population has never been centered about one single major metropolitan area, the capital city. The population is rather evenly dispersed throughout the several high valleys. There are presently five industrial cities with from 500,000 to 1,500,000 population, thirteen more between 100,000 and 500,000, and 25 cities with from 50,000 to 100,000 population [6].

Owing to the rapid pace of industrialization and communications of the past 15 years, plus the flight from the terror and violence which has pervaded the rural areas since 1946, urban centers have swollen to the bursting point, unable to absorb the uprooted peasants into the industrial economy fast enough, unable to solve the resultant social and psychic problems.

For example, Cali, in the center of the rich Cauca River Valley, the principal scene of action for this study, has grown from a small provincial seat of about 30,000 in 1912, to the most rapidly growing industrial and commercial center in Colombia (and second or third in Latin America) with an estimated population of 813,200 in 1964 [7]. Its current combined natural and immigrant population growth rate is a startling 8.3% [8].

It is estimated that the percentage of urban population of Colombia has now surpassed that of the rural population, [9] even though Colombia is still considered an agricultural country in terms of its production and world position as a raw material supplier. This relatively recent process of rapid urbanization has been one of the most striking characteristics of Latin America as a whole during the past decade. But while the cities have sucked in the peasant populations with the centripetal force of a vortex, the migration has not been accompanied by a significant increase in agricultural production, or an even gradual rise in the standard of living, as was the case during the comparable period of urbanization and industrialization in the United States. Rather, it has resulted in the pathological

5 *Semana*, Bogotá, February 17, 1959, cover chart, based on the population census of 1951. Results of the 1964 Population Census are not yet available.

6 *El Tiempo*, Bogotá, April 12, 1964, p. 1. Based on pre-census figures. Also, Banco Interamericano de Desarrollo, *Fondo Fiduciario de Progreso Social: Cuarto Informe Anual, 1964*. Washington, D. C., 1965, p. 232.

7 *El Tiempo*, Bogotá, July 17, 1964, p. 1. Cf. note 1.

8 In general these figures are also corroborated in the following studies: A. J. Posada F. "The Economic Growth of Cali and Medellín" (Mimeograph, CVC, Cali, 1960), p. 2; and Prieto R. and Ortega F. *Colombia: Proyecciones de Población y Métodos Empleados. 1955 - 1975* (Universidad de los Andes, Bogotá, 1961).

9 Banco Interamericano de Desarrollo. *Fondo Fiduciario de Progreso Social, Informe Anual, 1964*, p. 231.

phenomenon, one which is endemic to most of the developing nations of the world today, of disproportionate increase in urban service occupations of a highly inefficient type, characterized by extreme *under*-employment, at the same time that there exists a relatively high level of unemployment. For those underemployed who perform these menial services, this has resulted in a lower standard of living than they enjoyed in the rural areas. This change has produced, as a result, an increasingly deficient tax base, with the increasing incapacity of the urban centers to provide the basic essential services of housing, water supply, sewage, electricity, police, and educational facilities. The social problems that these cities face are of a dimension and complexity unknown during the worst periods of the industrial revolution in the United States.

c. *Land Tenure Pattern.* Of the total land in farms in Colombia, 61 percent of the farms are under 5 hectares and constitute 4.5 percent of this total; and 1.9 percent of the farms are over 200 hectares and occupy 48 percent of the total farm land [10]. Worse than that, 0.2 percent of the landowners possess almost one-fifth of the farm land in units of over 1,000 hectares; and 15 percent of the farms are less than one-half hectare in size. This shows that Colombia suffers from both problems: *minifundio*, or uneconomically small units, and *latifundio*, the excessively large and uncultivated tracts of absentee-owners. Furthermore, the population explosion has aggravated the pressure upon the most fertile lands in the high valleys, where the land is held primarily in large units. *Minifundios* and family-sized farms tend to occupy hilly areas, mountainsides, riverbanks, coastal areas, and as very small garden plots adjacent to the field workers' huts that surround large coffee and sugar plantations.

d. *Racial Composition.* Ethnically Colombia is considered predominantly a mestizo country. An estimate of the tri-ethnic composition of its population is the following: [11]

white	26 percent
mestizo	46 percent
mulatto and zambo	22 percent
negro	4 percent
Indian	2 percent

There are some regional variations with respect to the relative predominance of one or another of the ethnic groups. The ethnic white population (which constitutes primarily the upper and middle classes) is concen-

10 Instituto Colombiano de Reforma Agraria (INCORA): *Informe con Destino a la Comisión Interamericana Económica y Social de la Organización de Estados Americanos sobre los Aspectos Relacionados con los Programas Desarrollados por el Instituto en el año 1962.* Bogotá, 1963. Mimeograph. Table 1.1, based on statistics compiled by DANE, Directorio Nacional de Explotaciones Agropecuarias, 1960.

11 Lannoy, J. and Pérez, G. *Estructuras Demográficas y Sociales de Colombia.* Estudios Socio-Económicos Latinoamericanos. Bogotá, 1961, p. 53.

trated in the major urban centers and also constitutes a significant proportion of the over-all population of the Departments of Antioquia, Caldas, Valle and Santander del Sur. The mestizo population predominates on the Bogotá plateau, Boyacá, and the *llanos*, or Eastern Plains. Negroes are concentrated along the Caribbean and Pacific coastal regions, the mining regions of Chocó and Antioquia, and ever since colonial days have been moving inland in increasing numbers from the Pacific Coast to the cane fields and industries of the Cauca River Valley region. Pure Indians are few, and are found primarily in the South near Ecuador, and in a completely primitive state in the Amazon jungles and the arid Peninsula of Guajira near Venezuela. The Indian subculture does not today constitute a major problem of national integration as has been the case in Bolivia, Ecuador, or Peru.

B. CULTURAL ENVIRONMENT

The shared cultural experience of a people, based upon a continuous tradition of political institutions, ideology, and ruling myth; the operating system of social stratification and controls; the "rules" for resolution of political and social conflict; their values and attitudes with respect to social and economic change; and the concentration of power, or conversely, the existence of tendencies toward social pluralism, together with all the obstacles and challenges these may present, constitute the basic elements of the cultural environment. Cultural environment, it will be argued, is the major determinant of the directions, modes, and rate of Colombian development.

1. *Shared Political and Intellectual Experience*

a. Politics and Constitutions. Colombia has experienced, along with other Latin American republics, 300 years of uninterrupted authoritarian rule by the Spanish Colonial regime, followed by more than 140 years of continous existence as a republic. During the entire four and a half centuries there existed a basic underlying continuity of social institutions and cultural tradition.

The Latin American War for Independence, although part of the revolutionary infection inspired by the American and French Revolutions, was in some ways similar to both, but in other more important wavs, distinctly different. It was precipitated by a quarrel between the Spanish Colonial administrators and the creole elite (both of the same social class) over differential bureaucratic privileges and conflicting philosophies with respect to economic and fiscal policy. The specific grievance against the Spanish government was discrimination against creoles who because they were not born in Spain were denied access to controlling and policy making positions of bureaucratic and military power. Yet they were obligated to pay increasingly heavy taxes the incidence of which fell especially

hard upon a rising and progressively prosperous class of creole small farmers and artisans. It was also hard on creole merchants who, besides having always opposed Spain's policy of mercantilism which denied them the benefits of international trade, now felt the additional burden of restrictions upon *internal* trade in the form of a new series of taxes imposed in 1781 to cover the heavy debt of Spain's War with France [12].

However, the French ideology of liberty and equality adopted by the creoles meant something very different to them from what it meant to the French patriots, and what it has come to mean internationally today. In the case of France there was no vast alien subculture, the Indian, to which the two cultures of the Spanish Colonial society — that is, the Spanish-born the two cultures of the Spanish Colonial society, that is, the Spanish-born administrators and creole elite on the one hand, and the Indian serfs on the other— was so great at that time, that the Indian subculture was hardly considered with respect to the issues over which independence was fought. The fact that the French ideology only meant freedom and equality for themselves vis-a-vis their colonial rulers helps to understand why social institutions remained essentially the same in Colombia after Independence. The social class structure, the feudal land tenure patterns, the bureaucratic system, the Church, the extended family, the traditional values, and the myth of an aristocratic ruling class fit by nature and education to rule, remained the same after Independence as before. In contrast to North American colonists, a large number of the creoles were descendants of the greater or lesser Spanish nobility; and those with lands and wealth but without an *abolengo* often succeded in purchasing such credentials of nobility from the Spanish court. Thus there was no real break in the continuity of the underlying social structure, no real revolution, despite Independence and the imposition of a written constitution modeled after the North American and French forms. The aristocratic feudal outlook of the ruling class blinded them to awareness of the radically different social structure of the Spanish Colonies in comparison with that of the United States or France. This explains the lack of "fit" of these imported republican dress forms, the reason why Latin American constitutions are frequently described as merely "statements of future expectations". It also explains the reasons for the consequent early difficulties in establishing legitimacy, as first the American federal model was tried, and then the French unitary system. Both were finally altered with pieces borrowed from each. Simón Bolívar, one of the outstanding constitutional architects, was, however, aware of the ecological significance of Colombia's fragmented geography which constituted a centrifugal force destructive to national unity during a crucial period of nation-building. He was aware of the need

12 This is the classic case of immediate cause, or "accelerator", for revolution. Cf. Alexis de Tocqueville, *The Old Regime and the French Revolution;* and Chalmers Johnson, "Revolution and the Social System" (Unpublished paper presented at the 59th Annual Meeting of the American Political Science Association, N. Y., 1963).

to counteract, with a strong central structure, the separatist tendencies which were the cause of the protraction of the Independence movement itself and of the many civil wars which later erupted between 1820 and 1886. Thus the French unitary form seemed at that time more suitable as a basic model, although regional fragmentation and loyalties required some important concessions to federalism.

Since 1886, when the final constitutional form was crystalized, Colombia's governmental structure has included a national central government with total power in the hands of a bicameral parliament and a strong president. The power of the president lies in the fact that he can on prior consultation with the Council of State, at any time, declare a "state of siege", i. e. "public order disturbed" in parts or all of the national territory and suspend any or all of the constitutional guarantees or laws, at least during the period of the state of siege. In the absence of a Congress in session, the president is also generally empowered to legislate by decree-laws, which are as binding as laws passed by Congress. But these are in general discretionary powers, and whether or not they will in fact be used, will depend largely on the President's informal power and on his style of governing. Furthermore, the President's constitutional power is exceptional in that the entire executive branch depends on him. Except for military promotions, his appointments do not require the approval of Congress. The power of Congress lies partly in its power of investigation: it may demand cabinet ministers or other officials to appear before it to explain their actions, and it may censure the president himself when sitting as a whole and acting as a high court. Congress also has total power to amend, abrogate, or create a constitution, as well as to enact the laws to implement it. Congress possesses the total tax power which it may delegate at its discretion to departmental and municipal governments. Regional government units are *departamentos*, after the French form; the departmental governors are appointed by the President. The regional popularly-elected legislative body is a unicameral Assembly, which may enact ordinances within the limits established by the central government; and it may budget and dispose of such sources of income as it has been assigned by Congress. At present, this income is limited by law to profits derived from state monopolies and other enterprises, such as liquor factories; to indirect taxes such as those on tobacco, imported liquors, gasoline, lotteries, and other consumption items not taxed by the central government; and to such grants of aid as the national government may make at its discretion. The local unit of government is the *municipio*, which includes the urban center and its surrounding rural areas. Its executive officer is the mayor, or *alcalde*, appointed by the governor of the *departamento;* and its legislative body is a popularly-elected unicameral council. The municipal tax power is limited even further than that of the *departamentos*, that is, to indirect taxes not collected by departamental or national governments; to real estate taxes (very low); to valorization taxes collected on local improvements such as streets, water, and sewage connections on a pro-rata basis

from the immediate beneficiaries; to profits (generally non-existent) from municipal utilities; and to such grants of aid as the department or nation may decide to allot to them. Any local or regional development plans in which the central government has an interest or which involve borrowing must receive the approval of the National Planning Council. The severe limits upon local and regional autonomy, and conversely, the strong centralist control, are thus quite obvious. Moreover, pressures and interests in local and regional legislative bodies have operated to keep these already limited tax powers at extremely low rates. This has kept local governments in the position of poor dependents of the national government, and at its mercy for charity through constant requests for aid. These dependent relationships of local governments to the central also reflect the hierarchical and paternalistic social structure (to be discussed later in this chapter), which is characteristic of Colombia and Latin America as a whole.

Although this unitary centralist type of constitution has not conformed functionally to all of the needs or to all the facts of the national social and economic substructure, it has conformed to enough of them to obtain in recent decades a *degree* of popular support and relative legitimacy. That this degree of stability became possible in Colombia between 1907 and 1948 where it has not been possible for many other Latin American nations, was due to several factors distinctive to Colombia: the long delay in the politicization of the lower classes; the strength of the ruling class myth; an early beginning and steady growth of industrial development in two important regions (Antioquia and Santander), permitting there a measure of social mobility and the seeds of social pluralism; a strong two-party system; an apolitical Army since 1909; and a reasonably effective government from the point of view of those who were powerful and participated. It was an oligarchy, with important parallels to the early Greek city-state: political democracy with very active participation by and for the ruling class. The century long moratorium given by the lower classes thus produced a facade of respectable, reasonably stable and continuous legitimate government. Though superficial, the myth abounded that Colombia was, until 1948, the most promising democracy in Latin America, where "philosophers were kings", or at least, intellectuals were presidents.

In April 1948, touched off by the assassination of their idolized charismatic Liberal leader, Jorge Eliécer Gaitán, a mestizo intellectual who had risen from the masses, the partially politicized urban proletariat burst onto the international scene with a mob riot known as the *bogotazo* and colorfully described as a "mass social vomiting", an anomic movement which occurred because "the normal channels of decision-making have been closed off too long to bleed off protest pressures" [13]. This was the first shock experienced by many of the ruling class into a realization that

13 Silvert, Kalman. *The Conflict Society: Reaction and Revolution in Latin America.* Hauser Press, New Orleans, 1962, p. 22.

the masses could no longer be ignored. Certainly there had been previous warnings, but on the whole they had gone unheeded.

In 1944 the Liberal Party had divided, allowing the shift of government power by plurality vote to a Conservative president. There had been an orderly transfer of power according to a well-established tradition. First, no general had held office since 1909; and the Army had become a fairly professional, apolitical cadre devoted to acting as "guardián de la patria y la constitución" [14]. Also since 1909, President-intellectuals had rotated in office by ballot, as members of two opposing traditional political parties which had remained intact since the days of Independence. Colombians had been on the whole proud of this record, which hardly any other Latin American nation, except Uruguay and Costa Rica, both small and homogenous city-states, could boast of.

Even when certain right wing extremist elements of the Conservative Party began systematically to eliminate Liberal majorities in preparation for the next elections, Liberal Party leaders did nothing, in perfect consistency with their civilist tradition. Then, during the regime of Conservative Laureano Gómez, who was elected by default in 1950, an open attempt was made to impose totalitarian methods of thought control, torture, and genocide upon whole populations of unpoliticized peasants and partially integrated urban masses. "La Violencia", a personification of terror, stalked the land. Whole villages were burned, their victims tortured and then butchered. Those who escaped took to the mountains and became bandits with no other objective but blood revenge. Attempts to organize these embittered, primitive, [15] religious and unpoliticized peasants into *guerrilla* bands under the leadership of a few intellectuals and communists had rather discouraging results from the point view of organizing a militarized mass insurrection, especially with no help from the generally conservative and apolitical Army. There was almost total anarchy in the rural areas. Most of the dominant elite, moderate Conservatives and civilist Liberals alike, were paralyzed. They share to a large extent the "humane Western political tradition, with its centuries of civilized law and order and abhorrence of the use of violence to maim and destroy lives, a tradition which has so successfully insulated men from contact with death" that when they are suddenly confronted with organized torture and brutality, "perpetrated by the very political authority that previously protected man against such acts", then society becomes paralyzed and unable to cope with it [16]. In the face of the paralysis of party leaders, the increasing anarchy, the now nearly six years of fratricidal warfare, with thousands

14 Lieuwen, Edwin. *Arms and Politics in Latin America.* Praeger, N. Y., 1960.

15 Cf. Hobsbawm, E. J. *Social Bandits and Primitive Rebels.* Free Press, Glencoe, 1959. Primitive in the sense of being conservative, unsophisticated, and lacking in ideology.

16 Wolin, Sheldon S. "Violence and the Western Political Tradition". *American Journal of Orthopsychiatry,* January 1963.

of Colombians killed, [17] and the manifest inability of the Conservative president to govern, the Army, under General Gustavo Rojas Pinilla, and aided by ex-President Mariano Ospina, was moved to stage a military *coup d'état*. The General was hailed by all as "varior and liberator" in the style of welcoming Bolívar himself. However, the military government soon proved inept and repressive, compounding economic anarchy to the political and social. When Rojas began to attack the interests of the old elites, and to replace them with a new military class in all positions of public and private power, the leaders of both parties reacted, united, and organized a well-coordinated nation-wide general strike in 1957, which removed Rojas from power and reinstated the former ruling class.

These commonly shared political experiences, first of a fairly long civilist tradition, followed by terror, anarchy, and chaos, filled Colombians of all classes with a nostalgia for the "good old days" of relative peace and prosperity. The attachment of all Colombians to their institutions, however ineffective they had been, was attested to by their demand, through general strike and plebiscite, for reinstatement of the very governing parties whose lack of social sensitivity had been the cause of their misery [18]. The traditional rule was restored in the form of a constitutionalized coalition whereby the Conservative and Liberal Parties alternate the Presidency for a truce period of 16 years and share legislative and bureaucratic posts on a strict parity basis, beginning in 1958. This constitutional amendment of 1957, has had the effect, according to one author [19] of transfering interparty conflict to intra-party conflict, and is reminiscent of the "strategies of oligopolist and cartels in dividing their markets".

b. Intellectual Traditions. One factor which accounts for the strong sentiment of Colombian traditionalism is the existence of a cultural heritage many centuries old of respect for the intellectual. Bogotá had been the capital of the Viceroyalty of New Granada, covering the northern quarter of South America. As a prime educational center, even though inferior to Lima and Mexico, it was the seat of two of the oldest universities in the Hemisphere, and the magnet, then as now, of intellectuals, scientists (some of world fame, as Francisco José de Caldas, astronomer and inventor of the altitude barometer), foreigners such as Humboldt and Bonpland, poets and writers in great numbers, artists, learned priests, and even cultured viceroys who often participated actively in the "tertulias", or literary and philosophical groups. It was also, of course, the center of political activity, the Colonial court, and the Church. Most of the creole intellectuals had also been educated in the European Capitals:

17 Guzmán, Monseñor Germán, Fals Borda, Orlando, and Umaña Luna, Eduardo. *La Violencia en Colombia*. Vol. I. Universidad Nacional, Bogotá, 1962.

18 Cf. Tocqueville, Alexis de. *Op. cit.*, p. 145, for an analogous case.

19 Hunter, John. *Emerging Colombia*. Public Affairs Press, Washington, D. C. 1963, p. 16.

París, London, and Madrid, and moved in the salons of their top intellectuals. Some knew personally Bentham, Rousseau, and other French Encyclopedists, and brought back their books and ideas. All these cultural and intellectual traditions are known and respected by every Colombian schoolboy — traditions which are still vitally alive and form part of the Colombian myth of reverence for, and therefore rule by, the intellectual, a myth the intellectuals consciously fostered, as most of these were also the holders of economic and social power.

c. Ideology and Ruling Myth. In addition to a long common historical and intellectual tradition, the ideology and ruling myth of a nation is very important in its effect upon the development of its political institutions. For even though this ideology may quite imperfectly correspond to the political and social facts of a culture, it has profound effects so long as the people believe it is true [20]. Ideology is closely related to the myth which sustains the ruling class. Together they constitute the body of shared values and sense of community held by the politicized elements of the population and operate as a social cement.

With the possible exception of Cuba, Latin American countries reveal a kind of hungry eclecticism with respect to formal ideology. Many basically antithetical concepts, derived from Spanish mysticism, French rationalism, English liberalism; from humanism, socialism, Marxism, and the welfare state, (and during certain periods, even elements of nazism, and falangism, or corporate "democracy") have been eagerly absorbed and often hastily incorporated ir to the legal system as soon as they appear, adding one experiment, discarding another. The Latin American does not want to be left behind where novel ideas of government are concerned. And he is an incorrigible lover of abstract idealism and the dialectic.

Because the Colombian ideology includes many of these, the appearance of contradiction is often given. While unwilling to give up their traditional elitist values, their authoritarian religious conservatism, or their economic individualism, the ruling class at the same time often attempts to incorporate into its political ideology the values of egalitarian democracy, freedom, modernization in all its facets, and concepts of the welfare state. The inherent contradictions of some of these positions is, however, rarely perceived on the conscious level.

The effective operating myth is still that of rule by the intellectual. The vast majority of Colombia's presidents, cabinet ministers, party leaders, and parliamentarians have, throughout its history, been writers, poets, doctors, philosophers, and more recently, economists. They are members of a highly sophisticated, urbane, aristocratic, and talented upper class, with excellent and broad humanistic educations. Rule by the intellectual is held in such high esteem that part of the myth allows the upward mobil-

20 Wilensky, H. and Lebeaux C. *Industrial Society and Social Welfare.* Russell Sage Foundation, N. Y., 1958, p. 41.

ity of the talented of any class, who can manage to surmount the obstacles of entry into a restricted educational system and who adopt the manners, pure Castilian language, and outlook of the upper class [21]. That some few, [22] a sufficient minimum number, actually do accomplish this despite the obstacles placed in their way, tends to validate this myth. Another social mechanism which serves to reinforce this myth is the high reproductive rate among the upper classes. Not only does this ensure the availability of a sufficient number of talented, well-qualified persons born into the elite to justify its claim of right to rule, but results in the spilling over into the upper-middle professional classes, of members of large families, still socially "accepted" who may be marginal in financial wealth as compared with the upper class. This second group, possessing the same myth and world view, helps to support the ruling elite from below.

There is at present no conscious problem of national identity for the majority of Colombians. The ruling elite and upper middle classes have, to repeat, been for many centuries the producers and bearers of a rich cultural tradition. Those of the lower middle class whose life chances have been improved, even though very slowly, through increased educational opportunities and as a result of the recent periods of rapid industrialization and urbanization, tend to identify with and emulate the patterns of culture and consumption of the dominant elite rather than oppose them. In part this is because the upper class permits the few brilliant and talented who manage to rise from the lower classes to join their ranks through marriage and membership on their Boards of Directors. This coopting has prevented until now the development of a frustrated intrinsic elite which might otherwise become revolutionary.

2. *Stratification System and Social Controls*

In Colombia, as in most of Latin America, "the social class structure is a rough measure of the distribution of political and social power" [23] and as such is important for an understanding of the pace and dynamics of its economic and social development.

As in most traditional societies, Colombia had its two historic polar strata: the "aristocracia" and the peasant class. The origin of this basically bi-class structure derives from the Spanish Colonial Empire. The upper stratum of colonial society consisted of the Spanish-born colonial adminis-

21 One contemporary commentator, psychiatrist José Gutiérrez, explains the psychological need on the part of Colombians for this myth of reverence for the intellectual, as a way of "hiding the aristocratic reality of our social structure"; there is nothing better for this than the "presumption of a cultural democracy in the Athenian Style". Cf. *De la Pseudo-Aristocracia a la Autenticidad*. Ed. Tercer Mundo, Bogotá, 1961, p. 21.

22 Marco Fidel Suárez, poet-President and illegitimate son of a washerwoman, and Jorge Eliécer Gaitán, mestizo son of a bookseller, are two outstanding examples.

23 Blanksten, George. "The Politics of Latin America", in Almond and Coleman, *The Politics of the Developing Areas*. Princeton University Press, 1960, p. 462.

trators plus the *criollos*, those of Spanish descent born in the New World. Many of both the colonial administrators and the creoles were for the most part of noble Spanish lineage. Because of the Spanish law of primogeniture, the *segundones fijosdalgos*, or "second sons", of noble families could not inherit land in Spain and were therefore in "difficult circumstances" and went out to seek wider horizons in the New World [24]. They thus shared an aristocratic style of life, education, expectations, and world view.

At the other end of this bi-polar class system were the Indian serfs. According to the institution of the *encomienda* (trust duty), large grants of land were made to Spaniards in the name of the king who remained titular owner. The grants included all the Indians living thereon. In return for the usufruct of the land, the *encomendero* was to protect the Indians, see that they engaged in profitable work, and became Christians. In practice this institution degenerated into classic feudalism, with a permanent and rigid bi-class system of masters and serfs.

Today, this bi-class system is still evident, although the middle sectors [25] are growing slowly in urban areas. The 20-25 percent designated as "white" includes the upper aristocratic class and upper middle class as the true ethnic whites, and the lower middle class which in turn includes whites and a large proportion of mixed blood [26]. Although there are few overt manifestations of race prejudice as such in Colombia, the constant association of white skin with economic and social privilege has institutionalized race in the social class structure to a large degree [27]. The result has been that ethnic "race" prejudice is strongly denied in Colombia but has become an integral part of strong class prejudices.

Colombian society is still highly stratified and hierarchical, and this structure is reinforced by relatively strong social controls. A recent study of the class structure of traditionalist Popayán serves as a vivid archetype against which many of the aristocratic and paternalistic characteristics of contemporary Colombian class structure can still be measured [28].

24 Ots-Capdequi, José María. *El Estado Español en las Indias*. Fondo de Cultura Económica, México, 1941, p. 21.

25 The term "middle sectors" is preferred over "middle class" by such writers as John J. Johnson (*Political Change in Latin America: The Emergence of the Middle Sectors*, Stanford University Press, 1958) because of the general absence of clearly differentiated middle class consciousness.

26 That the mestizoes of the lower middle class are often considered "white" in the Latin American context is due to the fact that non-whites are considered white as soon as they become assimilated into the dominant urban Spanish culture. Blanksten, George, *op. cit.*, p. 463.

27 Fluharty, Vernon. *Dance of the Millions: Military Rule and the Social Revolution in Colombia, 1930 - 1956*. University of Pittsburgh Press, 1957, p. 175.

28 Whiteford, Andrew. *Two Cities of Latin America: A Comparative Study of Social Classes in Popayán and Querétaro*. Logan Museum of Anthropology Studies, Beloit College, Beloit, Wisconsin, 1960. Although Popayán is not like any other Colombian city —it is the most traditional, of ancient wealth and seignorial mien— it has supplied more than its share of great poets and statesmen. By its own

In most other Colombian cities today, one may find between these two polar cultures (the "Westernized"-urban and the "non-Western" rural peasant) three classifications of small but growing middle sectors: (1) A downward-mobile group of professionals and intellectuals related by blood to the great families, but enjoying less wealth. Due to the fact that Colombian upper class families have been as prolific as lower class families,[29] there is an increasingly large group of persons who have followed professions in order to make a living but whose psychological outlook is still upper class, despite their frequent self-characterization as middle class [30]. (2) A historic middle class of small entrepreneurs, originating during the colonial period in the two regions of Antioquia and Santander. This group has "colonized" and industrialized many other areas of the country [31]. More often than not, this middle class also shares most of the values (an important exception is the disdain for manual labor), style of life, and outlook of the upper class. (3) An upward-mobile group from the peasant and urban proletariat, which although small, is increasing, due to the rapid process of industrialization and urbanization of recent years. The pattern of aspirations for this group is also set by the dominant "Westernized" elite. The economic situation of the new lower middle class is quite precarious; and consequently great sacrifices are made to obtain education for the children and to maintain the outward material upper class status symbols, especially fashionable dress, and a job which does not require the use of the hands. Education is the most important channel of upward mobility and is clearly recognized as such by all social strata.

A rough indication of the relative size of each of the social strata of Colombian society can be had by examining statistics on education, [32]

expressed desires it has allowed modern ways and industrialization to pass it by. Its ideal model of class structure is still present to some degree in most Colombian cities, sometimes still exerting its power as in Buga, but most often being gradually pushed aside to make room for the new rich of the more open, fluid, bustling industrial cities like Cali. Popayán still presents the same two clearly-defined and separate cultures of the colonial era: the proud aristocracy of white Spanish descent, a closed, almost caste-like stratum with a highly sophisticated style of life, with prestige based on *abolengo* (noble name, usually supported by a coat of arms), on respect for *hidalguía* (courtliness and good manners), and on *cultura*, acquired only by high education and the pursuit of the arts and philosophy (consequently a very high self-image is maintained), and upon land as the symbol of wealth. On the other hand is the vast lower peasant class that ideally knows its own pre-ordained position in life, and shows its "cultura" by obeisance and respect for the *aristocracia*. One must add that as long as each class knows and keeps its place, respect is mutual.

29 Smith, T. Lynn. "Observations on the Middle Class in Colombia", in *Materiales para el Estudio de la Clase Media en América Latina*. Pan American Union. Washington, D. C., 1951, p. 11.

30 Fluharty, Vernon. *Op. cit.*, pp. 189-190.

31 Parsons, James J. *Antioqueño Colonization in Western Colombia*. University of California Press, Berkeley, 1956.

32 From *Semana*, Bogotá, February 17, 1959 (Cover). Based on 1951 census figures.

since education is one of the principal determinants of economic and social class position [33]. Although no other quantitative studies of Colombian social strata have been made, it may be safely presumed that, according to the census of 1951, the top 5 percent, or 650,000 persons, called the *población culta,* which are the only ones who have received secondary (lycée, largely classical and preparatory) and university education, constitute the aristocratic upper class and the two upper middle sectors. Eighteen percent, or 2,340,000 persons, attained from 2 to 5 years (5 years constitutes full primary training) of schooling, and include the lower middle sector and the urban skilled and semi-skilled laboring class. The remaining population, 77 percent (of 13 million) with no schooling or who are functionally illiterate, are almost exclusively peasants of the rural areas and unskilled urban laborers, or the "uprooted", who have recently migrated to the cities but have not yet been absorbed into industry and services. The almost exclusive monopoly of secondary and higher education by the Church and other private individuals and agencies, through costly private schools, is the major bottleneck and source of frustration for the ambitious of the lower and middle classes.

In addition to the social controls already mentioned, that is, worship of education and manners, hence a high self-image, yet entrance to education largely restricted by wealth, and a high birth rate among the upper classes ensuring available talent to justify the right to rule, there is the additional control of religion. The Catholic Church has always been a dominant force in Colombian history. It controls the educational system, pervades the philosophic content of most of its art and literature, provides the political ideology of the Conservative Party, and above all constitutes the deeply rooted mainspring of the way of life of the traditional culture in general, reinforcing, both formally and informally, the extended family ties, high birth rate, and acceptance of an authoritarian and hierarchically stratified society.

The extended family structure is similar to that of most other traditional societies. In spite of the onslaught of industrialization and urbanization which tends to reduce this primary institution to the nuclear family, extended family ties are still remarkably strong among the dominant upper and middle classes. They are also strong in most of the rural peasant population and such of the lower classes that are striving for middle class status. Elsewhere, stable consensual unions which show all the characteristics of the extended family and "compadrazgo" except the marriage rite are very frequent [34]. But due to the destruction of the Indian culture.

33 "The correlation between literacy and class system is so high that it is frequently used in Latin American statistical work to develop figures on either of the two where data on only one is available". Blanksten, G. *Op. cit.*, p. 473.

34 Preliminary anthropological research (1964) by Thomas Schorr of Tulane University in a town in the foothills of the northern Cauca Valley, indicates that the number of these stable consensual unions is probably as high as 20 percent

followed by the extra-marital unions of the Spaniards during the conquest, plus the destruction of kinship ties and culture of the negro slaves brought in later, a pattern of concubinage, illegitimacy, and weak formal family ties was begun among the lower classes which has continued to the present day. Lower class family ties have been further weakened during the past few decades among the "uprooted" that have swelled the ranks of the urban proletariat. However, strong family ties, where they exist, are further strengthened by "compadrazgo" ties; that is, the adoption, in the position of godfather, of other relatives and friends at religious ceremonies such as baptism, confirmation, and marriage. Thus there is a kind of social stability provided by these two sets of ties which is suplied in more industrialized and secular societies by government. There is widespread traditional feeling that only members of one's family and "compadres" can really be trusted and relied upon for help.

For this reason also, the extended family still operates to a large degree as a *private* social security system. This private system is largely responsible for the absence or paucity of other social welfare institutions. There are few orphanages; and adoption is generally not considered proper, especially among status-conscious upper and middle classes. There are relatively few mental institutions or homes for the aged, as it is generally believed that these persons ought to be cared for by the family. The need for such institutions is becoming increasingly acute, but the need does not yet seem to be fully perceived. The extended family controls are reinforced by the religious doctrines of the Colombian Catholic Church, under which no divorce, religious or civil, is permitted; where the ideal woman is the mother of eight or more children, who attends daily mass, and most of whose daily contacts and friendships are chosen from among relatives.

However, once again, the dislocating effects of industrialization and urbanization, and of "la violencia" caused by peasant bands who took to the mountains during the dictatorships (1950-1957) and have lived an outlaw existence ever since, have weakened and often destroyed the social controls exerted by the family structure, the stratification system, and the conservative Church. The rate of illegitimacy, child abandonment, unstable consensual unions, and one-parent (mother) households, as well as juvenile and adult delinquency, hav increased and become major social problems among the lower classes; and far too little is being done about them. The upper classes have so far evidenced little concern for these problems other than demanding the extension of punitive institutions, and manifest little sense of personal responsibility for their solution.

of the total village population. The church has campaigned against these unions, but the peasants themselves seem to ignore the problem. Some give as a reason that a wedding is too costly. Women often feel they can hold their men within the bonds of fidelity more easily if they are not married.

3. *Rules for the Resolution of Political Conflict*

Rules for the political game based on sportsmanlike competition and bargaining, so obvious and pervasive in all spheres of North American life, are not entirely absent in Colombia, but are greatly diluted by other patterns of social action.

Political bargaining is widespread but is often of a different kind — not the pattern of exchange of goods wanted, or compromise in the case of competing interests, and governed by rules of fair play, including resignation and good humor displayed by the loser. It is more often, rather, the exchange of a valued good or goal for the withdrawal of the threat of violence. Violence is far closer to the surface of Latin American politics than it is in the United States [35]. Use of this threat may be observed in the typical methods employed by political groups (labor unions, students, political parties, or the masses at large who have no organized group through which to work) to gain their ends: the "manifestación" (street demonstration accompanied by incendiary oratory), the "paro cívico" (coordinated ceasing of all work activities, especially transportation), the "huelga" (typical legal strike limited to one organization), and the "huelga de simpatía" (strikes of workers, students, or other in support of the demands made by another group).

The courting of violence to just the point of danger, as a conscious technique, seems not unrelated to the classic "sport" of the Spanish culture, the bull-fight. The elegant and dangerous dance (demonstration), the tantalizing of the enemy beast (violence), and the usual victory of the virile bull-fighter over his adversary seems a remarkably analogous pattern of action to the frequent political method in Colombia.

Another favorite activity, which is also reflected in the style of political behavior, is gambling, in all its forms. The lottery has always been a legal form of institutionalized gambling, and a large part of state charity is derived from the proceeds of these lotteries. Elaborate forms of number games based on the outcomes of the weekly national horseraces and football games have recently been instituted. Numbers games are even used as an inducement to purchase insurance policies, savings bonds, and houses. That laying the blame or praise for the outcome of events upon "chance", "good fortune", or "bad-luck" is also an important and pervasive attitude of the traditional culture is attested to by the language itself. The antithetical English concepts of "to win" and "to earn" are expressed indifferently by the Spanish verb "ganar". This attitude must surely be a partial

35 Everett Hagen *(On the Theory of Social Change)* explains this as a "need for aggresion", a psychological trait he noted in high incidence in his studies of Colombia. This is further corroborated by the socio-psychological pattern of "machismo", noted by many anthropologists to be a general cultural trait of Latin Americans; that is, the over-identification with the mother, the resulting fear of effemininity, and the subsequent over-reaction in the direction of identification with masculinity. This results in constant need to prove oneself a virile male and the over-sensitivity to suggestions to the contrary.

explanation for the often haphazard way in which political and social problems are usually attacked, revealing a widespread lack of recognition of the role of hard work, responsibility, competition, achievement, and planning for the future.

Fortunately, competitive games, especially "futbol" (soccer), are gradually becoming more popular in Latin America. To judge from the frequent inter-American competitive league series and the large amount of space devoted to them in the daily newspapers, just as much enthusiasm is evident for these games as for bull-fights. It is to be hoped, however, that this type of activity will generate habits of non-violent competition in other spheres of life. Curiously enough, a frequent reason given by Colombians for preferring soccer to North American football is that the latter is "too violent". Perhaps this indicates a subconscious desire for transference of violence away from fellow human beings, and onto things or beasts, or by analogy, onto objective institutions —the less personal government or industry.

One should also include here the habits of expecting services or fulfillment of needs and demands under the paternalistic social institutions discussed below.

All these patterns of social action are present and operating in Colombia today and undoubtedly affect to a significant degree the way in which the game of politics is carried on. They help one to understand Colombian political history and institutions, and the course of the development of the Cauca River Valley Autonomus Regional Development Corporation.

4. *Bureaucratic Patterns*

Bureaucratic systems and patterns based on traditions of centuries are often very resistent to change. The Spanish Colonial Empire maintained one of the most geographically extensive and stable bureaucratic systems of the Western world, with practices that were fairly effective in keeping the Empire together during a 300-year long period under conditions of communication that were extremely difficult and primitive. For this feat alone the Spanish bureaucratic system merits respect.

Some techniques, such as the principle of "avoidance", to ensure the loyalty of colonial officials to the Crown, are now universally accepted administrative practice for foreign service personnel. This principle included the qualification of birth in Spain, prohibition of nepotism within the same jurisdiction, and the prohibition of marriage to creoles and frequent rotation, in order to prevent the formation of local attachments during a tour of duty.

There are also other less desirable but significant patterns which resulted from the Spanish Colonial administration and which have persisted as a habit of mind down to the present. For example, the principle of

"obedezco pero no cumplo" —"taking due notice of the law but not complying"— which was often invoked when a royal decree promulgated by Spain could not be enforced in the colonies because of unforeseen and overpowering local circumstances. Other instances are the dependence upon complicated administrative checks and balances to ensure honesty where the human being fails, and the extensive and complex indirect taxation system which so stifled both international and internal commerce during the Colonial period, the incidence of which falls on those least able to pay.

The principle of "taking due notice but not complying" has become in fact a well-ingrained habit. There is today the same penchant for passing utopic and idealistic laws which officials are sometimes unable to enforce and administer for obvious reasons of lack of resources, or often unwilling to enforce because of vested interests. Contemporary examples include obligatory free public education, while at the same time neither transportation, sufficient schools, or trained teachers are available; a "land reform" legislated and administered by the landowning classes; free health insurance when neither hospitals, equipment, drugs, doctors or public revenue are in sufficient supply, and so on. When a rare attempt *is* made to carry out such a law, strong resistances or inertia are encountered at every turn.

Administrative checks designed to ensure honesty are still carried to the extreme, to the point where responsibility becomes diffused and diluted, and it is impossible to hold one official responsible for the effective administration of any policy. During the Colonial administration the function of checking honesty and preventing abuse of power was performed by officials appointed in Spain, such as *oidores* and *fiscales*, who were charged with investigating and reporting to the Crown any mismanagement or "excesses" on the part of any other official, from viceroys down to clerks. Today, this function is in part performed by the *contraloría*, on national, departmental, and municipal levels, which has the centralized power of investigating and rejecting any public account or expenditure made by any official or agency. It is further ensured by the numerous signatures, countersignatures, registration, stamps and seals that are required as an official document makes its way up the bureaucratic hierarchy and down again. Each official thus ostensibly checks on the activities of every other. But both the institution of the *contraloría* and the countersignatures not only eliminate the locus of responsibility but contribute to excessive expansion of bureaucratic personnel which the revenue base cannot afford. They also lead to inefficiency in the use of time and materials, and to the resultant frustration and loss of public support for government policies.

This extreme bureaucratic rigidity has thus led to the establishment of informal techniques for by-passing the regulations; the use of "influence", that is, a friend in office, called a "*palanca*", literally a "lever" for prying the negotiation loose from its rigid procedure into action; or even the more widespread employment, by citizens or government clients, of private "officials" or agents (usually lawyers) who know the key bureaucrats as

well as "the ropes", in order to personally see a problem through to its speedy solution.

The strong propensity to rely on indirect taxation for the support of public expenditures during the Colonial period persists today. However, direct taxes such as income and corporation taxes, begun as late as 1934 and 1955 respectively, over vigorous opposition, are becoming proportionately more important. An indication of the extension and complexity of indirect taxes is also shown by the fact that revenue stamps and sealed paper must be used for every official document or petition, however limited in importance, even for the payment of income taxes; and that major public services are financed by liquor, matches, cigarettes, gasoline, entertainment and registry taxes, auto licenses, tolls, and export and import duties.

The behavior patterns of a hierarchical social structure —paternalism, authoritarianism, and dependence— are repeated throughout society. In relationships among employees of both public and private enterprises, there is little tendency on the part of lower ranking officials to question the authority of those above them, and consequently little initiative is taken in the lower ranks towards improvement of methods. Even in positions of equal responsibililty, respect for the seniority of colleagues or for their higher social status, will inhibit the expression of opinions by junior members and the fruitful discussion and solution of problems [36]. Few subordinate administrators will risk assuming the responsibility for taking decisions, even for those that lie within their sphere of competence. Decisions, however minor, are almost always sent to the top. The strong authoritarian father and respectful son relationship of the traditional family, which assumes the father as all-powerful decision-maker and dispenser of favors, is projected into all institutions of society. This paternalistic pattern is evident everywhere throughout political and business relationships. The politician is expected to be the personalistic strong man who obtains favors and appropriations for his family, friends, and home community. The company manager, the cabinet minister, and above all the President, are all father figures [37]. They are expected to settle all problems and disputes as well as formulate policy. The President himself is almost always sought as a court of last resort in labor disputes, student strikes, and for redress of personal grievances. The suggestions or decisions of subordinate officials even if made are seldom taken seriously.

36 Hunter, John. "Reflections on the Administrative Aspects of a Technical Assistance Project" in *Economic Development and Cultural Change*. Vol. VII. № 4, July 1959.

37 A curious example occurred recently (June 26, 1964) when the Colombian Civil Service Commission issued an identity card as "Civil Servant № 1" to President Valencia — an absurdity when considered from the point of view of the clear functional distinction between civil servants and policy-makers, but understandable as an expression of the traditionalist need of every institution or group for a patron, or father-figure, or "compadre", who will as a result of having been chosen, be expected to take a special interest in promoting the welfare of the group.

Labor unions are paternalistic with relation to their members, as are government and private business; and are expected to care for them in many of their personal needs which are ordinarily left to private initiative in the United States. This is further evidenced by the comprehensive legal social security system, which could be viewed in one light as a modern industrial adaptation of the deeply-rooted traditional practices of feudalism, the extended family, and *compadrazgo* systems.

Finally, nepotism is still a respected institution. The personalistic links of the extended family and *compadrazgo* relationships still exert an important influence upon the pattern of political and business recruitment [38]. The official in public or private positions of importance is expected to help place members of his family, *compadres*, and friends; and will in turn expect help, loyalty, and dependence from them. Family-type corporations are the rule; again, because trust is generally limited to members of the extended family and *compadres*.

5. *Attitudes Favorable to the Acceptance of Change*

The most striking characteristic of the contemporary world is change. The traditional society of Colombia, with its institutions and values described above (even though already somewhat eroded by early modernizing influences of some sectors of the elites) can no longer remain even partially isolated from today's world in which close communications (especially the transistor radio) have made the "demonstration effect" a major cause for the "revolution of rising expectations". As David McClelland [39] has so clearly pointed out, the rapid rate at which social change and economic development must take place in order to forestall violent and totalitarian solutions to the problems of meeting the demands for material welfare of underprivileged classes everywhere, cannot be achieved without also acquiring some of the attitudes and values that accompany this development of material civilization. The peoples of the developing nations, among them Colombia, have already made their choice: they unquestionably desire and demand the benefits of material well-being. For this reason, they must now be aided in altering, modifying, or abandoning some of their traditional attitudes toward change, work and achievement. As McClelland also suggests, the best way to aid these developing nations may be to seek out those adaptable, progressive, "achievement-oriented" elements of the populations, and concentrate any foreign financial and technological aid that is given, toward supporting those persons and institutions that have already demonstrated their ability to utilize them efficiently. It is argued here that the CVC is one of these institutions, one that merits all possible support, since it is a modernizing, apolitical, and efficient agency, and was primarily the result of autochthonous efforts.

38 Cf. Whyte, William, and Holmberg, Allan. "The Human Problems of U. S. Enterprise in Latin America". *Human Organization*. Vol. 15, Nº 3, Fall, 1956.

39 McClelland, David. *The Achieving Society*. Van Nostrand, Princeton, N. J., 1961.

In order to be able to account for the more rapid rate of development of some nations and the stagnation of others, all under more or less equally favorable physical conditions, McClelland compared many historical and contemporary cultures which were outstanding for their archievements, with others that were not, through a psychological analysis of competitive, achievement-oriented, and non-authoritarian themes in their literature, art forms, songs, and games. Then, by validating these known results with independently administered psychological tests of samples of students and adults in widely varying contemporary cultures, and through a statistical frequency analysis of the value content of primary school textbooks for these same cultures, he was able to predict, to a significant degree, the appearance of a spurt of achievement-oriented activity for a future generation of adults [40]. Through these it also became fairly clear just what kind of parent-child attitudes and relationships, and what kind of social institutions were most likely to produce achievement-oriented young people. The parents must not be excessively authoritarian, overly protective nor superstitious. The children must be taught from infancy to do things and think for themselves, and to think in a secular manner, not relying on chance or supernatural forces. The presence of many personal servants is a strong deterrent to the development of independence and achievement. Unfortunately, the employment of many servants has been a characteristic of Colombian family organization throughout its history, especially in the upper and middle classes which are also, of course, the only educated groups. The authoritarian, domineering, and capricious father, and the mother who keeps her children dependent and protected until late adolescence, are also characteristic of most Colombian families. In the exception to this average picture, of which there are always many, despite the modal pattern of any culture, must lie the partial answer to the appearance of deviant, achievement-oriented individuals. This may be the case in the somewhat miraculous development of such institutions as the CVC amidst the highly traditional culture of Colombia, which is in general resistant to change.

As an example, the special characteristics which differentiate the *Antioqueño* from other Colombians have aroused the curiosity of social scientists interested in the phenomena of social change such as Everett Hagen [41].

40 A cursory survey by one of the authors of Colombian primary school literature revealed the predominance of achievement-oriented themes, such as competition and trickery for the attainment of a goal, in Antioquian folk tales; while elsewhere in Colombia traditional themes predominated, i. e., love of family, contemplation of the beauty of nature rather than its conquest and domination by man, the power of magic and superstition, the inculcation of religious values, patriotism, adventure for its own sake, yet emphasizing the dangers prevalent in the world outside one's own home. This tends to validate McClelland's thesis, although a more detailed analysis would be necessary to yield statistically significant correlations. However, regional differences in literature have been incorporated into the national literature during last 30 years and thus are now available to all Colombian school children.

41 Hagen, Everett. *On the Theory of Social Change*. Dorsey Press, Homewood, Ill., 1962. The chapter on Colombia has been translated into Spanish as *El Cambio Social en Colombia*. Ediciones Tercer Mundo, Bogotá, 1963.

Hagen tried to demostrate by the use of statistics on the founding of industrial establishments and upon Thematic Apperception Tests administered to a sample of Antioquian industrialists, and as a control group, to a similar sample of men of letters from the extremely traditionalist city of Popayán, that the Antioquians possess an unusually high degree of creativity and innovation as well as "need aggression", an almost Puritanical outlook on life, and other personality traits associated with the entrepreneurial, energetic, risk-taking business man; and that this has been a major determinant of the high rate of development in the Department of Antioquia and wherever else the Antioquians have settled. And a pioneering Colombian sociologist, Luis Eduardo Nieto Arteta, has also singled out the non-feudal Colombian entrepreneur as an early modernizing element [42]. Nieto Arteta described the emergence in the Santander region of an indigenous and highly entrepreneurial historic middle class, dating from the Colonial and early Independence periods, constituting, in effect, two different economies existing side by side: the feudal, in the rich Cauca River Valley and the Cundinamarca plateau, and the non-feudal in Santander and, although he did not mention it, Antioquia. In both the latter areas, the absence of servile aborigines and the shortage of fertile flat land forced the channeling of activities into family-sized farms, commerce, and small mining and manufacturing enterprises. Unfortunately, the tightening of Spanish Colonial taxation policies just before the war for Independence, hit the nascent farming and manufacturing enterprises of Santander especially hard; so that this region failed to recover its initial impetus after Independence. Hagen noted that in Antioquia the nature of the risks involved in subsistence farming, and especially in gold and platinum mining, caused the early development of a corporate form of enterprise for spreading the risks. This group constituted an early "modernizing yeast", a people who were aggressive, innovative, achievement-oriented, and unafraid of manual labor. Due also to their high reproductive rate, they have, since Independence, "colonized" the entire Department of Caldas, [43] and parts of the Cauca Valley, and penetrated the commercial, banking, and manufacturing sectors of most of Colombia's towns and cities. There is no doubt that the highly successful corporation experience of the Antioqueño, carried by them to all parts of the country, aided in achieving acceptance of this type of organization in an otherwise traditional society. The Antioqueño's model of success must certainly have constituted a most influential indigenous "demostration effect", breaking down prejudices against non-family firms. Although no Antioqueños were involved in the founding of the CVC, many have started other enterprises in the Cauca Valley. The point is that their example of energy and enterprise must have been a factor in arousing other Colombians to a faith in the possibility of control over their own destinies.

42 Nieto Arteta, Luis Eduardo. *Economía y Cultura en la Historia de Colombia.* Editorial Siglo XX, Bogotá, 1942.

43 Parsons, James J. *Op. cit.* Also, for a beautiful description of this wave of colonization in Caldas, see Bernardo Arias Trujillo's novel *Risaralda.*

Equally important as an explanation of the spurt toward modernization in Colombia, represented, for example, by the creation of the CVC regional development corporation, is the introduction of "Western" technology and ideas, as early as 100 years ago, through the appearance in Colombia of key inmigrants, through the education of certain professional elites abroad, or by foreign technicians teaching in the nation's universities. And the fact that these modernizing ideas were incorporated into the value systems of upper class elites, and that the few immigrants who came to Colombia entered the upper class and professional status levels directly —in both cases, individuals with technical know-how, high status *and* capital— permitted the introduction of modernizing ideas that were strongly backed by both power and resources. So that it was the power elite itself, or at least certain sectors of it, who carried the task of modernization, and their status and influence made the task somewhat easier than if the ideas had been brought in by a group with lower status. In addition to the CVC example, Bogotá's industrial development can in part be ascribed to foreign influences on the upper class levels and from Antioquian influences.

6. *Social Pluralism and Development*

Social pluralism can be described as the division of social power according to geographic regions, according to centralized and decentralized political institutions, and by competing organized economic and social interests. It has been observed that the presence of pluralism is one of the characteristics of stable but dynamic democracies. It is argued that the existence of social pluralism is a guarantee that social change will become more orderly, that there will be less frequent resort to violence in the solution of problems and conflicts, and that both public and private sectors will be more likely to be involved in their solutions, leading to experience in debate and compromise. Therefore, to the degree that social pluralism is present or beginning in Colombia, trends toward authoritarian, totalitarian, and/or centralist government can be checked, and those toward democracy and orderly change be strengthened. In a situation of many competing private and semi-autonomous sources of power, as well as divided public power, the resultant plurality of elites is less able to operate to oppress, control, or disregard the needs of the masses; nor can the masses easily control and impose their will upon a plurality of elites [44]. At the same time active competition among institutional, associational, and regional interests will often maintain the continuing debate and support of initiatives toward modernization. Further, when organized interest groups and associations are formed, and are not characterized by excessively overlapping membership or membership restricted to one class, they serve in part to create some of the "intermediate cross pressures", which aid in siphoning off some of the total emotional commitment of the

44 Kornhauser, William. *The Politics of Mass Society*. Free Press, Glencoe, 1959.

individual, so that conflict, when it occurs, tends to become more limited to the immediate interests of the association and less destructive and disintegrative to the society as a whole [45].

To evaluate the strength of any trend toward democratic, orderly development with respect to Colombia, then, it will be necessary to examine the number and composition of separate organized interests, and their relative importance and power.

a. Regional Interests. As noted previously, the geographical features of Colombia in themselves have always exerted a strong influence upon its development. The topography of the effectively populated and integrated Western third of Colombia first fostered the growth of regional social isolation and differentiation, then gradually economic differentiation. Each somewhat isolated and self-sufficient valley region has one or more large urban centers with their surrounding and supporting agricultural regions. Some of them are relatively equal in wealth and importance. In each region there has been some tendency toward specialization in crop production, and since 1900, in industry as well. The strong regional cultures and loyalties that have developed among these populations over the centuries, and which were the basis for the strong federalist movements during the post-Independence period, have further reinforced this regional differentiation in recent years fostering the fractioning of political and economic power geographically and demographically. Thus region will often be pitted against region, or a region against the central government, in the protection of regional interests. In the Department of Valle at least, representatives from all important public and private Valle institutions have recently been organized into an association for the defense of across-the-board regional interests against those of the centralist government and other regions, called the *Unidad de Acción Vallecaucana.*

b. Institutional Interests. Institutional interests include two major ones: the Catholic Church and the Armed Forces. The powerful Church has formed or sponsored numerous ancillary political action and social service organizations such as a labor union, its extensive private school system, the more recent study group of industrialists called the Instituto de Estudios Sociales y Económicos (I.E.S.E.), and the professional "secret society" known as the *Opus Dei,* [46] both of which exert strong

45 Coser, Lewis A. *The Functions of Social Conflict.* Free Press, Glencoe, 1956.

46 *Opus Dei* is a worldwide organization founded by a Spanish priest, Monseñor José María Escrivá y Balaguer, in 1928, for the purpose of bringing lay Catholics closer to the Church and "perfecting the practice of Christianity among members of all social classes". (Cf. *El Siglo, Bogotá,* June 21, 1964, p. 10). It is organized hierarchically and by professions and economic groups, almost like "cells". Although it claims that its membership rolls are public and published in the *Anuario Pontificio,* it cannot help but operate in a way somewhat analogous to the Masonic Orders. And wherever people are drawn together in association for a common purpose and with a common ideology, an interest group is formed.

influence among the elite groups of business and the professions, and are becoming increasingly powerful.

The Armed Forces, on the other hand, have achieved a degree of professionalism [47]. Since 1909 the Army had been relatively apolitical. Even now it does not intervene in the political arena unless it seems obvious that the civilian government is unable to maintain order. The coup d'etat by General Rojas Pinilla in 1953 ocurred when the country had reached a state of undeclared civil war.

The use of this balance wheel may become increasingly frequent if the social structure does not show signs of peaceful evolution. The Army is gradually becoming divorced from the interests of the upper class. Officers have increasingly been drawn from the middle sectors, and enlisted personnel has always been recruited from the lower urban and peasant classes. In general, although the Army has historically been a conservative force, there are signs of change. Increasing numbers of recent graduates of the Superior School of War are being trained in economics, sociology, and political science, as well as in engineering and the physical sciences. It may take some time, however, before these social science graduates reach the upper echelons.

c. Associational Interests. Increasing economic diversification and demographic decentralization have fostered the growth of associational interest groups in urban areas. The first of these interest groups appeared during the 1930's and 40's: the National Federation of Coffee Growers, the Association of Industrialists (ANDI), and the National Federation of Merchants' Associations (FENALCO). These three groups are powerful and exert influence on legislation and business methods. All three have permanent bureaucracies, national and regional branch offices, legal retainers, and large budgets. The National Federation of Coffee Growers, the most powerful and best organized of the three, has become almost a government within a government, assuming many of the functions we normally associate with a Department or Ministry of Agriculture: marketing, storage, price supports, credit, scientific research, housing, and social services for all those connected with the industry, including both large and small farmers. The success of the Federation of Coffee Growers has stimulated the formation of other producers' associations, although the activities of these newer groups are mostly limited to pressure upon government. Among them are the Sugar Cane Producers' Association (ASOCAÑA), the Cotton Growers' Association, the Association of Cattlemen, and the Rice Growers' Association, which are all active and powerful. One might include here the Instituto de Estudios Sociales y Económicos, the recent organization of industrialists which is closely linked to and backed by the institutional interests of the Catholic Church. There is also a rather recently organized

47 Lieuwen, Edwin. *Op. cit.*, pp. 122-126, 168-169; and *Generals Vs. Presidents: Neo-Militarism in Latin America*, Praeger, N. Y., 1964; Johnson, John J. *The Military and Society in Latin America*. Stanford University Press, 1964, pp. 72-73, 115-118, 121, 128-129, 144, 151-152.

Association of Small Manufacturers (ACOPI), to defend their interests against the power of those of the large industries represented in the ANDI. Frequently the industrialists have pitted their weight against the power of the agricultural and landowning interests on such issues as land reform and the taxation laws to support the CVC.

There are two national labor unions with their local affiliated unions in all the large cities: the CTC (Confederación de Trabajadores de Colombia), the secular union, and the UTC (Unión de Trabajadores de Colombia), a union set up in 1946 and sponsored by the Church to parallel and compete with the activities of the CTC at all levels. There is presently an attempt to set up an independent union. Labor union membership is growing but still quite small; [48] and limited to large manufacturing industries, petroleum fields, and sugar cane mills, where because of the homogeneity of the labor force and its concentration in areas, interaction and mobilization are relatively easy [49]. The union activities apart, have not always been constructive; that is, not always limited to collective bargaining toward improvement of working conditions, but often engaging in political demonstrations.

The university student associations have often engaged in leading political pressure demonstrations and have in the past constituted a "fourth power" in national politics. They are given a large part of the credit for the overthrow of General Rojas in 1957. Although they had been seriously weakened during the past four years due to a loss of prestige during a wave of morally unjustified strikes, their non-violent demonstrations in 1964, provoked by arbitrary action on the part of University directors in Santander, have again raised them to a somewhat "heroic" role.

National and regional organizations of professionals for the defense of their respective interests are becoming increasingly important. There are several associations of lawyers by specialty, of physicians and surgeons, dentists, pharmacists, architects, engineers, agronomists, economists, a wider-based association of professionals interesed in civic affairs *(Sociedad de Amigos del País)*, an Association of Rectors of Universities, another for Rectors of Secondary Schools, a professional teachers' association, as well as several teachers' unions, and a new League of Women Voters *(Ciudadanas de Colombia)*. Pharmacists and pharmaceutical companies, for instance, have recently fought against legislation to produce "generic drugs" which are to have the effect of lowering prices so that poorer classes are able to purchase them.

All of these —sectional interests, institutional interests, associational, and professional interests— are important beginnings of social pluralism,

48 According to *El Espectador* of January 17, 1965, there are some 500,000 members affiliated with the two national unions CTC and UTC.

49 Kerr, Clark, and Siegel A. "Inter-Industry Propensity to Strike: an International Comparison" in *Industrial Conflict* by A. Kornhauser and R. Dubin, McGraw-Hill, N. Y., 1954.

which, *if* extended to cut across class lines to include lower class and status groups, may contribute significantly toward achieving increased democratic participation, political stability, and insurance against absolutist or centralist repression and control. Although associational interest groups are growing rapidly in power and importance, [50] many are still weak; and hardly any cut across class lines at present. Participation is still limited to upper and middle classes which possess the economic and social power. Paternalism has retarded the growth of labor unions. The lower classes do not now have, besides these small labor unions, sufficient organized power, that is, interest groups, through which to work. While the elites are now somewhat more sensitive to mass pressures from below since the experience of the mob rage during the April 9, 1948 "bogotazo", the masses are on the other hand, still highly vulnerable to pressures from the elites and limited in their media of expression to the violence-threatening techniques of the "manifestación" and the strikes mentioned previously. Further, Colombians, are, in general, still far from being as organization-minded, as North Americans; and this apathy often leaves these associations in the hands of small oligarchies. Unfortunately, no studies of the degree of overlapping membership are available at this time [51]. But since this active membership is still largely limited to the upper classes, and even if the ruling class is divided into groups according to occupational interest, class consciousness in the upper class is so strong that it often results in the blurring of lines between different "interests" and the frequent aligning of the monied classes against the mass of the population. However very important is the fact that Colombia *is* developing industrially, that it *does* possess groups increasing in strength and power, power which is often constructive and sometimes quite effectively used in restraining or counteracting the landowning interests.

Moreover, in spite of the formal centralist-unitary government structure, which tends to pull in all power hierarchical to the apex at the capital Bogotá, and given the generally present authoritarian attitudes of the population which reinforce this hierarchy, Colombia is different from the

50 "Grupos de presión" have become a major topic of public discussion in recent months (April-June 1964), but reveal a far from universal awareness of their positive as well as negative functions and powers. Certain influential members of these pressure groups, Eduardo Zuleta Angel of ANDI, for example, have publicly admitted their existence and defended their value. Certain sociologically trained military officers and university professors, and certain political leaders are also aware of their existence, but warn of the dangers in their lack of control. Other cabinet ministers, politicians, and even the President have tried to deny either their existence, or their power in influencing policy decisions.

51 However, an idea of the concentration of land can be obtained by a glance at the figures on land tenure; and the degree of concentration of capital in a few hands may be seen by looking at the figures reported by José Consuegra in *Apuntes de Economía Política* (Ed. Tercer Mundo, Bogotá, 1964), pp. 76-78. Consuegra reports that in 1960, 4 corporations (of a total of 810 then existing in the country) owned 30 percent of all the capital; and 61 of these corporation (7 percent of the total of 810) owned 62.6 percent of all the capital. He notes a marked trend toward increasing concentration of wealth.

rest of Latin America in that regional loyalties and interests have always been quite strong. They have begun an interesting trend toward further decentralization. The regional alignment of associational interests against the center, and the additional alignment of industrial and commercial interests against the feudal landowners, have forced the chipping off of some of the centralized power into the creation of a new regional development institution spliced in between the national government and the local, and overshadowing to a large degree, the rather ineffective and powerless departmental government. The first of the regions to experiment with this new type of regional development institution was the Cauca Valley region, primarily the Department of Valle. Although influential individuals and groups of the Department of Valle who initiated the movement originally intended the inclusion of the Departments of Cauca and Caldas, it has remained mainly a creation of the Department of Valle. The success of the CVC has not only made it a permanent and accepted institutional innovation in the Department of Valle, but has brought about the creation of the Corporation of the Magdalena and Sinú Valleys (CVM) and the Corporation of the Bogotá Savannah (CAR), now beginning studies and operations, and the projected creation of similar entities for Chocó and Santander.

C. THE CAUCA RIVER VALLEY REGION

Bearing in mind the over-all cultural environment of Colombia, attention will now be focused more directly upon the Cauca Valley Region.

In the west-central part of Colombia, the valley is closed in by two majestic branches of the Andean mountain range, the Western and Central Cordilleras which fork off from the *Nudo de los Pastos* in the South. From La Balsa at the southern end of the Valley to Cartago in the North, the land is furrowed by the swift-flowing Cauca River. This Valley of the Upper Cauca is one of the most beautiful, rich, and fertile valleys of the world, with an area of approximately 400,000 hectares of flat land suitable for mechanized agriculture. Its moderate climate, rich deep black soils, variety of plant and animal life, adequate transportation facilities and strategic location, the excellent quality and quantity of the available human resources, all contribute toward making the Cauca River Valley an exceptionally privileged region, one with a highly promising future.

Unfortunately, in spite of significant agricultural and industrial progress during the past 50 or 60 years, and especially during the last decade, the Cauca Valley still remains underdeveloped in relation to its potential, due to traditionalist social institutions and the concentration of power, which have predominated throughout the past 400 years. The social, economic, psychic, and political problems caused by these anachronic institutions have increased and compounded with the passage of time, until today they are extremely acute. Realization of the gravity of these problems on

the part of a small modernizing elite, backed by the economic power of the industrial sector, finally led to a moderate reform movement, the creation of the Autonomus Regional Corporation of the Cauca Valley (CVC) in 1954, for the purpose of promoting the integrated development of regional resources and the well-being of the inhabitants of the region.

1. *The Valley Resources*

Sebastián de Belalcázar, the Spanish explorer largely responsible for the discovery and colonization of the Cauca River Valley in 1535, had a good eye for promising real estate which could be developed for both agricultural enterprises and urban settlements (as has every visitor to this "Garden of Eden" ever since). Belalcázar is credited with having introduced cattle, poultry, horses, and crop seeds from the Old World, as well as founding numerous towns throughout the Valley where he encouraged Spanish colonists to settle. Few who have come to the Valley have left it without regrets.

a. Physical Resources. Since the Cauca Valley is located at an altitude of approximately 3000 feet above sea level, and near the Equator, the climate is unvaried and pleasant throughout the year. Its average temperatures range from 75 to 80 degrees Fahrenheit, with an average humidity of from 60 to 65 percent. The nights are refreshingly cool. Dry and rainy seasons, called "summer" and "winter", alternate fairly regularly by three-month periods, the dry periods occurring at the beginning and the middle of the calendar year. There is a cycle of "wet" and "dry" years, which is, however, often irregular, but which in the "wet" years seriously floods the banks of the Cauca River and which largely prevents intensive cultivation of crops in those flooded areas. The present year 1964 initially appeared to be one of these wet cycle years. In any event, crop losses in the northern part of the Valley and extensive urban property damage have brought home the value of CVC projects to both large and small farmer and urban dweller alike.

The principal mineral resources of Valle are coal, clays, limestone, gold, and platinum. North of Cali there are coal deposits whose reserves are estimated at 42 million tons. There are also prospects of gas and possibly petroleum reserves in this sector [52]. The extensive limestone deposits in the *Cordillera Occidental* supply the cement plant at Yumbo (industrial town contiguous to Cali) which produced about 200,000 tons in 1954, and 480,000 tons in 1963 [53]. Alluvial gold and platinum are exploited on the Pacific Coast, and gold in the Cauca River upstream near Timba. The Puracé Mine of the contiguous Department of Cauca is reported to contain 6 million tons of sulphur agglomerate with 30 to 40 percent sulphur content, the richest source in the country. There are also possibilities for cop-

52 AUTECO (L'Auxiliaire Technique et Comptable). *Republic of Colombia: Cauca Valley Coal Survey.* Brussels, Belgium, 1963 - 1964, p. 33.

53 CVC, Departamento de Estudios y Desarrollo Regional.

per, lead, zinc, and iron ore, but lack of adequate geological studies prevent further mineral exploitation at the present time. Mineral production of Valle in 1953 was 7.1 million pesos, or only 2.5 percent of the total national production [54]. Timber resources are extensive along the Pacific Coast, but have not been significantly exploited.

The electric power potential of Valle is excellent and relatively easy to harness. The total installed capacity of the Cauca Valley region in 1955 was 75,000 kilowatts, of which 49,200 was from hydro sources and 25,900 thermal [55]. But the rapid expansion of population and industrialization led to an estimate made in 1955 of an increase in demand for power of 150,000 kilowatts by 1965 [56]. However, these estimates of demand have been periodically revised upward as the progressively increasing population growth rate invalidates previous estimates in demand.

The soil of the Valley floor is rich and fertile volcanic loam; that of the hill and mountainsides typically acid and in need of liming if used for crops other than coffee. The principal crops of the valley region are sugar cane, cotton, soybeans, tobacco, rice, corn, plantains, cacao, beans, yuca, fruits, and vegetables. Coffee is a very important crop on the hillsides of the northern valley region (known as the "Quindío"). Barley, corn, potatoes, wheat, and vegetables are also grown in these hilly and mountainous, and therefore somewhat cooler, areas. The Cauca Valley is also a major producer of poultry and dairy products and an important producer of beef cattle. In part because of periodic flooding, in part because large scale cattle farming is a more easily administered enterprise, one which requires far less in investment of capital, labor, and technical knowledge, the flat valley lands, which are the only areas apt for mechanized, intensive agriculture, are still too widely used for cattle-grazing. Crops are grown on the hillsides, using the slash and burn method, with no technical knowledge of agriculture and causing serious problems of erosion. This present "uneconomical and illogical pattern of land use obstructs any attempt to increase agricultural production" [57]. However, the situation is changing, precisely because of the efforts of the CVC.

According to a recent study, [58] it appears that agricultural production did increase by 47 percent as a whole during the period 1955 - 1962, taking 1955 as a base year; that is, an average yearly increase of 6.7 percent, as can be seen from the table below. In the same period, however,

54 CVC, OLAP, G&H, TAMS. *The Unified Development of Power and Water Resources in the Cauca Valley*. Cali, January 1956, p. II-26.

55 *Ibid.*, p. VII-6.

56 IBRD. *The Autonomous Regional Corporation of the Cauca and the Development of the Upper Cauca Valley*. Washington, D. C., 1955, p. 32.

57 IBRD. *The Agricultural Development of Colombia*. Washington, D. C., May, 1956, p. 5.

58 Colmenares, Jesús Humberto. *Análisis de la Producción Agrícola en el Departamento del Valle: Números Indices de Producción Agropecuaria, 1955-62*. (tesis de grado). Facultad de Ciencias Económicas, Universidad del Valle, Junio, 1964.

TABLE II.1.

Indices of Gross Agricultural Production in the Cauca Valley 1955 - 1962 [59]

1955 = 100

Years	*Indices*
1955	100
1956	97
1957	109
1958	117
1959	126
1960	127
1961	132
1962	147

"the population of the area grew at 4.9 percent per year. In spite of this, it cannot be said that the increase in production has been satisfactory; on the contrary the situation has been unfavorable. If one excludes from the index those products which are not consumed as food staples, the increment... reaches only 29.2 percent for this period (compared with a 46.6 percent total increase in production and a 34.7 percent increase in population), at an annual increment of only 4.3 percent" [60]. This of course means that serious steps should be taken to foster agricultural development in the area so that it can at least meet the region's needs due to population increase. Sugar cane, cotton, and soybeans are the crops which have developed most rapidly during this period.

b. Human Resources. As mentioned before, the population of the Cauca Valley region includes whites, Indians, negroes, and mixtures of the three. The whites, of Spanish origin, first settled in the Valley during the first half of the 16th Century and found there several warlike tribes of Carib Indians, primarily hunters and gatherers, whom they managed to reduce and push back into the hills and mountains after several bloody skirmishes. There were also some agricultural tribes — the Gorrones and Calimas on the west bank of the Cauca River, and the Bugas on the east bank — who lived in villages in the Western Cordillera foothills, cultivated corn, yuca, fruits, and palms on "small, more or less shifting holdings", [61] and fished extensively in the Cauca River. These tribes taught the Spanish settlers most of what the latter knew about the cultivation of

59 *Ibid.*, p. 84. This index refers to 15 products: cotton (fiber and seed), paddy rice, cacao, sugar cane for sugar, sugar cane for panela, barley, beans, corn, potatoes, plantains, soybeans, tobacco, wheat, and yuca.

60 *Ibid.*, p. 137.

61 Crist, Raymond. *The Cauca Valley: Land Tenure and Land Use.* Waverly Press, Baltimore, 1952, p. 12.

indigenous crops. Later on, other white settlers joined the first from Spain and other parts of Colombia and the Colonial Empire. The negroes were brought in later as slaves for the mines of Chocó, and though largely concentrated on the Pacific Coast, have increasingly moved into the interior in search of work.

On the whole, Cauca Valley inhabitants are today a labor force that is intelligent and learns quickly. Although the problem of literacy and education in Valle is very serious, it is somewhat less so than in the rest of the country. In 1960 Valle placed 16th among the 16 then existing *departamentos* of Colombia in descending order of percent of illiteracy [62]. In 1958 it was estimated that in Valle there were 28,980 children of primary school age not in school [63]. Of a total population of 1.3 millions over the age of seven, 360,000, or 28 percent were illiterate [64]. But despite rapid construction of schools, the situation today remains much the same as before, if not worse, because of the high population growth rate, with 50,000 children of school age without schools in Cali alone, in 1964 [65]. Furthermore, the drop-out rate is very high: 33 percent after the first year of primary school and 68 percent after the second [66]. This strongly suggests that there is an extremely high degree of functional illiteracy, since one or two years of the quality of public primary school training available is not sufficient to make the written word a real tool for use. Finally, only 1.2 percent of the children who begin primary school ever reach the second year of high school [67].

According to the population census of 1951, the Department of Valle had 1,106,900 inhabitants; which constitutes 9.6 percent of the total for Colombia of 11,459,000, in an area which is, however, only 1.8 percent of the total area of Colombia. Between 1938 and 1951, the population of Valle increased by 493,700, or at an annual rate of 4.7 percent, the highest rate in Colombia [68].

By 1960, the population of Valle is estimated to have risen by another 669,823, making a total for Valle of 1,776,750; [69] while the population for Colombia as a whole rose by 3,606,000, or a total of 15,065,000 [70]. This increases the share of the total population of Colombia for Valle to 11.7 percent for 1960, at an increasing rate of over 5 percent annually. Meanwhile the population of Cali more than doubled between 1951 and

62 Sandoval, Alberto. *Estudio Geo-Económico del Valle del Cauca.* Instituto Vallecaucano de Estadística. Cali, 1960, p. 65.
63 CVC. *Informe sobre la Educación en el Valle del Cauca.* Cali, August, 1958, p. 29
64 Sandoval. *Op. cit.*, p. 59.
65 *El Espectador*, Bogotá, May 17, 1964.
66 CVC. *Informe sobre la Educación en el Valle del Cauca.* Cali, August 1958, p. 17.
67 *Ibid.*, p. 16.
68 CVC. *The Unified Development... Op. cit.*, p. II-6.
69 Sandoval. *Op. cit.*, pp. 40-41.
70 Prieto and Ortega. *Op. cit.*, Table 4.

1960, and tripled between 1951 and 1964. The present population growth rate for Cali is a staggering 8.3 percent.

About half of the population of Valle is urban, distributed among eight medium-sized centers and one large city, Cali.

In addition to the population indicators above, there exist other indices [71] of the dynamism of the people of the Department of Valle. With respect to the economic development of Valle as compared with other industrializing departments and with the country as a whole, investments in manufacturing in Valle for 1952, represented 29.4 percent of the total for Colombia in comparison with 16.8 percent for Antioquia (Medellín) and 22.1 percent for Cundinamarca (Bogotá); in sales in trade and services for the same year Valle made 15.8 percent of the total for Colombia against 13.9 percent for Antioquia and 25 percent for Cundinamarca; savings deposits represented 12.5 percent of the national total, for Valle; 13.2 percent for Antioquia; and 35.1 percent for Cundinamarca. Per capita income level estimates for 1954 showed that Valle, at 970 pesos per capita annually, surpassed Antioquia at 620 pesos, and Atlántico (Barranquilla) at 910 pesos, and was second only to Cundinamarca at 1,180 pesos. The annual per capita income for all of Colombia was 630 pesos. These indicators seem to show that Valle is, or was in 1952, developing much more rapidly than the traditional leader in Colombian industrialization, Antioquia; and is well above the national average.

2. *Historical Traditions of Regional Independence*

The Cauca River Valley has had long and deeply rooted traditions of regional independence and initiative. Geographical isolation is largely responsible for this. It took two months by horseback, riverboat, and mule across two rugged mountain ranges and the Magdalena River Valley to reach the Cundinamarca plateau and Bogotá until way into the 20th Century. Trails were steep and dangerous. It is indeed somewhat remarkable that there was any sense of unity with the other provinces of New Granada at all. The center of cultural and economic gravity for the Cauca Valley region for several centuries was Popayán, and relations with Colonial Quito were often closer than with Bogotá.

Geography and distance thus favored the development of town *cabildos*, or councils, along lines not originally intended by the Spanish Colonial government. Due to the inability of obtaining prompt decisions from colonial administrators in the capitals — Popayán, Quito, or Bogotá — the notables of the town cabildos often usurped more than their legal functions, which were intended to be largely administrative. On more than one occasion, therefore, the notables, feeling the need of a school, roads, a parish church, or a prision, looked to their own resources, voted to tax themselves, and donated the necessary land and slave labor

71 CVC. *The Unified Development... Op. cit.*, pp. II-9-10.

to carry out the public work. The habit of relying on their own resources also led to open rebellion on the part of the town cabildo at times when it felt its interests were threatened by a new central government decree or tax [72].

Besides this self-government experience during the Colonial period, which was possible only in the provinces which lay at great distances from the vice-regal capital, the fact that the Cauca Valley region also had significant governing experience during the period between 1810 and 1886 when the long battle between the centralists and the federalists at times favored and permitted local autonomy, contributes to a tradition of independence that surely was a factor in the development of a habit pattern towards the seeking of local solutions to felt needs of regional development. The autochthonous creation of the autonomous regional corporation, when the central government failed to satisfy felt local needs is thus within this tradition of local initiative.

The Constitution of 1886, which became the final basic constitutional form and which although since then amended frequently, still contains the fundamental distribution of power between local and central governments, is a unitary-centralist form with concessions to localism. The principle is described as "*centralización política y descentralización administrativa*". While in theory the central government has absolute power under the formal constitutional structure, the realities of decentralized regional power groups, regional loyalties and habits of initiative, and geographic and demographic fragmentation, make *extreme* centralism in Colombia difficult if not impossible, as noted in the previous section. Attempts to ignore local power and interests, such as occurred during the administration of dictator General Rojas Pinilla, and when President Valencia recently challenged Cauca Valley interests, have not met with complete success in the past and are unlikely to in the future. However, one cannot help but lament the delays and obstacles which centralist control and power can place in the path of local initiative.

3. *Colonial Economic and Agrarian Pattern*

The fertile lands of the Cauca Valley were effectively divided up among the colonists soon after discovery, in the form of *encomienda* grants where there were docile Indians which could be made to do the work, and outright grants where there were none. Small scale crop farming carried on originally by the Indians was moved up into the less fertile lands in the foothills and mountainsides. The estates granted were very large and their boundaries vague. These indefinite estate boundary lines "made it relatively easy for the strong to encroach upon the smaller landholders, with the result that many estates grew to enormous size in the course of a few

72 Numerous instances are noted in Tulio Raffo's *Palmira Histórica* (Imprenta Departamental, Cali, 1953) and Gustavo Arboleda's *Historia de Cali* (Biblioteca de la Universidad del Valle, Cali, 1956).

hundred years" [73]. As the estates became larger, pasture lands increased, and the raising of beef cattle became more lucrative. At the same time, the production of food crops for local consumption continued declining. Sale of beef to Popayán and other towns beyond the Valley became very profitable, but the money passed through fewer and fewer hands. At times the *cabildo* of Cali had to forbid the sale of beef to other towns until local demands were satisfied, and even inaugurated price controls [74]. This increasing concentration of wealth in essentially speculative activities increased unemployment and failed to stimulate the growth of local industries.

Independence in 1820 brought no alteration in this monopolistic land tenure system or in the trends of increasing *latifundismo*. The social class structure which controlled it remained the same. The barriers to agricultural, commercial, and industrial development which were a major cause of the war for Independence continued to exist afterward. The institution of *mayorazgo* or primogeniture, which prevailed throughout most of Colombia threatened to congeal land ownership permanently. And even the few beneficial policies of the Colonial regime were abandoned, such as the obligatory provisioning of towns with food and the price controls. Thus as the population grew, and more and more of the most fertile land became concentrated in few hands and was turned over to cattle grazing, pushing intensive crop agriculture up into the less fertile hills, food became more scarce and higher priced. The post-Independence economy was fast approaching a crisis.

In 1824 a moderate "agrarian reform" was passed, one which, however, did not really attack the problem of latifundio, even though it weakened it somewhat: The *mayorazgo* was abolished, providing the legal basis for possible future circulation of land. In 1858, another attempt was made which, although intended to encourage production, in effect actually intensified the concentration of land. The *resguardos indígenas*, or communally-owned tracts, which had been turned over to the Indians at Independence and which they had not been permitted to alienate or abandon, had had the effect of reducing migration to towns and therefore retarding the growth of industry which depended upon an increasing labor force. The reform of 1858 parceled out these communal lands to the Indians in private ownership. Almost immediately they were sold for a pittance to the local *caudillo*, and the Indians were reduced to peonage. Haciendas grew larger.

In the 1860's came the confiscation of Church lands. The Church had been one of the largest *latifundistas* during the Colonial period and continued acquiring lands under the institution of *manos muertas* or mortmain, whereby faithful parishioners bequeathed their property to the Church. More than one hacienda in Valle fell to this fate, of which this

73 Crist, Raymond. *Op. cit.*, p. 13.
74 Arboleda, Gustavo. *Op. cit.*, pp. 66-67, 99, 238.

outstanding instance is recorded: The Hacienda La Paila, 500 square miles in size, was willed by its owner, a Señor San Martín, to the souls in Purgatory with the Church as perpetual administrator, the profits of the estate to be used for saying masses for the redemption of these unfortunates [75]. The law suppressing this "confessional" latifundio, the confiscation of these lands in mortmain, did effect some redistribution of lands favoring the middle and lower classes, but by far the best lands and the larger tracts fell again into the hands of the upper and military ruling classes that had connived through legislation in dispossessing the Church. No real land reform was possible then — and does not portend greater possibilities today — when the "reforms" are legislated by a Parliament composed of a majority of land holders who cannot see the long-range value of limiting their own power and wealth.

In 1864, however, the first major enterprise in commercial agriculture was initiated in Valle: the planting of a relatively large hacienda in sugar cane and the installation of steam-powered sugar mill by a Russian - American immigrant to Colombia, James Eder. His successful example was followed by the Caicedo sugar mill in the early 1900's, and later by others.

In the early 1930's, because of protection to agriculture to counteract the Emergency Law of 1926, [76] agricultural production gained impetus. This growth was further accelerated in the 1940's by new economic protective measures. Due to the suspension of shipping and to the difficulties in importation during the Second World War, increasing success was achieved in some agricultural and industrial ventures undertaken to fill the needs which could not be met by importing from abroad. These achievements led to further impetus during the 1950's. Mechanized farming of rice, cotton, beans, soya, corn, and sugar, as well as highly improved livestock management, was introduced in a few large farms whose wealthy owners had seen scientific farming abroad.

The result is that agriculture in the Cauca Valley today is unevenly developed, and the contrasts are stark. It is highly mechanized and productive for a small group of large owner-operator and tenant-operator wealthy farmers; it is extremely backward, even primitive for the vast majority of the owners of small and medium-sized farms, located especially in the hills. Although over-all improvement is thus substantial, and

75 Crist, R. *Op. cit.*, p. 32.

76 In 1925 the United States paid Colombia 25 million dollars in indemnization for the loss of Panama. This money was immediately invested in a vast program of public works. Attracted by the higher salaries, laborers left the farms in droves for construction jobs. This resulted in a serious deficit in food production. The Emergency Law of 1926 provided for the reduction of tariffs on agricultural products and foodstuffs. But rather than alleviating the food shortages, the situation grew worse: Colombian agricultural production could not compete with cheaper and more efficiently produced products from abroad, and continued decreasing.

has undoubtedly been accelerated and technified for all concerned, especially when the CVC entered the field of reclamation and extension work, much still remains to be done to enable the small farmer to make an adequate living.

4. *The Pattern of Land Tenure and Land Use Today*

Accurate statistical data on land tenure and land use in the Cauca Valley was not available until 1959 when the CVC and the School of Economics of the University of Valle undertook jointly to survey the agricultural resources of the Valley. Before that, a nationwide sample was taken by the Dirección Nacional de Estadística in 1954, but this was only a sample.

The 1954 sample [77] showed that of a total of 59,000 farms, 68 percent, representing 10 percent of the land, were under 10 hectares in size; and 4 percent representing 60 percent of the area were over 100 hectares. Further, farms of over 1000 hectares account for 11 percent of the area. The complete agricultural census of 1959, [78] on the other hand, showed that there had been a decrease in the total number of farms by 8,177. Of the remaining 50,823, 35,500 were under 10 hectares and represented 9.4 percent of the land; 2,176 were over 100 hectares and constituted 58 percent of the land; and 78 farms were over 1000 hectares in size and constituted 12.3 percent of the land. Providing that the 1954 sample is accurate then, there would seem to be a gradual trend toward greater concentration of land in fewer hands. In any event, a situation in which less than 2 percent of the landowners own 43.5 percent of the land is not a healthy one. But worse by far is the situation of the marginal farmer on the *minifundio:* 70 percent of the landowners of the Cauca Valley are in this situation.

77 CVC. *The Unified Development... Op. cit.*, pp. II-17.

78 Universidad del Valle, Facultad de Ciencias Económicas, *Censo Agropecuario del Valle del Cauca, 1959.* Cali, Colombia, September 1963. Table 1, p. 11.

TABLE II.2

Valle del Cauca: Number of Farms and Area of Land, by Size of Farms, 1959

Farm size	*Number of farms*	*% of total farms*		*Number of hectares*	*% of total land*
Farms without land	652	1.28		—	—
Less than ½ hectare	4,979	9.77		1,286.9	
From ½ to 1 hectare	5,061	9.90		3,804.3	
From 1 to 2 h.	6,649	11.11	52.16	10,415.3	3.93
From 2 to 3 h.	3,467	6.82		8,761.7	
From 3 to 4 h.	3,973	7.81		13,927.3	
From 4 to 5 h.	1,728	3.40		7,724.2	
From 5 to 10 h.	8,991	17.69		63,929.0	5.47
From 10 to 20 h.	6,480	12.75		93,526.6	8.01
From 20 to 30 h.	2,252	4.43		55,338.0	
From 30 to 40 h.	1,591	3.11	9.05	55,420.7	12.37
From 40 to 50 h.	755	1.48		33,761.1	
From 50 to 100 h.	2,069	4.07		142,256.7	12.18
From 100 to 200 h.	1,166	2.29		170,120.5	14.57
From 200 to 500 h.	717	1.41		220,045.5	
From 500 to 1000 h.	215	0.42		143,671.6	
			1.99		43.47
From 1000 to 2500 h.	67	0.13		92,089.1	
Over 2500 hectares	11	0.02		51,868.9	
Total	50,823	100.00		1,167,947.4	100.00

Source: Adapted from Table 1 of *Censo Agropecuario del Valle del Cauca: 1959.* Facultad de Ciencias Económicas, Universidad del Valle, Cali, 1963, p. 11.

5. *The Presence of Modernizing Elites and the Problems to Attack*

The infiltration of modern ideas in the field of agriculture — the use of machine technology, techniques for commercialized intensive agriculture, such as improved varieties of crops, irrigation, accounting methods, and improved transportation and marketing facilities — probably had its most important beginnings around the 1860's, with the arrival in the Cauca Valley of a German-Russian immigrant to the United States who was a graduate of Harvard University Law School and spent part of his youth in California during the Gold Rush of 1848; and later managed, with an older brother, a commercial trading and shipping firm which plied the Pacific Coast route from San Francisco to Santiago de Chile, and acted as U. S. Consul in several of the ports along the way — Santiago, Guayaquil, and finally Buenaventura. This young man of wide experience and broad education was James Eder, known in Valle as Don Santiago. While stationed at Buenaventura, Don Santiago Eder made several trips into the interior, fell in love with the beautiful Cauca Valley, and bought the Jorge Isaacs Hacienda, La Manuelita, which was then in bankruptcy. This hacienda, previously devoted to cattle grazing, a primitive and inefficient panela mill, and a few crops for household consumption, soon became a profitable sugar plantation with the introduction of the first steam-powered refining machinery in Colombia. The importation of this machinery, via the still primitive port of Buenaventura which then

lacked even the most rudimentary dock and loading facilities, was one of the feats that has never been forgotten in the Cauca Valley — large axles, boilers, and tubes hauled through virgin forests, along rivers with dangerous rapids, and up and down narrow mountain trails, by canoes, mules, ropes, and oxen. It took two years, but proved two things: that determination and enterprise can overcome the worst obtacles, and that good transportation is essential for trade and development. Don Santiago then began to agitate and organize for the construction and termination of the highway connecting Buenaventura to the riches of the interior, a project which had been conceived in 1850 and abandoned in 1865. In time he bought up several neighboring haciendas and made sugar one of the principal commercial crops of the region and the country. He introduced improved varieties and methods for the growing of coffee, tobacco, indigo, and several fruits and vegetables; brought in the first sewing machines, horse-drawn carriages, alcohol lamplighting for Palmira and Cali, and other improvements. In fact, La Manuelita became a veritable "school of work", [79] revolutionizing systems of work and living. Don Santiago also brought various foreign "technical assistance" experts — engineers, chemists, and business managers — at different periods to help in the industrialization and expansion of the sugar enterprise.

And not having abandoned his interests in trade, banking, commerce, and intellectual pursuits, Eder also broke the traditions of family-type economic association and entered into a variety of companies with other capitalists of the region: a coffee trading company, a river steamboat transport company on the Cauca River, a newspaper *El Telégrafo* of Palmira, a street-car company in Cali, gave stimulus to the opening of a branch of the Bank of Cauca (Popayán) in Palmira in 1874, and at the same time carried on his duties as United States Consul in Buenaventura.

The success of La Manuelita stimulated other wealthy farmers to devote their capital to the sugar industry: Hernando Caicedo with Hacienda Riopaila and later in the 1940's adding Hacienda Castilla, and the Cabal family of Buga with their Hacienda La Providencia. These soon became enterprises which are today as large as La Manuelita. There are at present 18 sugar mills in the Cauca Valley.

Other wealthy natives of the Cauca Valley soon followed suit, some by renting old haciendas and putting them under intensive, mechanized agriculture — the Castro Borrero family and José Otoya in cotton and soybeans, Carlos Durán Castro and Miguel López in rice and later soybeans, and an Austrian immigrant Leo Feldsberg in the 1950's in vegetables and fruits and a modern canning factory, Fruco. The Fruco farm is a model truck farm, showing what modern technology can do to obtain high yields and quality. Modern livestock and dairy methods were introduced in the farms of Gonzalo Córdoba Vallecilla, Mariano Córdoba, and, more

79 Plazas y Perry, Ltda. *Manuelita: Una Industria Centenaria, 1864 - 1964.* Editorial Agra, Bogotá, April 20, 1964, p. 38.

recently, by Alejandro Garcés Patiño, Efrén Cabal, Alfredo Cabal, Jorge Molina, Camilo Molina, and Carlos Durán Castro, all of old Valle families; and by Jaime Zuluaga, Miguel Duque, Diego Botero, and Luis Horacio Gómez, among others, who were of Antioquian origin and "colonized" the northern Valley from Buga to Cartago. Many of the latter have also turned part of their lands into cotton and soybean crops. Finally, one must include the influence of the Japanese immigrant colony near Palmira, even though these families did not enter on the upper class levels. In the late 1940's Japanese farm machinery expert Nakamura in Palmira made arrangements for about 40 to 50 families to come to Valle as immigrant farmers. These Japanese came with a minimum of capital and started as tenant farmers around Palmira, but with their spirit of enterprise and knowledge of crop-growing techniques, especially rice, beans, and soybeans, they soon rented larger and larger parcels, became quite well-to-do, and demonstrated to small farmers of the area what enterprise can accomplish. Today their Saja Cooperative is an important Valle organization.

However, although these progressive farmers were highly influential and powerful, they were still few in number. The vast majority of large landowners, especially absentee-owners, continued to be satisfied with old methods, which gave them "adequate income and much prestige", but contributed nothing to the development of the region.

In 1928 scientific agriculture had received fresh stimulus with the founding of the Agricultural Experiment Station at Palmira, due primarily to the efforts of Ciro Molina Garcés who was at that time Departmental Secretary of Industry. Molina Garcés, more than anyone else of his generation, had a vision of what the Cauca Valley could be. He was instrumental in bringing in 1929 the famous Chardón Mission of experts from Puerto Rico to survey the resources and problems of the Valley, and set bases for scientific research in crop and livestock methods at the new experiment station. The Puerto Rican Mission, under the direction of Carlos E. Chardón, a graduate of Cornell University, made extensive recommendations concerning the breeding of hardy varieties of native cattle with selected foreign breeds and brought from Puerto Rico and Cuba new varieties of sugar cane which would give higher yields. He also emphasized the need to contract the initial research regarding special tropical conditions, crop diseases, and plant and animal breeding, with foreign agencies such as the Tropical Plant Research Foundation of Washington, which was specially equipped and experienced in this kind of research, until Colombia had sufficient trained personnel to carry on its own research. Meanwhile, efforts were made to bring specialists to the new agricultural experiment station; and its organization and facilities were planned to meet the complete needs of the region. At the same time, another progressive wealthy farmer, Carlos Durán Castro, had gone to Southern United States to study rice growing and processing, and supple-

mented the Chardón report in this field. Durán Castro then became the director of the Agricultural Experiment Station.

A natural development growing out of the work at the experiment station was the realization of the need for a school to train young people in modern farm methods and to carry on the research needed. For several years talks to students at the Colegio Cárdenas of Palmira by another progressive wealthy farmer and civil engineer, José María Rivera Escobar, helped to awaken the interest of high school students in Valle in the possibilities of this new career and the need to harness the resources of nature for the benefit of man. Then through the determined efforts of Dr. Demetrio García Vásquez, at that time Departmental Secretary of Agriculture, the Escuela Superior de Agricultura Tropical was founded in August 1934 in Cali. Its first Director was Ignacio Vidal y Guitart, a Spaniard and graduate of the University of Barcelona in physical and natural sciences. The teaching personnel brought in consisted of Colombians, half of whom were graduates of the National Agricultural Institute of Medellín (the first of its kind in Colombia and founded in 1911) or the School of Veterinary Medicine at Bogotá (founded in 1921). The other half had been trained in universities abroad — the University of California, the University of Puerto Rico, the University of Louvaine in Belgium, and the University of Clermont-Ferrand in France.

It seems clear then, that the region had its small but influential group of innovators: immigrants, wealthy landowners, Colombians trained in Antioquia and abroad, and foreign technicians through early, pioneering programs of both public and private "technical assistance". But it is important to stress that all streams of ideas and capital entered on the upper class level of society, although admittedly among a limited group. This injection of innovations on the upper class level guaranteed that the technical innovations would more likely be accepted. The main problem since then has been that the ideas have not "trickled down" to the lower levels to a sufficient degree. And once again, this is due to the fact that secondary education is highly restricted; entrance into even the few agricultural schools that exist is almost entirely limited to graduates of academic secondary schools and thus to the upper and middle classes or to urban-educated youth [80]. Very few youths of farm background are thus able to take advantage of the opportunities available. However, the fact that the value of modern technology has been demonstrated and accepted, and has become part of the intellectual heritage of some sectors of the upper classes for about 35 years, has undoubtedly been one of the important factors paving the way to eventual acceptance of ideas of unified planning such as the CVC.

80 Comisión de Educación Agrícola Superior (sponsored by the Kellogg Foundation). *Educación Agrícola Superior en Colombia: Recomendaciones para Integrar la Enseñanza, la Investigación y la Extensión Agrícola.* Bogotá, April 1961, p. 38.

Then in 1936 the Cauca Valley region was scourged by a long hot "summer", causing severe drought in several parts of the Valley; and the thoughts of agricultural experts and politicians such as Demetrio García Vásquez, Secretary of Agriculture of Valle, and Domingo Irurita, Representative to Congress and himself the son of a farmer, turned to the problems of irrigation, dams, protection of watersheds through reforestation, and flood control through canalization of the Cauca River and some of its tributaries [81]. Through their constant agitation in the Assembly of the Department of Valle, in the national Congress, and in the press, they stimulated interest, not only on the part of the agriculturists of the region and the general public, but of private engineers and public officials in the various governmental agencies on all levels — local, regional, and national. These engineers and officials began to study the problem of irrigation, flood control, and reforestation and to submit concrete plans and suggestions for their solution. A dialogue was begun which extended into the 1940's and 50's between those in favor of limited and local projects and those in favor of more geographically extensive and ambitious projects. The significant fact was that all of them agreed that something had to be done. Gradually, as the problems were more deeply probed, and the interdependence of the multiple problems realized, the idea began to dawn of the possibility and need for long-range planning, based upon ambitious multiple-purpose projects, integrating and developing all the resources of the region.

81 Irurita, Domingo. *Los Grandes Problemas Nacionales: La Irrigación del Valle del Cauca.* Imprenta Nacional, Bogotá, 1936.

III

Creation of the CVC: A Challenge to Underdevelopment and Traditionalism

Thanks to the far-sighted initiatives of progressive "dreamers" such as Ciro Molina Garcés, Demetrio García Vásquez, Domingo Iurrita, and José María Rivera Escobar; and brought to fruition later through the efforts of José Castro Borrero, Diego Garcés Giraldo, Manuel Carvajal, Harold Eder, José Otoya, and Bernardo Garcés Córdoba, with the advice of David E. Lilienthal, an experiment without precedent in the history of Colombia, was initiated in 1954: the Autonomous Regional Corporation of the Cauca (CVC) was created in the extensive and fertile, yet inadequately developed Valley of the Upper Cauca, described in the previous chapter together with all its physical potentialities and obstables —economic, political, and social. To this agency was assigned the "mission of transforming the Upper Cauca Valley and its surrounding regions; that is to produce more and better quality foods at lower prices; more electric power for factories, homes, and farms; more and better transportation systems at lower costs; and in general, improved economic, social, and cultural conditions for all the inhabitants, through better and more intensive use of natural resources. What is involved here is a gigantic task, the unified development of a region —land, water, power, and other resources" [1].

The creation of the CVC was not due to an accidental event; on the contrary, it was the answer to intense needs for regional development which had been widely felt for many years. As was recorded in a study made by the International Bank for Reconstruction and Development in 1955 [2]:

"The idea was not new. For years the government and leading citizens of the Department of Valle del Cauca had sought means of quickening and spreading economic growth in their region. They were convinced, and rightly so, that the Upper Cauca River Basin was endowed with climate and soil and a geographic situation which would reward their efforts. They were animated by the belief that their people and their land could make a greater contribution to the economic strength of Colombia. As early as 1928, the Departmental Government of Valle obtained the expert advisory services of a mission from Puerto Rico on the agricultural resources of the Valley. Salvajina was first studied as a possible hydro-

1 Posada F., Antonio J. "Sentido y Espíritu de la CVC" in *La Nueva Economía*, Vol. I, Nº 2, April 1961, Bogotá, p. 222.

2 International Bank for Reconstruction and Development. *The Automonous Regional Corporation of the Cauca and the Development of the Upper Cauca Valley.* November 1955, Washington, D. C., pp. 1-2.

electric site in 1942; in 1945, Dr. Ciro Molina Garcés, then Secretary of Agriculture of Valle, contracted with a New York firm for an engineering study on improved use of the water resources of Valle. Calima was first studied as a power project in 1946. In 1949 the Departmental Government contracted with the engineering firm of Olarte, Ospina, Arias, & Payán (OLAP) for a study of the electrification of Valle, and OLAP presented a full report in July 1949. OLAP also prepared an over-all irrigation plan, and in June 1952 presented a Plan for the Economic Development of the Upper Cauca River Basin which suggested the creation of a Valley Development Corporation.

This long record of engineering reconnaissance and analysis made possible a step forward. Upon the suggestion of the Cali branch of the Colombian Manufacturers Association (ANDI), the Government of Valle in June 1953 formed a Departmental Planning Committee, which turned to the National Planning Committee for assistance and advice. Accordingly, in May 1954, a Report on a Plan for the Department of Valle, with recommended development investment for 1954-58, was presented and subsequently published.

The idea was thus moving steadily towards fruition. In early 1954, Mr. David E. Lilienthal, former Chairmen of the Tennessee Valley Authority in the United States, visited Colombia at the invitation of the President of the Republic, and in June 1954, submitted a Report to the President. The report reflected the experience of the Tennessee Valley and the T.V.A., which twenty years ago had faced problems and opportunities comparable in some degree to those of the Upper Cauca Valley. Mr. Lilienthal crystalized the idea in these words: 'The best prospect for rapidly advancing the agricultural, industrial and educational welfare of the entire Colombian people lies in the creation of a regional development corporation or agency to serve as a demonstration of the coordinated, efficient, and modern development of natural resources of waters, land, forests and minerals, and of industrial and educational progress'. The establishment of the Cauca Corporation was the first step towards converting that prospect into achievement".

1. *A Decentralized, Autonomous, and Apolitical Agency*

The creation of the CVC as an autonomous regional entity constituted a great departure from deeply-rooted traditional theories of development, of public administration, and of public finance. Given the traditions and unitary-centralist government system in operation in Colombia, the first step which was necessary for the creation of the CVC as a decentralized organization was to request and obtain a constitutional reform which would permit an organization other than the existing units of government (that is, the National Government, the Department, and the Municipality), which would be clearly recognized for the execution of certain well-defined public activities. The requested reform, Article 1 of Legislative Act Nº 5 of 1954, was passed by the National Constituent Assembly (ANAC) in which the legislative power of the country was at that time vested, and which states as follows: "The legislator may create public entities, endowed with autonomous juridical status, for the carrying out of one or more specifically stated services, and which will have the power to execute all the functions necessary for the achievement of their stated purposes; and these activities may extend to include all of the national territory or part of it".

With this constitutional provision as a basis, the government, in the absence of a Congress which it had closed, created, by Legislative Decree 3110 of October 22, 1954, the Autonomous Regional Corporation of the

Cauca Valley, the statutes of which were approved according to Decree 1829 of July 5, 1955. Later on, and as a consequence of the overthrow of the military dictatorship in 1957, the text of these decrees, as well as that of an additional decree concerning the means of financing the CVC (Decree 0160 of January 31, 1956) were left without legal status because of the National Plebiscite of December 1, 1957. It then became necessary for the Corporation to seek new juridical support. This was obtained by means of the adoption of Legislative Act Nº 3 of 1959, passed by Congress as a Constitutional Amendment [3], by the passage also of Law 25 of May 25, 1959, and by Decree 1707 of June 18, 1960, which contains the legal norms which now govern the CVC, and to which reference will be made throughout this study. In addition, Decree 3110 of 1954 was confirmed.

As was intended when it was created, and based on previous legal provisions, the CVC remains a public agency, that is, an entity of public law with juridical status, administrative autonomy, its own sources of public revenue and patrimony, and devoted to the provision, within a given zone, of various services which hitherto had been a function of the central government. Thus an irreversible dynamic towards modern decentralization was ratified as a means of checking the excessively centralized power of the central government. Because of the complexity of the programs, the central government was not in a position to carry out satisfactorily all the functions inherent in the unified economic and social development of the region and the provision of the corresponding services.

Because of the functions assigned to it, the CVC epitomizes not only the concept of territorial decentralization but that of decentralization by services; the former because there is a limitation upon its authority within the national territory, and the latter because it renders within that territory public services of a technical and development nature, the organization and administration of which are generally a function of the central government.

Since it is a public agency, the CVC enjoys juridical status and thus has both legal rights and obligations. It acts through its legal representatives (The Board of Directors and the Executive Director) and possesses its own source of revenue and patrimony which it administers with autonomy in the fulfillment of its purposes, but subject to inspection by the Contraloría General de la República (National Comptroller General) with respect to fiscal matters, and to approval by the National Council of Economic Policy and Planning with regard to its plans and programs and to the obtaining of domestic and international loans. In addition,

3 Article 7 of the National Constitution states that:
Article 7. "Besides the general political divisions of the National territory there may be others within the boundaries of each Department for the purpose of giving public services. The divisions with respect to fiscal, military, public instruction or economic development matters may not necessarily coincide with the general divisions".

ecause it is a part of the over-all governmental structure, its acts are dministrative and involve exercise of power; it possesses the prerogaives of occupying public roads, of the imposition of rights of way, and f the charging of valorization taxes and fees for services; and the proprty necessary for carrying out its stated purposes is declared to be in minent domain and may be expropriated.

The experiences acquired by the CVC during its first decade of exisence are an eloquent demonstration, from the administrative point of iew, of how a regional corporation may provide valuable services when t fulfills the widely-felt desires of most Colombians toward reaching a ertain degree of efficient decentralization. The progress made by this ntity indicates that a rational plan for the unified development of a egion can be carried out effectively on a local level, under the direction nd responsibility of persons who understand regional conditions and are n daily contact with regional activities and problems. And this is partiularly true if, as has been the case of the CVC, these individuals treat heir work as essentially technical and completely removed from partisan olitics.

With regard to the patrimony and financing of the Corporation, the onsiderable direct and indirect contributions which have been made by he national and departmental (Valle) governments show that the CVC s a model of what considerable local effort — that of the people of the Cauca Valley — can do to achieve better and more orderly utilization of natural and human resources within a well-coordinated technical plan. The basic financial resources of the CVC initially depended upon a 4 per 1000 real estate surtax levied in the Department of Valle on all properties he owners of which had a liquid patrimony of over Ps. $ 50,000; and oday upon a similar real estate surtax which is, however, only at a rate of 3 per 1000 and affects only owners of real estate whose patrimony exceeds Ps. $ 100,000. In Chapter VI of this study a detailed discussion of this mode of financing public institutions, until then unknown in Coombia, will be made.

2. *A Realistic Approach*

According to Article 4 of Decree 1707 of 1960 which reorganized the CVC, its functions are the following:

"a. Generation, transmission, and distribution of electric power;
b. Coordination of power systems in order to obtain greater efficiency and economy of operation;
c. Regulation of water flows to avoid flooding;
d. Utilization of water resources for irrigation;
e. Distribution and regulation of water for public use within the territory of its jurisdiction, for domestic, agricultural, industrial, or public supply purposes, according to the existing laws and regulations on these, by means of contracts which the CVC makes with the central government;
f. The protection of waters from contamination;
g. The improvement of river beds for various purposes;

h. Land reclamation and improvement, by means of drainage works or other improvements;

i. Soil conservation and reforestation;

j. Regulation of the exploitation of forest reserves and the granting of the respective concessions according to the provisions of contracts between the CVC and the government;

k. Preservation of flora and fauna;

l. The development of appropriate agricultural land use practices in cooperation with other organizations which carry out similar programs;

m. The development of mineral resources;

n. The improvement of communications, ports, and transportation systems in cooperation with the respective government agencies;

o. Cooperation in the development of education, public health, and community action programs;

p. The promotion of industrial activity;

q. Land zoning, especially for the purpose of regulating construction within zones subject to flooding, and to prevent the construction of permanent buildings in zones needed for the execution of the projects, public works, or services of the Corporation;

r. The promotion of, and participation in, societies or establishments which provide public services, which are involved in general economic development or in improved use of natural resources; and

s. The assignment of public lands in conformance with the pertinent laws and decrees which govern the contract that the CVC makes with the national government.

Paragraph. Once the contracts mentioned in items e, j, and s above are made, the corresponding delegations of authority to the respective governors of Departments referred to in items a, b, and c of Article 1 of this Decree are revoked".

From the above it is clear that the CVC has been assigned the task of unified regional planning; that is, the rational and integrated use and conservation of available natural resources, in order to obtain adequate development of wealth and the greater well-being of the people of the region; in addition to rendering a series of public services, such as generation, transmission, and distribution of electric power; the promotion of agricultural and industrial enterprise; and cooperation in the development of programs in education, public health, and community action.

The above constitutes a gigantic and long-term task, which requires adequate planning, not only to avoid costly errors but also to achieve more efficient utilization of the very scarce financial resources available for these purposes.

It would have been far easier for the CVC to use extremely complicated planning techniques in the preparation of its plans and programs, techniques which at the beginning of the 1950's were very fashionable and well-accepted. However, the CVC very wisely decided upon a flexible and simple approach. It first made an inventory of available resources and the most urgent needs, in order to arrive at decisions with respect to programs which are of first priority and to meet these needs on an integrated, unified basis. This means that the initial interest was concentrated upon an over-all diagnosis of the factors responsible for retarda-

tion in the growth of the region. It was thus discovered that the principal obstacles to agricultural development were: the periodic flooding from the rivers; the lack of facilities for irrigation; the lack of appropriate agricultural technical know-how; very low levels of agricultural income, productivity, and nutritional standards among the farm population; that in the field of industry the basic difficulty at the moment was in the scarcity of electric power; and with respect to transportation, in the existence of very expensive and inadequate services as a result of the lack of equipment, of highways that were unpaved and in poor condition, and the lack of feeder roads connecting to the main highways.

Based upon the above diagnosis, the main policy objectives were then defined, as follows: to capacitate the region for producing, by means of conscious planning, products in greater quantities and of higher quality; to raise the standard of living of all the people of the region; and to try to involve all the inhabitants of the Cauca Valley to active commitment in this enterprise. The next step was the preparation of detailed engineering studies (and in some cases economic studies as well), in order to determine the specific projects to be undertaken and their priorities, given the financial and human resources then available and those that might be obtained in the near future. In Chapter IV the detailed and long-term plans undertaken by the Corporation will be described, together with an evaluation of these in terms of both coverage and weaknesses. For the moment it will suffice to say that, with a realistic sense of its limitations, the Corporation undertook only three general programs of action to start with: land reclamation (drainage and irrigation) in two pilot zones, supplying of electric power for the entire region, and raising the standard of living of the farm population through the dissemination of modern, tried and proved production methods and the improvement of community relationships. Through its programs of land reclamation, besides making a far greater area available for agriculture under optimum conditions, the CVC attempted by methods of inducement, to modify the existing land tenure and land use patterns and to create family-sized units of agricultural exploitation which would produce high-value crops. According to the original plans of the CVC, the developments in land reclamation and power generation were intimately interrelated, and as a result, multiple-purpose projects, such as the Timba Dam project, were planned.

3. *A Flexible Program*

The approach described above is extremely flexible and constitutes one aspect which is of great importance for the development of a unified plan such as that contemplated by the CVC. The experiment was very new for Colombia, and as such, was subject to vicissitudes in public support, in financial resources, in availability of personnel for the preparation of detailed plans, to pressures from political, economic, or other groups, to changes in the over-all economic situation of the country, etc.

During its long fight to insure itself continuous sources of income, the CVC in reality worked within a very rudimentary organizational framework. Nevertheless, during this period its study groups were able to prepare a master plan for the unified development of the region as well as many specific projects which it will be able to carry out as soon as the necessary technical and financial resources become available. This tactic has given the CVC a certain degree of maneuverability which it might not have had if it had been geared to rigid planning techniques. When the opposition of the landowning interests arose, or that of the centralist bureaucrats, or when political obstacles arose with respect to one or another of the projects, another project could be taken up and carried out during the interim necessary to solve the problems related to the first project. This valuable degree of flexibility has also enabled the CVC to earn the sympathy of the public, since it could see that something to its benefit was continually being accomplished.

4. *Opposition to the CVC: Nature, Strength, Methods, and Consequences*

Even though the procedure by which the CVC was created in 1954 was somewhat rapid, equally rapid was the organization of the opposition by the traditionalist elements of the region and by persons at their service. Obviously the owners of large tracts of land, and particularly the cattlemen, constituted the principal opposition group, but they were supported in their objectives by various newspapers, public officials, lawyers, and others of inflexible mentality.

The reasons for the opposition were of varied nature: administrative, legal, differences in concepts concerning the most desirable theories of economic development, of the purposes of planning, of the ways of financing the CVC, etc., all presented in the most orthodox ways, and reflecting on every occasion an unhealthy desire to preserve the status quo, and above all, to avoid any change which would in any way affect their own patrimony.

In spite of the fact that the need to make every effort to accelerate regional development was realized by all — development which apparently everyone desired —, strong voices of protest were heard, maintaining that it was not wise to concentrate such heavy investments as were implied in the CVC Plan in one region, and that these investments should be made, rather, in the more remote and isolated regions of the country. This is the persistent question as to whether the development programs of the developing countries should or should not be concentrated where there already exists a higher concentration of social investments. In the Cauca Valley there had been a greater amount of these in comparison with other regions of the country, in spite of the limitations already described for this region. But those who encouraged the idea of the Cauca Valley Corporation, did so precisely because these social investments already existed, and because the existing conditions of soil, climate, and

power sources were exceptional, and insisted upon their belief in the need to make this gigantic effort in the Cauca Valley. The excellent and well-known results have brought them success, and have fully demonstrated that in an underdeveloped country, the acceleration of progress in key zones induces greater rapidity in the over-all development of the country. The considerable institutional changes of an economic and social nature that have resulted from the intensification of economic activities that the CVC has made possible, will be described in Chapters V and VIII.

The broad objectives of the Corporation seriously disturbed various opposition groups, especially as far as the electrification programs of the CVC are concerned. For these groups, the electrification program constituted an unrealistic and unnecessary program. They believed the power needs of the region could be satisfied with small plants which when added to the existing ones would produce a total of approximately 100,000 Kw [4]. Their interests only extended to the point of accepting small-scale irrigation and drainage works. All the rest was considered "an obvious exaggeration of our immediate and urgent needs", [5] and as "a creole plagiarism of foreign ideas from nations whose economies are vastly different from the modest realities of Colombia" [6]. Furthermore they believed that even those project which they accepted should be constructed by private institutions, so that they would not infringe upon the sacred right of private enterprise [7]. In short, the production and distribution of electric power within a unified regional system was for them an almost incomprehensible matter. The policy of "laissez-faire, laissez-passer" should not, according to them, be modified in any way, and least of all with the introduction of "authoritarian" planning notions such as they ascribed to this recently created public institution.

The element of planning involved in the proposed programs represented an especially strong source of apprehension among several sectors of opinion who considered the required studies "byzantine, academic, long, and ruinous", [8] a mere instrument for the maintenance "of a useless and voracious bureaucracy which within a few months would suck five million pesos from the weak economy of the Cauca Valley in order to pay for a report by 15 foreign engineers and 45 Colombian professionals" [9]. It took a great deal of effort to make them understand that an

4 González-Piedrahita, Ernesto. *Estado de Conflicto entre la CVC y los Postulados Democráticos Colombianos: Informe del Presidente de la Sociedad de Agricultores del Valle del Cauca Rendido a la Asamblea General de Agricultores en 16 de Diciembre, 1957*, p. 9. In this report are summarized practically all of the arguments against the CVC, which were used to fight it, using all the possible means of communication.

5 *Ibid.*, p. 8.

6 *Ibid.*, p. 8.

7 *Ibid.*, p. 8.

8 *Ibid.*, p. 15.

9 *Ibid.*, p. 9.

enterprise of this kind required careful and detailed general studies, and that within the new development procedures it was no longer possible to carry out public works without first having established their costs both from economic and technical points of view. The excellent reception that the reports concerning the CVC plans and programs had among international financial circles, and the relative facility with which some of the projects based on these reports were financed, little by little began to show them that not all the CVC plans had been "byzantine" and "academic" nor excessively costly.

Although it was in reality of little importance to these inimical groups —and they certainly had accepted a similar series of official regulations on various topics—, the creation of the CVC was characterized as one "of despotic profiles and undoubtedly totalitarian traits", [10] because it was founded by decree during the epoch of the military dictatorship. But what the really most objected to, from the administrative point of view, was the autonomy which the CVC had been granted. For them institutions of this kind constituted "authoritarian organizations incrusted upon the State, removed from the vigilance of public agencies, inaccessible to fiscal control by its contributors, and immune to criticism" [11]. They then argued that the CVC was an entity of "foreign creation" [12] whose functioning should not be permitted unless every step was confirmed by a legislative body, in this case, Congress.

And of course, what most enfuriated them was the fact that there should be a special tax levied within the territory of the region to finance it through another decree-law, which, they insisted, had even less legal validity than that which created the CVC. In their opinion, the financing of the CVC "rested upon a foundation of sand with an unconstitutional and harmful tax", [13] the establishment of which had been possible only through an act of abuse of power.

Those who headed the movement of opposition to the CVC used every means in their power to discredit the CVC, and, if possible, to destroy it. All means of communication, written or spoken, the penetration into the Boards of Directors of various key institutions, direct and undue intervention before foreign governments and international organizations, the printing of publications of pernicious character, and finally the initiation of legal demands of nullification against several of the legal resolutions which affected the survival of the Corporation, were some of the means used in this negativistic enterprise, which of course, could not help but cause serious delays in the development of the institution and in the initiation of almost all its projects.

10 *Ibid.*, p. 8.
11 *Ibid.*, p. 10.
12 *Ibid.*, p. 7.
13 *Ibid.*, p. 16.

The most serious formal battle against the CVC was the demand which Gonzalo Gaitán, as the lawyer speaking on behalf of the Boards of Directors of the Society of Agriculturists and the Cattlemen's Committee of Valle, made before the Administrative Court of Valle, [14] that the latter declare null and void various municipal decrees by which an increase of 4 per 1000 in the real estate tax had been established as the contribution of the municipalities to the CVC, and also declare null and void the corresponding resolutions of the Governor of the Department of Valle by means of which the municipal decrees had been approved. As an immediate measure, the accusers demanded the provisional suspension both of the decrees and resolutions which they deemed "in open violation of legal norms" [15]. At the same time they contested Decree 0160 of 1956, which provided the CVC with its financial resources, before the Supreme Court, as unconstitutional.

The essence of the above legal claims was the accusation of the violation of the democratic principle consecrated in the Constitution of Colombia, according to which the representative bodies —Congress, Departmental Assemblies, and Municipal Councils— are the only ones which can create or increase tax contributions.

The most competent jurists in the country (Carlos Lleras Restrepo, Diego Tobón Arbeláez, and Antonio Rocha, among others) were consulted by the CVC for its defense. All of these lawyers agreed that although some of the arguments put forth by the opposition might well serve to condemn the very nature of the political system then in operation in Colombia, they were not adequate, however, to challenge the legal validity of the laws which were the result of that system, since the legislative function was de facto in the hands of the chief executive [16]. If this were not the case, the thousands of governmental resolutions adopted during the dictatorships which ruled the country between 1949 and 1957 would also have to be abrogated, which obviously would have created an unprecedented administrative chaos. The Plebiscite of December 1, 1957, resolved, however, that this legislation should be revised. This has been done in a few cases, as for example in the case of the CVC, which was reconfirmed with slight modifications. Following this event, the attacks based on legal considerations obviously could not continue. By this time the CVC had become somewhat stronger financially and had several of its projects well on the way towards completion. These excellent initial

14 *Ibid.*, pp. 23-24. Dr. González Piedrahita mentions Dr. Gustavo Balcázar Monzón as one of the legal counsels for the Society of Agriculturists and the Cattlemen's Committee of Valle, but Dr. Balcázar withdrew his services before the legal proceedings actually began.

15 *Ibid.*, p. 28.

16 Lleras Restrepo, Carlos. "Concepto Relacionado con el Decreto Legislativo Nº 0160 de 1956 (Enero 31), que Autorizó un Aumento del Impuesto Predial para Dotar de Recursos a la Corporación Autónoma Regional del Cauca". CVC, Cali, April 1958, pp. 24-25.

results ended by destroying completely almost all of the arguments of the opposing forces. In time, some of the bitterest opponents of the CVC came to hold positions on the Directive Council of the Corporation, [17] and from that vantage-point were able to observe that the plans and programs of the CVC followed rational and technical criteria; that it was being administered sensibly and with Spartan austerity; and that the people of the Cauca Valley as a whole were proud of the CVC, participated in its programs with pleasure, and felt a part of it.

If an opposition of such persistence had not existed during the CVC's first five years of existence, it is almost certain that its accomplishments, material and otherwise, would today be almost double those that will be described later on in this work. Yet, as a result of the long, hard battle, there remains above all the reassurance that when there is desire for work and enterprise, even when it exists among only a few who exercise leadership in the community, the interest groups that traditionally oppose the alteration of outmoded social structures can be convinced through persuasion to aid in the benefit of the common welfare.

17 Cf. Selznick, Philip. *TVA and the Grass Roots.* (University of California Press, Berkeley 1949). Cooptation into the CVC Board of Directors was similar to that of the TVA.

IV

CVC Plans and Programs

As was to be expected, the first steps taken by the CVC were oriented toward undertaking the research which would permit the preparation of a general plan to integrate and coordinate all those individual projects required for the realization of the objectives assigned to it: improved regional resource use and the raising of production, income, and employment levels within an over-all process of coordinated growth. This general plan was to include, of course, proposals for the adequate utilization of hydroelectric resources —production of an abundant supply of power, flood control, drainage, and irrigation— within the area controlled by the CVC; soil and forest conservation; improvement of agricultural techniques, transportation, and community living; health, hygiene, and public education; and industrial development.

In order to plan for the solution of these problems, including their engineering aspects, the CVC contracted the services of the engineering firms Olarte, Ospina, Arias y Payán, Inc. (OLAP) of Bogotá (now called INGETEC); Gibbs and Hill (G&H) of New York, and Knapp, Tippetts, Abbott, and McCarthy (KTAM), later called Tippetts, Abbott, McCarthy, and Stratton (TAMS), also of New York, which under the leadership of the latter, were to act not only in an advisory capacity but also administratively within the CVC as its Engineering Department, until such time as the Colombian technicians employed by the CVC, or others, acquired the necessary experience for taking over the operating and planning aspects of the CVC program.

The first work order received by these consulting firms (January 17, 1955) charged them with the "preparation of a general engineering report on the coordinated development of power and water resources of the Cauca Valley region, which would provide an adequate technical basis for consideration by the CVC Board of Directors of the engineering aspects of the development program". This general study, like others that would be prepared in the future, was to provide, furthermore, (a) an estimate of the individual projects, their alternatives, and costs, (b) adequate guidance in the collection of basic data, and (c) operational criteria for the projects once they were completed.

One year later, on January 30, 1956, the group of consultants presented to the Board of Directors of the CVC the report that had been requested

under the title "The Unified Development of Power and Water Resources of the Cauca Valley" [1]. This report outlines a "Master Plan" and enumerates and describes the principal projects which were to be undertaken in the field of electric power, during the period 1956 - 1970 and in land reclamation (flood control, irrigation, and drainage) during the period 1956 - 1985. In a general feasibility study it brings together suggestions to increase electric power production tenfold and to reclaim 320,000 hectares of flat land for intensive agricultural exploitation, and has served as a basis for all the individual projects [2]. Besides power development and use (including thermal plants), flood control, irrigation, drainage and related topics, the report also deals with agriculture and livestock, industrial development, transportation, mineral resources, and health to the degree required for the harmonious development which should take place in all these fields in order to insure an orderly rhythm of progress.

The work of preparing these general studies at the CVC was particularly intensive during the period 1955 - 1958, after which attention was concentrated primarily on the detailed project studies, and then, of course, on the construction of various projects. However recent events, which will be referred to later, have once more begun to force the CVC to occupy itself intensively with matters of long-range general planning.

A. ELECTRIC POWER PROGRAM

1. *Power Generation*

The creation of a unified electric power system for the region, which would permit the unified administration of all the then existing generating plants, as well as those that would be built later, constituted one of the principal objectives of the CVC. Unified administration would of course, be far more economical and efficient. The philosophy implicit in this main objective is summarized in the proposed future power generation program outlined in Table IV.3.

The scarcity of power then existing in Valle was clearly evident. Excluding the CHEC System (Central Hidroeléctrica de Caldas), the total installed power capacity at the end of July 1955 [3] in the area under

1 CVC and OLAP-G&H-KTAM. *The Unified Development of Power and Water Resources of the Cauca Valley*. Bogotá, New York, and Cali, January 1956.

2 "Project planning... includes mapping, topographic surveys, hydrologic measurement and studies, subsurface explorations, geologic and soils studies, economic studies, preliminary layouts, and reports —all preceding final design. (Final design includes preparation of contract drawings and specifications, and detailed estimates of contract quantities and costs)". CVC and INGETEC-G&H-TAMS. Report C-4885, *CVC Advance Planning Requirements*. Bogotá, New York, May 1962, pp. 1-2.

3 On this date, the first units of the Anchicayá Hydroelectric Plant entered into operation, with a total of 24 MW. Before this date power had been rationed

CVC jurisdiction was only 75.1 MW; and of this only 52.4 MW was firm power, due principally to the fact that during periods of drought the Anchicayá Plant could only guarantee peaks of up to 70 percent of installed capacity. For this same year 1955, the potential demand for power was estimated at 95.4 MW, [4] and it was believed that this demand would increase at an annual average rate of 14 percent. Thus the demand for 1970 would be 620 MW (See Table IV.1). These projections of demand for the entire region could not be fulfilled, because it was impossible to develop power generation and distribution programs in time. However the real demand, to the degree that it could be satisfied, has increased for the system as a whole at an average annual rate of 16 percent. The present estimates of demand (June 1964) for the CVC-CHIDRAL system indicates that this will increase from 155 MW in 1963 to 422 MW in 1970, and to nearly 720 MW in 1975 (See Table IV.2).

TABLE IV.1

CVC: Estimates of Future Load, CVC Development Area
(Kilowatts)

Mid-years	*Peak Load at Load Centers*	*Peak Load at Generating Stations (a)*
1955	95,380	102,000
1956	108,000	115,000
1957	122,000	131,000
1958	138,000	148,000
1959	156,000	167,000
1960	177,000	189,000
1961	200,000	215,000
1962	227,000	243,000
1963	257,000	275,000
1964	293,000	313,000
1965	331,000	354,000
1966	375,000	402,000
1967	427,000	457,000
1968	483,000	517,000
1969	548,000	586,000
1970	620,000	663,000

(a) Assuming 7% transmission losses.

Source: CVC and OLAP-G&H-KTAM. *The Unified Development of Power and Water Resources in the Cauca Valley*, p. VII-9.

in the Cali - Yumbo zone. Of the 75.1 MW installed in 1955, 35 MW were the property of CHIDRAL (Central Hidroeléctrica de Anchicayá, Ltda.). The rest, 40.1 MW, were generated by antiquated hydraulic and thermal plants of small capcity, locted throughout the area between Popayán and Cartago. Total power sales in the Cauca Valley were 223,472,994 kwh, and in 1963 rose to 609,550,843 kwh. (One MW equals 1,000 kilowatts or one megawatt).

4 The distribution of this demand was estimated as follows:

Group 1.	Cali, Yumbo, and Palmira	63,340 kilowatts
Group 2.	Buga, Tuluá, Cartago, Sevilla, Santander, Popayán, and Buenaventura	19,280 kilowatts
Group 3.	Other urban centers	10.730 kilowatts
Group 4.	Rural population	2.030 kilowatts
	Total	95,380 kilowatts

TABLE IV 2

Area of the CVC - CHIDRAL System:

Real Demand for Power in 1960 - 1963 and Estimated Demand for 1964 - 75 (To December of Each Year)

Years	*Megawatts*
1960	80
1961	96
1962	133
1963	155
1964	179
1965	206
1966	248
1967	284
1968	324
1969	370
1970	422
1971	476
1972	534
1973	593
1974	653
1975	719

Source: CVC, Department of Electric Design.

In order to satisfy immediate requirements, and until such time as a large-scale power generation project could be added to the system, the program proposed in 1955 included the installation of two new units of 20 MW each at Anchicayá and the rapid completion of two units of 12.5 MW each at the Yumbo Thermoelectric Plant, to be constructed by CVC and CHIDRAL (See Table IV.3).

As far as satisfying the power demand until 1960 was concerned, and as the result of clearly acceptable economic considerations, the report recommended the construction of the Hydroelectric Plant today as Calima I, a development of 120,000 kilowatts, the per unit costs of which were estimated to be lower than those of any other source then known; furthermore, sufficient information was available for this project so that it could be initiated immediately. In order to meet the normal increase in demand required after 1961, the execution of the Timba and Salvajina Projects was recommended. These are two multiple-purpose projects of the Cauca River, which besides supplying power, would contribute toward control of floods caused by the overflowing of the Cauca River. Timba is a project which is basic to the establishment of a vast irrigation program in Valle, and for this reason alone it was held that it ought to be constructed before Salvajina. "Moreover, no great progress on the reclamation program for the flat part of the valley can be made until after completion of the Timba Dam" [5]. Besides the development of hydraulic resources, the construction of a thermal plant was recommended at Timba. The generation program as a whole as proposed would increase the firm power capacity of

5 CVC and OLAP-G&H-KTAM. *The Unified Development...* p. 2.

TABLE IV.3

CVC: Future Generation Facilities Proposed by the Consultants in 1956
(Capacity in Megawatts) (a)

Date	*Planta*	*Installed Capacity*	*Firm Power (g)*	*Firm Capacity*
	Anchicayá Units 1 and 2	24.0	15.0	24.0
	Thermal Plants	25.9	22.3	25.9
	Small Hydroelectric Plants	25.2	15.1	15.1
July 1, 1955	Total Existing Plants	75.1	52.4	65.0
March 1, 1957	Anchicayá. Unit 3	20.0	—	20.0
May 1, 1957	Anchicayá. Unit 4	20.0	—	20.0(b)
Nov. 1, 1957	Purchased from CHEC	6.0	6.0	6.0
Jan. 1, 1958	Yumbo Thermal. Unit 1	12.5	11.25	12.5
July 1, 1958	Yumbo Thermal. Unit 2	12.5	11.25	12.5
			80.9(c)	
	TOTAL System A	146.1	73.8(d)	123.0
Jan. 1, 1959	Calima. Units 1 and 2	60.0	—	60.0
Jan. 1, 1959	Thermal Plants Eliminated	—11.4	—11.4	—11.4
Jan. 1, 1959	CHEC Purchases Eliminated	—6.0	—6.0	—6.0
Sept. 1, 1959	Calima. Units 3 and 4	60.0	—	60.0
	Anchicayá Increase	—	—	13.0(e)
	Less: Provision for Shortages	—	—	—26.6
	TOTAL System B	248.7	127.0	212.0(f)
May 1, 1961	Timba. Unit 1	30.0	—	30.0
Sept. 1, 1962	Timba. Unit 2	30.0	—	30.0
Sept. 1, 1962	Small Plants Eliminated	—5.6	—4.4	—4.4
	Less: Additional Spare Capacity	—	—	—0.6
	TOTAL System C	303.1	160.0	267.0(f)
June 1, 1963	Salvajina. Units 1 and 2	90.0	—	90.0
Sept. 1, 1965	Timba. Unit 3	30.0	—	30.0
April 1, 1966	Salvajina. Units 3 and 4	90.0	—	90.0
	Less: Additional Spare Capacity	—	—	—27.0
	TOTAL System D	513.1	270.0	450.0(f)
May 1, 1967	Timba. Steam Unit 1	60.0	—	60.0
May 1, 1968	Timba. Steam Unit 2	60.0	—	60.0
March 1, 1969	Timba. Steam Unit 3	60.0	—	60.0
Dec. 1, 1969	Salvajina. Units 5 and 6	90.0	—	90.0
	TOTAL System E	783.1	432.0	720.0(f)

(a) At station switchboard.
(b) The Peaking capacity of Anchicayá in System A is 51.0 MW.
(c) Available (not limited by load curve).
(d) Limited by reserve capacity and 60 percent of load factor.
(e) The Peaking capacity of Anchicayá in System B is 64.0 MW. (Equal to the installed capacity), or 13.0 MW higher than in System A.
(f) Limited by dependable power and 60 percent of load factor.
(g) In continuous megawatts.

Source: CVC and OLAP-G&H-KTAM. *The Unified Development of Power and Water Resources in the Cauca Valley,* p. VII-11.

the region from 65,000 to 720,000 kilowatts during the period 1955 - 1970.

Due to financial difficulties resulting from differences of opinion between the central government and the CVC, motivated by campaigns on the part of pressure groups opposed to the CVC which are explained in Chapters III and VI of this study, the above program could not be begun immediately; and in order to meet the requirements of a continuously increasing demand for electric power, it was necessary to add a third unit of 33,000 kilowatts to the Yumbo Thermoelectric Plant, which was put into service in 1962, thus increasing the total capacity of this Plant to 53,000 kilowatts and that of the system as a whole to 148 MW. In addition, the CVC-CHIDRAL and CHEC systems were interconnected in 1963.

Once the good relations between the CVC and the central government were restored following the overthrow of General Rojas Pinilla, the delayed layout studies for Calima were re-initiated in mid-1959, and the corresponding international bids for its construction were closed at the end of 1960. The Perini firm of New York won the contract; construction was begun in mid-1961, and is expected to be finished in mid-1965. (Initially construction was to be completed in 1964, but the ocurrence of a strike and other unforeseen difficulties caused a considerable delay).

Together with the initiation of the Calima project, CVC intensified the general power studies [6] which it had been advancing quietly during "the lost years" (1956 - 1960), in order to determine the priorities for its next enterprises in power generation. And although the unanimous desire of the CVC Board of Directors was to carry out the Timba Project because of the benefits which this would provide for agriculture in the region, the high cost of Timba in terms of power production and the absolute impossibility of obtaining the necessary funds at that time for the accompanying irrigation systems, it became necessary to postpone this project and concentrate attention on a new project which had come up in the meantime and which was especially attractive because of its relatively low cost: Calima II. According to the layouts and plans prepared in 1962 - 1963, this project could generate between 180 and 240 thousand kilowatts, with which it would have been possible to satisfy all demand requirements from 1967 to 1971; and most important of all, the International Bank for Reconstruction and Development, which was financing Calima I, also offered to facilitate the funds for Calima II. The Salvajina Project, it had been agreed, would be constructed after Calima II, so that it would be ready to enter into service in 1971, and later on the multiple purpose Timba project, the financing of which might then be achieved by devoting a part of the income derived from the sale of power by the entire then existing CVC system —Anchicayá, Yumbo, Calima I

6 a. CVC and OLAP-G&H-TAMS. "Cauca Pacific Diversion". November 1957.
b. CVC and OLAP-G&H-TAMS. "The Timba Project", April 1958.
c. CVC and OLAP-G&H-TAMS. Report C-1107 "CVC Power Program 1960-1970", September 1959.

and II, Salvajina, the plants formerly owned by COEDEC and other small CVC plants scattered throughout the Valley. Thus only feasibility studies would continue to be prepared for the Salvajina and Timba projects as financial resources became available.

When the layouts and plans for Calima II had been practically completed, [7] two unexpected problems arose which caused the suspension of the project: (1) The vehement desire of the President of the Republic Guillermo León Valencia that Salvajina be constructed with priority over any other hydroelectric project in the region, and (2) a new policy of the IBRD, fortunately at least partly rectified later. According to this new policy it is apparently now possible to defer the construction of any new power generating plants in Colombia, and instead, to proceed to interconnect the existing systems, particularly those of the CVC, Medellín, and Bogotá.

In spite of its disadvantages, [8] the proposal to interconnect the Bogotá, Medellín, and CVC systems, which according to the IBRD, should be completed by the middle of 1967, would permit the satisfaction of power demands estimated for Valle until 1971, —with a dependence of 40 percent of its total demand—, at which time a new generating plant would enter into service in the interconnected system. In the expectation, or even, the almost complete assurance that this new plant would be Salvajina, and with the manifest desire to please the President, the CVC, under prior agreement with the IBRD, decided in January 1964, to (a) accept the interconnection program, with the reservations noted in footnote 8, (b) suspend the detailed studies for Calima II, deferring its construction

7 CVC. *Report on the Calima II Project.* Cali, June 30, 1963.

8 Although the interconnection of the Bogotá, Medellín, and CVC power systems, an idea promoted by the IBRD since May 1963 which was contemplated in CVC programs for later on, seems to be a relatively attractive proposal from the economic and technical points of view, it does not appear so attractive from the point of view of the present conditions of the country, and particularly with respect to the protection of the interests for which the CVC was created, which are to assure adequate, timely, inexpensive, and reliable electric service for the region that it covers.

With the present programs of construction or expansión of electric power generating plants, the CVC area alone would be requiring power from the interconnecting transmission network in 1967, and by 1971 would be meeting 40 percent of its demand from other regions, with the resulting uncertainties in supply. rates, etc. This would create a degree of dependence in Valle with respect to these other regions, which would bring with it serious disadvantages, given the general objectives of economic and social development pursued by the CVC, especially in case a general scarcity of power or a decrease or suspension of foreign credit, or similar causes which would impede the opportune expansion of power generation and create a deficit, making it impossible for the system in charge to guarantee a stable supply. This would constitute a brake on industrial development. Furthermore, certain political factors and the resulting dangers which might arise to a greater or lesser degree, taking advantage of the general economic conditions of the country, do not seem to make such a high degree or dependence advisable. But given the extreme pressure by the IBRD in favor of interconnection, — with the insinuation that after this has

to some undetermined future date, and (c) accelerate instead the feasibility studies and layouts for Salvajina, for which the IBRD had already loaned CVC, the funds necessary for this purpose in 1963 [9].

In summary, the electric power supply programs of the CVC-CHIDRAL system, now interconnected with the CHEC system at 115 KW, are the following:

1. Until such time as Calima I begins operating in 1965, the CVC-CHIDRAL system will have a deficit which will be covered by supplies from CHEC. The two systems combined have sufficient power for the period, but lack adequate storage facilities. By means of continuous purchases from CHEC, the CVC-CHIDRAL system will be able, however, to reduce its operations at the Yumbo Thermoelectric Plant for several months and thereby conserve its coal reserves.

2. After the entrance of Calima I into the system, CVC will initially have an excess of power, but towards the end of 1966 and above all in 1967, new shortages will appear in the system. These shortages will have

been accomplished it would only finance the power generation projects that it deemed most economical in the country irrespective of their location —, the CVC accepted in principle but demanded a guarantee of outside power supply, and at the same time a maximum limit to the degree of dependence (15 to 20 percent) upon any one of the interconnected systems. In order to make sure of this, the CVC went beyond the IBRD proposals and suggested the fusion of the three systems, so that each one of them would be treated on an equal basis. This does not seem to have been achieved up to the present time, but, in a counterproposal of the IBRD which considered the CVC's arguments valid, the CVC did succeed in obtaining a promise that future additions to the generating capacity of the three systems would be the common property of all the systems, and that these additional plants would be located within the territory covered by that system which is consuming power to a greater degree of dependence than the others at the moment of its construction. This would at least permit the gradual increase in all the systems, and the maintenance for each one of them of its own technical organization, which is essential to a regional development agency such as the CVC.

9 The studies pertinent to Salvajina are proceeding with all the speed and seriousness which are due a project so vital to the region, the cost of which is estimated at roughly 100 million dollars. But the speed and quality of this work has not seemed, on occasion, to satisfy the President of the Republic and those who advise him and suggest, — perhaps because of the lack of the necessary information or of seriousness —, that the project can be constructed immediately, and that for that reason, if necessary, should be subtracted from the sphere of action of the CVC and given to CEDELCA, a small electric enterprise in the Department of Cauca, which is the home state of the President. A first attempt to do this took place in mid-1963, resulting from an offer of direct financing by "English Electric" to construct Salvajina. However this proposal did not survive the most superficial analysis, due to its extremely high cost, the short term for amortization of the principal of the loan (15 years), and the high interest rate charged, in addition to the improper procedures by which this firm would be simultaneously the designer, constructor, contractor, supplier, and financer of the project. The proposal of "English Electric" was repeated in December 1963 on the instigation of CEDELCA, and again the CVC had to point out its disadvantages and remind the government that Salvajina was part of its own program, according to existing legal stipulations. Because of these events the agreement of January 1964 referred to in the above text, which the

to be met not only by means of purchases from CHEC but by the construction of a fourth unit of 33 MW at the Yumbo Thermoelectric Plant or by building the San Francisco Hydroelectric Plant in the CHEC system. All surplus power that CVC can purchase from CHEC with priority over either of these other alternatives, will be of great value, in order to conserve the maximum amount of water at the Calima reservoir to cover greater scarcities which may arise in the future.

3. By the end of 1967 or the beginning of 1968, the interconnection with the Bogotá and Medellín Systems should begin to enter into service, according to the IBRD plans. But if the Nare Hydroelectric Plant in the Medellín system does not begin to operate until 1969, and if there should be a period of drought in Bogotá in 1967-1968, the situation in the CVC, CHIDRAL, and CHEC areas would be critical, and it would be necessary to cover the deficit of power by relying on the water supplies at the Calima reservoir. By that time the Calima I reservoir will have had almost two years' accumulation of water.

4. Once the CVC area, by means of the interconnection system, can make use of power produced at Nare, the power supply situation in the Valley will be reasonably adequate until 1970 or the beginning of 1971, with a degree of dependence, however, which will be close to 40 percent

CVC facilitated, in order that its attitude with respect to the English Electric proposal should not be interpreted as systematic opposition by the CVC to Salvajina, as some persons were insinuating, was celebrated. In spite of this, during mid-May 1964, the President continued the attack, and this time publicly and with unaccustomed fury. In fact, during a press conference held at San Carlos Palace on May 15, he accused the CVC of carrying out and favoring power generation projects that were in his opinion nothing less than "a colossal error" because they were located on the Pacific slopes of the mountains, and that therefore the waters of its reservoirs could not be used for agricultural purposes in the Cauca Valley. This attack, to which were added, during the next few days, those of old enemies of the CVC, with the obvious desire to ingratiate themselves politically with the President, besides being unexpected, were tremendously unjust, since according to what the CVC had explained on repeated occasions, the CVC has been permanently interested in the Salvajina project and only because of its limited financial resources has not been able to undertake construction of this project; furthermore, at the very moment that these unfortunate public statements occurred, the CVC was engaged in preparing the studies needed for the construction of Salvajina, and the IBRD had already manifested its willingness to consider the necessary loans at the proper time, when these indispensable studies are completed. This new impasse was straightened out on the following June 3, when the Directors of CVC and CHIDRAL (Gustavo Balcázar, Bernardo Garcés Córdoba, Vicente Aragón, and José Otoya) once more explained to the President in a private interview the reality of the CVC's programs and the priority which was being given to Salvajina within this general plan; that is, when President Valencia was given the correct information by those best able to give it. In any case, the unnecessary and acrimonious dispute which arose between the central government and the CVC, — and which the latter neither desired nor fomented — placed the Corporation in a most difficult position, which might even have affected its present and future stability, if it had not been for the tact with which the CVC handled the problem, and for the clamorous support the CVC received from public opinion in the Department of Valle, a fact which the President perceived at once.

of the total needs. By this time, a new power generation project within the interconnected system ought in any case to enter into service, and it is hoped that this project will be Salvajina, the first unit of which is planned for service in mid-1970.

Beyond 1970-1971, it is difficult to predict accurately to the moment what will occur. On the one hand, it will be necessary to have some experience with the interconnection system, and even more important and based on the latter, to know what the position of the IBRD will be, since this organization, which is the only financing agency offering reasonable terms of capital amortization and interest rates, has set itself up as the principal decision-maker with respect to the existing electrification programs in Colombia. The Timba project and the developments in connection with the Cauca - Pacific Diversion, would seem to be the most advisable enterprises for the Cauca Valley. The CVC has recently reinitiated preliminary feasibility studies related to the latter.

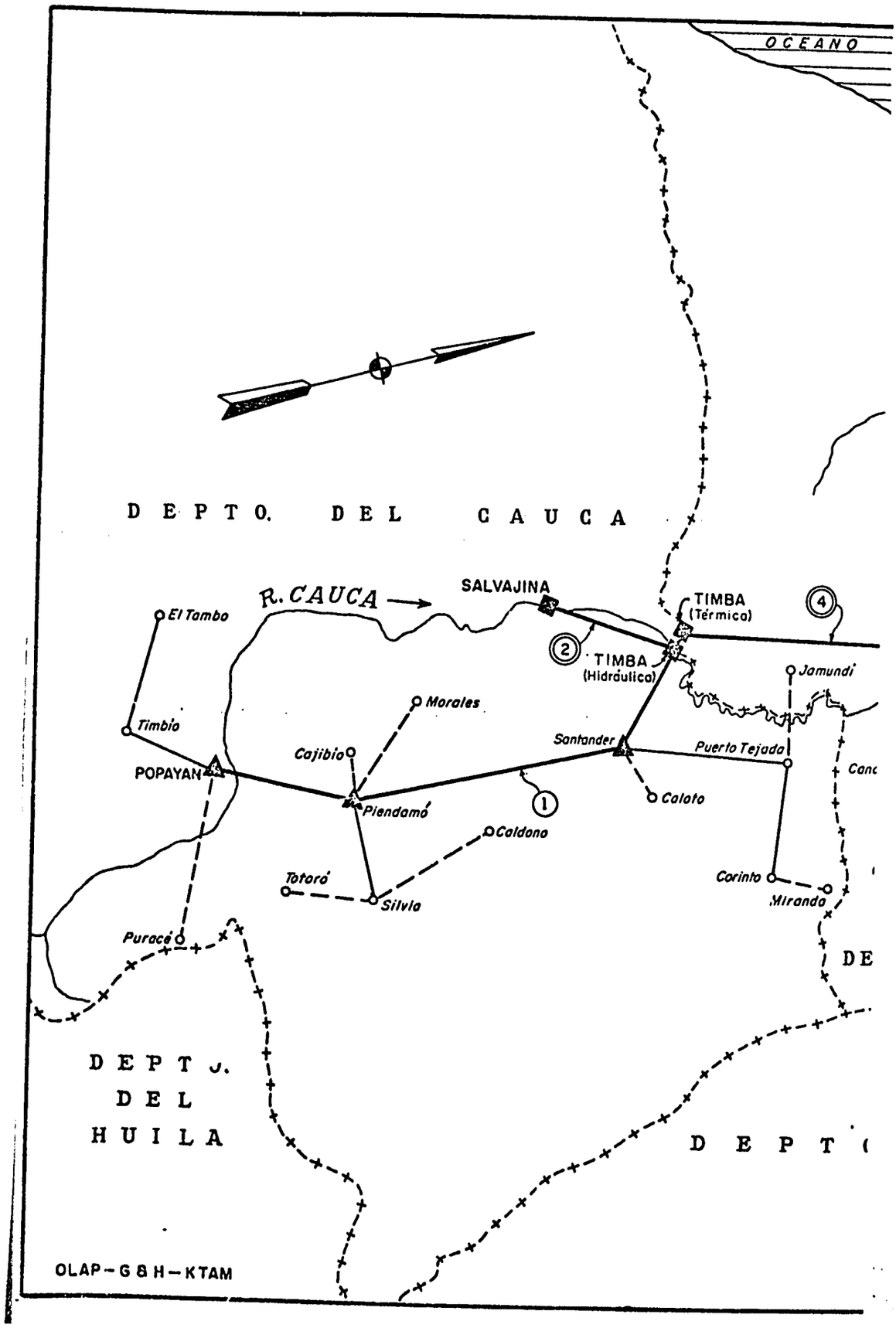
2. *Transmission System*

The integration of all the consumption centers located in the CVC area into one unified power system, supplied by the then existing generating plants, the operation of which would be economically justified, plus those that would be added to the system in the future in accordance with the proposed program, was to be one of the primary purposes of the Corporation within its power plan, and for this reason the construction of transmission lines from Calima to Buga and Cali, from Cali to Popayán, from Cali to Cartago, and from Anchicayá to Buenaventura, was proposed in the Report "The Unified Development of Power and Water Resources in the Cauca Valley". The voltage suggested for these lines was based on load studies made for this purpose.

The Cali - Cartago line, of 115.000 kilowatts, would be the main one in the high tension transmission system. This would be supplied by all the generating plants of the CVC system and would facilitate the exchange of power at Cartago, with the CHEC system. A secondary system of transmission lines would radiate from the transmission sub-stations at Yumbo, Buga, Tuluá, Zarzal, and Cartago. All these lines would be 34 kilowatts, and in a few cases 13.2 kilowatts (See Figure IV.1.) These were planned according to their importance and economic justification. Generally the secondary lines are very short, due to the narrowness of the Valley, and are adjusted to the voltages used by CHEC and CHIDRAL. When the interconnection system with Medellín materializes, it will be necessary to construct a line of higher tension between Cali and Medellín, possibly of 220 kilowatts.

3. *Distribution System*

The initial electrification program of the CVC included supply of power only to the local municipal sub-stations, since it was originally


OCEANO
DEPTO. DEL CAUCA
R. CAUCA
SALVAJINA
TIMBA (Térmica)
TIMBA (Hidráulica)
El Tambo
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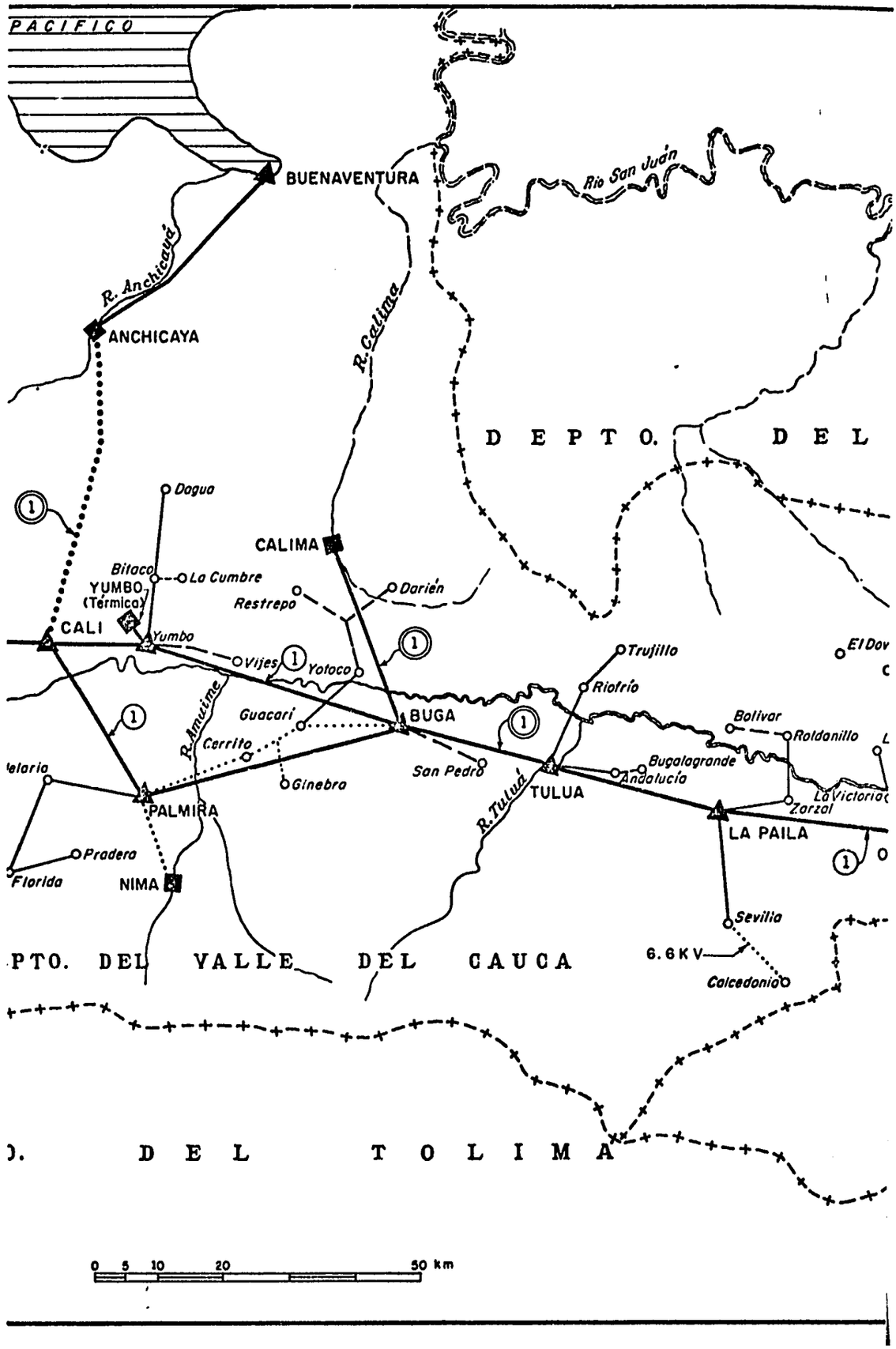
POPAYAN
Morales
Cajibio
Piendamó
Caldono
Totoró
Silvia
Puracé
Santander
Calotó
Puerto Tejada
Jamundí
Corinto
Miranda
DEPTO. DEL HUILA
DEPTO
OLAP-G&H-KTAM


PACIFICO
BUENAVENTURA
Rio San Juán
R. Anchicayá
ANCHICAYA
R. Calima
D E P T O.
D E L
Dogua
CALIMA
Bitaco
La Cumbre
YUMBO
(Térmica)
Darién
Restrepo
CALI
Yumbo
Vijes
Yotoco
Trujillo
Riofrío
R. Amaime
Guacari
BUGA
Bolivar
Roldanillo
Cerrito
Bugalagrande
San Pedro
Andalucía
Ginebra
TULUA
R. Tuluá
PALMIRA
Zarzal
LA PAILA
Pradera
Florida
NIMA
Sevilia
6.6 KV
Calcedonia
PTO. DEL VALLE DEL CAUCA
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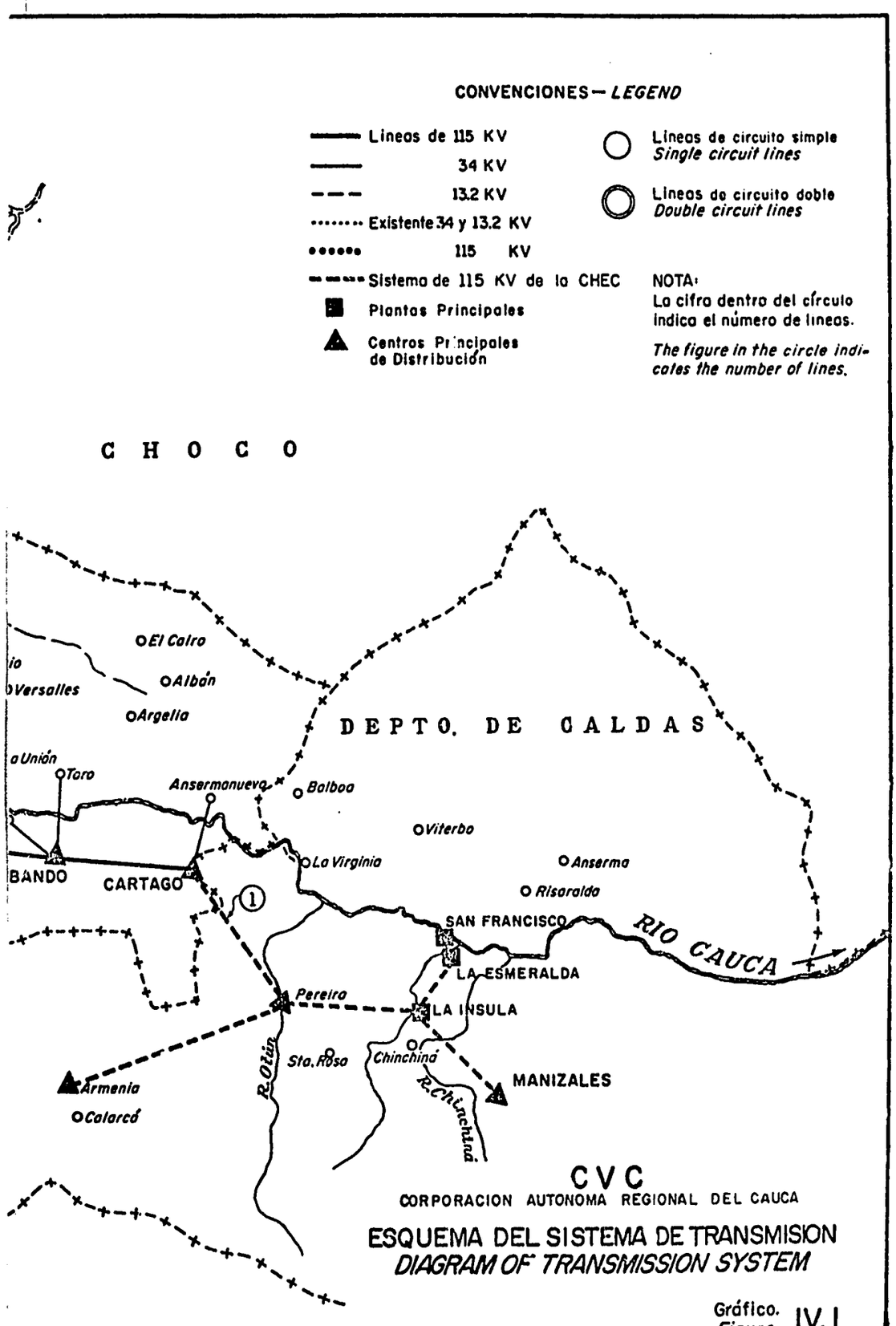


Gráfico. *Figure.* IV.1

Cortesía de la CVC *Courtesy of the CVC*

presumed that the municipalities would be in charge of them. Nevertheless, it was discovered later on that it would be necesary for the CVC to become a major stockholder in the distribution systems of the smaller communities in order to insure uniform technical and administrative services. For this reason very complete basic designs of the distribution systems have been prepared. The larger cities (Cali, Palmira, Buga, Tuluá, and Cartago) have constructed their own distribution systems, although the CVC has actively participated in the preparation of their designs.

° ° °

Due to the electrification program described above, it was possible at the end of 1963, for the first time in Colombia, to meet the needs of an entire region of some 20 thousand square kilometers, covering a number of large urban centers whose progress depended upon an adequate power supply. This program will obviously contribute toward fortifying the equilibrium which fortunately already exists among the different towns of the Cauca Valley, and between the towns and their respective rural areas. And even more important is the fact that this objective has been accomplished efficiently and economically by means of one unified system.

B. LAND RECLAMATION

1. *Flood Control*

Of the 395 thousand hectares of flat land in the Cauca Valley, floods from the overflowing of the Cauca River and some of its tributaries affect 84,000 hectares every year, or 23 percent of the total land (See Map of Zones Subject to Flooding), which cause considerable losses to crops and livestock as well as damage and interruptions in public transportation. Since the area subject to flooding is very flat, and the banks of the Cauca River are higher than the surrounding lands, the waters which remain after the river returns to its normal level become stagnant for long periods in many areas. For this reason, these areas can only be used for pastures. The two most likely periods of flooding are those from February to May, and October to December. But in addition to these annual flood periods, there are years when the floods are above average, the most important of which were 1916, 1932, 1934, 1938, and 1950. The frequency of maximum flooding occurs about once every ten years, although available records indicate that every 50 years the river rises to even greater heights. In spite of this, the degree of protection to be offered to the Valley lands should perhaps not exceed that necessary for protection against the ten year cycle floods.

For control of these floods, the Report "The Unified Development of Power and Water Resources in the Cauca Valley" recommended storage in reservoirs, river channel regularization, construction of dikes, and in some cases spillways (See Map of Flood Control Works).

As far as storage on the Cauca River is concerned, the recommended reservoirs were obviously those to be formed by the Timba and Salvajina Dams. The first of these is more valuable for flood protection since it controls an area 38 percent larger than that controlled by Salvajina; and for this reason it was suggested that Timba be constructed first. Furthermore, the cost of constructing Timba was far less than Salvajina and would have permitted the diversion of waters into irrigation canals to be constructed on each side of the river. Reservoirs cannot be constructed on the Cauca tributaries for lack of adequate sites; consequently protection of lands adjacent to the river can only be achieved by means of widening of channels and the construction of levees.

The works proposed for channel rectification of the Cauca River include cut-offs to shorten the length of the river by about 30 percent, or some 115 kilometers, and the construction of 63 kilometers of levees along the right bank and 35 kilometers along the left bank. These levees would generally be no higher than two meters between Timba and Buga, and 1.5 meters from Buga to Cartago. This work, combined with the Timba project would offer complete flood protection to cover the ten-year cycle floods. If to this is added the Salvajina Dam the degree of protection would extend to include the 50-year flood cycle.

In view of the magnitude of this program, it is obvious that the designs of the protection projects presented in the Report are merely preliminary studies and much detailed work remains to be done before deciding upon definitive sites and dimensions.

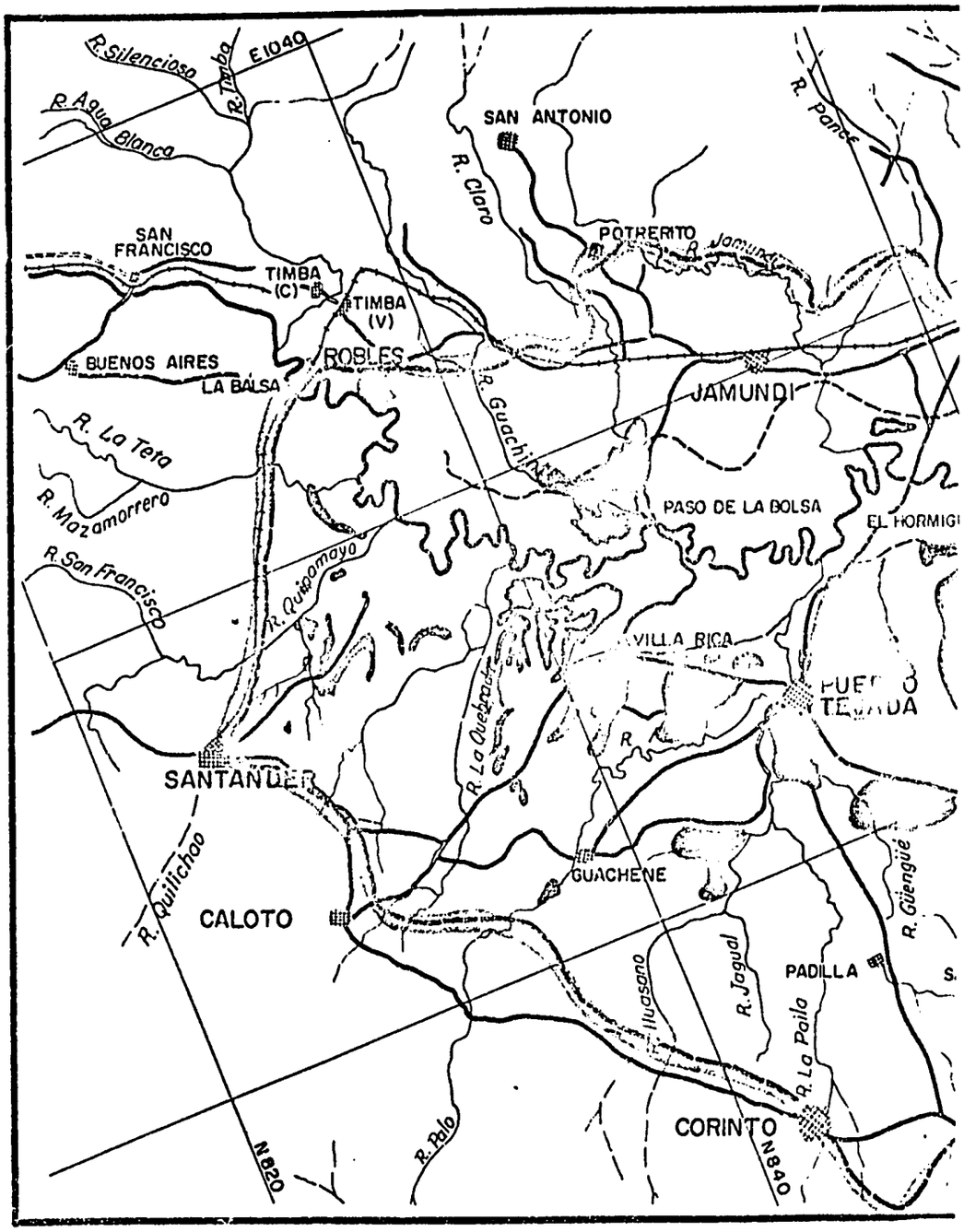
2. *Irrigation and Drainage*

At the same time that it is necessary to construct the aforementioned flood control works in order to reclaim a considerable portion of the land of the Valley, the execution of a vast series of irrigation and drainage works are also needed in order to achieve adequate utilization of all agricultural land. Irrigation is necessary in some areas because the annual distribution of rainfall is not sufficient or uniform; and the latter because the natural drainage of much of the land is inadequate.

The flat zone of the Valley can be roughly classified as follows:

Net area of irrigation	290,000	hectares
Area for irrigation and drainage canals	32,000	hectares
Agricultural area	(322,000)	hectares
Urban areas and other uses	73,000	hectares
Total flat area	395,000	hectares

Of the 322,000 hectares of the agricultural area, 84,000 are in a zone subject to flooding and 238,000 are not. But both require irrigation, especially the former areas, once the corresponding flood control works have been completed, in order to assure adequate yields for the crops to which the land will be devoted.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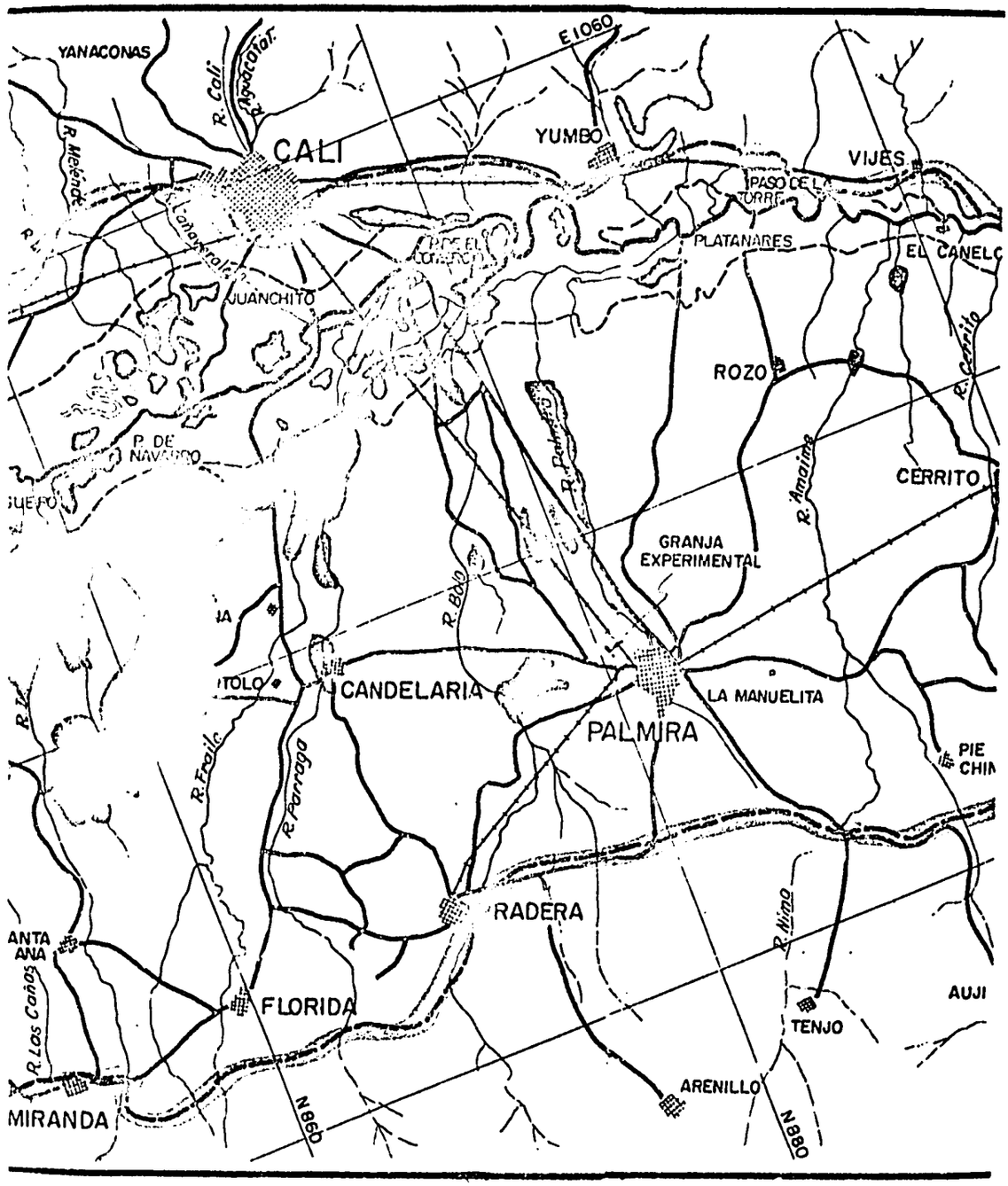
R. Timba
E1040
R. Agua Blanca
SAN ANTONIO
R. Claro
R. Pance
POTRERITO
R. Jamundí
SAN FRANCISCO
TIMBA (C)
TIMBA (V)
BUENOS AIRES
ROBLES
LA BALSA
R. Guachinte
JAMUNDI
R. La Tera
R. Mazamorrero
PASO DE LA BOLSA
EL HORMIGI
R. San Francisco
R. Quinamayo
VILLA RICA
R. La Quebrada
SANTANDER
GUACHENE
R. Quilichao
CALOTO
R. Güengüe
PADILLA
R. Jagual
Huasano
R. La Paila
CORINTO
R. Palo
N820
N840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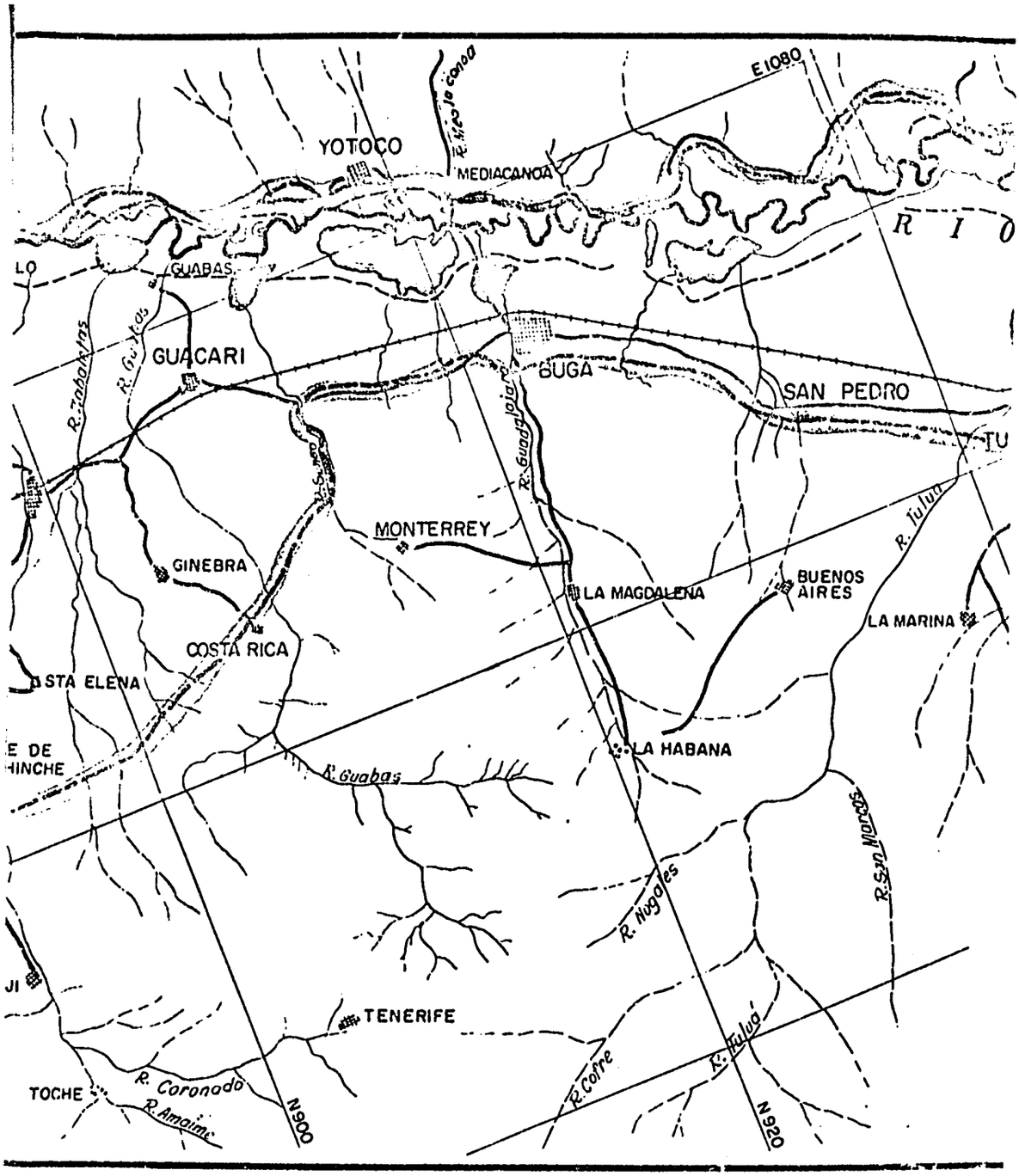
R. Aguacatal
E 1060
CALI
YUMBO
VIJES
PASO DE LA TORRE
PLATANARES
EL CANELO
JUANCHITO
ROZO
R. Cerrito
P. DE NAVARRO
R. Amaime
CERRITO
GRANJA EXPERIMENTAL
R. Bolo
CANDELARIA
LA MANUELITA
PALMIRA
PIE CHIN
R. Frailes
R. Parraga
RADERA
R. Nima
ANTA ANA
R. Los Caños
FLORIDA
AUJI
TENJO
ARENILLO
MIRANDA
N 86b
N 88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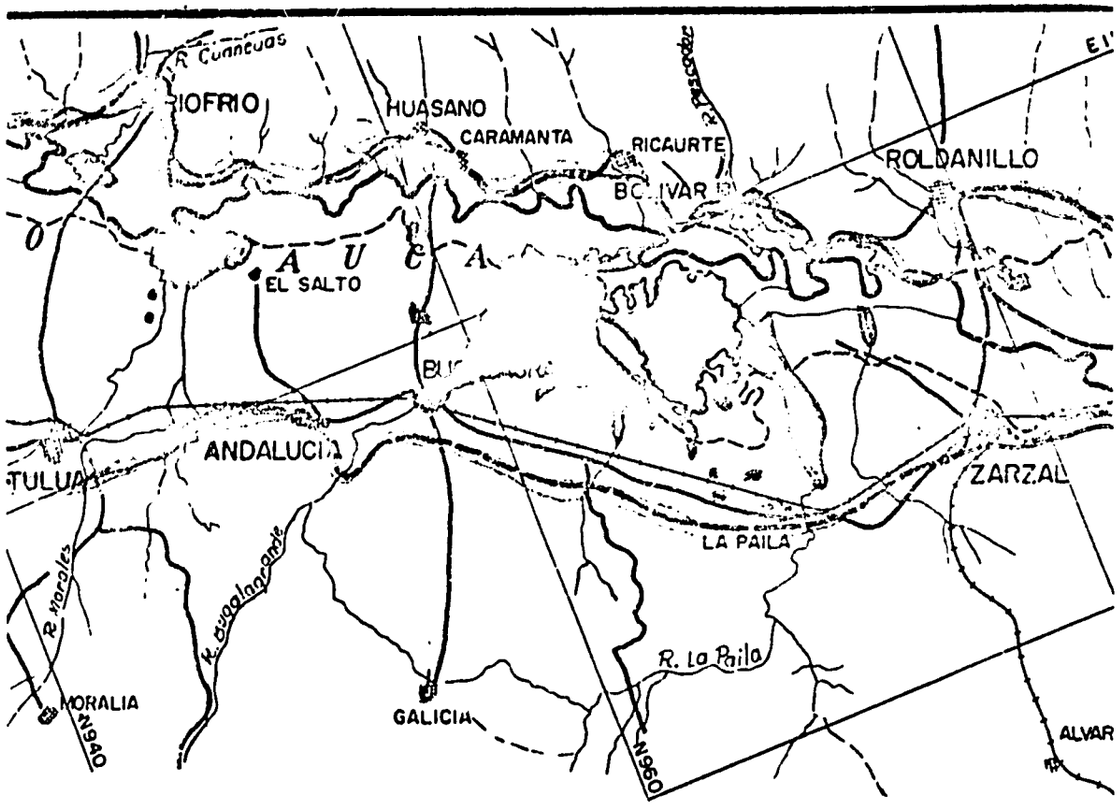
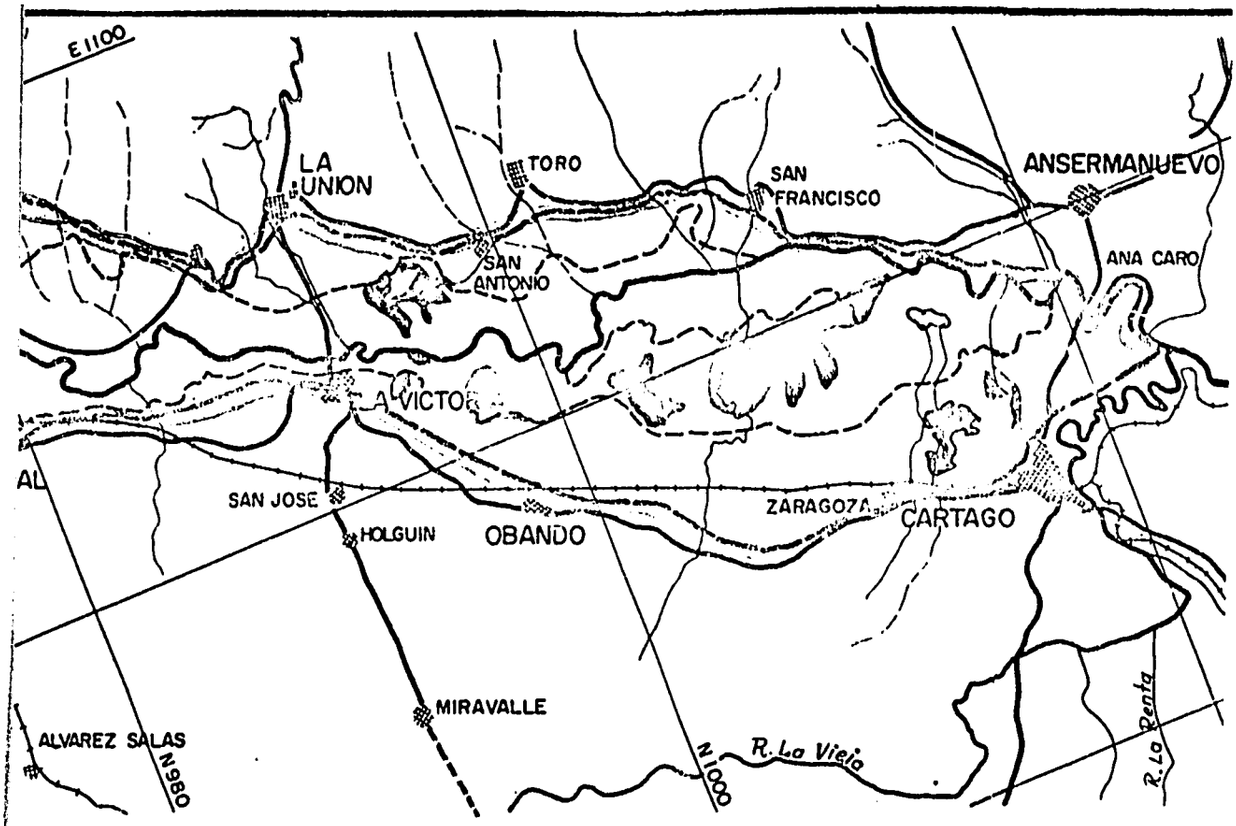
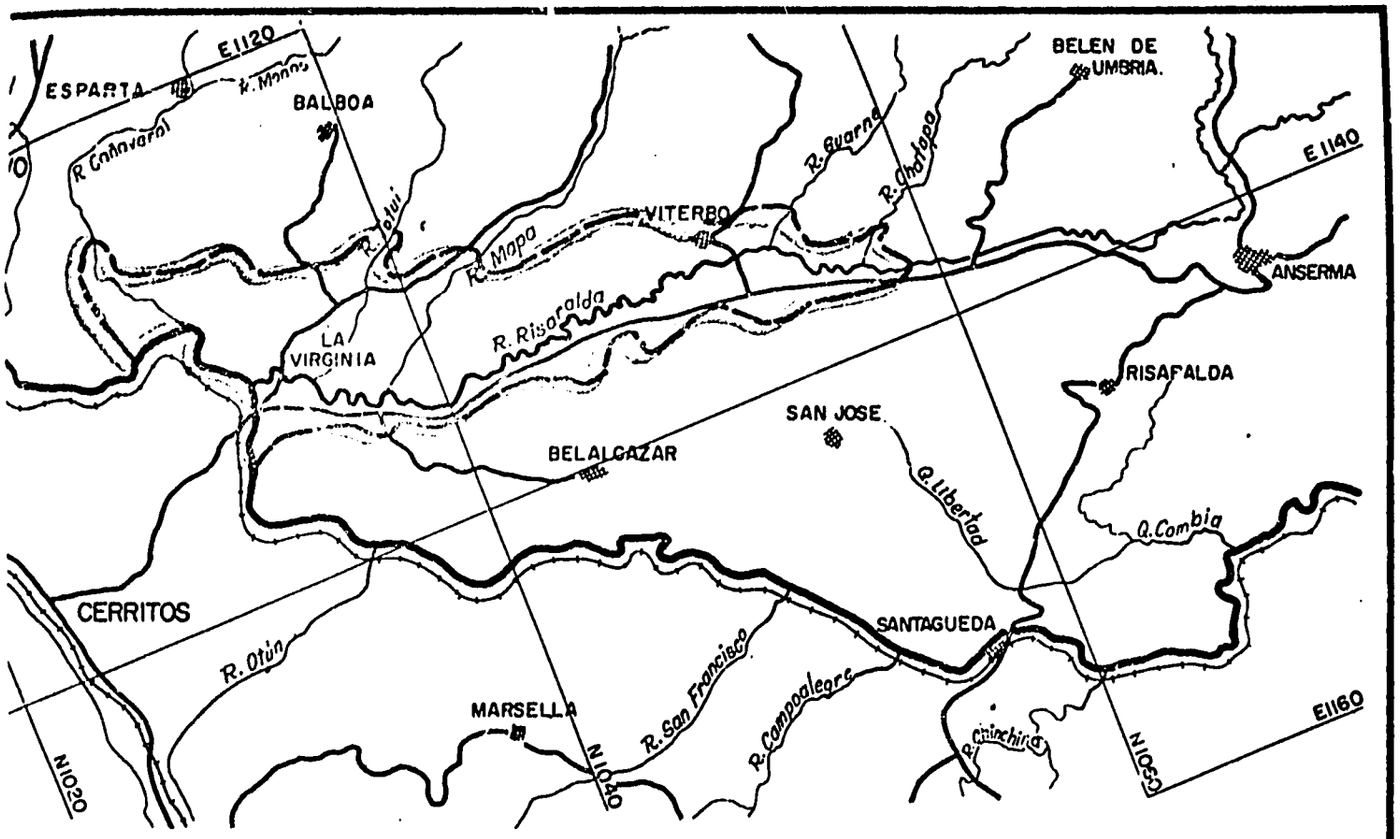
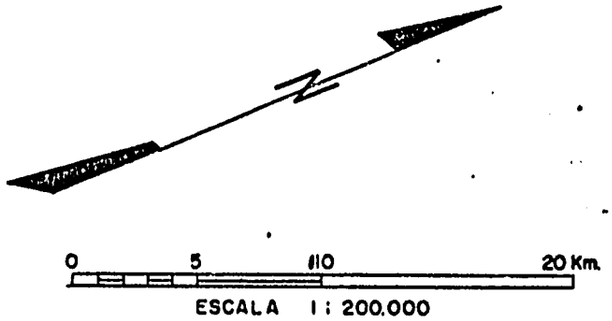
MEDIACANOA
R I O
GUABAS
GUACARI
BUGA
SAN PEDRO
TU
R. Zabaletas
R. Guadajoja
MONTERREY
GINEBRA
LA MAGDALENA
BUENOS AIRES
R. Tuluá
LA MARINA
COSTA RICA
STA ELENA
E DE
HINCHE
LA HABANA
R. Guabas
R. San Marcos
R. Nogales
TENERIFE
R. Cobre
R. Tuluá
TOCHE
R. Coronado
R. Amaime
N 900
N 920



CONVENCIONES		LEGEND
Limite de area plana		Limits of flat area
Areas inundables		Flooded areas
Por rio Cauca y tributarios		By Cauca River & tributaries
Por tributarios solamente		By tributaries only
Por aguas lluvias		By rainfall
Limite de la creciente de 1949/50		Limit of the 1949-1950 flood


E 1100
LA UNION
TORO
SAN FRANCISCO
ANSERMANUEVO
SAN ANTONIO
ANA CARO
VICTOR
AL
SAN JOSE
HOLGUIN
OBANDO
ZARAGOZA
CARTAGO
MIRAVALLE
ALVAREZ SALAS
N980
N1000
R. La Vieja
R. La Renta





CVC

CORPORACION AUTONOMA REGIONAL DEL CAUCA

ZONAS INUNDABLES

AREAS SUBJECT TO FLOODING

Gráfico *Figure* IV.2

Cortesía de la CVC *Courtesy of the CVC*

As of June 1956, according to the study prepared for the CVC by the School of Agronomy at Palmira and incorporated into the Report "The Unified Development of Power and Water Resources in the Cauca Valley", the pattern of land use in the Cauca Valley was the following:

Crops (all types)	105,500	hectares
Pastures	219,500	hectares
Lakes and swamps	12,000	hectares
Urban areas and public services	58,000	hectares
Total	395,000	hectares

The Report of the Consultants suggested the reduction of the area in pastures to 44,000 hectares and the increase to 246,000 hectares of areas devoted to crop production. Since at that time (1956) only approximately 50,000 hectares had irrigation facilities, which in general were deficient gravity-operated systems constructed by the owners of the properties themselves, this meant that some 250,000 hectares remained which should be provided with irrigation systems.

The basic plan proposed to meet these irrigation needs on the 290,000 hectares apt for irrigation, included the utilization of all three of the possible sources of irrigation waters that exist in the Valley: the Cauca River, the Cauca tributaries, and underground waters, as follows:

By gravity from the main Timba canals	79,000	hectares
By pumping from the Timba canal on the right bank	34,000	hectares
By pumping from the Cauca River	59,000	hectares
By pumping and gravity from the Cauca Tributaries and from deep wells	118,000	hectares
Total	290,000	hectares

The water obtained from the pumping of deep wells and from tributaries would generally be used to irrigate the highest lands of the Valley, those near the foothills. The electric power required for this pumping as well as that to be pumped from the Cauca River is estimated at 13,500 kilowatts, once the developments have been completed.

When irrigation is generalized, given the flatness of the land, which has an average of only 3 meters of inclination per kilometer, it is estimated that the entire flat zone will need artificial drainage, and that for at least 85,000 hectares this drainage will have to be achieved by pumping because it covers areas presently subject to flooding by the Cauca River. Included in these 85,000 hectares are 12,000 hectares in permanent ponds and swamps.

Even if the proposed irrigation works are not carried out, much of the Valley land will require artificial drainage, due in some cases to the high level of the waters subject to flooding, and in others to the fact

that many properties located below zones irrigated by private owners have suffered damage due to the excessive amounts of water they receive. Drainage is vital, since it permits easier cultivation of land at lower costs, diminishing the losses in seeds and fertilizers during rainy seasons, preserves the composition of the soils, helps to maintain capillary humidity, increases crop yields since plants can develop better root systems, and in general improves the health of human beings and animals in the rural areas.

3. *Benefits from Flood Control, Irrigation, and Drainage*

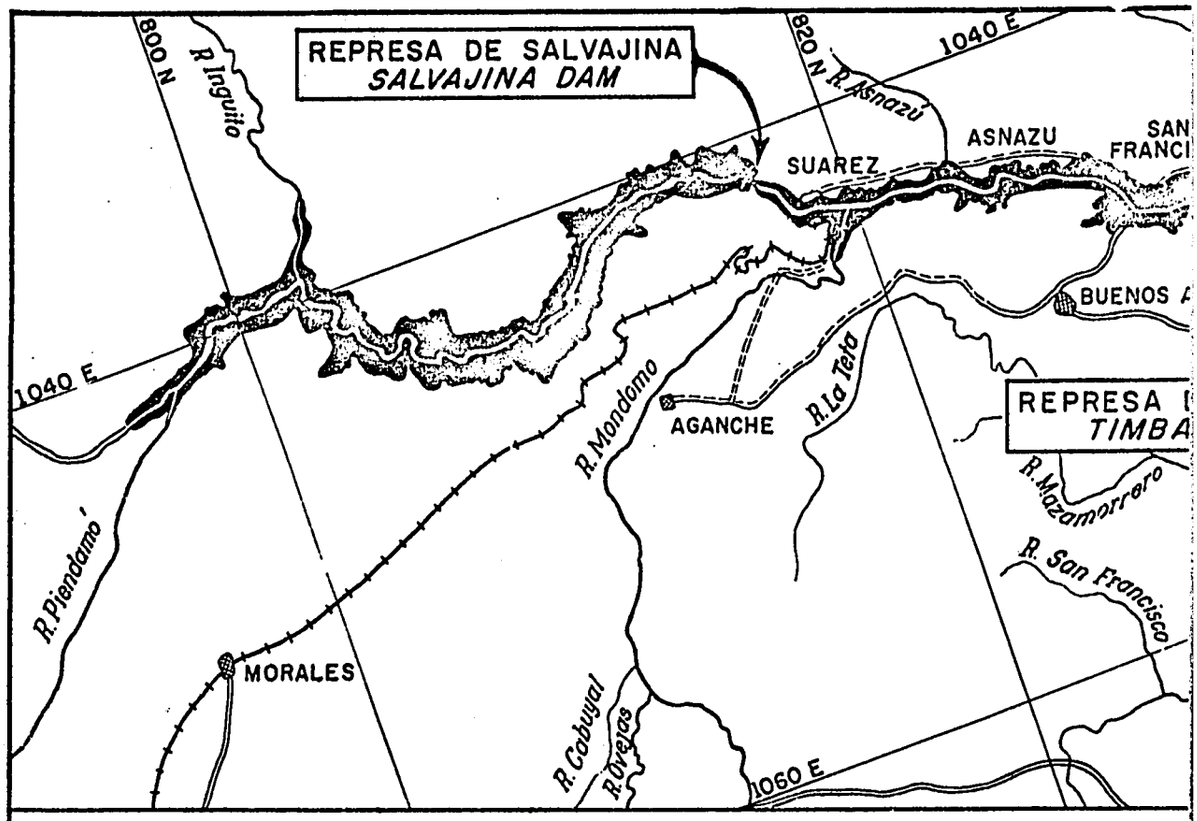
The proposed program of improvement of land, which includes flood control, irrigation, and drainage, is to be carried out during the 30-year period between 1956 and 1985, and is fully justified according to the cost-benefit studies which were prepared, comparing the annual monetary value of benefits with the annual costs, including in these all charges for interest, amortization, depreciation of equipment and structures plus the annual cost of operation, maintenance, and administration.

Using very conservative data on the volume of agricultural production and on agricultural prices, it was discovered that the ratio between annual benefit and annual cost would be, on the average, a ratio of 4 to 1 for the entire flat zone. Surprisingly enough, it was estimated that the direct benefits would be even greater in the areas subject to flooding, which would constitute an additional argument favoring the execution of the corresponding rectification works, in spite of their high initial cost.

But besides increasing net income from greater volume of agricultural production, the suggested program of land improvements would bring with it, according to the Report of the Consultants, other important benefits, such as: (a) an increase in food processing industries as a result of greater agricultural and livestock production; (b) an increase in values of urban land and other lands not used for agriculture; (c) economies in the construction and maintenance of public works such as highways and airports due to flood control and drainage; and (d) benefits to public health, resulting from the improved sanitary conditions which would prevail following the control of floods. Because of these additional benefits, which would easily raise the direct benefits by half again as much, the ratio of total benefits received from the program may reach 6 to 1, which is clearly an extremely attractive prospect.

4. *Pilot Projects*

According to the above discussion, the basic work planned for land reclamation should be the dam to be constructed on the Cauca River at Timba, which will also constitute an important source of power. But because of cost and other considerations already explained, the construction of this project is to be deferred indefinitely. In the meantime, however,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SALVAJINA DAM
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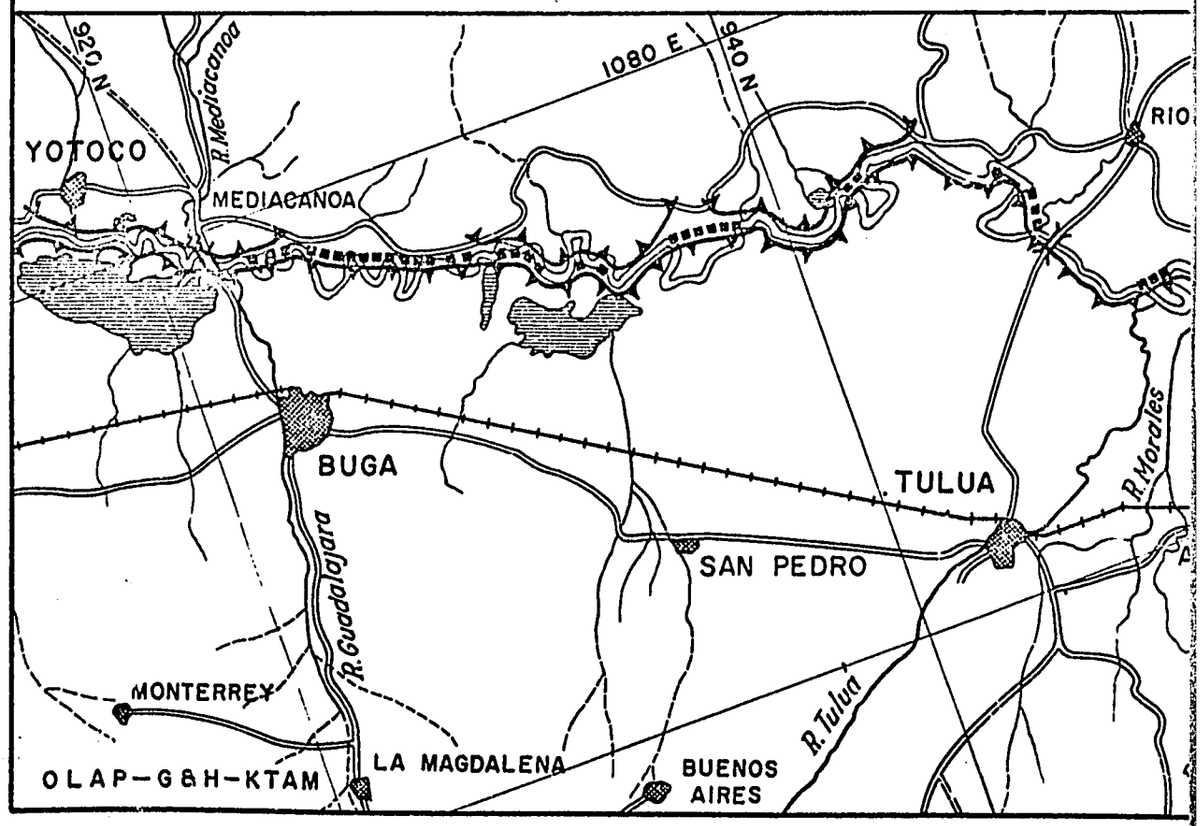
R. Inguito
820 N
R. Asnazú
1040 E
ASNAZU
SAN FRANCI
SUAREZ
BUENOS A
1040 E
R. Mondomo
AGANCHE
R. La Teta
REPRESA
TIMBA
R. Mazamorrero
R. San Francisco
R. Piendamo
MORALES
R. Cabuyal
R. Ovejas
1060 E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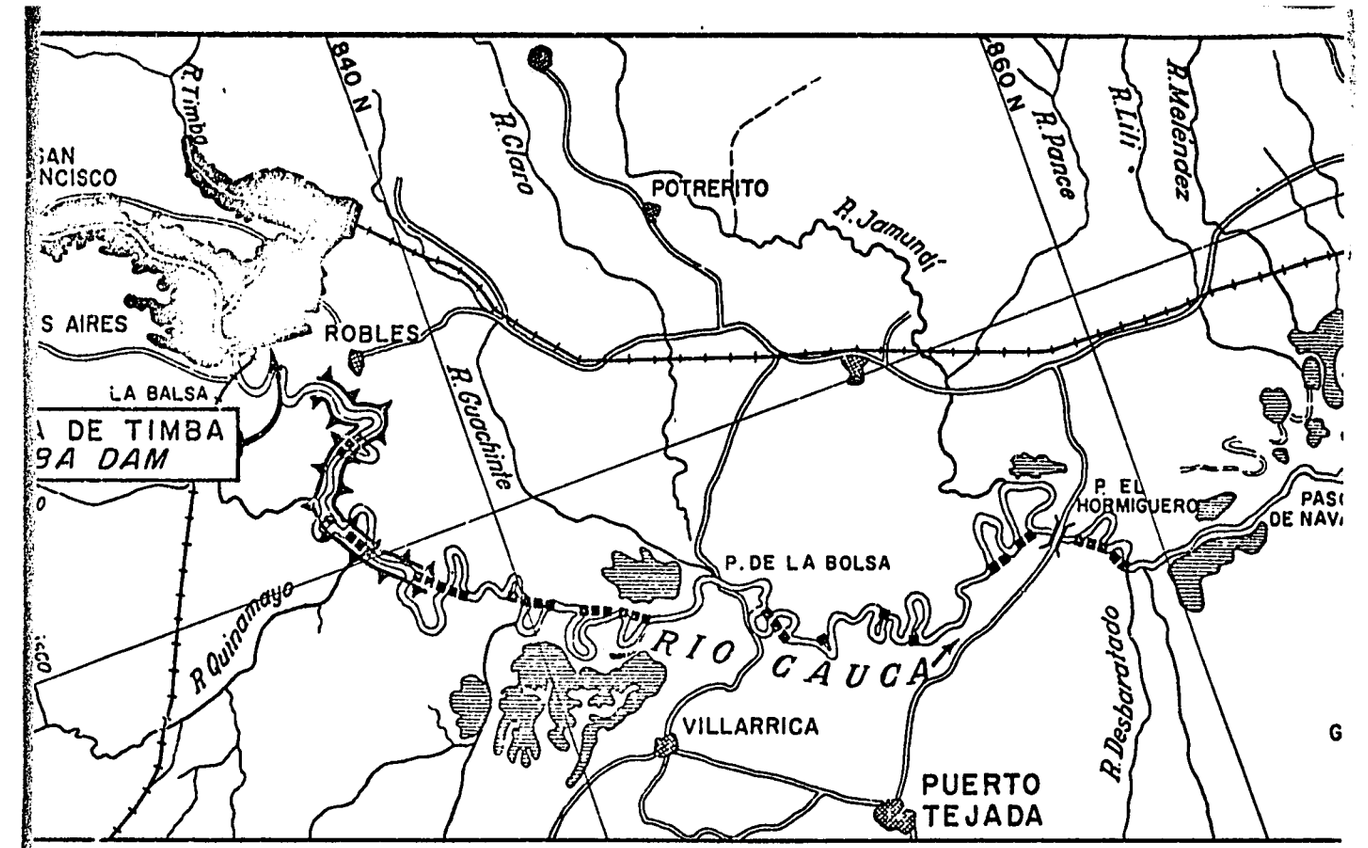
R. Mediacanoa
1080 E
940 N
YOTOCO
MEDIACANOA
RIO
BUGA
TULUA
R. Morales
SAN PEDRO
R. Guadalajara
MONTERREY
R. Tulua
OLAP-G&H-KTAM
LA MAGDALENA
BUENOS AIRES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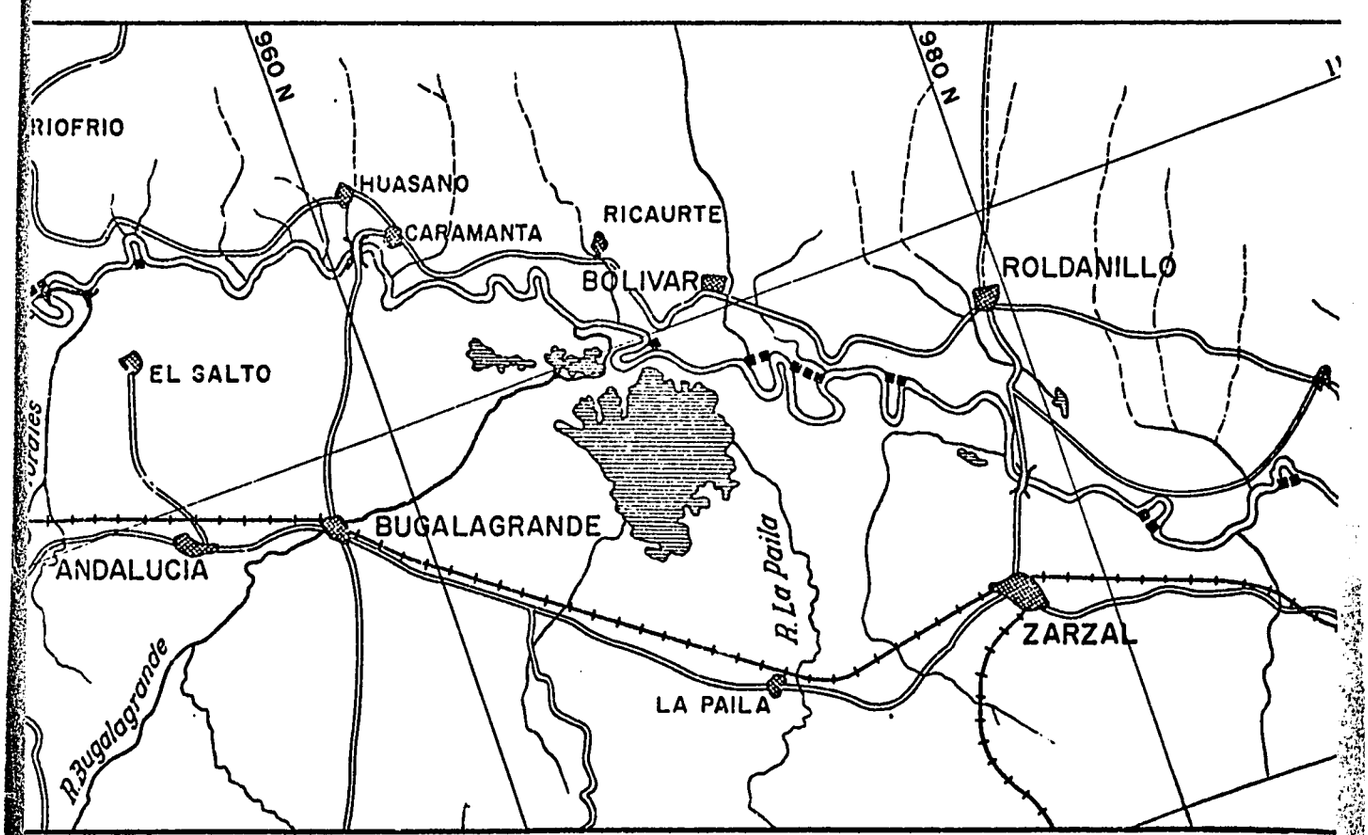
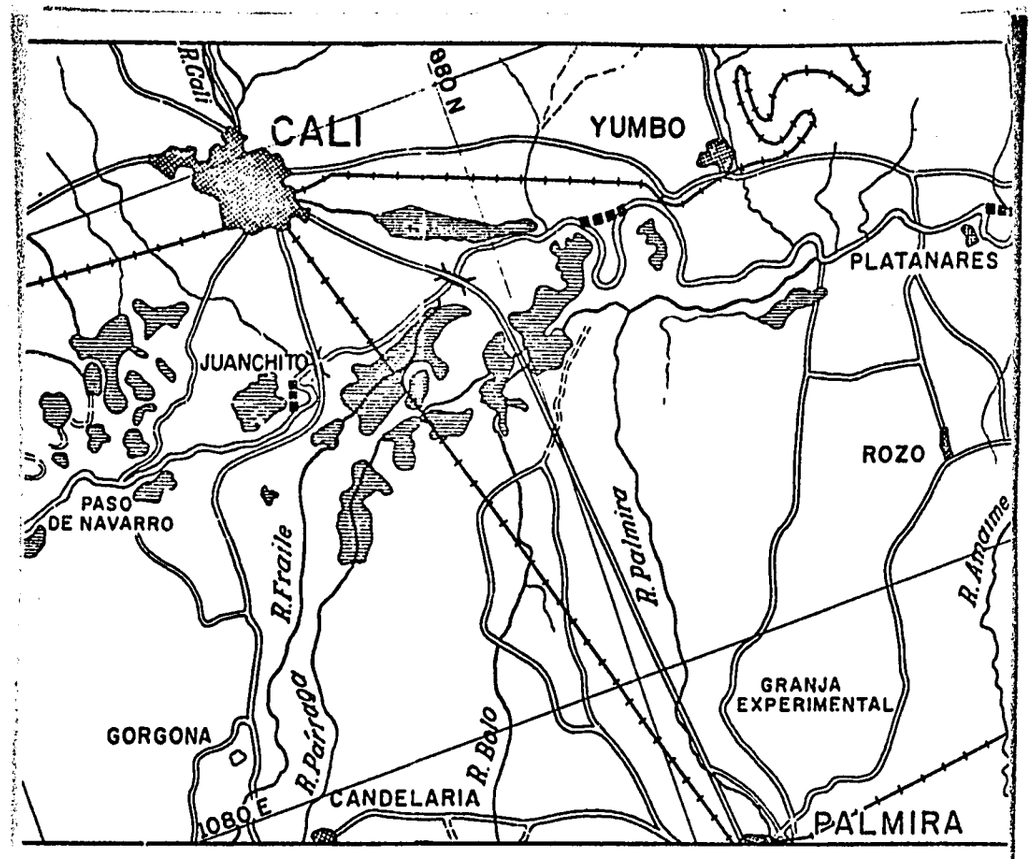
R. Jamundí
R. Pance
R. Lilí
R. Meléndez
ROBLES
LA BALSA
DE TIMBA
DAM
R. Guachinte
P. EL HORMIGUERO
P. DE LA BOLSA
R. Quinamayo
RIO CAUCA
VILLARRICA
R. Desbaratado
PUERTO TEJADA


960 N
980 N
RIOFRIO
HUASANO
CARAMANTA
RICAURTE
BOLIVAR
ROLDANILLO
EL SALTO
BUGALAGRANDE
ANDALUCIA
R. La Paila
ZARZAL
LA PAILA
R. Bugalagrande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PLATANARES
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ROZO
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R. Fraile
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EXPERIMENTAL
GORGONA
R. Pairapo
R. Bolo
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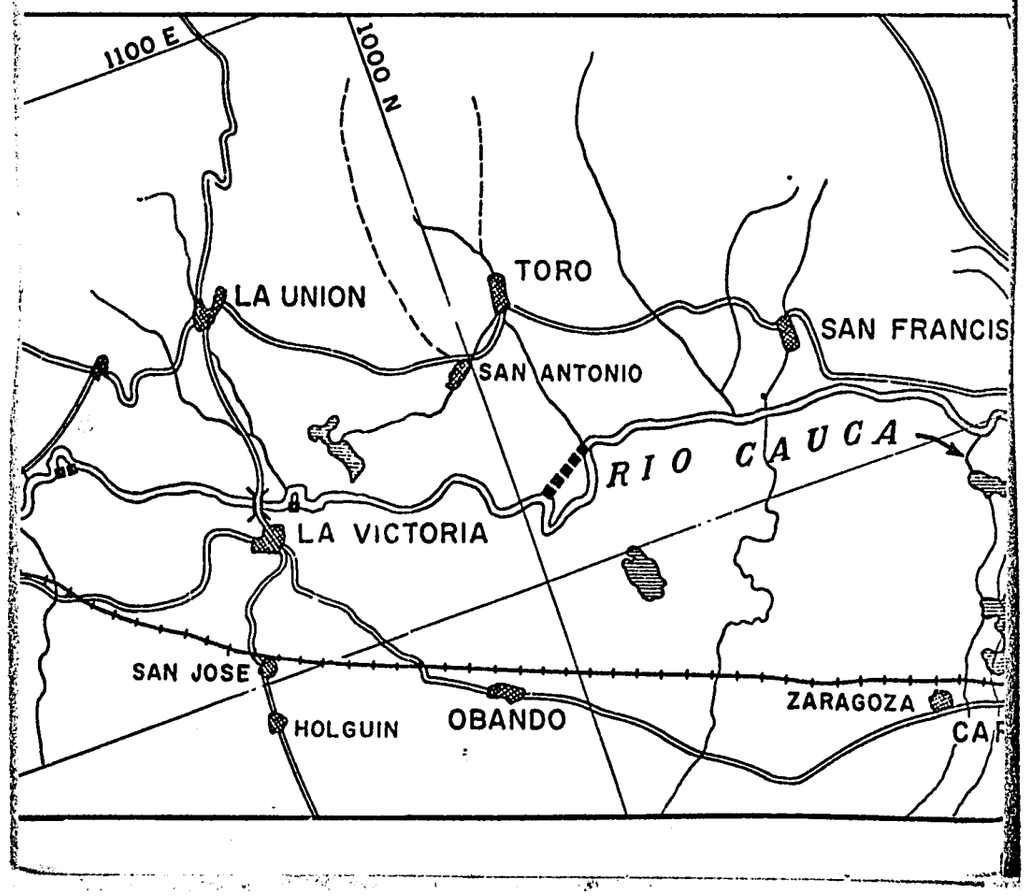
CANDELARIA
PALMIRA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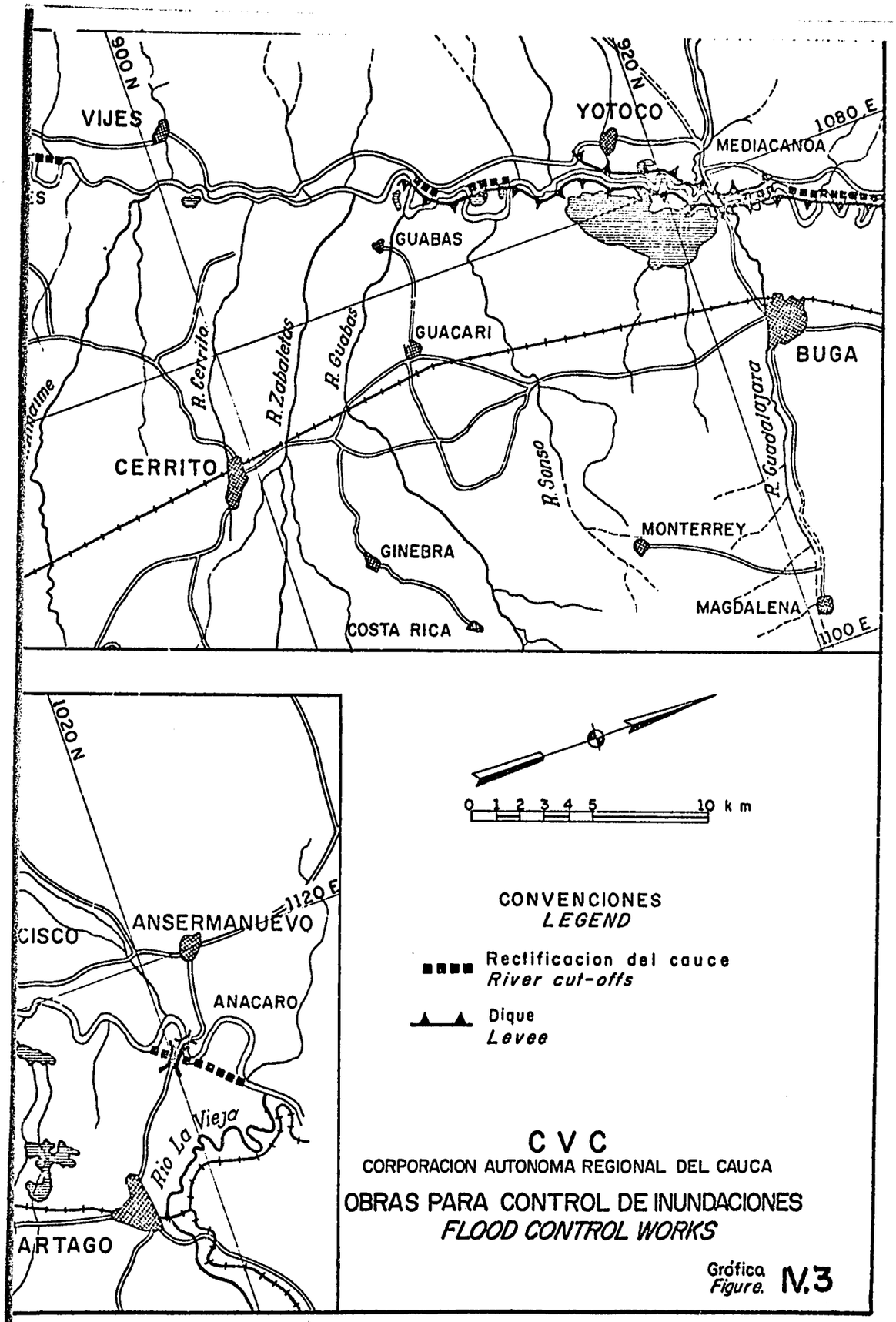
OBANDO



Cortesia de la CVC *Courtesy of the CVC*

it became possible, indeed necessary, to advance some local land reclamation works that would not require the construction of Timba but would produce immediate benefits of improved land use yet would fall within the general Plan. These would serve the double purpose of permitting demonstration to the farmers of the advantages to be derived from farming on soils that are technically drained and irrigated, and of providing the CVC with experience which would enable it to determine the most appropriate irrigation practices, new crop adaptations, and in general the best way of managing improved soils. The Consultants at first recommended the study and construction of the following three projects: Risaralda in Caldas, Candelaria in Valle, and Padilla in Cauca. The withdrawal from CVC of the Departments of Caldas and Cauca, for reasons already explained, made it impossible to attempt the Risaralda and Padilla projects. And because the cost of the Candelaria project was very high and to some extent required the prior completion of certain rectification works on the Cauca River, the CVC chose instead two alternate local projects: Aguablanca and Roldanillo-La Unión-Toro.

The Aguablanca project in the vecinity of Cali protects the city against flooding and insures proper drainage of the lowlands between Cali and the Cauca River, from the Lilí River in the south to the express highway to Palmira in the north. It includes almost 5,000 hectares which ultimately will be devoted to urban use, and has served to help in solving the desperate problem of housing for the lower classes, since the higher lands were very expensive and concentrated in a few hands.

The Roldanillo-La Unión-Toro project, including 13,300 hectares located on the left bank of the Cauca River in the northern part of the Department, will give flood protection as well as facilities for irrigation and drainage, to the major part of the flat area of these three municipalities. This project is about 40 percent completed, and the benefits have already been outstanding. As is recorded in detail in Chapter V, agriculture there, as well as in Aguablanca, has already received substantial impetus. The completion of the Roldanillo-La Unión-Toro project was further assured in 1963 when it came under the jurisdiction of the Colombian Institute for Agrarian Reform (INCORA), which will use the area as a pilot irrigation project and for land redistribution.

A third pilot project, La Victoria-Cartago, the detailed studies and final designs of which are now complete, will also be constructed in cooperation with INCORA. This project includes 17,000 hectares and is a part of a larger project, that of Bugalagrande-Cartago, which will include 55,000 hectares of flat land, as described in the CVC Report C-4204 of April, 1962. But the construction of this project has been delayed because the large landowners of that zone, alligned with the latifundistas of the rest of Valle and Colombia, have placed a long series of obstacles in its way, since they do not wish to see a program of land redistribution carried out there. If the project is carried out, this redistribution will be

necessary, according to the terms of the present agrarian reform law. This law stipulates that wherever the government or an official agency carries out land reclamation works, this should include a program to establish family-farms. The large landholders do not want this to happen because of the changes that will occur in the distribution of political, economic, and social power. To date, they have succeeded in delaying the project for at least a year, but there are indications that the government is not prepared to permit further dilatory tactics, so that it is possible that work on this project can be initiated during the latter part of 1964.

In Chapter V, Accomplishments of the CVC, a more detailed description of these three projects is presented, the final studies and designs of which were prepared by the CVC Department of Engineering, with the advice of the group of Consultants.

The total area comprised in the CVC land reclamation projects is 201,800 hectares (See Table IV.4.).

C. INVESTMENT PROGRAM

The Report "The Unified Development of Power and Water Resources in the Cauca Valley" included estimates of possible costs for the various power development and land reclamation projects for the period 1960-1970. Due to the fact that these projects could not be initiated until several years later, a new general investment plan was prepared in 1961 for the years 1961-1968, as appears in Table IV.4. Obviously, and for reasons discussed elsewhere in this study, this investment program could not be developed; and it is included only in order to show the magnitude of the global programs contemplated by the CVC.

The new decisions and events that have arisen during the last few months, referred to in sections A and B of this Chapter, obviously make a further revision of CVC's long term investment program necessary. This task of long-range planning is complex but basic to the development of these indispensable regional projects and necessary in order to avoid difficulties in budget planning, in obtaining credit and technical personnel, and for other vital matters. For this reason, the CVC is now at a point where it should intensify its general efforts in short and long-term planning to the utmost. And in doing this, it would be desirable that it not limit itself to its own activities but rather also coordinate these activities with those of other regional agencies and organizations, both public and private, which play a part in the process of regional economic and social development. Coordination of CVC programs with other nationwide programs is also of vital importance, especially now that the interconnection of power systems discussed above, becomes an increasing reality.

Project Major power projects	Magnitude of Project Kw	Total Cost			Cost up to Dec	
		US$	Ps.	Total in Ps.	US$	Ps.
Calima I	120,000	16.7	66.5	178.2	0.8	9.2
Timba (allocated to power)	60,000	15.4	51.8	155.0	—	—
Calima II	240,000	26.6	74.3	252.5	—	—
Salvajina (allocated to power)	180,000	31.6	144.5	356.2	—	—
Copomá-Calima Tunnel	(21 km)	8.3	51.3	106.9	—	—
Totals	600,000	98.6	388.4	1.408.8	0.8	9.2
Land reclamation	*Ha*					
Aguablanca	5,000	0.2	19.2	20.3	0.2	13.3
Roldanillo	13,200	1.5	42.9	53.0	0.2	9.8
Bugalagrande-Cartago	30,000	4.5	76.5	106.8	—	—
Florida-Pradera-Candelaria	41,000	5.9	103.0	142.5	—	—
Guachinte	10,400	1.4	25.0	34.4	—	—
Jamundí	13,200	1.8	32.6	44.7	—	—
Hormiguero-Meléndez	5,000	0.9	22.5	28.7	—	—
Yumbo-Santa Rosa	2,000	0.5	8.8	11.9	—	—
La Balsa-Corinto-Puerto Tejada	44,000	6.5	109.0	152.6	—	—
Puerto Tejada-Corinto-Florida	38,000	5.5	95.0	131.9	—	—
Timba (allocated to land reclamation) .		3.8	38.6	63.8	—	—
Salvajina (allocated to land reclamation)		3.5	16.0	39.4	—	—
Río Cauca channel rectification		5.1	35.0	69.2	—	—
Principal irrigation Canals		1.5	45.0	55.2	—	—
Totals	201,800	42.6	669.1	954.3	0.4	23.1
Electric transmission & distribution						
Transmission Systems		12.4	29.6	113.2	—	10.6
Subtransmission Systems		0.8	6.0	11.2	—	—
Distribution Systems		0.8	2.4	7.7	0.1	0.3
Totals		14.0	38.0	132.1	0.1	10.9
Grand Totals		155.2	1,095.5	2,135.2	1.3	43.2

TABLE IV.4

CVC: Investment Plan, 1961-1968

(In millions of Dollars and Pesos) (US$ 1 = 6.70 Ps.)

o Dec. 31, 1960		1961			1962			1963			1964	
Ps.	Total in Ps.	US$	Ps.	Total in Ps.	US$	Ps.	Total in Ps.	US$	Ps.	Total in Ps.	US$	Ps.
9.2	14.5	3.3	16.7	38.8	6.1	24.2	64.9	4.7	13.6	45.1	1.8	2.8
—	—	—	—	—	0.4	1.3	4.0	0.5	1.5	4.9	3.8	11.3
—	—	—	—	—	0.1	0.4	1.1	0.6	0.7	4.7	0.8	1.5
—	—	—	—	—	—	—	—	—	—	—	0.1	0.8
—	—	—	—	—	—	0.2	0.2	0.1	2.4	3.1	0.4	9.7
9.2	14.5	3.3	16.7	38.8	6.6	26.1	70.2	5.9	18.2	57.8	6.9	26.1
13.3	14.4	—	2.9	2.9	—	3.0	3.0	—	—	—	—	—
9.8	11.2	0.1	5.0	5.3	0.3	5.6	7.4	0.4	10.2	13.3	0.2	5.0
—	—	—	—	—	0.4	6.1	8.7	0.9	15.8	22.3	1.1	18.4
—	—	—	—	—	—	—	—	0.3	6.1	8.1	0.9	14.5
—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	0.3	4.4	6.0	0.2	4.4
—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	1.0	7.8
—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	0.3	0.3	0.1	0.9	1.6	1.0	7.0
—	—	—	—	—	—	—	—	—	0.2	0.2	0.1	1.4
23.1	25.6	0.1	7.9	8.2	0.7	15.0	19.4	2.0	37.6	51.5	4.5	58.5
10.6	10.6	2.3	5.3	20.6	1.1	0.8	8.7	1.0	3.2	10.1	—	—
—	—	0.6	3.5	7.4	0.2	2.5	3.8	—	—	—	—	—
0.3	1.1	0.2	0.6	2.0	0.5	1.5	4.6	—	—	—	—	—
10.9	11.7	3.1	9.4	30.0	1.8	4.8	17.1	1.0	3.2	10.1	—	—
43.2	51.8	6.5	34.0	77.0	9.1	45.9	106.7	8.9	59.0	119.4	11.4	84.6

1 = 6.70 Ps.)

1964		1965			1966			1967		
Ps.	Total in Ps.	US$	Ps.	Total in Ps.	US$	Ps.	Total in Ps.	US$	Ps.	Total in Ps.
2.8	14.9	—	—	—	—	—	—	—	—	—
11.3	36.7	4.3	15.1	43.9	4.3	15.1	43.9	2.1	7.5	21.6
1.5	6.9	3.1	9.1	29.9	12.0	34.1	114.5	7.7	22.1	73.6
0.8	1.5	0.1	2.3	3.0	0.5	0.9	4.3	6.9	17.7	63.9
9.7	12.4	0.5	2.4	5.7	2.9	14.4	33.8	4.4	22.2	51.7
26.1	72.4	8.0	28.9	82.5	19.7	64.5	196.5	21.1	69.5	210.8
—	—	—	—	—	—	—	—	—	—	—
5.0	6.5	—	—	—	—	—	—	—	—	—
18.4	25.6	1.0	16.8	23.5	0.8	13.7	19.1	0.3	5.7	7.5
14.5	20.5	1.1	19.5	26.9	1.1	18.6	26.0	1.1	18.6	26.0
—	—	0.4	8.0	10.7	0.7	12.0	16.7	0.3	5.0	7.0
—	—	—	—	—	0.6	10.8	14.8	0.9	15.3	21.3
—	—	—	—	—	—	—	—	0.5	11.3	14.4
4.4	5.9	—	—	—	—	—	—	—	—	—
—	—	0.4	6.5	9.2	0.8	15.2	20.6	1.2	20.7	28.7
—	—	0.3	5.8	7.8	0.7	13.2	17.9	1.1	18.0	25.4
7.8	14.4	1.1	12.3	19.6	1.1	12.3	19.6	0.6	6.2	10.2
—	—	0.1	0.4	1.1	0.1	0.1	0.8	0.8	1.9	7.3
7.0	13.7	1.1	7.0	14.4	1.0	6.6	13.3	1.0	6.6	13.3
1.4	2.1	0.4	11.7	14.5	0.4	10.6	13.3	0.3	10.6	12.6
58.5	88.7	5.9	88.0	127.7	7.3	113.1	162.1	8.1	119.9	173.7
—	—	0.1	0.4	0.9	3.8	4.8	29.7	2.1	2.2	16.9
—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—
—	—	0.1	0.4	0.9	3.8	4.8	29.7	2.1	2.2	16.9
84.6	161.1	14.0	117.3	211.1	30.8	182.4	388.3	31.3	191.6	401.4

1968			After 1968			Remarks
US$	Total Ps.	in Ps.	US$	Total Ps.	in Ps.	
—	—	—	—	—	—	Comp. beg. 1964
—	—	—	—	—	—	Comp. mid. 1967
2.3	6.4	21.8	—	—	—	Comp. end 1968
6.6	35.1	79.3	17.4	87.7	204.2	Comp. mid. 1971
—	—	—	—	—	—	Comp. end 1967
8.9	41.5	101.1	17.4	87.7	204.2	Comp. end 1961-62
—	—	—	—	—	—	Comp. end 1963
—	—	—	0.3	7.3	9.3	Comp. end 1967
—	—	—	—	—	—	Comp. end 1970
0.7	12.3	17.0	0.7	13.4	18.0	Comp. end 1967
—	—	—	—	—	—	Comp. end 1968
0.3	6.5	8.6	—	—	—	Comp. end 1968
0.4	11.2	14.3	—	—	—	Comp. end 1964
—	—	—	—	—	—	Comp. end 1972
1.2	19.6	27.6	2.9	47.0	66.5	Comp. end 1972
1.0	17.0	23.7	2.4	41.0	57.1	Comp. end 1967
—	—	—	—	—	—	Comp. end 1971
0.7	3.9	8.5	1.8	9.7	21.7	Comp. end 1968
0.9	6.6	12.6	—	—	—	Comp. end 1968
0.3	10.5	12.5	—	—	—	
5.5	87.6	124.8	8.1	118.4	172.6	
—	—	—	2.0	2.3	15.7	
—	—	—	—	—	—	
—	—	—	—	—	—	
—	—	—	2.0	2.3	15.7	
14.4	129.1	225.9	27.5	208.4	392.5	

D. OTHER CVC PROGRAMS

Besides the electrification and land reclamation programs, the CVC carries on other programs which, although they often seem less spectacular, are also of profound significance for the development of the region; and some are certainly basic to adequate planning for this development.

Under its survey and mapping program it has been preparing detailed topographical maps for the entire CVC region. In the beginning, aerial maps were made (some are now in the process of restoration) which were later refined with supplementary land surveys, such as triangulation to the first degree, and with detailed topographical measurements for various of the project areas. All available older surveys were utilized to the maximum in this program, the maps of which had been prepared on various different scales. The work to be done on this front is still vast and urgent.

Water and meteorological studies comprise another basic program. This includes measuring the flow of the various rivers at 18 hydrometric stations, studying the sedimentation of the rivers and several reservoirs, meteorological observations at more than 100 points throughout the region, and water studies with principal reference to the conditions of the Cauca River and the supplies of subsurface waters.

Although it is flexible and long range, the CVC Agricultural Extension Service plan is prepared on an annual basis. It includes numerous individual projects in the different fields covered by the program: 4-S Clubs, home economics, nutrition, farm management, agricultural cooperatives, and crop, livestock, pig, and poultry production. Planning in these fields must, however, take into consideration the basic long range objectives of this program; that is, increase in agricultural and livestock production and productivity and the raising of the standard of living of the farm population.

As far as soils studies are concerned, the objective pursued is an adequate knowledge of the soils of the Cauca River Valley region through the preparation of general surveys, agrological surveys, and edaphological studies, all according to international standards set for studies of these kinds. These standards are also maintained with respect to the administration of riverbed systems.

Finally, CVC programs have included several projects which have been assigned to it by delegation from the national government. At present these include some improvements at the Port of Buenaventura and two land reclamation projects for INCORA. The planning of these projects is of course largely dictated by the nature of the respective public works.

V

CVC Accomplishments

Following the preparation of the careful general and detailed studies outlined in the previous chapter, the general action programs in which the CVC is now engaged are three: (a) Supplying electric power for the entire region, as a result of which its industrial development has obviously increased; (b) land reclamation (flood control, irrigation, and drainage), and (c) raising the standard of living of the rural population by disseminating modern and improved methods of production. Furthermore, the CVC is carrying out some local projects by delegation from the National Government, and on a permanent, continuing basis, the engineering (water, soils, new land reclamation projects, power, etc.) and economic studies necessary for adequate projections into the future and for guiding the operation of existing installation and the preparation of new projects.

A. POWER PROGRAM

The CVC power program includes three basic aspects of the problem: power generation, transmission, and distribution.

1. *Generation*

Power generation facilities up to July 1955 in the Department of Valle to which the action of the CVC was definitively limited, reached 75.1 MW, of which 24.0 MW were produced by the Anchicayá Hydroelectric Plant, 25.9 MW in several thermal plants and 25.2 by small hydro plants. From then until 1963 in order to meet increased demands, another 101.2 MW [1] was added to the generating capacity of the system, and the construction of Calima I Hydroelectric Plant with a capacity of 120 MW is considerably along the way towards completion.

Table V.1 summarizes the status of all the CVC projects for direct power generation as of June 30, 1964. The construction of the finished projects, as well as of those under construction, has been supervised by specialized contracting firms.

1 Of the additional 101.2 MW, 40 are due to the expansion of the Anchicayá Plant by CHIDRAL; 58 to thermoelectric units at Yumbo built by CVC and CHIDRAL; 2.1 to small diesel plants installed by the CVC in several villages of Valle and 1.1 to the small hydroelectric plants of the CVC at Patumá and Ceilán. (One MW equals one megawatt or 1,000 kilowatts).

Calima I. This project will have a peak generating capacity of 120 MW in 4 units of 30 MW each, and its purpose is to meet the demand of industrial expansion in the region. As a secondary benefit, its reservoir, an artificial lake, will become a beautiful recreation site at some 65 kilometers to the north of Cali and 30 west of Buga. It will utilize the permanent buildings at Palermo, 2.6 kilometers from the dam. These buildings, which were constructed for CVC personnel and contractors during construction of the dam, include attractive modern cottages for 39 families, a school, and a central dormitory with 44 single rooms, and were built for the express purpose of future conversion into a tourist hotel and cottages for rent to those desiring to vacation at the shores of Lake Calima. Sporting facilities for boating, water skiing, and fishing will be added. In addition the camp at Madroñal built for 500 construction laborers 2 kilometers from the dam is planned to be used as a vacation camping colony for the underprivileged public school children of Valle.

Calima II. After Calima I begins operation, the estimated demand for power in the CVC development area, would require, as mentioned before, the addition of new sources of power beginning in 1967. The project that was considered most economical for meeting demands up to 1970, was that of Calima II, located a few kilometers downstream from Calima I. This dam would have an installed capacity of 200 thousand kilowatts, and would utilize the total outflow of waters from the Calima I Dam, which would be stored at the Calima II damsite, and located at the mouth of the Bravo River where it flows into the Calima. The Calima II Dam would be 45 meters high with a crest 356 meters long. The powerhouse would contain four units of 50,000 kilowatts each, which would be connected by a high tension transmission line to the Calima I installations. The construction of this project, the combined cost of which in pesos and dollars was estimated at US $ 34,800,000 approximately, had to be postponed, however, to an as yet undetermined date, for the reasons explained in Chapter IV.

Salvajina. As soon as Calima I is finished, according to prseent plans, the Salvajina Dam on the Cauca River will be built. This is considered a multiple purpose project: besides generation of 430,000 kilowatts of electric power, it will provide considerable storage capacity for flood control in the south of the Valle and will improve regulation of the water flow of the Cauca River. The latter will eventually permit, especially if the Timba Dam is constructed, considerable diversion of waters from the Cauca River to the Pacific, making possible vast hydroelectric developments on the Dagua River.

The Salvajina Dam will be located at the upper limits of the Timba reservoir approximately 2 kilometers upstream from the town of Suárez, in the Department of Cauca, some 64 kilometers to the south of Cali, and 95 kilometers north of Popayán.

At present work on the feasibility studies and preliminary designs is proceding with all possible speed. The total cost of this project is calculated at US $ 100,000,000.

TABLE V.1

CVC: Physical Status of Progress of the Electric Power Generation Program to June 30, 1964

Project	*Geographic location Municipality*	*Department*	*Physical Unit*	*Total Physical Goals Programmed*	*% of Work Estimated to be done by Dec. 31, 1964*	*% of Work Completed to June 30, 1964*	*Physical Goals Reached*	*Key*
Calima II Hydroelectric Plant	Darién	Valle	Kw.	120,000				B
Design and Specifications				100%	99%	98%	98%	
Land Acquisition			Ha.	2,410	95%	47%	1,133	
Access Roads			Km.	26	75%	53%	14	
Encampments			m²	9,230	100%	99%	9,138	
Dam and Tunnels			Both					
Acquisition and Installation			Together	100%	90%	68%	68%	
of Equipment				100%	87%	80%	80%	
Calima II Hydroelectric Plant	Darién	Valle	Kw.	200,000				C
Preliminary Studies			Studies	100%	100%	100%	100%	
Final Design				100%	50%	45%	45%	
Access Roads					53%	55%	55%	
Salvajina Hydroelectric Plant	Suárez	Cauca	Kw.	430,000				D
Preliminary Field Studies			Studies		90%	35%	35%	
Preliminary Design Studies			Studies		90%	25%	25%	
Encampments for Studies			m²	760	100%	50%	50%	

(Continued)

TABLE V.1 *(Continuation)*

			Physical Unit	Total Physical Goals Programmed	% of Work Estimated to be done by Dec. 31, 1964	% of Work Completed to June 30, 1964	Physical Goals Reached	Key
Other Power Generation Projects								
Ciro Molina Garcés Project	Timba	Cauca y Valle	Studies	100%	100%	100%	100%	E
Cauca-Pacific Diversion		Cauca	Kw.	1,327,000				E
Micay River Hydroelectric Plant			Kw.	250,000				E
Other Generating Plants								
Patumá Hydroelectric	Versalles	Valle	Kw.	1,000			1,000	A
Ceilán Hydroelectric	Ceilán	Valle	Kw.	100	100%	100%	100	A
Zarzal Diesel	Zarzal	Valle	Kw.	630	100%	100%	630	A
Caicedonia Diesel	Caicedonia	Valle	Kw.	440	100%	100%	440	A
El Cairo Diesel	El Cairo	Valle	Kw.	120	100%	100%	120	A
Argelia Diesel	Argelia	Valle	Kw.	120	100%	100%	120	A
Buenaventura Diesel	B|ventura.	Valle	Kw.	660	100%	90%	90%	B
El Aguila Diesel	El Aguila	Valle	Kw.	150	100%	60%	60%	B

A Project in operation (construction completed)
B Project under construction
C Design in preparation
D Draft project
E Proposed project

Source: CVC, Division of Finance.

Timba. The Timba project, also a multiple-purpose program, will be located at Timba on the Cauca River at the border between the Departments of Cauca and Valle, and will consist primarily of an earth dam 1,200 meters long and 46 meters high together with its accompanying structures. The principal objectives of this project are to dam the Cauca River waters in order to control its overflowing and facilitate drainage works in the lowlands in the north of Cauca and the south of Valle, to regulate the flow of the Cauca River to permit irrigation by gravity canals on both sides of the river; to supply between 60,000 and 120,000 kilowatts of power, and to control (equally with Salvajina) the minimum flow of the Cauca River, in order to make possible a diversion at Vijes of part of the Cauca to the Pacific Ocean for the generation of one and a half million kilowatts. When the minimum flows of the river are controlled, the problem of contamination of the waters from industrial wastes in the Cali-Yumbo zone will be reduced, the cost of treatment of sewage will be lowered, and navigation will be stimulated. The principal irrigation canals and the control of dam deposits will facilitate the use of the waters for human consumption and industrial uses. The large reservoir lake will constitute an excellent tourist attraction.

The Timba reservoir will have a usable reserve capacity of 305 million cubic meters of water for the control of river overflow during the rainy seasons. The adopted program of flood control, when combined against Cauca River channel rectification projects, will provide protection against floods of the magnitude recorded in 1950, the 10-year cycle flood which renders 84,000 hectares or 22 percent of the flat land of the Valley unusable. These projects will also produce a considerable deepening of river waters below Timba, thus facilitating drainage of the areas subject to flooding alongside the riverbanks. The minimum flow of the Cauca River will increase by from 58 meters per second to more than 100, which will make the Pacific Diversion possible.

The project will initially supply some 60,000 kilowatts at all times, and provision is included for the addition of another 60,000 kilowatts later on. This plant will permit greater efficiencies in the operation of the other plants of the system, in this way increasing power production of the whole system considerably.

Between direct gravity irrigation and reclamation by pumping, the irrigation canals of this project will make the irrigation of 152,000 hectares, or 55 percent of the flat area of the Valley available and thus useful for intensive agriculture.

In spite of these benefits, there are reservations on the part of the citizens of the Department of Cauca with respect to the construction of the Timba Project, because they fear the economic loss of the land which would be flooded by the future Timba reservoir lake, damage to the San Francisco coal mines and to the Popayán railroad. These objections lack foundation in fact, because:

(1) Of the 3,380 hectares which will be lost to the reservoir lake, 1,200 are not utilizable, as they are the remains of dredging from the Aznazú Gold Mines, and of the remaining 2,180, only 250 hectares are presently cultivated. In contrast, the Department of Cauca has downstream from the dam 20,000 hectares that are subject to periodic flooding and without proper drainage, making this land apt only for low-quality cattle grazing. With the Timba Project, this land can be utilized for intensive agriculture and will make possible the economic, intensive and full use of 70,000 hectares, the majority of which are of excellent fertility, in the north of the Department of Cauca;

(2) The construction of a new railroad to Popayán above the flood elevation, the necessary roads, and the relocation of the population of the village of Timba, are all included in the Timba Project budget; and

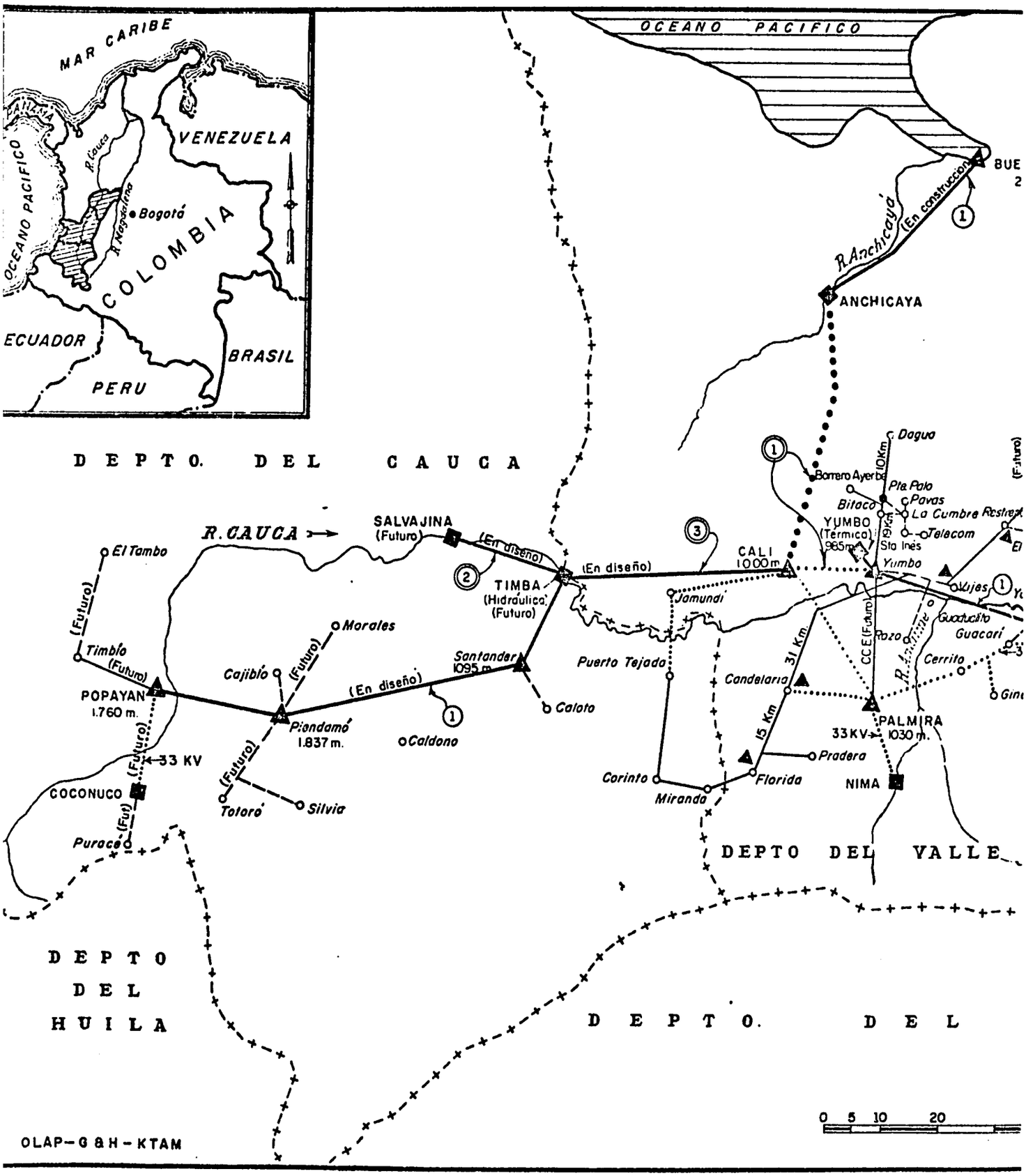
(3) The reservoir-lake does not in any way endanger the existing coal mines nor those of possible future exploitation. The San Francisco coal mines are located at elevation 1,150 meters, or 150 meters higher than the level of the reservoir lake. Furthermore, geological and soils studies have proved that since the subsoil is impermeable clay, the reservoir would not affect in any way, present or future exploitation of coal mines located at levels below that of the reservoir.

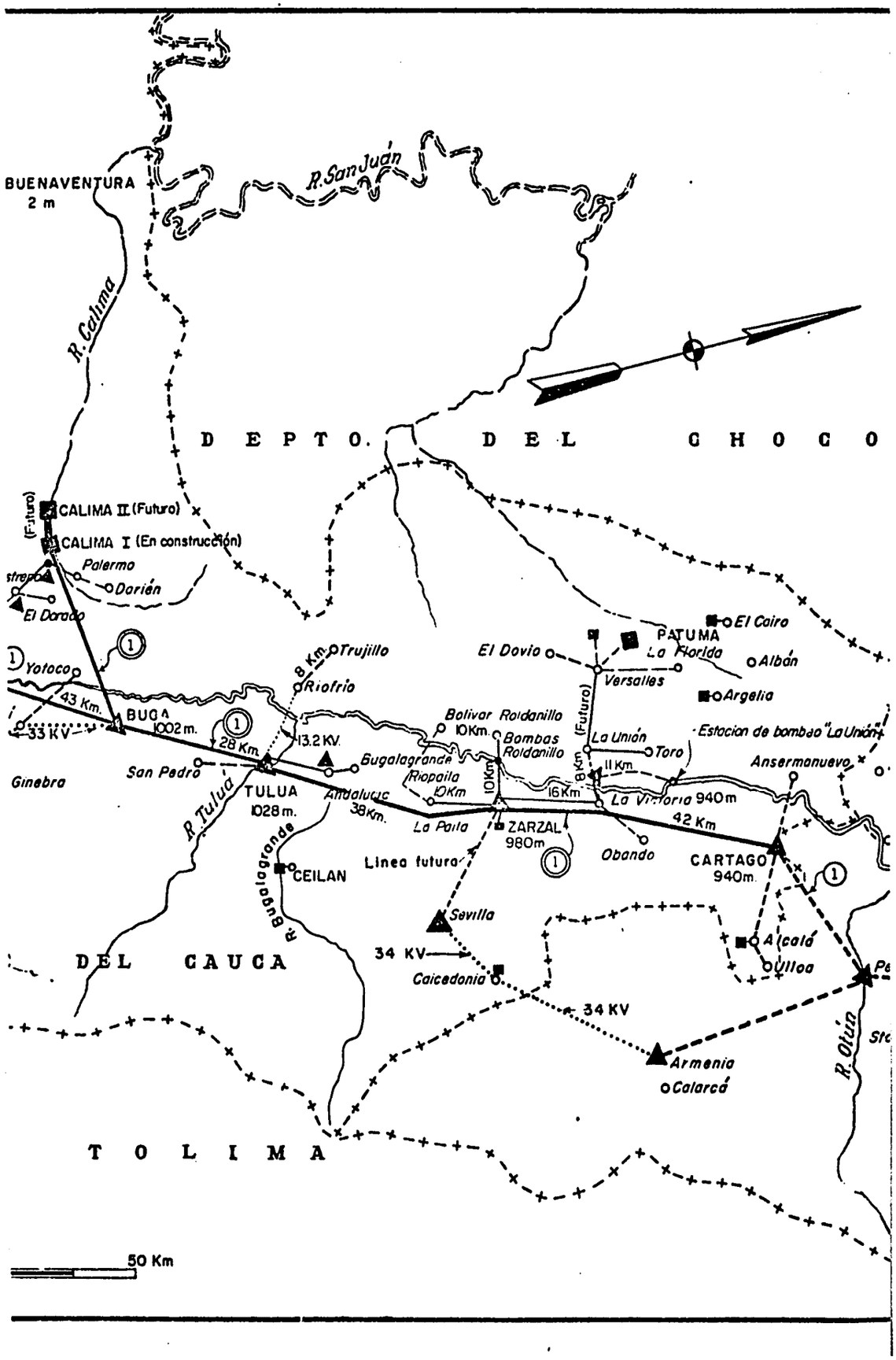
All the known analyses of all various aspects of the Timba project— which will be named the Ciro Molina Garcés project when it is finished, as a tribute to the most important of the early promotors of unified regional resource development in Valle— lead to the conclusion that the success of the CVC in its objective of optimum land and water use and development of human resources depends on the early completion of this project, the construction of which unfortunately has been postponed indefinitely.

Cauca-Pacific Diversion. [2] The control of the flow of the Cauca River, which the Timba Project will make possible, will permit the diversion of a considerable portion of the waters of this river to the slopes of the Pacific. In general, according to the preliminary studies completed, it is estimated that 100 cubic meters per second permanently and 120 cubic meters per second 80 percent of the time, can be diverted. The development will be completed in 3 stages, with a fall of 850 meters, and will also use additional waters from rivers intercepted on the Pacific slopes. This installed capacity will be as follows:

Stage 1.	Bitaco	275 meters	416,000 kilowatts
Stage 2.	Boquerón	300 meters	475,000 kilowatts
Stage 3.	San Cipriano	275 meters	436,000 kilowatts
	Total	850 meters	1,327,000 kilowatts

2 The description of this project is based entirely on the Report *Cauca-Pacific Diversion*, CVC-OLAP-G&T-TAMS, Cali, November 1957.


MAR CARIBE
VENEZUELA
OCEANO PACIFICO
R. Cauca
R. Magdalena
Bogotá
COLOMBIA
ECUADOR
PERU
BRASIL
OCEANO PACIFICO
DEPTO. DEL CAUCA
R. CAUCA
SALVAJINA
(Futuro)
(En diseño)
TIMBA
(Hidráulica)
(Futuro)
(En diseño)
CALI
1000m
Jamundí
Puerto Tejado
Santander
1095 m
Caloto
Caldono
Piendamó
1.837 m.
Cajibío
Morales
(Futuro)
(En diseño)
POPAYAN
1.760 m.
Timbío
(Futuro)
El Tambo
(Futuro)
33 KV
COCONUCO
Puracé
Totoró
Silvia
DEPTO DEL HUILA
R. Anchicayá
(En construcción)
ANCHICAYA
Dagua
Borrero Ayerbe
Pta Palo
Bitaco
Pavas
La Cumbre
YUMBO
(Termica)
985m
Telecom
Sta Inés
Yumbo
Vijes
Guadalito
Guacarí
Rozo
CCE (Futuro)
31 Km
15 Km
Candelaria
Cerrito
PALMIRA
1030 m.
33KV
Pradera
Florida
Corinto
Miranda
NIMA
DEPTO DEL VALLE
DEPTO. DEL
0 5 10 20
OLAP-G&H-KTAM


BUENAVENTURA
2 m
R. San Juán
R. Calima
D E P T O. D E L C H O C O
CALIMA II (Futuro)
CALIMA I (En construcción)
Palermo
Darién
El Dorado
Yotoco
43 Km.
BUGA
1002 m.
33 KV
28 Km.
13.2 KV.
8 Km.
Trujillo
Riofrío
San Pedro
Ginebra
TULUA
1028 m.
R. Tulua
Andaluciá
38 Km.
Bugalagrande
Riopaila
10 Km
Bolivar Roldanillo
10 Km.
Bombas Roldanillo
10 Km
16 Km
La Paila
ZARZAL
980 m
Línea futura
CEILAN
R. Bugalagrande
Sevilla
34 KV
Caicedonia
34 KV
Armenia
Calarcá
El Dovio
PATUMA
La Florida
El Cairo
Albán
Versalles
Argelia
(Futuro)
La Unión
Toro
11 Km
8 Km
Estacion de bombeo "La Unión"
Ansermanuevo
La Victoria 940 m
42 Km
Obando
CARTAGO
940 m.
Alcalá
Ulloa
R. Otún
DEL CAUCA
T O L I M A
50 Km

CONVENCIONES — *LEGEND*

- Lineas de 115 KV
- 34 KV
- 13.2 KV
- Existente 34 y 132 KV
- 115 KV
- Sistema de 115 KV de la CHEC
- Plantas Principales
- Centros Principales de Distribución
- Pequeñas plantas CVC

- Lineas de circuito simple *Single circuit lines*
- Lineas de circuito doble *Double circuit lines*

NOTA:
La cifra dentro del círculo indica el número de lineas.

The figure in the circle indicates the number of lines.

CVC
CORPORACION AUTONOMA REGIONAL DEL CAUCA

ESQUEMA DEL SISTEMA DE TRANSMISION
DIAGRAM OF TRANSMISSION SYSTEM

INFORME DE PROGRESO
PROGRESS REPORT

MAR. 30 - 1964 Gráfico. *Figure* V.I

Cortesia de la CVC *Courtesy of the CVC*

It is estimated that the primary power available will be 6,400 million annual kilowatt-hours after the construction of Timba and 7,000 million annual kilowatt-hours after the completion of both Timba and Salvajina.

The development at Bitaco will include a diversion dam on the Cauca River at Vijes where the river has an average elevation of 946 meters; a tunnel from Vijes to Bitaco, lined with concrete, 8 meters in diameter and 20 kilometers long, which will empty into the Bitaco reservoir, which will have a storage capacity of 20 million cubic meters. The dam will be 65 meters high with a crest 150 meters wide. From Bitaco the conduit will be a pressure tunnel 1.2 kilometers long with a penstock to the powerhouse 300 meters under-ground below Bitaco, from which the water will be released by a tailrace tunnel 500 meters long.

The Boquerón development will include a re-regulation reservoir at Loboguerrero one kilometer upstream from the confluence of the Bitaco and Dagua Rivers; the Bitaco-Boquerón conduit about 10 kilometers long; a penstock 320 meters long which will lead to the underground powerhouse at Boquerón, and from which a tailrace tunnel 1.5 kilometers long will go to the Pepita River. The dam of the Boquerón Reservoir will be 35 meters high, with a crest of 200 meters and a storage capacity of about 3 million cubic meters.

The information available on the San Cipriano development is still incomplete, but in general, this stage will consist of a "re-regulation reservoir on the Pepita River formed by a dam 30 to 40 meters high, the Pepita-San Cipriano Tunnel 10 kilometers long, the underground powerhouse at San Cipriano, and a tailrace tunnel 5 kilometers long emptying into the Dagua River".

2. *Transmission and Sub-Transmission*

With the exception of the line to Popayán, the rest of the transmission and sub-transmission program outlined in the Report "The Unified Development of Power and Water Resources in the Cauca Valley" has been completed or is under construction. At present all of the towns and villages of Valle and the main rural zones enjoy electric services, due to this program. (See Figure V.1).

The main line of the high tension transmission system (115,000 volts, double circuit) was laid (July 1960 to February 1962) between Yumbo and Cartago; and is connected, of course, to the Anchicayá-Cali-Yumbo lines of the same voltage and also to the Calima I-Buga and Anchicayá-Buenaventura lines under construction. The Yumbo-Cartago lines have also served to interconnect the CVC-CHIDRAL and CHEC electric systems, and will be used to interconnect with the Bogotá and Medellín systems according to the Interconnection Program recently agreed to which is expected to be completed by 1967 or the beginning of 1968.

From the substation at Buga, Tuluá, Zarzal, and Cartago, recently

completed and in service, the latter of which was constructed directly by the CVC, numerous subtransmission lines of 13,200 and 34,500 volts branch out in order to provide other towns and villages with service. Up to December 31, 1963, 347 kilometers of these lines had been constructed, of which 140 kilometers were by direct administration and 198 by means of subcontracting. As of the same date 12 substations of 34,500 and 13,200 volts had been constructed by direct administration.

The extent and status of projects accomplished up to June 30, 1964, in the transimssion and sub-transmission systems can be seen in detail in Table V.2.

3. *Distribution*

In the most important cities and towns, the distribution of electricity has been accomplished through distributing companies in which the respective municipality holds 20 percent of the shares of stock, the Department of Valle 20 percent, and the CVC 60 percent. In this way the provision of technical and administrative services of uniform quality coordinated for the entire region can be assured. As of December 31, 1963, 39 urban distribution systems had been constructed, of which 17 were by direct administration, and 22 by contract. In addition 35 more systems are under construction, as can be seen in Table V.3, which lists all distribution systems by cities (municipalities) and towns (corregimientos). In Figure V.2 the status of progress on these distribution projects is also included.

The distribution systems of some of the larger urban centers (Cali, Tuluá, and Cartago) are being constructed by the respective Municipal Utility Companies, or by private companies, under the technical supervision of the CVC. In other cases, such as Palmira, Buga, and Buenaventura, they are being constructed directly by the CVC, by means of delegation of authority to the CVC in the management of these systems, and which according to present legal stipulations will shortly, possibly sometime during 1964, become part of the patrimony of the CVC, together with the respective transmission and generation systems.

B. INDUCED INDUSTRIAL DEVELOPMENT

Even though the surprising industrial development of Valle during the past two decades cannot be attributed to electricity alone, it is evident that the supply of a greater volume of electric power has been an element basic to this development, Other factors which stimulated this development were an abundant labor force, favorable geographic location, favorable markets, both real and potential, and a good transportation system which includes rapid and adequate exits to the Port of Buenaventura on the Pacific Ocean.

TABLE V.2

CVC: Status of Progress on Power Transmission and Sub-transmission Programs as of June 30, 1964

Project	*Description*	*Geographic location Municipality*	*Department*	*Physical Unit*	*Total Physical Goals Programmed*	*% of Work Estimated to be completed by Dec. 31, 1964*	*% of Work Completed up to June 30, 1964*	*Physical Goals accomplished*	*Key*
	Transmission System								
1	Cartago-Yumbo Line	Tuluá	Valle	Km.	154	100%	100%	154	A
2	Calima-Buga Line	Buga	Valle	Km.	33	100%	45%	15	B
3	Anchicayá-B|ventura Line		Valle	Km.	35	10%	10%	4	D
4	Calima II-Yumbo Line		Valle	Km.	50				F
5	Anillo de Cali		Valle	Km.	45	20%	5%	2	D
6	Cali-Salvajina Line		Valle and Cauca	Km.	53	30%	15%	8	F
7	Salvajina-Mondomo Line		Cauca	Km.	25	10%			
8	Buenaventura Substation	B|ventura	Valle	Kw.	10,000	100%	100%	15%	D
9	Anchicayá Plant Expansion		Vallé	Together	100%	100%	20%	20%	D
10	Carrier Command System		Vallé	Together	100%	40%			E
11	Buga Substation	Cali	Valle	Kw.	20,000	100%	100%	20,000	A
12	Tuluá Substation		Valle	Kw.	10,000	100%	100%	10,000	A
13	Zarzal Substation	Zarzal	Valle	Kw.	10,000	100%	100%	10,000	A
14	Cartago Substation	Cartago	Vallé	Kw.	10,000	100%	100%	10,000	A

(Continued)

TABLE V.2 *(Continuation)*

Project	*Description*	*Geographic location Municipality*	*Department*	*Physical Unit*	*Total Physical Goals Programmed*	*% of Work Estimated to be completed by Dec. 31, 1964*	*% of Work Completed up to June 30, 1964*	*Physical Goals accomplished*	*Key*
	Sub-transmission System								
1	Alcalá-Ulloa	The same	Vallė	Km.	5	65%	35%	2	D
2	Zarzal-Roldanillo	The same	Valle	Km.	10	100%	100%	10	A
3	Zarzal-La Victoria-La Unión-Toro	The same	Valle	Km.	35	100%	100%	35	A
4	Zarzal-Alvarez Salas-Sevilla	The same	Valle	Km.	25	100%	100%	25	A
5	Yumbo-La Cumbre-Dagua	The same	Valle	Km.	35	100%	100%	35	A
6	Yumbo-Vijes-Yotoco	The same	Valle	Km.	40	100%	100%	40	A
7	Vijes-Restrepo-Calima	The same	Valle	Km.	25	100%	100%	25	A
8	Paso de la Torre-Rozo	The same	Valle	Km.	7	100%	100%	7	A
9	Yumbo-Candelaria-Florida	The same	Valle	Km.	45	100%	100%	45	A
10	Tuluá-Bugalagrande	The same	Valle	Km.	15	100%	100%	15	A
11	Patumá-Versalles-B|grande-El Dovio	The same	Valle	Km.	17	100%	80%	14	B
12	Calima-Darién	Darién	Valle	Km.	10	100%	100%	10	A
13	Riofrío-Trujillo	The same	Valle	Km.	5	100%	100%	5	A
14	Alvarez Salas-Corozal	The same	Valle	Km.	7	100%	30%	2	C
15	Versalles-Tres Esquinas-La Florida	The same	Valle	Km.	12	100%	55%	7	C
16	Dapa-Borrero Ayerbe	La Cumbre-Dagua	Valle	Km.	6	100%	100%	6	A
17	Restrepo-El Dorado	Restrepo	Valle	Km.	10	100%	100%	10	A
18	Cartago-Alcalá	The same	Valle	Km.	20	80%	55%	11	D
19	Florida-Pradera	The same	Valle	Km.	20	100%	60%	12	D
20	Cartago-Ansermanuevo	The same	Valle	Km.	12	100%	100%	12	A
22	La Victoria-Obando	The same	Valle	Km.	7	100%	100%	7	A

(Continued)

TABLE V.2 *(Continuation)*

Project	*Description*	*Geographic location Municipality*	*Department*	*Physical Unit*	*Total Physical Goals Programmed*	*% of Work Estimated to be completed by Dec. 31, 1964*	*% of Work Completed up to June 30, 1964*	*Physical Goals accomplished*	*Key*
23	La Cumbre-Peñas Negras	Yumbo-La Cumbre	Valle	Km.	7	100%	100%	7	A
24	Candelaria-Cabuyal	The same	Valle	Km.	13	100%	100%	13	A
25	Estación de Bombas Riopaila-Bolívar	La Paila-Bolívar	Valle	Km.	4	100%	100%	4	A
26	Bugalagrande-El Overo	The same	Valle	Km.	3	100%	80%	2	C
27	Andalucía Substation	Andalucía	Valle	Kw.	1,500	—	100%	1,500	A
28	Caicedonia Substation	Caicedonia	Valle	Kw.	1,500	100%	60%	60%	B
29	Calima Substation	Darién	Valle	Kw.	3,750	100%	100%	3,750	A
30	Candelaria Substation	Candelaria	Valle	Kw.	4,200	100%	100%	4,200	A
31	Florida Substation	Florida	Valle	Kw.	1,500	100%	100%	1,500	A
32	La Unión Substation	La Unión	Valle	Kw.	1,500	100%	100%	1,500	A
33	Madroñal Substation	Darién	Valle	Kw.	1,500	100%	100%	1,500	A
34	Paso de la Torre Substation	Yumbo	Valle	Kw.	1,500	100%	100%	1,500	A
35	Restrepo Substation	Restrepo	Valle	Kw.	1,500	100%	100%	1,500	A
36	Sevilla Substation	Sevilla	Valle	Kw.	4,200	100%	10%	10%	B
37	Vijes Substation	Vijes	Valle	Kw.	750	100%	100%	750	A
38	Zarzal Substation	Zarzal	Valle	Kw.	4,000	100%	100%	4,000	A

A Project in operation (construction completed)
B Project under construction
C Designs completed
D Designs in process
E Preliminary draft
F Preliminary research under way
Source: CVC, Division of Finance

TABLE V.3

CVC: Physical Status of Progress in Electric Power Distribution Systems, as of June 30, 1964

Project	Description	Geographic Location Municipality	Department	Physical Unit	Total Physical Goals Programmed	% of Work Estimated to be done by 12-31, 1964	% of Work completed as of 6-30, 64	Physical Goals Reached	Key
	Distribution Systems								
2	Alcalá	Alcalá	Valle	Kw.	200	50%	10%	10%	D
3	Andalucía	Andalucía	Valle	Kw.	190	100%	100%	190	A
4	Ansermanuevo	A|manuevo	Valle	Kw.	260	100%	100%	260	A
5	Argelia	Argelia	Valle	Kw.	130	100%	100%	130	A
6	Bolívar	Bolívar	Valle	Kw.	200	100%	100%	200	B
9	Bugalagrande	B|lagrande	Valle	Kw.	205	100%	100%	205	A
10	Caicedonia	Caicedonia	Valle	Kw.	500	100%	100%	500	A
12	Dagua	Dagua	Valle	Kw.	250	100%	100%	250	A
13	Darién	Darién	Valle	Kw.	250	100%	100%	250	A
14	El Aguila	El Aguila	Valle	Kw.	200	100%	45%	45%	C
15	El Cairo	El Cairo	Valle	Kw.	250	100%	100%	250	A
16	El Cerrito	El Cerrito	Valle	Kw.	600	55%	10%	10%	D
17	El Dovio	El Dovio	Valle	Kw.	170	100%	90%	90%	B
18	Florida	El Dovio	Valle	Kw.	350	100%	100%	350	A
19	Candelaria	Candelaria	Valle	Kw.	400	100%	100%	400	A
20	Ginebra	Ginebra	Valle	Kw.	280	55%	10%	10%	D

(Continued)

TABLE V.3 *(Continuation)*

Project	*Description*	*Geographic location Municipality*	*Department*	*Physical Unit*	*Total Physical Goals Programmed*	*% of Work Estimated to be done by 12-31, 1964*	*% of Work Completed as of 6-30, 64*	*Physical Goals Reached*	*Key*
21	Guacarí	Guacarí	Valle	Kw.	350	55%	10%	10%	D
22	Jamundí	Jamundí	Valle	Kw.	250	100%	100%	250	A
23	La Cumbre	La Cumbre	Valle	Kva	300	100%	100%	300	A
24	La Unión	La Unión	Valle	Kw.	220	100%	100%	220	A
25	La Victoria	La Victoria	Valle	Kw.	260	100%	100%	260	A
26	Obando	Obando	Valle	Kw.	205	100%	100%	205	A
27	Pradera	Pradera	Valle	Kw.	870	100%	50%	50%	C
28	Restrepo	Restrepo	Valle	Kw.	280	100%	100%	280	A
29	Riofrío	Riofrío	Valle	Kw.	180	—	—	—	E
30	Roldanillo	Roldanillo	Valle	Kw.	575	100%	100%	575	A
31	San Pedro	San Pedro	Valle	Kw.	120	100%	10%	10%	D
32	Sevilla	Sevilla	Valle	Kw.	3,000	100%	30%	30%	C
33	Toro	Toro	Valle	Kw.	230	100%	100%	230	A
34	Trujillo	Trujillo	Valle	Kw.	180	100%	100%	180	A
36	Ulloa	Ulloa	Valle	Kw.	150	50%	10%	10%	D
37	Versalles	Versalles	Valle	Kw.	350	100%	100%	350	A
38	Vijes	Vijes	Valle	Kw.	100	100%	100%	100	A
39	Yotoco	Yotoco	Valle	Kw.	100	100%	100%	100	A

(Continued)

TABLE V.3 *(Continuation)*

Project	*Description*	*Geographic location Municipality*	*Department*	*Physical Unit*	*Total Physical Goals Programmed*	*% of Work Estimated to be done by 12-31, 1964*	*% of Work Completed as of 6-30, 64*	*Physical Goals Reached*	*Key*
41	Zarzal	Zarzal	Valle	Kw.	510	100%	100%	510	A
42	El Overo	Bllagrande	Valle	Kw.	50	100%	40%	40%	C
43	El Carmen	Dagua	Valle	Kw.	115	100%	100%	115	A
44	Bitaco	La Cumbre	Valle	Kw.	40	100%	100%	40	A
45	La Cumbre	Lomitas	Valle	Kw.	30	100%	100%	30	A
46	Puente Palo	La Cumbre	Valle	Kw.	60..	100%	100%	60	A
47	Borrero Ayerbe	La Cumbre	Valle	Kw.	40	100%	100%	40	A
48	Quebradagrande	La Unión	Valle	Kw.	15	100%	40%	.. 40%	C
49	La Cuchilla	Sevilla	Valle	Kw.	30	100%	40%	40%	C
50	Manzanillo	Sevilla	Valle	Kw.	30	100%	40%	40%	C
51	Corozal	Sevilla	Valle	Kw.	50	100%	30%	30%	C
52	Tres Esquinas	Versalles	Valle	Kw.	50	100%	10%	10%	C
53	Campo Alegre	Versalles	Valle	Kw.	50	100%	10%	10%	C
54	Coconucos	Versalles	Valle	Kw.	50	100%	10%	10%	C
55	La Florida	Versalles	Valle	Kw.	50	100%	10%	10%	C
56	El Dorado	Yotoco	Valle	Kw.	10	100%	100%	10%	A
57	Dapa	Yumbo	Valle	Kw.	200	100%	100%	200	A
58	La Paila	Zarzal	Valle	Kw.	138	100%	100%	138	A

(Continued)

TABLE V.3 *(Continuation)*

Project	*Description*	*Geographic location Municipality*	*Department*	*Physical Unit*	*Total Physical Goals Programmed*	*% of Work Estimated to be done by 12-31, 1964*	*% of Work Completed to June 30, 1964*	*Physical Goals Reached*	*Key*
59	Ceilán	Bllagrande	Valle	Kw.	130	100%	100%	130	A
60	Amaime	Palmira	Valle	Kw.	50	100%	100%	50	A
61	Rozo	Palmira	Valle	Kw.	80	100%	100%	80	A
62	Zamorano	Palmira	Valle	Kw.	10	100%	100%	10	A
63	La Herradura	Palmira	Valle	Kw.	30	100%	100%	30	A
64	Santa Inés	Yumbo	Valle	Kw.	30	100%	100%	30	A
65	Pavas	La Cumbre	Valle	Kw.	50	100%	100%	50	A
66	Tierra Blanca	Roldanillo	Valle	Kw.	35	100%	100%	35	A
67	Cabuyal	Candelaria	Valle	Kw.	48	100%	100%	48	A
68	Cajamarca	Roldanillo	Valle	Kw.	50	—	—	—	F
69	La Palmera	Tuluá	Valle	Kw.	37.5	—	—	—	F
70	Salónica y Fenicia	Riofrío	Valle	Kw.	80	—	—	—	F
71	La Carbonera	Palmira	Valle	Kw.	40	100%	100%	40	A
74	Private Connection	Palmira	Valle	Meters	91,936	98%	92%	84,840	
	Rural Electrification			Properties	93				
1	Zone 1			Studies		100%	60%	60%	D
				Studies		100%	30%	30%	D
3	Zone 3			Studies		80%	10%	10%	D
4	Zone 4			Studies		100%			E
5	Zone 5			Studies		100%	30%	30%	D

A Project in operation (construction completed)
B Project under construction
C Designs completed (construction to be initiated)
D Design under way
E Preliminary draft
F Preliminary research under way

Source: CVC, Department of Finance

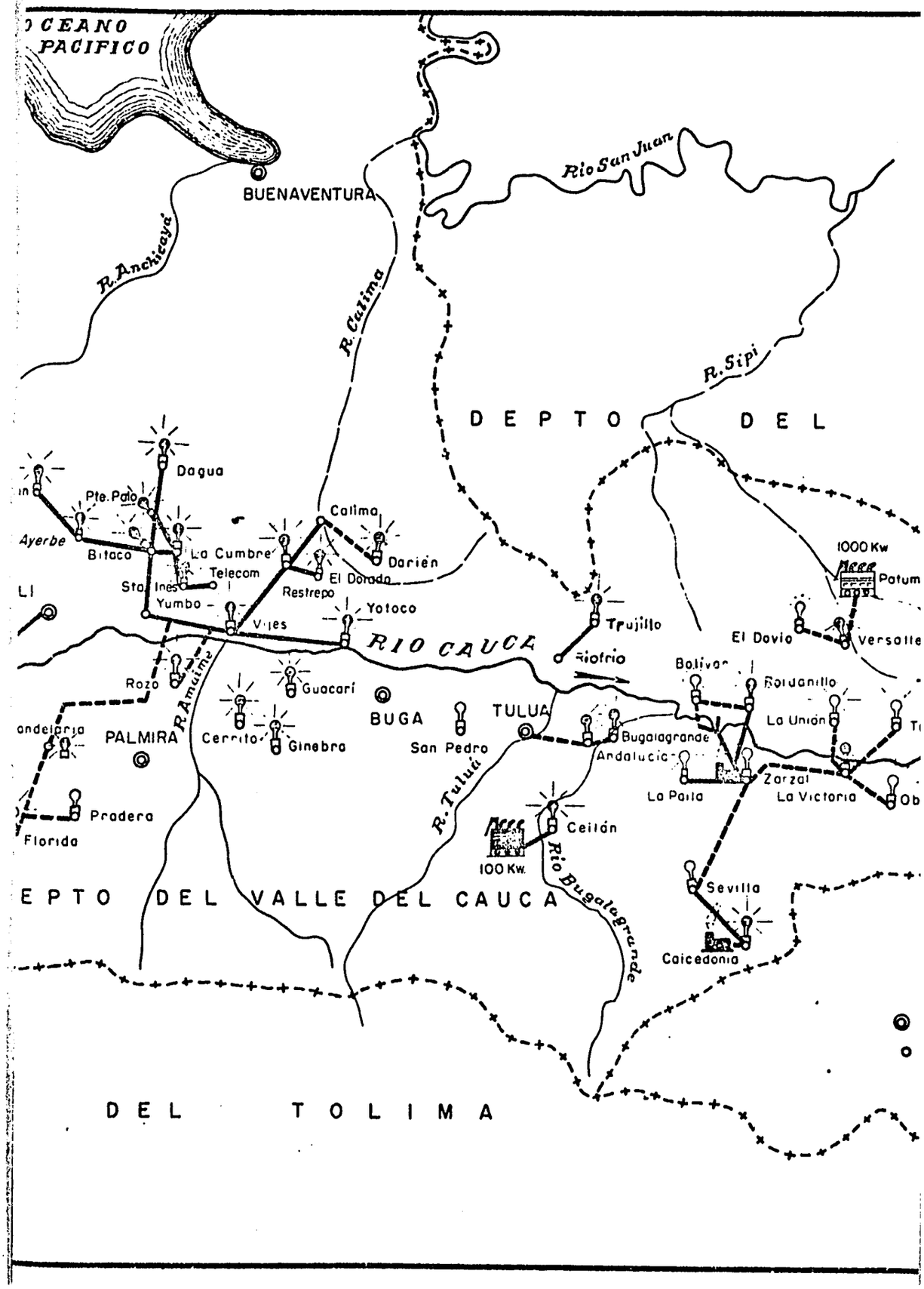
In Table V.4 two markedly different periods of industrial development in this region can be discerned beginning in 1945. The first, between 1945 and 1953, was favored by the enterance into service of the first two units of the Anchicayá Hydroelectric Plant, and surely by the knowledge that eventually two more units to a total of 40,000 kilowatts, would be installed. Nevertheless, many industries had to install their own diesel generating plants during this period. The number of industrial enterprises doubled and the amount of power consumed by industry tripled.

From 1953 to 1961 the increase in industrial consumption of electric power was only about 60 percent, and the number of establishments increased only slightly. But what did occur during this period was the consolidation and expansion of existing industries. The few new industries were, however, in general quite large, such as Propal, Icollantas, Goodyear, Cauca River Purification Plant, etc. One should also point out that, during this second period, while the increase in power per worker was 17 percent, productivity per worker increased by 49 percent. This increase in productivity is seen also when the increase of 37.5 percent in labor force is compared with an increase of 100 percent in value added in production. Obviously this increase in productivity implies the use of better capital equipment in addition to the use of electric power.

The industries which showed greatest development during the periods under discussion were those of food processing, tobacco derivatives, paper and paper products, rubber and rubber products, chemical and pharmaceutical products, metal products excluding transport equipment, and electric equipment and machinery.

When comparing the increase in power generated during this period with consumption of power for industrial use, an appreciable difference is observed, which was devoted almost entirely to residential consumption, commercial consumption, and public lighting. The facilities which housewives now enjoy in the use of electrical equipment for domestic tasks is surprising and has contributed greatly to alleviating this burden due to increasing scarcity of domestic servants. Furthermore, the use of electricity in homes has permitted wider diffusion of ideas through radio and television, as well as increase in social gatherings in the evenings. In the large urban centers such as Cali, Palmira, Buga, Tuluá, and Cartago, among others, the consumption of power for commercial purposes is considerable, and in these cities as well as in other populated centers of the Department of Valle, public lighting is adequate and has contributed towards making evening social life more pleasant, and in many cases has been an important instrument for the elimination of violence.

CONVENCIONES
PLANTAS HIDROELECTRICAS CONSTRUIDAS
PLANTAS HIDROELECTRICAS EN CONSTRUCCION
PLANTAS DIESEL CONSTRUIDAS
PLANTAS DIESEL EN CONSTRUCCION
SISTEMAS DE DISTRIBUCION CONSTRUIDOS
SISTEMAS DE DISTRIBUCION EN CONSTRUCCION
SISTEMAS DE DISTRIBUCION POR CONSTRUIR O RECONSTRUIR
LINEAS DE SUBTRANSMISION CONSTRUIDAS
LINEAS DE SUBTRANSMISION POR CONSTRUIR.
DEPTO DEL CAUCA
El Carmen
Borrero Ayerbe
El Tambo
Timba
CALI
Jamundí
Morales
Santander
Puerto Tejada
Timbío
POPAYAN
Cajibío
Piendamó
Caloto
Caldono
Corinto
Miranda
Coconuco
Totoró
Silvia
Puracé
DEPTO DEL HUILA
DEPTO
OLAP - G & H - TAMS
DIBUJO: C.Vásquez C. - MARZO 31/61


OCEANO PACIFICO
BUENAVENTURA
Rio San Juan
R. Anchicayá
R. Calima
R. Sipi
DEPTO DEL
Dagua
Pte. Palo
Ayerbe
Bitaco
La Cumbre
Telecom
Sta. Ines
Yumbo
Calima
Darién
El Dorado
Restrepo
Yotoco
Vijes
RIO CAUCA
Trujillo
Riofrio
1000 Kw
Patum
El Dovio
Versalle
Bolivar
Roldanillo
La Unión
Rozo
R. Amaime
Guacarí
BUGA
TULUA
Cerrito
Ginebra
San Pedro
Bugalagrande
Andalucia
La Paila
Zarzal
La Victoria
PALMIRA
Pradera
Florida
R. Tuluá
Ceilán
100 Kw.
Rio Bugalagrande
Sevilla
Caicedonia
EPTO DEL VALLE DEL CAUCA
DEL TOLIMA

Cortesía de la CVC *Courtesy of the CVC*

TABLE V.4

Department of Valle: Selected data on Industrial Development, 1945-1961

Year	Number of Establishments	Number of Persons Employed	Personnel Employed by Establishment	Value Added (1952 Prices)				Electric Power			
				Total	Index	By Worker	Index	Total H. P.	Index	By Worker	Index
1945	800	17,979	22	(a)	(a)	(a)	(a)	2º.140	31	1.6	55
1953	1,506	32,575(b)	22	243,189,030	100	7,465.5	100	93,626	100	2.9	100
1958	1,441	37,221	26	331,229,250	136	8,898.9	119	110,534	118	3.0	103
1959	1,456	39,530	27	373,898,470	154	9,458.6	127	122,151	130	3.1	107
1960	1,532	42,220	28	427,679,820	176	10,129.7	137	128,851	138	3.1	107
1961	1,584	44,605	28	487,531,500	200	10,929.9	149	150,051	160	3.4	117

(a) Data not available
(b) Includes only gainfully employed personnel

Sources: The data shown in this table was prepared by authors, based on statistical information contained in the following publications:

a) *For 1945:* Departamento Administrativo Nacional de Estadística, *Primer Censo Industrial de Colombia, 1945.* Vol. IV. Bogotá, pp. 2027, 2169.
b) *For 1953:* Departamento Administrativo Nacional de Estadística, *Boletín Mensual de Estadística,* Nº 75. Bogotá, June 1957, p. 22.
c) *For 1958:* Departamento Administrativo Nacional de Estadística, *Boletín Mensual de Estadística,* Nº 113. Bogotá, August 1960, pp. 32-34.
d) *For 1959:* Departamento Administrativo Nacional de Estadística, *Boletín Mensual de Estadística,* Nº 128. Bogotá, November 1961, pp. 30-32.
e) *For 1960:* Departamento Administrativo Nacional de Estadística, *Boletín Mensual de Estadística,* Nº 137. Bogotá, August 1962, pp. 24-30.

The basis data corresponding to condensed data shown in this table for 1961, was supplied directly to the authors by the Director of the Departamento Administrativo Nacional de Estadística in official letter Nº 0107 of January 13, 1964.
The wholesale price indices used for trade in general throughout the coutry, with 1952 as a base year, for the different industrial categories and employed for the determination of value added to industrial production in the Department of Valle, were taken from the *Revista del Banco de la República,* Volume XXXVI, Nº 431, Bogotá, September 1963, pages 1232 - 1233.

Table V.5 presents the percentage distribution of electric power by consumer in 1962 for the CVC-CHIDRAL development area.

TABLE V.5

CVC and CHIDRAL Electrification Program:

Distribution of Electric Power by Consumers, 1962

Type of Consumer	*Kilowatt-hours (in thousands)*	*Percentage*
Residential	167,088	33.8
Commercial	72,962	14.7
Industrial	175,737	35.4
Official Agencies	16,064	3.2
Public Lighting	21,917	4.4
Block sales to other enterprises	42,022	8.5
Total	495,790	100.0

Source: CVC, Division of Regional Studies and Development.

C. LAND RECLAMATION

A second field of activity in which the CVC is sponsoring appreciable social change is that of land reclamation, which is primarily an educative process; since by means of it, peasants are forced to change their ancestral habits of thinking and working. This is not always easy to accomplish in so traditional a society as that of the Cauca Valley. The social change which is produced by electricity is most easily and rapidly accepted, first, because, of course, it occurs in urbanized groups who are generally better prepared for change, and second, because electric power is an element basic for the sustaining or expansion of industrial activities —generally carried on by people of a higher educational level—, and at the same time provides the luxuries and comforts of modern life for which society strives.

1. *Pilot Projects*

The CVC development program includes the reclamation of 200,000 hectares of land for intensive agriculture. Since the program is costly because of its vastness, the Report "The Unified Development of Power and Water Resources in the Cauca Valley" recommended the initial completion of some pilot projects as a means of producing an immediate impact upon agricultural production in the Valley region and for acquiring the necessary administrative and operating experience. Within this frame of reference, the CVC embarked upon the construction of the Aguablanca and Roldanillo-La Unión-Toro projects, and has recently begun the La Victoria-Cartago project in collaboration with INCORA. All of these are planned in such a way that they form part of the unified development program, even though they are independent of it and do not require the

large scale flood control, irrigation, and drainage works proposed in the master plan for their operation. Table V.6 summarizes the physical status of the land reclamation projects as of June 30, 1964.

The cost of the projects plus a small percentage for administration and interest on investment will be charged to the farmers benefited over a period of 20 years in the case of Aguablanca and part of Roldanillo, and over 15 years for the rest of this project and that of La Victoria-Cartago. This payment is guaranteed in the land itself, since no transaction in this land is valid until the corresponding payments have been made. The benefits which the farmers receive and which will be converted into increased agricultural income, will enable them to make these payments easily, as well as to make the additional investments necessary to level the land, purchase machinery, and pay for water rights, etc.

Aguablanca Project. The entire zone surrounding Cali towards the Cauca River was subject to frequent flooding that (1) made truck farming impossible in this zone located close to the Cali market, (2) created unhealthy conditions in this zone which were aggravated by the fact that almost all the sewage of the city, carried by the Cañaveralejo River to the Cauquita gulch, frequently backed up from the Cauca River into the city; and (3) restricted the expansion of the city towards the east, as a result of which the city was developing in narrow belts to the north and south along the foothills, the land of which was becoming extremely high-priced and causing a scarcity of land for housing for the working classes. The floods of 1949-1950 are still fresh in people's memory, when the waters reached most of the neighborhoods of lower elevation, cut off transportation on the main arterial to Palmira, and left thousands of persons homeless.

When the construction of this project was completed in 1958-1962, drainage and protection against floods was assured for the 5,000 hectares of land surrounding Cali and at the same time permitted the intensive cultivation of these lands and especially the expansion of the city towards this area, in which housing developments for the underprivileged classes have been located. The transformation and development of this zone is truly amazing.

The principal elements included in this most important project can be seen in Figure V.3., and in summary form are as follows.

(1) A dike or levee from 3 to 5 meters high and 27 kilometers long which begins at the east side of the railroad to Popayán, along the front of the market place of the "barrio" Cristóbal Colón and for the first 10 kilometers follows the railroad southward, later eastward along the interceptor canal to Navarro, from which point it goes north bordering the left bank of the Cauca River for 15 kilometers up to the Comercio Underpass. Its last 2 kilometers follow first the north of the arterial highway to Palmira and finally the eastern expressway, ending at La Flora where the land is generally high enough for protection from floods.

TABLE V.6

CVC: Physical Status of Progress on Land Reclamation Projects, as of June 30, 1964

Project	Description	Location Municipality	Location Department	Physical Unit	Total Physical Goals Programmed	% of Work Estimated to be done by 12-31, 1964	% of Work Completed to June 30, 1964	Physical Goals Reached	Key
	Land Reclamation								
	Aguablanca	Cali	Valle	Ha.	5,000	100%	100%	5,000	A
1	Acquisition of Land			Ha.	286	100%	100%	286	
2	Valorization studies			Ha.	4,756	100%	84%	3,995	
3	Protection Levee			Km.	17	100%	100%	17	
4	Drainage Canal			Km.	15	100%	100%	15	
5	Intercepting Canal			Km.	9	100%	100%	9	
6	Structures and Improvements			Structures	Misc.		99%	99%	
7	Cattle-crossings and machine bridges			Structures	26	100%	100%	26	
8	Closing of Cañaveralejo Levee			Meters	800	100%	100%	800	
9	Pumping Station			Structures	1	100%	100%	1	
10	Acquisition and installation of equipment			Pumps	3	100%	100%	3	
11	Auxiliary Works			Structures	Misc.	100%	94%	94%	
12	Regulation Ponds			Ha.	102	100%	—	—	
	Bugalagrande-Cartago	B|grande-Cartago	Valle						
	Preliminary Studies			Studies	100%	100%	100%	100%	D
	Studies for other Projects								
1	Florida-Pradera-Candelaria	The same	Valle	Ha.	41,000	—	—	—	E
2	Rectification of Cauca River		Valle and Cauca		—	—	—	—	E
3	Yumbo-Vijes	The same	Valle	Ha.	2,000	—	—	—	E
4	Guachinte-Jamundí-Meléndez	Jamundí	Valle	Ha.	1,300	—	—	—	E

(Continued)

TABLE V.6 *(Continuation)*

Project	Description	Geographic location Municipality	Department	Physical Unit	Total Physical Goals Programmed	% of Work Estimated to be done by 12-31, 1964	% of Work Completed to June 30, 1964	Physical Goals Reached	Key
	Works for INCORA								
	Roldanillo-La Unión-Toro	The same		Ha.	13,300	—	—	—	B
1	Acquisition of Land			Ha.	930	30%	30%	279	
2	Valorization Studies			Ha.	12,370	—	—	—	
3	Organization of Irrigation Districts			Km.	100	87%	80%	80	
4	Intercepting Canal			Km.	31	100%	100%	31	
5	Drainage Canal			Km.	26	100%	96%	25	
6	Cattle-crossing and machine bridge			Structures	60	87%	61%	61%	
7	Adduction Canal			Km.	1.4	—	—	—	
8	Canal along the Cauca River			Km.	45	66%	7%	3	
9	Pumping Station			Structures	2	100%	100%	2	
10	Acquisition and Installation of Pumping Equipment			Pumps	7	100%	100%	7	
11	Secondary Irrigation and Drainage Canals			Studies	100%	30%	7%	7%	
12	District Headquarters			Structures	Misc.	80%	10%	10%	
	La Victoria-Cartago	The same	Valle	Ha.	17,000	—	—	—	
1	Preliminary Designs and Studies			Studies	100%	85%	40%	40%	
2	Organization of Irrigation Districts				100%	63%	44%	44%	

A Project in operation (construction completed)
B Project under construction
C Designs in preparation
D Preliminary draft of project
E Proposed project
Source: CVC, Division of Finance

(2) A canal 9 kilometers long which intercepts the Cañaveralejo, Meléndez, and Lilí Rivers, collects the waters from "El Estero" and empties directly into the Cauca River at Navarro, carrying the waters of a large portion of the city, which enter it at the point of intersection with the Cañaveralejo River.

(3) An inside drainage canal 15 kilometers long which drains the old swamps and ponds, and bifurcating at the upper part, collects the rain water and carries it to the Comercio Underpass, where in periods when the river is low, it deposits it directly into the Cauca River by means of a gate system which closes automatically when the river rises above a certain level, at which time the pumping system begins to operate.

(4) A pumping station, equipped with three automatic electric pumps of a total capacity of 81,000 gallons per minute, which maintains the flow of the drainage canal sending its waters to the river during periods of high level of the river.

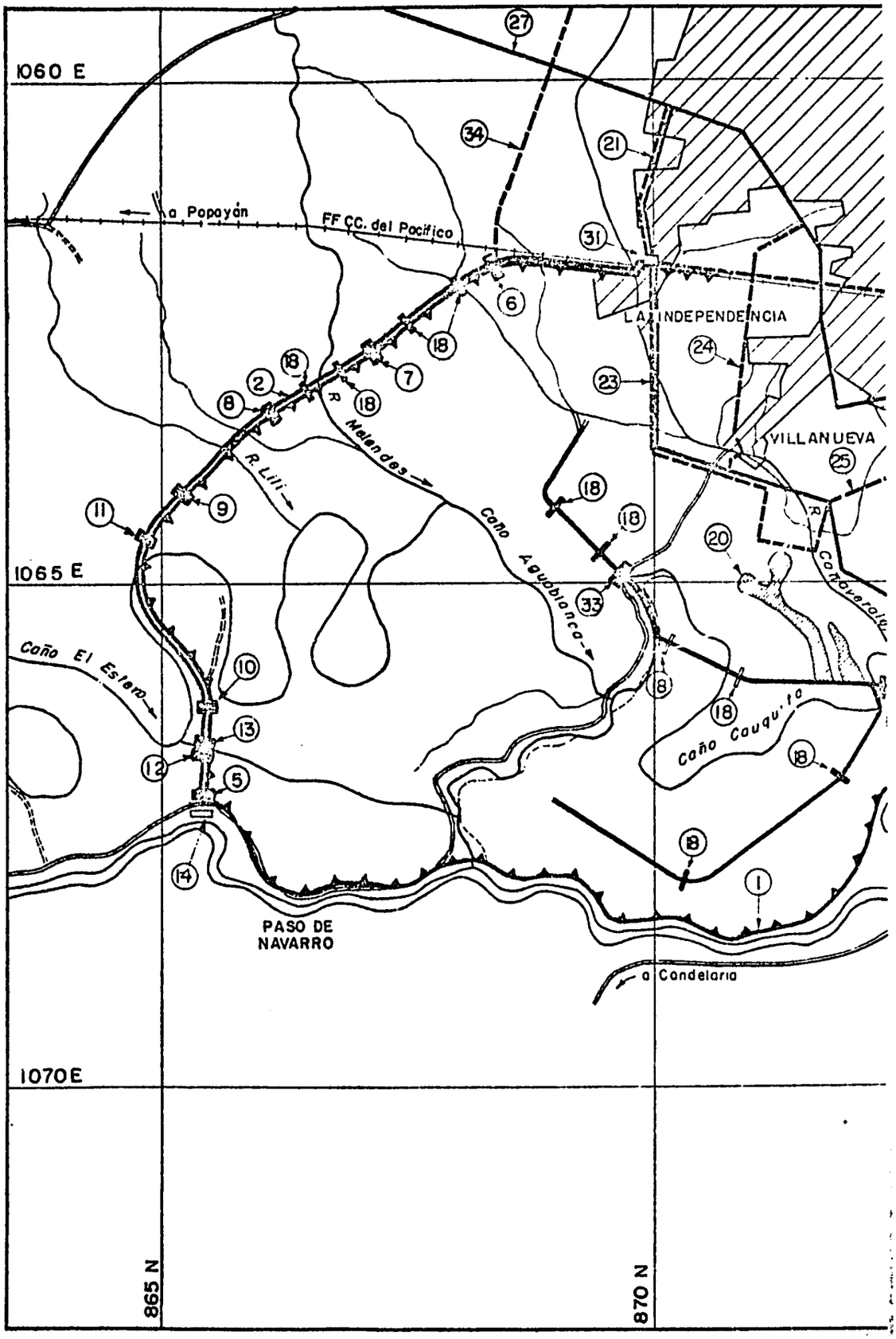
(5) A series of auxiliary works, such as small levees, bridges, openings for irrigation waters, spillways and some other special supplementary structures necessary for this service and some that were needed to prevent interruption of traffic during the opening of the canals and the erection of the dikes.

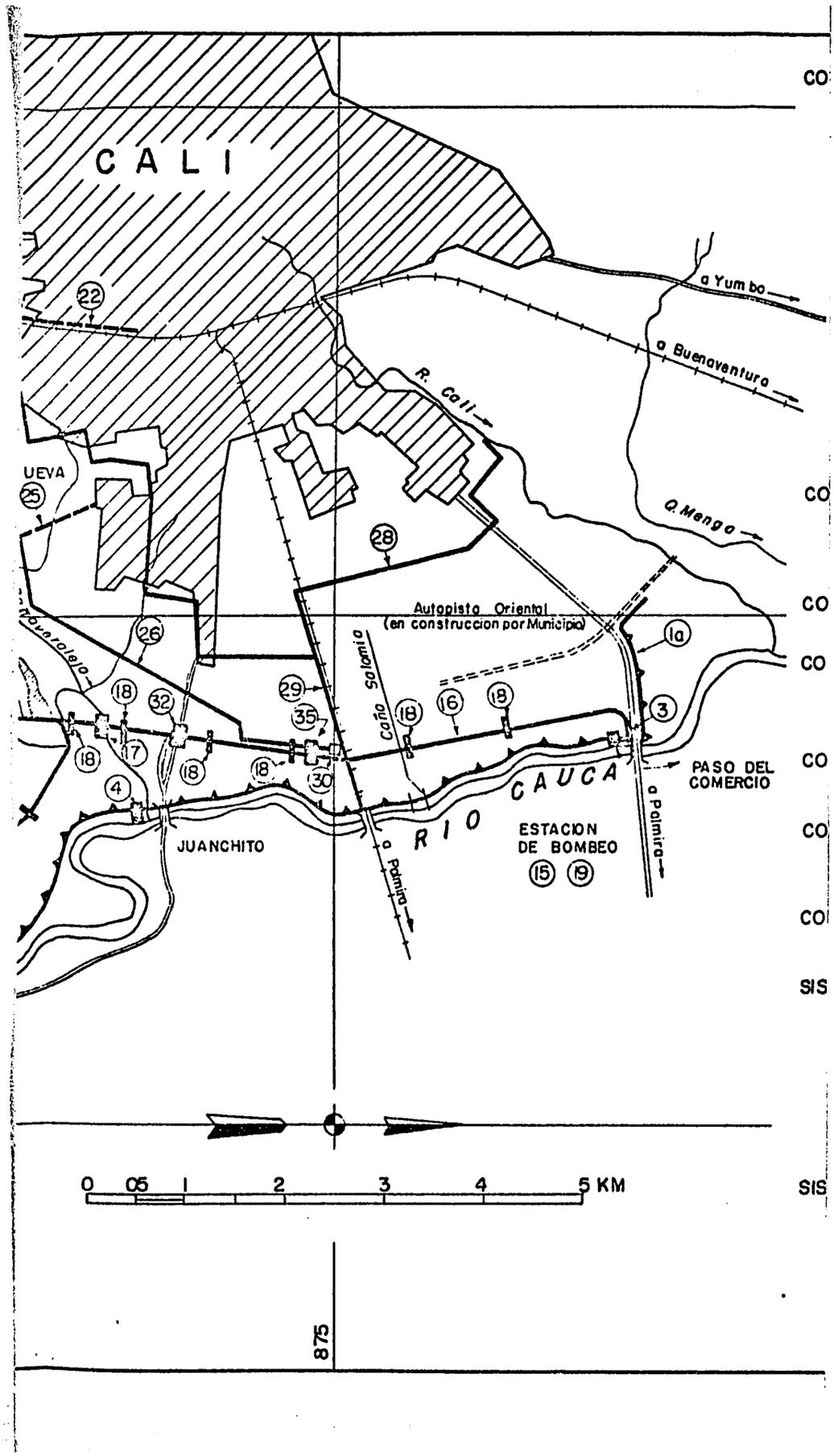
(6) Finally, as an instrument for stabilizing and regulating the pumping system, a lake more or less at the center of the project is planned and will be constructed. This will become a recreation center and will beautify the city.

Roldanillo-La Unión-Toro Project. This project includes flood protection, irrigation, and drainage for approximately 13,200 hectares of fertile land to the north of the Cauca Valley, of which 10,000 hectares are included in the part of the project now under construction. The remaining 3,200 hectares are at an elevation above the north and west sides of the project area and require pumping services for its irrigation. As mentioned before, this project does not depend upon others for its flood control or irrigation; on the contrary, flood control here will be accomplished by means of levees and irrigation by pumping water from the Cauca River.

The principal parts of this development are (1) an interceptor canal 30 kilometers long which will collect the streams that fall from the mountains into the project area. This canal will also serve as an irrigation canal; (2) a main drainage canal 27 kilometers long running through the center of the project area; (3) an irrigation canal 40 kilometers long parallel to the Cauca River, and (4) two pumping stations, one near Roldanillo and the other near La Unión.

The Roldanillo pumping station will pump water to the interceptor canal and to the marginal canal parallel to the river. The La Unión


1060 E
1065 E
1070E
865 N
870 N
a Popayán
FF CC. del Pacifico
LA INDEPENDENCIA
VILLANUEVA
R. Malandes
R. Lili
Caño Aguablanca
Caño El Estero
Caño Cauquita
Canoveralo
PASO DE NAVARRO
a Candelaria


CALI
a Yumbo
a Buenaventura
R. Cali
Q. Mango
UEVA
Autopista Oriental
(en construccion por Municipio)
Novaroleja
Caño Salomia
RIO CAUCA
PASO DEL COMERCIO
a Palmira
ESTACION DE BOMBEO
JUANCHITO
0 05 1 2 3 4 5 KM
875

CONTRATO 109 - 1

(1) DIQUE RIO CAUCA (Conval)
(2) CANAL INTERCEPTOR Y DIQUE (Moore)
(3) PASO DE GRAVEDAD EN PASO DEL COMERCIO (Pav. Unidos)
(4) PASO DE GRAVEDAD EN JUANCHITO (— " —)
(5) PUENTE H-20 EN K9 +0 (— " —)
(6) PUENTE H-15 EN K1 + 5 (— " —)
(7) PUENTE H-15 EN K3 + 2 (— " —)
(8) PUENTE H-15 EN K4 + 5 (— " —)
(9) PUENTE H-15 EN K5 + 5 (— " —)
(10) PUENTE PASAGANADO EN K8 +2 (— " —)
(11) ESTRUCTURA DE DESAGUE EN K6+0 (— " —)
(12) ENTREGA DEL ESTERO EN K8 + 4 (— " —)
(13) PASO DE AGUA EN K8+4 (— " —)
(14) ESTRUCTURA DE PROTECCION EN K9+0 (— " —)
(1) DIQUE CARRETERA CALI- PALMIRA (Conval)

CONTRATO 109-1 (EXTENSION)

(32) PUENTE H-20 CANAL DE DRENAJE. K 4+7 (Pav. Unidos)
(33) PUENTE H-20 CANAL DE DRENAJE K 9+2 (— " —)
(35) PUENTE H-20 PROVIVIENDA K 3+3 (C V C)

CONTRATO 109-2

(15) ESTACION DE BOMBEO PASO DEL COMERCIO SUMINISTRO DE EQUIPO (Man-Siemens)

CONTRATO 109-4

(16) CANAL DE DRENAJE PRINCIPAL
(16) CANAL DE DRENAJE SECUNDARIO
(17) ESTRUCTURA SEPARADORA

CONTRATO 109-5

(18) PUENTES PASAGANADO Y PASAMAQUINARIA (Conciviles Ltda)

CONTRATO 109-6

(19) ESTACION DE BOMBEO PASO DEL COMERCIO
ESTRUCTURA Y MONTAJE DEL EQUIPO

CONTRATO 109-7

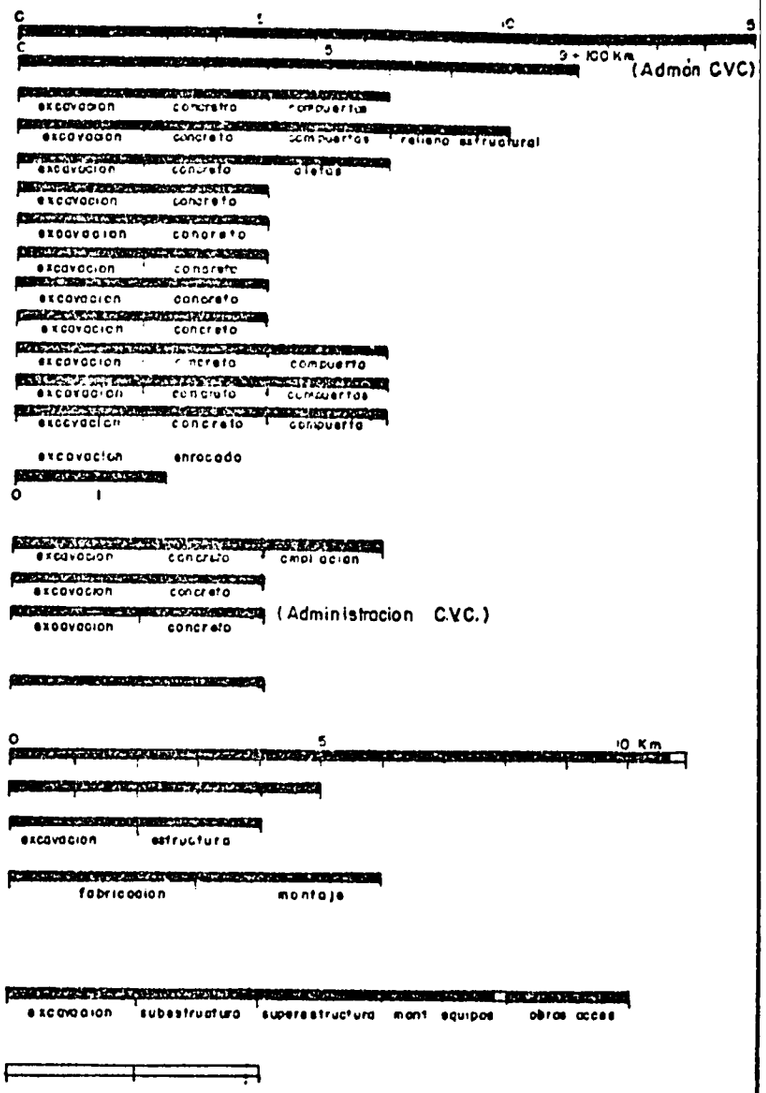
(20) PONDAJE

SISTEMA DE ALCANTARILLADO (En construccion por el Municipio de Cali)

(21) CANAL DE NUEVA GRANADA
(22) CANAL DEL FERROCARRIL
(23) CANAL DE CANAVERALEJO
(24) CANAL DE LA CARRERA 20
(25) CANAL DE SAAVEDRA GALINDO
(34) CANAL DE SAN FERNANDO

SISTEMA DE ALCANTARILLADO (En proyecto y ejecucion por el Municipio de Cali)

(26) COLECTOR DE CANAVERALEJO
(27) COLECTOR ORIENTAL, PRIMER SECTOR
(28) COLECTOR ORIENTAL, SEGUNDO SECTOR
(29) COLECTOR GENERAL,
(30) PLANTA DE BOMBEO DE AGUAS NEGRAS
(31) ESTRUCTURAS SEPARADORAS



CVC
CORPORACION AUTONOMA REGIONAL DEL CAUCA

PROYECTO DE AGUABLANCA
AGUABLANCA PROJECT

PROGRESO DE LAS OBRAS
PROGRESS OF WORKS

MAR. 30-1964

Gráfico · *Figure.* V.3

Cortesia de la CVC *Courtesy of the CVC*

pumping station will pump water from the main drainage canal to the river, or when necessary, to the Cauca marginal canal.

At present only the interceptor canal, 22 kilometers of the main drainage canal and the two pumping stations are finished. Early in 1964, after a suspension of work for two years because of lack of funds, work has been resumed, [3] in cooperation with INCORA, on the main drainage canal, the Cauca marginal canal, and will soon begin on the system of secondary and tertiary irrigation canals. These recently resumed works represent 60 percent of the entire project, and are expected to be finished in 1965. As of June 30, 1964, INCORA had acquired 20 kilometers of the 42 kilometer long strip of land bordering the river to be used for the marginal canal, and it is hoped that during the next four months it will be able to acquire the rest, based on agreements fair to both the property owners and INCORA, in spite of the recent political interferences designed to obstruct the acquisition of land bordering the river on the argument that the prices being paid by INCORA are too low, when in reality payments are being made on the basis of the average commercial value of the flat land of the Cauca Valley.

As of December 31, 1963, the CVC had made direct investments to the amount of Ps.$25,817,954.00. It is estimated that in order to finish the project in all its phases, including the relocation of the peasants who must move because of the canal construction and other works, another equal sum will be required, including about US $ 800,000 for the acquisition of equipment and engineering services.

Because of this long delay, the benefits derived from this project to date have, of course, been limited to drainage, in spite of the fact that the investments required are fully justified and self-liquidating. Lands which until very recently were almost worthless have been converted, due to the drainage, into land with excellent soil for intensive agriculture. The good results obtained are described in Section 4 of this chapter, which also includes estimates of the great potential of this zone, once all the planned improvements have been completed.

La Victoria-Cartago Project. This new CVC project in the north of the Valley is being rapidly advanced at present; 75 percent of the final design layouts have been completed. This project on which construction will begin shortly, has also been delegated by INCORA to the CVC. The improvements planned for this area between the right bank of the Cauca and the Central Cordillera foothills will provide flood control, irrigation, and drainage for approximately 17,000 hectares of flat land in the Municipalities of La Victoria, Obando, and Cartago. These works include the following: (1) A protective dike along the Cauca River; (2) a main drainage canal through the center of the project zone; (3) a canal to intercept the mountain streams; (4) channeling of the Quebrada de los Micos (river),

3 See Figure V.4. for the status of progress as of March 31, 1964.

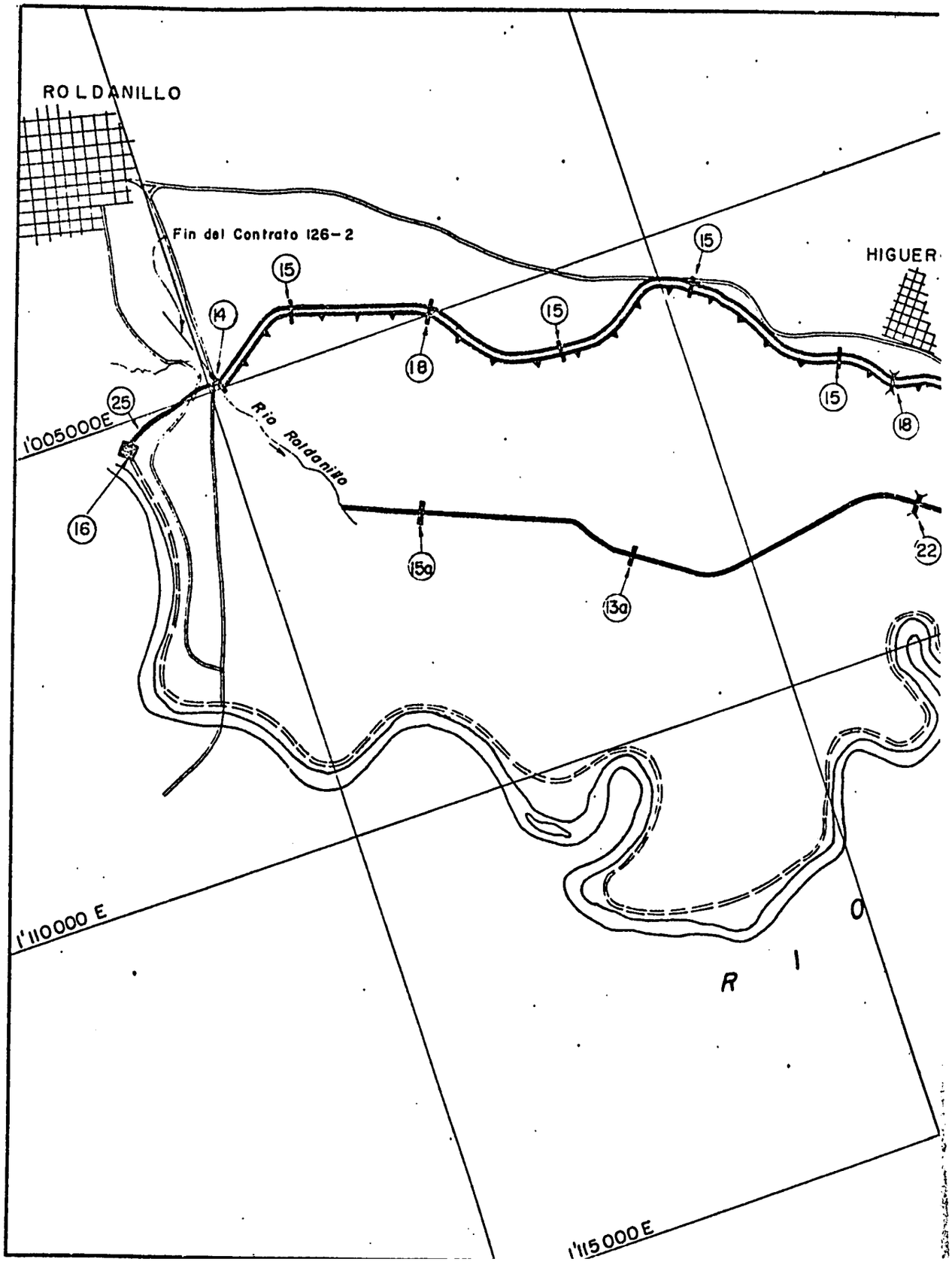
and (5) the construction of an irrigation system which includes a marginal canal alongside the protective dike parallel to the Cauca River, using also the mountain water interceptor canal and the necessary system of secondary and tertiary canals.

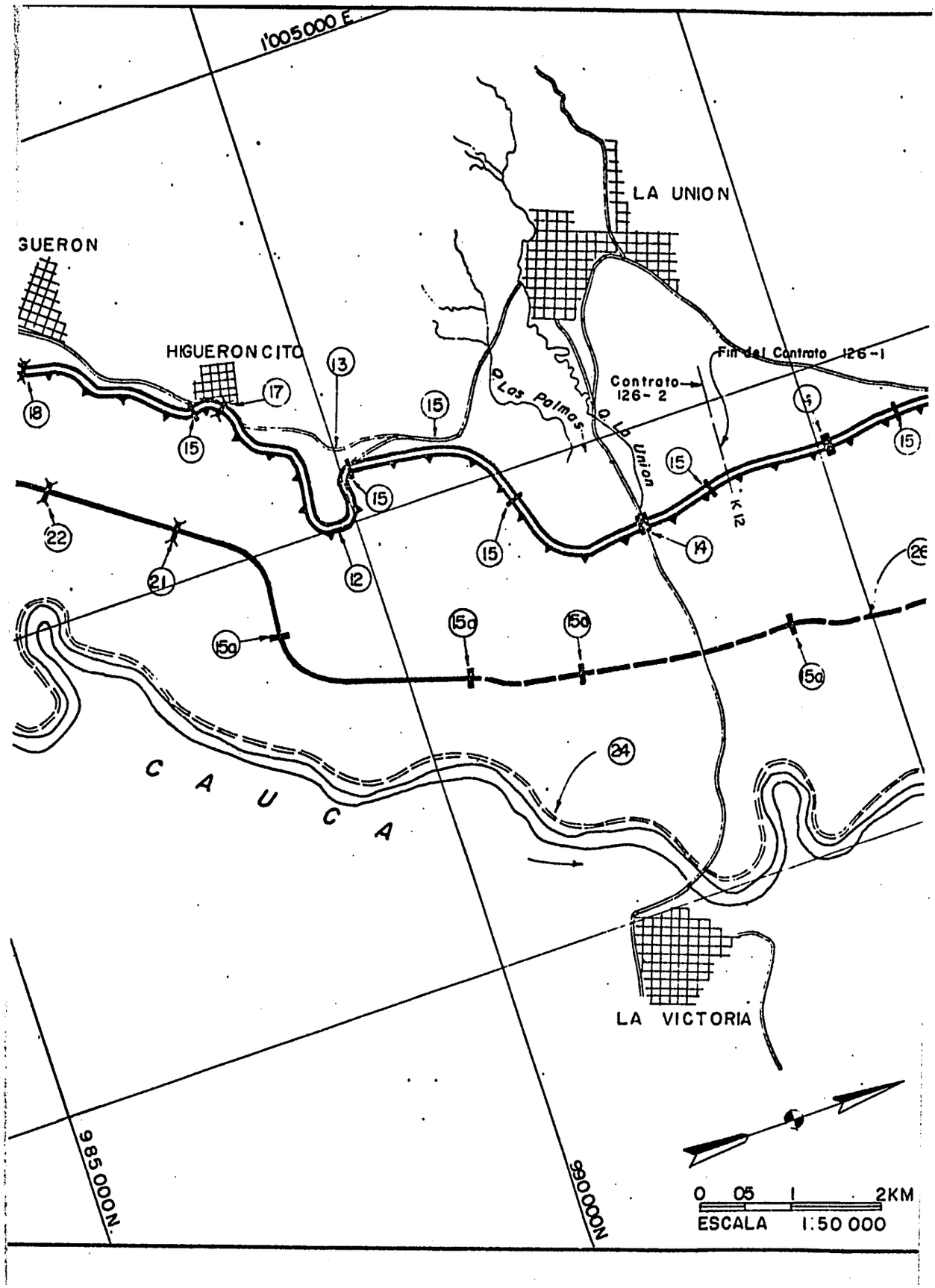
The construction of this important project could be much further advanced if it had not been for the latifundistas of the region who, in league with large landholders from the rest of the Department and the country, have been obstructing its progress. Due to the participation of INCORA in this project, according to the Agrarian Reform Law, a program of land redistribution must be carried out as soon as the improvements are completed. The owners of the haciendas located there, almost all of which are inadequately utilized, were not disposed to accept this. The landholders obtained the temporary suspension of the works by means of promises which they have not kept, such as that of establishing a large sugar mill —which according to them requires large tracts of land under one or a few owners—, and that they themselves would undertake the land reclamation works if they really became necessary. The unfortunate disaster that the zone suffered during June 1964 because of the overflowing of the Cauca River and the flooding of no less than 7,000 hectares in crops and pastures, with financial losses calculated at more than Ps. $ 15,000,000, has vividly demonstrated the urgent need for the project, and has pointed an accusing finger at the persons responsible for the delay in its initiation. As a result of this catastrophe, the latifundistas of the area have modified their attitude somewhat, and it seems that it will soon be possible to resume work on this project.

Yet this project is only a part of the much more extensive Bugalagrande-Cartago project which the CVC had planned and which included flood control, irrigation and drainage for 55,000 hectares of which 35,000 are irrigable and the remaining 20,000 will receive only indirect benefits through the services installed in the zone and the general improvement of economic conditions there. The 38,000 hectares in the southern part which constituted phase 1 of the project, were subtracted from the project area because these lands were owned by a very few people; and the CVC considered that it would not be just, even though the owners would in the long run pay for these works, to devote public funds for activities that would benefit so few persons.

2. *Irrigation Districts*

The adequate use of water for irrigation in the projects described above, will require the organization of irrigation districts in conformance with plans which include the average volumes of water available at the sources, average monthly evaporation and precipitation, irrigation coefficients, irrigation periods, number of times each crop should be irrigated, etc. The first of these districts which the CVC will establish will be Roldanillo-La Unión-Toro, and the regulations which govern the district


ROLDANILLO
Fin del Contrato 126-2
HIGUER
Rio Roldanillo
1'005000E
1'110000 E
1'115000E
R I O
15
14
18
25
16
15a
13a
22


1'005000 E
LA UNION
GUERON
HIGUERONCITO
Fin del Contrato 126-1
Contrato 126-2
Q. Las Palmas
Q. La Union
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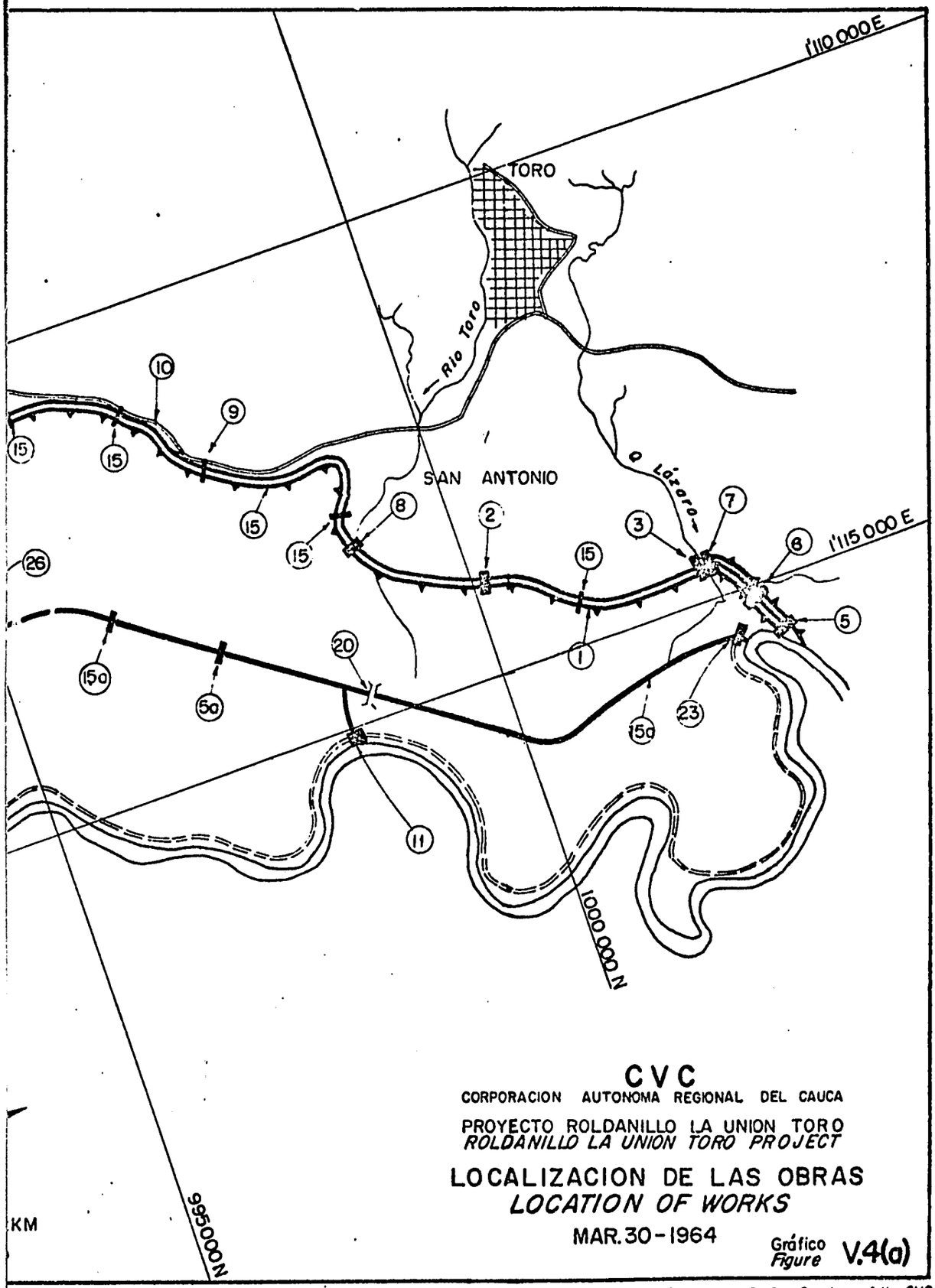
C A U C A
LA VICTORIA
985000N
990000N
0 05 1 2KM
ESCALA 1:50 000



CVC

CORPORACION AUTONOMA REGIONAL DEL CAUCA

PROYECTO ROLDANILLO LA UNION TORO
ROLDANILLO LA UNION TORO PROJECT

LOCALIZACION DE LAS OBRAS
LOCATION OF WORKS

MAR. 30-1964

Gráfico *Figure* V.4(a)

Cortesía de la CVC *Courtesy of the CVC*

CONTRATO 126 - 1 (Pavimentos Unidos - Incoferro)

(1) CANAL INTERCEPTOR Y DIQUE (SECTOR NORTE)

(2) ESTRUCTURA DE CONTROL Nº 1 EN K3 + 6

(3) PUENTE H15, 1 EN K 1 + 2

(4) PUENTE H15, II EN K10 + 8

(5) ENTREGA AL RIO CAUCA EN KO + 0

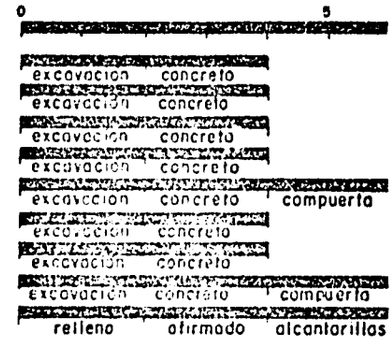
(6) ENTREGA VALENTIN EN KO + 6

(7) ENTREGA SAN LAZARO EN K1 + 1

(8) ENTREGA RIO TORO EN K5 + 1 (Por administración directa)

(9) ENTREGA DEL RODEO EN K7 + 7

(10) VARIANTE DE LA CARRETERA EN K8 y 9



CONTRATO 126-2

(11) ESTACION DE BOMBEO DE LA UNION, SUMINISTRO DE EQUIPO (Man - Siemens)

CONTRATO 126-3

SUMINISTRO DE LA DRAGA HIDRAULICA DE 10" (Ellicott)

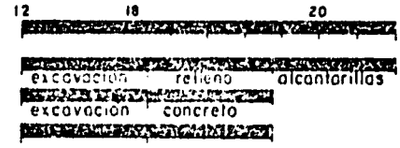
CONTRATO 126-4 (Concivites Ltda.)

(12) CANAL INTERCEPTOR Y DIQUE (SECTOR SUR)

(13) VARIANTE DE CARRETERA EN PORTACHUELO

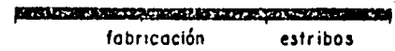
(14) ESTRUCTURA DE CONTROL Nº 2 (Extensión contrato)

(14a) ENTREGA RIO ROLDANILLO (Por administración directa)



CONTRATO . 126-5

(15) PUENTES PASAGANADO Y PASAMAQUINARIA (Conciviles Ltda.)



CONTRATO 126-6

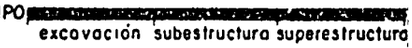
(11) ESTACION DE BOMBEO DE LA UNION, ESTRUCTURA Y MONTAJE DEL EQUIPO (Técnico Const. González Zuleta)

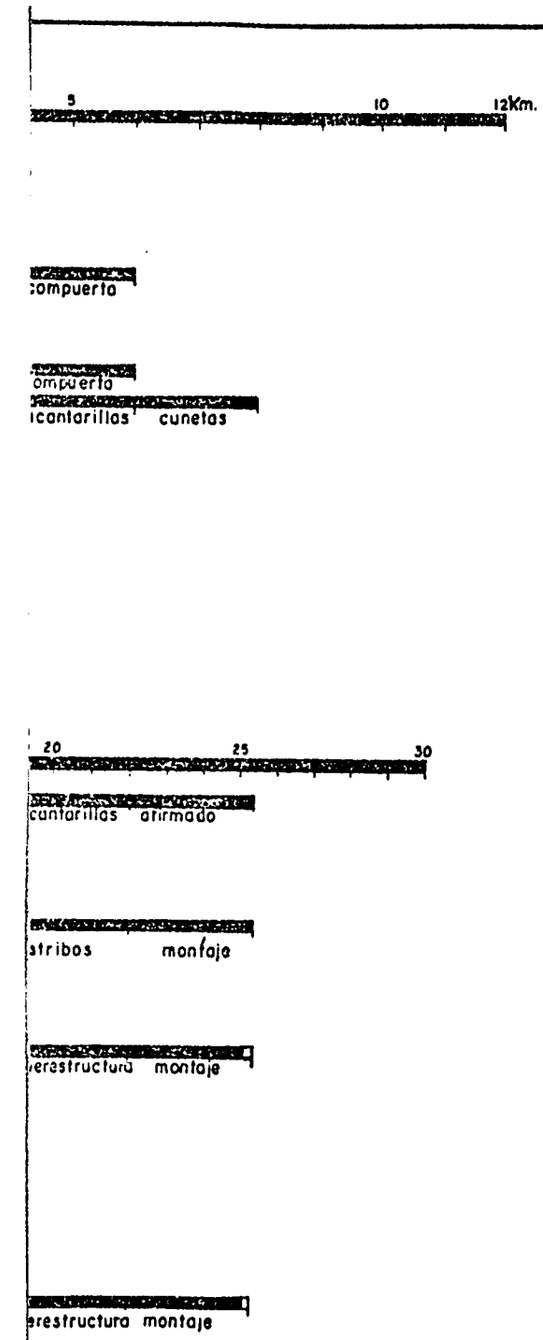
CONTRATO 126-7

(16) ESTACION DE BOMBEO DE ROLDANILLO, SUMINISTRO DEL EQUIPO

CONTRATO 126-8

(16) ESTACION DE BOMBEO DE ROLDANILLO, ESTRUCTURA Y MONTAJE DEL EQUIPO (Técnico Const. González Zuleta)





CONTRATO 126 - 9 (Victor Pérez Reyes)

(17) PUENTE H15 EN K19+560 CANAL INTERCEPTOR

(18) PUENTE H15 EN K21+675 CANAL INTERCEPTOR

(19) PUENTE H15 EN K27+560 CANAL INTERCEPTOR

(20) PUENTE H15 EN K4 + 300 CANAL DE DRENAJE

(21) ALCANTARILLA H15 EN K17+010 CANAL DE DRENAJE

(22) ALCANTARILLA H15 EN K18+590 CANAL DE DRENAJE

(23) ESTRUCTURA DE ENTREGA AL RIO CAUCA

(15a) PUENTES PASAGANADO Y PASAMAQUINARIA

(15b) ALCANTARILLAS DE CAJON PASAGANADO Y PASA-MAQUINARIA

CONTRATO 126 - 10

(2),(14) COMPUERTAS EN LAS ESTRUCTURAS DE CONTROL

CONTRATO 126 - 11

(24) CANAL DEL RIO CAUCA

(25) CANAL DE ADUCCION (Conciviles Ltda.)

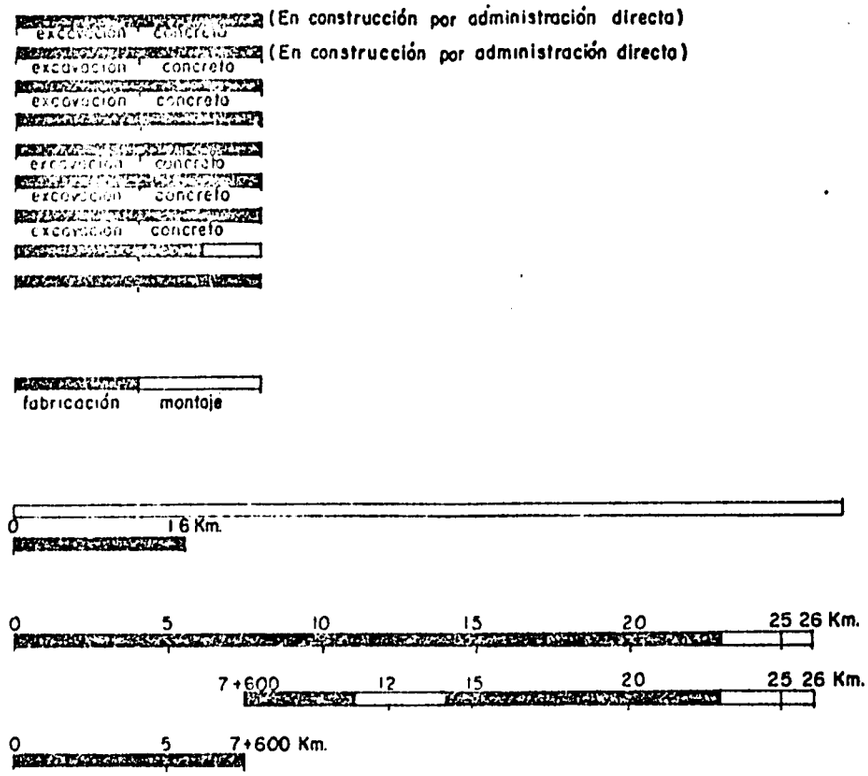
CONTRATO 126 - 12

(26) CANAL DE DRENAJE, EXCAVACION SECA (Robledo & Borrero)

CANAL DE DRENAJE, EXCAVACION HUMEDA (Administración directa)

CONTRATO 126 - 12a

(26) CANAL DE DRENAJE, EXCAVACION CON DRAGA



CVC

CORPORACION AUTONOMA REGIONAL DEL CAUCA

PROYECTO ROLDANILLO LA UNION TORO
ROLDANILLO LA UNION TORO PROJECT

PROGRESO DE LAS OBRAS
PROGRESS OF WORKS

MAR. 30-1964

Gráfico. *Figure.* V.4 (b)

Cortesía de la CVC *Courtesy of the CVC*

and its relationships with the users, have been planned. Furthermore, the design of the irrigation and drainage system, together with access roads to the irrigable areas, have been developed to preserve the unity of every farm within a maximum size of 100 hectares and a minimum of 10 hectares, although this criterion is somewhat elastic. Each farm or lot planned, will have a "point" appropriate for irrigation, drainage, and access roads.

The costs of operation and maintenance of the district will be charged cost during the first year of operation will be US$14.00 per year per hectare. According to INCORA, this will probably be the model of its type and the basis for future irrigation districts of the CVC and of Colombia in general.

Part of the personnel which will be in charge of this irrigation are presently responsible for the operation and maintenance of the canals and other works constructed in the Roldanillo-La Unión-Toro and Aguablanca projects.

D. CHANGES EXPECTED OR PRODUCED BY THE LAND RECLAMATION PROGRAMS

The land reclamation projects described above had as their ultimate objective the promotion of more intensive and adequate use of agricultural land.

In the case of Aguablanca it has already been pointed out how the benefits have been turned into urban housing construction activity for the low income groups. It has been estimated that more than 25,000 families have been located in part of this zona, principally known as the Alfonso López Pumarejo, La Floresta, and Aguablanca housing developments. It has also appreciably modified the pattern of agricultural land use in the area surrounding Cali. There is at present no data on the extent to which this change has taken place as of the writing of this report, however. No study has been made recently of the new patterns of tenure and land use in effect there. But the changes are evident.

As far as the Roldanillo-La Unión-Toro and Bugalagrande-Cartatago projects are concerned, studies published by the CVC in 1962, [4] suggest the possibility of the institutional changes expected in the agriculture of these regions. These are described below in Section D.1. Studies carried out by CVC on Roldanillo-La Unión-Toro in 1962, [5] show the changes in this zone recorded in Section D.2 of this chapter.

4 CVC-INGETEC-G&H-TAMS, Universidad del Valle, *Roldanillo-La Unión-Toro Project: Status of Development, Report C-4267*, Cali, April 1962; and CVC-INGETEC-G&H-TAMS, Universidad del Valle. *Bugalagrande-Cartago Project. Report C-4204*. Cali, April 1962, both of which were prepared under the senior author's direction.

5 CVC. "Análisis Económico de 109 Fincas en el Area del Proyecto Roldanillo-La Unión-Toro, 1961, 1962". Cali, 1962. Unpublished.

1. *Changes Theoretically Expected in the Roldanillo-La Unión-Toro and Bugalagrande-Cartago Areas*

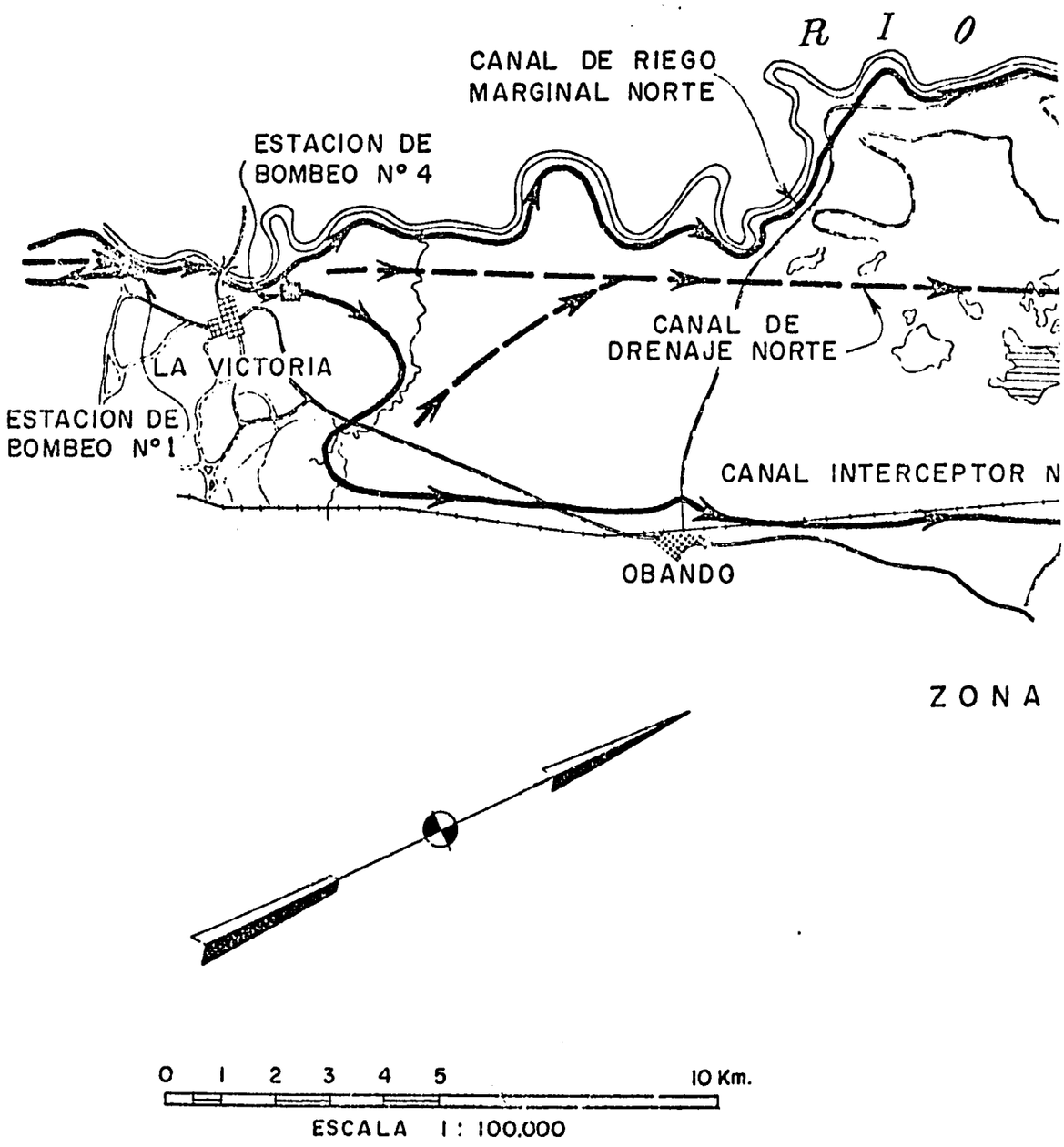
Roldanillo-La Unión-Toro. [6] In this zone agriculture is now undergoing dynamic change as a consequence of the partial completion of the drainage system, which has permitted the farmers to use their land more adequately, land which was formerly subject to flooding or which was under permanent swamps and ponds. Before the project was undertaken, the zone suffered frequent droughts concurrently with floods from the streams rushing down the mountainsides. Although the irrigation facilities have not yet been provided, the farmers have taken inmediate advantage of the drainage works and have begun to plant the land in crops. This is still a risky enterprise when irrigation is not possible, but so far the results in better land use and increased production have been satisfactory.

According to the 1959 Valle Agricultural Census data, extensive agriculture predominated throughout this area. Of the 12,500 hectares apt for annual and permanent crops if irrigation is available, only 4,650 were devoted to annual crops and 920 to permanent crops; 2,600 hectares were devoted to extensive uses, and 3,500 hectares were not usable at all due to swamps or periodic flooding. Thus, this project could double the amount of land devoted to annual or perennial crops.

The inadequate rainfall, which frequently reached the proportions of a drought, have also handicapped agricultural production and restricted more intensive land use. This fact is clearly seen in the 1959 Census results, which reveal that the land in annual crops was used only 1.08 times per year, when theoretically it can be used 2 or more times for various crops. Even though the drainage works constructed have brought about an appreciable increase in the amount of land devoted to crops, considerable losses have occurred as a result of the scarcity of water. The completion of the works planned for this area is thus very urgent.

The land in this project area is highly subdivided, although inequitably — 87 percent of the farms are under 10 hectares each but represent only 17 percent of the total land in farms. On the other hand, 16 farms of over 200 hectares each occupy almost 40 percent of the zone. The completion of the irrigation and drainage works will make the Roldanillo-La Unión-Toro zone extremely apt for the development of family-sized farms and will permit the improvement, through application of the Agrarian Reform program, of many small units of agricultural exploitation which are uneconomical today. In this respect it should be noted that if all the farmers are to be given parcels of not less than 10 hectares, and if the size of the existing farms between 10 and 100 hectares is not modified, it will be impossible to accommodate in this zone all the farm-

6 This description is almost wholly taken from CVC Report C-4267, pp. 1-5, 72, 76, and 112-117.


R I O
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ESTACION DE
BOMBEO N° 4
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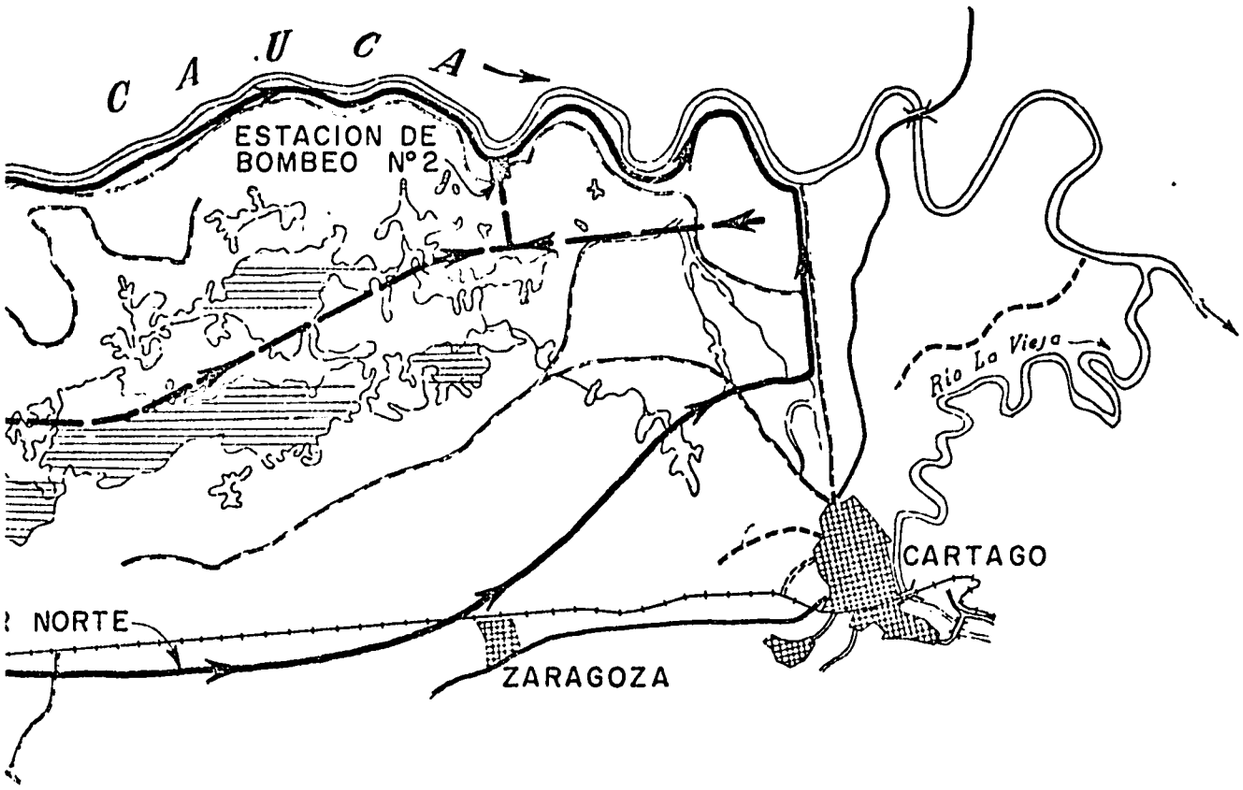


A NORTE

CVC
CORPORACION AUTONOMA REGIONAL DEL CAUCA

PROYECTO DE DRENAJE Y RIEGO
BUGALAGRANDE – CARTAGO

BUGALAGRANDE-CARTAGO DRAINAGE AND IRRIGATION PROJECT

Gráfico
Figure. V.5

Cortesía de la CVC *Courtesy of the CVC*

ers who now possess farms under 10 hectares —there are 1,000 of them. Thus although modifying only the structure of the farms under 10 hectares by consolidating them, and those over 100 hectares by redistributing the excess of 100 hectares in each case, the number of farms must be reduced from 1,516 to less than 800. This means that some 700 farmers must be relocated elsewhere. It is estimated that about 350 of these could be accommodated in the adjacent zone of Bugalagrande-Cartago. It would be possible, of course, to reduce the minimum farm size to 5 hectares for certain agricultural activities such as fruits and vegetables, and this would reduce the number of farmers who would have to be resettled. However, some of these, for reasons of age, sex, etc., might possibly not be interested in continuing agricultural activities, thus alleviating the problem somewhat.

Gross and net agricultural income for the zone in 1959 (at 1961 prices) are estimated at Ps.$ 19.3 millions and Ps.$ 9.7 millions respectively. With the completion of the irrigation and drainage works in the project area, and assuming a pattern of land use and crops basically similar to that of 1959, gross and net agricultural income would increase to 100 and 50 million pesos respectively in 1968. That is, gross and net annual agricultural income would increase to 80 and 40 million pesos respectively, or to 102 millions gross and 70 millions net if agriculture is diversified, more intensive practices of agricultural exploitation are adopted, and the patterns of land tenure are modified establishing family-sized farms.

Bugalagrande-Cartago. [7] When the feasibility studies for this project were made in 1961-1962 —which were to include the construction of main canals, a dam for the diversion of the Bugalagrande River, channel improvements on the Bugalagrande, La Paila, and La Honda Rivers, pumping stations, lateral canals, zone and administrative rights—, were estimated to cost a total of 76 million pesos plus US$4.53 million, or a total of 106.7 million pesos at the rate of 6.70 pesos per dollar. (At present this would have to be raised by 34 percent at least because of the currency devaluation in 1963).

The additional annual gross and net agricultural incomes expected were estimated to reach 166 and 77 million pesos respectively in 1968 if the patterns of land tenure and cropping remain basically the same as in 1959; or 230 and 141 million pesos respectively if agriculture is diversified and the tenure pattern is modified. Gross and net income in 1951, at 1961 prices, were estimated at 61 and 32 million pesos respectively, for the farms in the project area. Of this income more than half was derived from the 20 largest farms of the region.

According to the 1959 Agricultural Census, of approximately 35,000 hectares of potentially irrigable land, 11,000 are subject to permanent or temporary flooding and 2,200 are in forests, highways, etc., or in other

7 This description is based on Report CVC-4204, of April, 1962.

words, some 22,000 hectares could be devoted to intensive cultivation. But according to the 1959 Census only somewhat less than 10,000 hectares (approximately 45 percent) were devoted to annual or temporary crops. The remainder of this excellent, arable land was devoted to extensive cattle-raising. It also showed that instead of cultivating some crops twice a year as is possible in that region, the intensity of land use for annual crops was only 1.27. It is estimated that flood control, irrigation, and drainage would more than double the area that could be devoted to intensive cultivation, with the good results in increased income for all farmers noted above.

2. *Changes in the Agriculture of the Roldanillo-La Unión-Toro Zone as a Result of the Completion of Drainage Works* [8]

By mid-1962, when the Roldanillo-La Unión-Toro project had to be temporarily suspended because of lack of financial resources, the drainage works had been completed for this area and represented 40 percent of the total overall works contemplated for the project. These completed drainage works included: the Principal Drainage Canal through the center of the zone, approximately 28 kilometers long, the Interceptor Canal 30 kilometers long which runs parallel to the Western Cordillera, and the pumping stations at Roldanillo and La Unión. At that time none of the irrigation works had been carried out; these have just been started during the first semester of 1964. But the drainage works produced a complete change in the agriculture of the zone, since it permitted the utilization of areas previously subject to periodic flooding, or covered with ponds, swamps, and marshland, for agricultural purposes.

According to West [9] and Arias, [10] who carried out studies in 1954 to classify the area into agricultural regions, but who unfortunately did not include the basic quantitative data in their respective papers which would have permitted further comparisons, there predominated in the Roldanillo-La Unión Area three principal agricultural regions: (a) The riverbank zone, of rather low rainfall but where due to the proximity of the river and the annual floods crops could be grown throughout the year, (b) the flat plain subject to flooding with an elevation lower than the riverbank area, which during the rainy seasons receives waters from both the Cauca River overflow to the East and mountain freshets to the West,

8 The authors express their gratitude to Luigi Laurenti of the IBRD and Francisco Montoya of FAO, at present assigned to the CVC as general economist and farm management expert respectively, for their help in the preparation of this section.

9 West, Quentin M. *Estudio General del Uso de la Tierra del Area Demostrativa de Roldanillo, Departamento del Valle del Cauca, Colombia.* Instituto Interamericano de Ciencias Agrícolas de la Organización de Estados Americanos. Zona Andina, Proyecto 39, Programa de Cooperación Técnica, Lima, Perú, 1954.

10 Arias-Giraldo, Helio Fabio. "Uso de la Tierra en Pequeñas Fincas de Roldanillo". *Acta Agronómica,* Vol. VI, Nº 2, Palmira, April 1956.

and which was obviously devoted to grasslands, and (c) the alluvial fans formed by the mountain freshets as they reach the valley. From the respective maps of the agricultural regions of the area, one concludes that the flat plain region subject to flooding comprises the largest part of the zone.

In his letter No. C-374 of September 13, 1956, to the Executive Director of the CVC, the Chief Engineer of the Consulting Firms in referring to the 11,200 hectares of the total net project area, states that 440 hectareas are swamp land with more than 80 percent of water and 1,290 hectares are marshland with less than 80 percent of water. In a memorandum addressed to the Director, it is stated that "about 1,500 hectares are in swamps and ponds which have rarely receded except after prolonged periods of drought; another 2,500 hectares have very high water tables, and 3,200 additional hectares are subject to relatively frequent flooding from the Cauca River overflows and mountain freshets". Of these 7,200 hectares, that part which was used was devoted to pastures, except for a few small plots devoted to crops here and there.

Using the above and other sources of information, Montoya has unofficially estimated that in 1955, only 7.7 percent of the approximately 16,000 hectares which would receive direct and indirect benefits from the project were devoted to annual crops and 4.3 percent to permanent crops. The remaining 88 percent represented permanent meadows and pastures and land devoted to other uses (Table V.7).

Based on data obtained from the 1959 Agricultural Census of the Cauca Valley —1959 was the first year in which benefits for the area on account of the project works could be noted, in spite of the fact that construction of the drainage canals had not been completed—, and for the same area which would receive direct and indirect benefits from the projected works, the pattern of land use, as can be discerned in Table V.7., was considerably altered: 29 percent of the land was devoted to annual crops, 5 percent to permanent crops, and only 60 percent to permanent meadows and pastures; the remaining 6 percent represented land devoted to other uses.

By the end of 1962, and when the entire benefits of the drainage works could be perceived, a farm management study [11] was undertaken in the area on a sample basis. Unfortunately it refers only to farms included in the net area receiving direct benefits from the project. Thus, it refers only to 1,251 farms and 11,191 hectares, and not to the 1,516 farms and 16,700 hectares of the study based on the Census results, [12] making comparisons quite difficult. However, the difference in areas to which

11 CVC, "Análisis Económico de 109 Fincas en el Area de Roldanillo-La Unión-Toro. 1961-1962". Cali, 1963. Unpublished.

12 CVC *et al. Report C-4267: Roldanillo-La Unión-Toro Project, Status of Development.* Cali, April 1962.

TABLE V.7

CVC, Roldanillo-La Unión-Toro Project Area: Distribution of Areas According to Land Use Pattern, 1955, 1959 and 1961-1962

Years	Land Use									
	Annual Crops		Permanent Crops		Pastures		Land in Other Uses		Total	
	Hectares	%	Hectares	%	Hectares	%	Hectares	%	Hectares	%
1955 (a)	1,247.5	7.7	697.5	4.3	14,767.0		88.0		16,712.0	100
1959 (b)	4,818.0	29.0	935.0	5.0	10,016	60.0	942.0	6.0	16,712.0	100
1961-1962 (c)	5,669.0	51.0	343.0	3.0	3,795	34.0	1,400.0	12.0	11,207.0	100

(a) Unoffficial data prepared by Francisco Montoya, based on the best available information.

(b) Data obtained from *CVC Report C-4267: Roldanillo-La Unión-Toro Project, Status of Development*. Cali, April, 1962. The general area includes some hills and flat lands outside the zone of direct influence of the drainage and irrigation schemes.

(c) Data from "Economic Analysis of 109 Farms in the Roldanillo-La Unión-Toro Projecte Area". CVC, 1963. Unpublished. The area covered by this study is that of direct influence of the drainage and irrigation schemes.

the two studies refer does not impede making general comparative conclusions from the two studies. According to the 1962 farm management survey, only 34 percent of the net project area was then devoted to permanent meadows and pastures, the largest percentage, 51 percent of the land, was used for annual crops; 3 percent for permanent crops, and 12 percent for other uses. The increase in this latter category is accounted for by the land devoted to drainage canals and additional roads. Table V.8 summarizes the main shifts in annual crops which occurred between 1959 and 1962 in the area; it shows also that cotton and soybeans have practically displaced all other crops.

The physical changes accounted for in the preceding paragraphs would obviously mean appreciable changes in the gross value of the agricultural production of the area and consequently of the net income accruing to each farmer. Table V.9 summarizes the estimated gross income assignable under the previous three crops and land use estimates at constant prices of 1961. The differences are striking —gross income per hectare went up over 300 percent between 1955 and 1962, calculated at 1961 prices.

Bearing in mind the limitations imposed by the differences in the sizes of the respective statistical universes, the 1962 Farm Management Survey also shows that the use of agricultural machinery has increased appreciably in the area. While only 92 tractors were reported for the 1,516 farms studied in 1959, the sample of 1962 indicated the existence of 177 tractors on 1,251 farms. The number of farms using different kinds of agricultural machinery, whether owned or rented, also increased considerably.

TABLE V.8

CVC, Roldanillo-La Unión-Toro Project Area: Comparison of Areas Cultivated during the First Half of 1959 and 1962

	Area Cultivated (Hectares)		*Variation in Area Cultivated*	
Crops	*In 1959*	*In 1962*	*Hectares*	*%*
Cotton	1,097	2,721	+ 1,624	+148.0
Corn	2,513	1,757	— 756	— 31.0
Beans	749	227	— 522	— 70.0
Soybeans	200	907	+ 707	+367.0
Other annual crops (a)	260	57	— 203	— 78.0
Totals	4,819	5,669		

(a) Includes rice, sesame, tobacco, yucca, vegetables.

Sources: *CVC Report C-4267: Roldanillo-La Unión-Toro Project, Status of Development.* Cali, April, 1962, and "Analisis Económico de 109 Fincas en el Area Proyecto Roldanillo-La Unión-Toro, 1961-1962", Cali. Unpublished Manuscript.

TABLE V.9

CVC, Roldanillo-La Unión-Toro Project Area: Distribution of Gross Income, by Annual and Perennial Crops, Livestock, and Livestock Products, 1955, 1959, and 1961-1962

(At 1961 prices)

Years	Distribution of Gross Value of Production, in Absolute and Relative Figures											
	Annual Crops			Permanent Crops			Pastures			Total		
	Total Gross Income		Income per Hectare	Total Gross Income		Income per Hectare	Total Gross Income		Income per Hectare	Total Gross Income		Income per Hectare
	Ps.$	%	Ps.$	Ps.$	%	Ps.$	Ps.$	%	Ps.$	Ps $	%	Ps.$
1955 (a)	2,050,001	25	1,643	1,816,988	22	2,605	4,351,608	53	304	8,219,000	100	505
1959 (b)	12,523,964	66	2,598	3,114,408	16	3,331	3,364,728	18	336	19,033,000	100	1,100
1961-62 (c)	20,214,020	86	3,566	628,522	3	1,831(d)	2,591,657(e)	11	683	23,434,000	100	2,094

(a) Unofficial data prepared by Francisco Montoya, based on the best available information.

(b) Data obtained from *CVC Report C-4267: Roldanillo-La Unión-Toro Project, Status of Development*. Cali, April 1962.

(c) CVC. "Análisis Económico de 109 Fincas en el Area del Proyecto Roldanillo-La Unoión-Toro, 1961-1962". Cali, Unpublished manuscript.

(d) The decrease is due to deterioration in cacao plantations and to lower coffee prices.

(e) In the calculation of gross income derived from livestock production, net changes in livestock inventory plus net sales were taken into account.

In the field of land tenure, the 1959 and 1962 studies are not properly comparable, not only because of the coverage in area, but mainly because the land tenure classification used in the 1962 Farm Management Study departs from the international classification used in the 1959 Census. In the latter, simple forms of tenure are investigated separately from the mixed forms of tenure to obtain the tenure of the farms; when the tenure of the land in farms is wanted, the item "mixed forms of tenure" is broken down and its component elements are added to the corresponding single forms of tenure. In the 1962 survey an old-fashioned classification was used, in which several mixed forms of tenure are assimilated to a single form wherever a single form predominates. In spite of this, the 1962 Survey contributes toward confirming two trends already surmised on the basis of personal observations and conversations with a number of the better informed farmers of the area: that (a) the farms over 100 hectares existing in the area were broken down as to ownership so that in accordance with present agrarian legislation the amount of land exceeding 100 hectares would not be acquired by the government for parcelation projects, and (b) that a fair number of rather well-to-do and efficient tenant-farmers have settled in the area and are actually making the best use of the land among all farmers of the area. The tenant farmers not only have rented the largest tracts available but also many small plots, thus reducing the number of small direct farm operators. Several small truck farms and orchards have thus disappeared in favor of the cultivation of cash crops.

E. AGRICULTURAL AND LIVESTOCK DEVELOPMENT

1. *Principal Problems of Agriculture in the Cauca Valley*

In spite of the progress achieved recently, agriculture in the Cauca Valley confronts a series of technical production problems in addition to those of inadequate irrigation and drainage, such as, poor soil management practices, deficient selection of seeds and appropriate plant varieties, general absence of adequate cultivation and livestock management techniques, inadequate control of plant and animal diseases, and low use of fertilizers. Moreover, together with these, there are various other problems of a legal and institutional nature which are related primarily to inadequate patterns of land tenure and use in this region and the lack of timely and cheap credit.

Then there are also potent basic defects in the structure and functions of the marketing and processing systems, which when combined with those of the productive process, place farmers, especially small and medium scale entrepreneurs, in a precarious position. This contributes to creating a socio-economic environment for the peasant which leaves much to be desired, and in order to change this environment, substantial and radical changes in the control and use of productive resources and in the usufruct of the wealth created would be required.

The efforts of the CVC in land reclamation in order to bring about technological improvements in agriculture have already been described. In addition to this, according to the functions assigned to it by law,[13] the CVC, through its Department of Agricultural Extension, carries on agricultural development and rural education programs designed to inprove agricultural practices, the farm home, and community relationships; analysis, survey, and conservation of soils; protection and management of watersheds; and irrigation engineering services to farmers. An attempt has been made, above all in these programs, to channel the efforts of the rural population toward cooperative programs of general well-being, within a democratic framework which will contribute toward the establishment of a new system of human relationships in the community.

2. *Agricultural Extension Service*

a. *Objectives of the Service*

There is an ever greater recognition today of the importance of transmitting scientific knowledge on the improvement of production and marketing of agricultural products, farm management practices and rural home welfare to the farmers. In order to improve agriculture, two types of professionals are required, among other things, research personnel to produce new techniques and knowledge, and their intrepreters, those who transmit this new knowledge in terms that the layman can understand and apply towards achieving that progress. Here we will deal with the work carried on by the latter group.

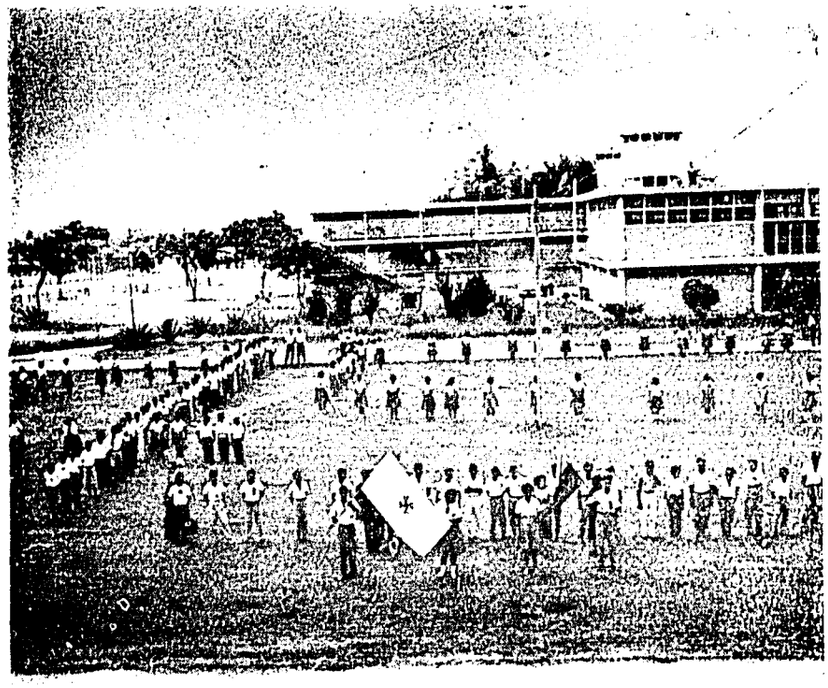
The work which extensionists carry out is a type of informal education with people who have had but limited opportunities for formal education, for the purpose of raising agricultural productivity and production and contributing to improving rural standards of living, once they have determined their real needs and problems, and through their own efforts learned to find the most appropriate solutions.

b. *Work Programs and Results*

The above is the philosophy which guides the agricultural extension program directed and administered by the CVC, in cooperation with and by delegation from the Ministry of Agriculture [14].

13 See Chapter III, Section 2.

14 The Service is financed jointly by the CVC and the Ministry of Agriculture, by means of a contract signed between these agencies in May 1957, and twice amended later. The annual contribution of the Ministry of Agriculture now amounts to Ps.$600,000, and that of the CVC a little over double that amount. The Service covers the entire Department of Valle. It has enjoyed from the beginning constant advice of specialized officials from the United States government and occasionally from the OAS and FAO.

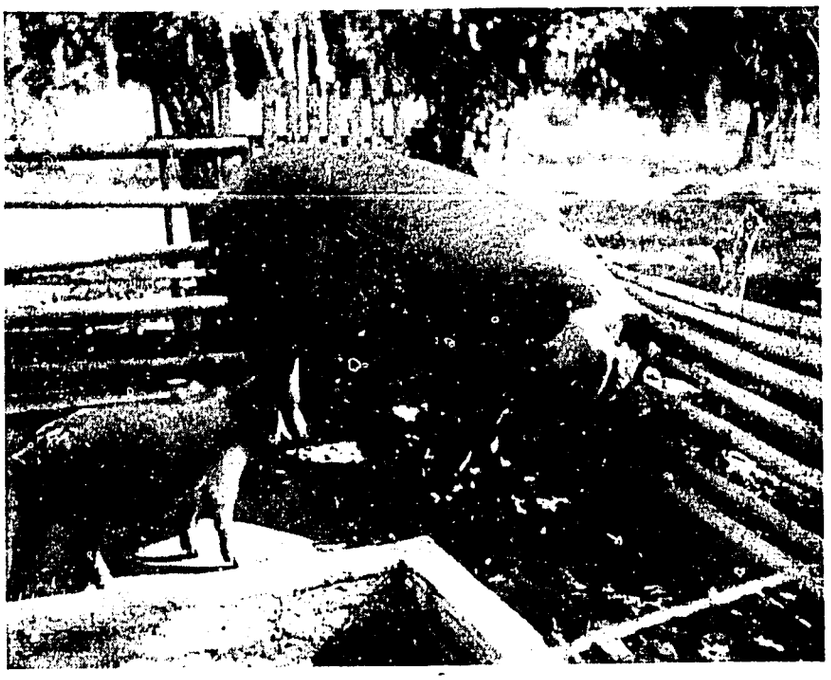


Parade of 4-S Club members at the annual exposition at the School of Agronomy, Palmira

4-S Club members carry on grape cultivation projects under the guidance of the CVC Agricultural Extension Service

The farm family can increase its income while their children participate in projects financed by the CVC Agricultural Extension Service.

Young farm girls also carry out agricultural projects



An example of a hog project of one of the 4-S Club members

The rotation of dairy cattle on pasture of pará grass increases capacity per unit of area and contributes toward increasing production

Fencing of pastures also increases capacity and shortens the fattening period. The CVC Agricultural Extension Service aids farmers in preparing a plan

Semi-intensive fattening increases meat production per unit of area in shorter periods

Raising Production and Productivity. In order to achieve this objective an attempt has been made to improve techniques in farm management and in the marketing of agricultural products. Efforts have been concentrated on the study and solution of problems on some pilot farms which would serve as a model to the farmers in each zone.

These efforts have consisted mainly of systematic instruction in matters such as farm management, introduction of high yield varieties, application of soil conditioners and fertilizers, and adequate soil practices. In the field of livestock, emphasis has been placed on better pasture management practices, use of new forage grasses, and rotation of pastures, with which production of milk has doubled on many farms, and fattening capacity per unit area has increased appreciably. This improved livestock management has also resulted in the return of extensive zones formerly devoted to extensive cattle-raising to intensive crop raising. Extensionists have worked independently with crop farms, cattle farms, double-purpose farms, family subsistence type farms, and with highly specialized farms. In all, more than 5,000 adult farm operators have been influenced to introduce changes in the management of their farms. Besides these demonstrations of methods and results, the extension program includes field-trips, meetings, lectures, illustrated talks, movies, distribution of information bulletins, and "days on the farm".

Raising the Rural Standard of Living. The social action program of the Extension Service has been oriented toward achieving changes in community living relationships and improvement of the general welfare of the peasant population. In this respect attempts have been made to: (1) Stimulate the farmers to join in cooperative participation to obtain greater efficiency in the preparation of work plans and in the search for more adequate solutions to problems which affect the family and the community; (2) Introduce changes in the behavior patterns of the family, to stimulate their spirit of cooperation, love of the countryside, to improve the standard of living; (3) Develop formal organizations (4-S Clubs) for rural youth in order to instill in them the spirit of teamwork, desire to solve family and community problems, develop stronger ties to farm life for their after-school years, and provide them with information and techniques that will be useful in their future agricultural occupations; and (4) Create an environment of happiness, achievement, and idealism in human relations throughout these rural areas.

Study of rural problems conducted by extensionists with the cooperative participation of the farmers has led to solutions more in accord with their available resources; and above all, it has succeeded in stimulating an awareness and knowledge on their part, of the importance of this active participation in the study of their problems and of suggesting solutions themselves. The desire to participate along with the extensionists has become a felt need in some of the communities served by the Extension Service. As a result, the "Juntas de Acción Comunal" (Civic Action Councils)

in many villages are thoroughly and actively involved in the CVC programs, and are contributing with their interest, participation, and support to selling the work plans agreed upon to the entire village population. The rural development program has tried to stimulate, with considerable success, cooperative teamwork in the construction of local public works, such as neighborhood streets, small parks, planting of trees, community recreation centers, and in general beautifying the exteriors of homes and public areas.

Concerning changes in human behavior, the development of the human being himself, amazing progress has been made. Besides the benefits attained by the increase in the productivity and production of their farms, the most significant and obvious fact is that children, housewives, and farmers alike are developing their knowledge and skills, as well as genuine enthusiasm in the achievement of solutions to their problems through their own efforts.

Through work with the children and youth of the rural area, the spirit of association has been developed. Formal organization, called 4-S Clubs, have been started in every community to develop cooperative attitudes and teamwork, and to stimulate the members to study their own problems and needs, and interest them in a greater participation in the activities of their homes and communities. The Girls' 4-S Clubs and the Housewives' Clubs have been particularly effective in advancing programs for the improvement of the rural home —household furniture and equipment, clothing, and nutrition. The principal aspects of this latter program have been the production of nutritional foods in the home itself and using these to improve their nutritional standards. More than 14,000 young people and housewives have learned many new arts and skills in the management of small agricultural, livestock, home economics, and craft enterprises.

In its concern to strengthen the 4-S Club program, the CVC has devoted funds from its own budget in order to grant directed credit to the members of these clubs who have desired to carry on projects for raising chickens and pigs. About 850 poultry projects to a total value of Ps.$700,000, including feed and drugs, and 80,000 chicks and 595 hog projects to a total value of Ps.$360,000 including feed and drugs, have been serviced in this way. As a result, the young 4-S members have acquired noticeable skill and business management in the raising of hogs and poultry, which has been proved, among other things, by the quality of the animals that are presented at the annual CVC fairs and contests. Table V.10 shows the number and kind of projects carried on by 4-S Club members, Housewives' Clubs, and adult farmers during the period 1956 - 1963, and Table V.11 the activities of the CVC 4-S Clubs from 1956 to June 1964.

Agricultural Cooperatives. During the last three years, cooperative education and the development of this type of economic association among the farmers has been included in the CVC Extension Program. For this purpose it has had the valuable aid of an FAO expert on cooperatives.

The development of an awareness of the important role that cooperatives can play in agricultural production and marketing, has been achieved. As of June 1964, five agricultural cooperatives have been established in the Department of Valle as a result of this program.

TABLE V.10

CVC: Number of Agricultural, Livestock, and Home Economics Projects Carried Out by 4-S Clubs and Adult Farmers' Clubs, Sponsored by the CVC, 1956-1963

Type of Project	*1956*	*1957*	*1958*	*1959*	*1960*	*1961*	*1962*	*1963*	*Totals*
Agricultural	70	108	230	340	667	1,299	1,409	1,605	5,728
Poultry	40	50	85	110	155	183	124	165	912
Cattle	—	—	—	—	33	130	60	80	303
Hogs	210	60	72	97	228	147	238	273	1,325
Remodeling and Furnishing of Homes	672	400	310	642	1,392	[illegible]	1,009	949	8,057
Sewing	360	397	413	525	790	902	1,056	1,148	5,591
Manual Arts	—	366	400	411	1,230	1,514	1,773	1,915	7,609
Food preparation and nutrition	366	437	418	842	1,059	1,500	1,770	1,915	8,307
Recreation programs	672	739	763	525	1,729	2,406	2,926	3,436	13,196

Source: CVC, Agricultural Extension Service.

c. *Administration of the Program*

The Agricultural Extension Service is directed by a Chief who is in turn aided and advised by specialists in each specific field: 4-S Clubs, home economics, crops, cattle and hog raising, poultry and small animal industries, and nutrition. These specialists supervise the work carried on by extension agents, of which there are 13 in the Department of Valle, and to each of which is responsible a Club assistant and a home demonstration agent. Each sector office prepares its own work program which includes a detailed calendar of activities.

d. *Expansion of the Program*

Among Latin American professional circles, the CVC Agricultural Extension Service has the reputation of being the best in Latin America. Its contribution toward the development of agriculture and rural living in the Cauca Valley has certainly been significant, and is, therefore, called upon to continue playing a role of primary influence in the future development of agriculture in the region. But every organization should be continually restructured in order to satisfy the changing needs of the people being served more adequately, and this Extension Service cannot be an exception. As has been recorded in previous pages, the CVC is engaged in land reclamation programs which will tremendously increase the already high potential productivity of the region and which will obviously produce a change in the patterns of land use and land tenure.

TABLE V.11

CVC: Activities of the 4-S Clubs of the CVC Agricultural Extension Service. 1956-1964

	1956		1957		1958		1959		1960		1961		1962		1963		1964 (June 30)	
Type of Club	*Nº of Clubs*	*Number of Members*	*Nº of Clubs*	*Number of Members*	*Nº of Clubs*	*Number of Members*	*Nº of Clubs*	*Number of Members*	*Nº of Clubs*	*Number of Members*	*Nº of Clubs*	*Number of Members*	*Nº of Clubs*	*Number of Members*	*Nº of Clubs*	*Number of Members*	*Nº of Clubs*	*Number of Members*
4-S Boys	14	305	20	302	24	305	23	317	30	544	46	753	64	996	84	1,153	110	1,521
4-S Girls	16	366	24	400	22	310	29	411	31	552	42	757	57	990	92	1,432	96	1,566
Young Farmers	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3	54	2	14
Housewives	—	—	3	37	8	103	10	114	11	296	22	357	28	496	31	341	38	476
Mixed	—	—	—	—	—	—	—	—	—	—	—	—	2	35	—	—	2	27
Totals	30	672	47	739	54	718	62	842	72	1,392	110	1,867	151	2,517	210	2,980	248	3,604

Source: CVC, Agricultural Extension Service.

If they do not occur, the CVC will have wasted its time and efforts. These necessary changes can only be realized by the farmers if they can count on sufficent technical direction which obviously must be supplied by the CVC Extension Service itself. This means that the program must be expanded not only as far as geographic coverage is concerned but also in specific work areas. But even without the completion of the vast land reclamation projects of the Corporation, the program must be expanded to include a larger number of farmers and programs. All the farmers of each sector should be visited in order to, among other things, carry out more comprehensive studies of the agriculture in each sector and prepare the corresponding programs of aid upon more solid bases. At the same time, as an effective teaching method, the number of pilot demonstration farms should be increased. All of the above means that the personnel of the service should be increased, and in order that competent persons be attracted to this work, the CVC should adopt a salary scale which will bring the most highly qualified professionals to the CVC. The growing need for technical assistance in the field of farm management, marketing, and agricultural production economics demands this expansion of the CVC Agricultural Extension Service.

3. SOILS STUDIES

Appropriate knowledge of the agricultural and livestock potential of the lands included in the vast economic development plans of the CVC, made the immediate initiation in 1956 of a program of soil classification studies of the region necessary, and as far as possible, the realization of detailed edaphological studies. The greatest advantage and benefit from the soils depends upon the orderly and technical planning of soil management and use.

These tasks were assigned to the Soils Studies Section of the CVC Department of Agriculture, and were initiated with the aid of technicians from FAO and in cooperation with the National Geographic Institute Agustín Codazzi and the National School of Agronomy at Palmira, and occasionally with the Palmira Agricultural Experiment Station. In addition to general soil surveys of the flat zone of the Valley and the analysis of the corresponding samples, the Soil Studies Section has carried on extensive personnel training programs in this field and provided, although on a limited scale, technical assistance services to private and public agencies. It has prepared the preliminary bases for the establishment of later projects in soils research.

a. *General Agrological Surveys*

The general soils surveys for the flat zone of the Valley, in order to discover general properties and characteristics for classification into large geomorphological units, was begun in 1956 and finished the following year. The area covered by this study is 400,000 hectares in the Department of

Valle, and 13,000 in the north of the Department of Cauca. Techniques of photo-analysis and photo-interpretation were used as aids in determining these areas. The aero-photogrametric surveys were carried out entirely at the expense of the CVC, and approved by the Geographic Institute "Agustín Codazzi".

Then in 1958, more detailed soil studies were initiated in the Aguablanca area, where the CVC was to initiate a land reclamation project that year. These were continued during subsequent years, and as of December 31, 1963, the Agrological Studies in the Department covered an area of 350,000 hectares, with greater intensification in the Aguablanca and La Victoria-Cartago zones. Among other purposes, the results of this extensive work have been used as a principal basis for catastral evaluation of rural property in the region. (See Figure V.6.)

In carrying out this work, some 10,000 samples were analyzed, the majority of which were made in the Cooperative Chemical Laboratory which functions as an adjunct to the National School of Agronomy at Palmira and is financed by that institution, the CVC, and the Ministry of Agriculture.

The Department of Valle is the first in Colombia to have such surveys, and the CVC has now at its disposal all the basic information necessary for the initiation of the most complete soil surveys of the region. These will be edaphlogical studies, that is, of all aspects concerned with the perspectives and possibilities of future exploitation of the land in specific zones, with given crops, as well as estimates of the resulting economic capacity. If these studies are not carried out, total utilization of the preceding surveys will not be achieved.

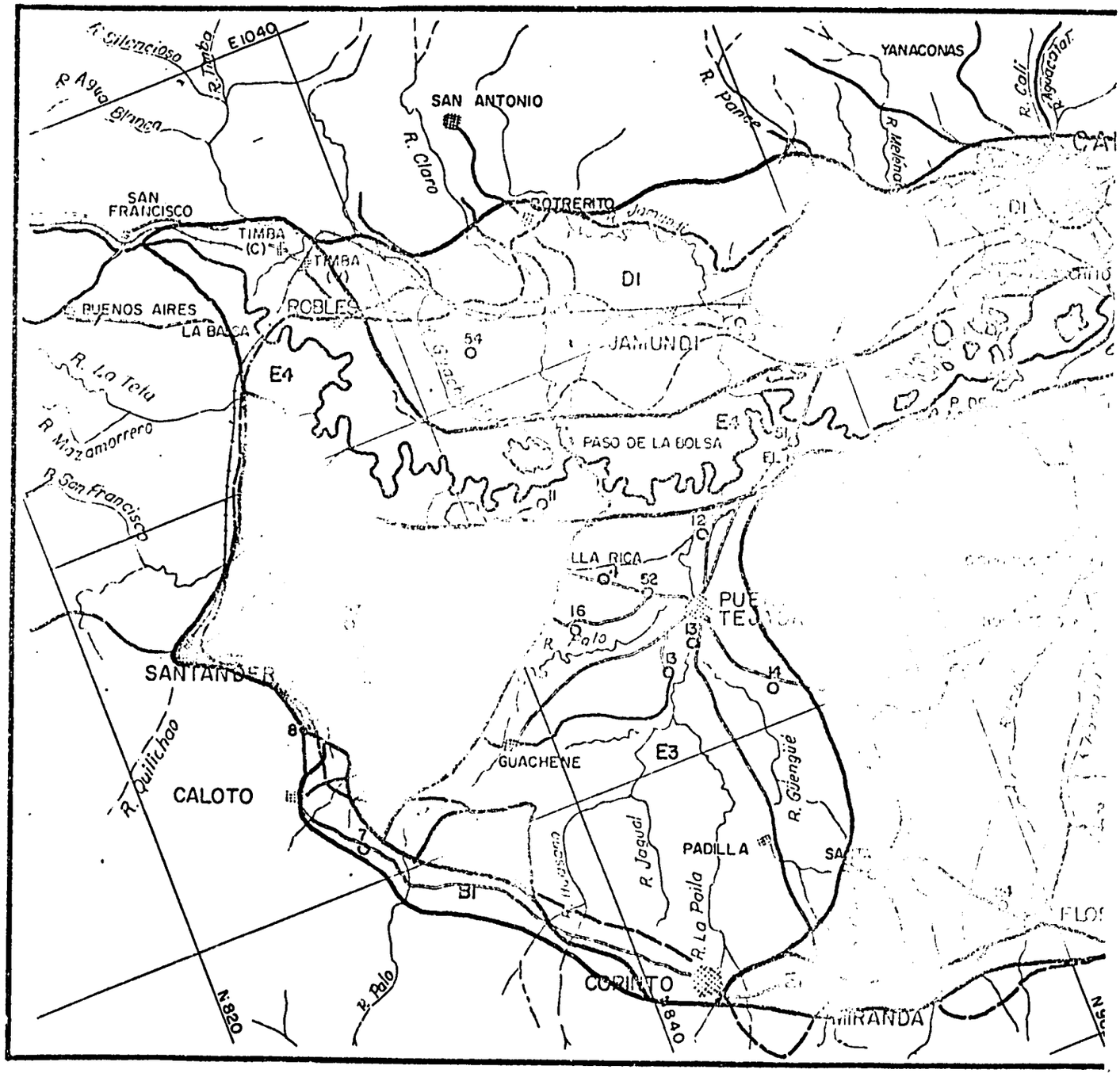
b. *Training Courses*

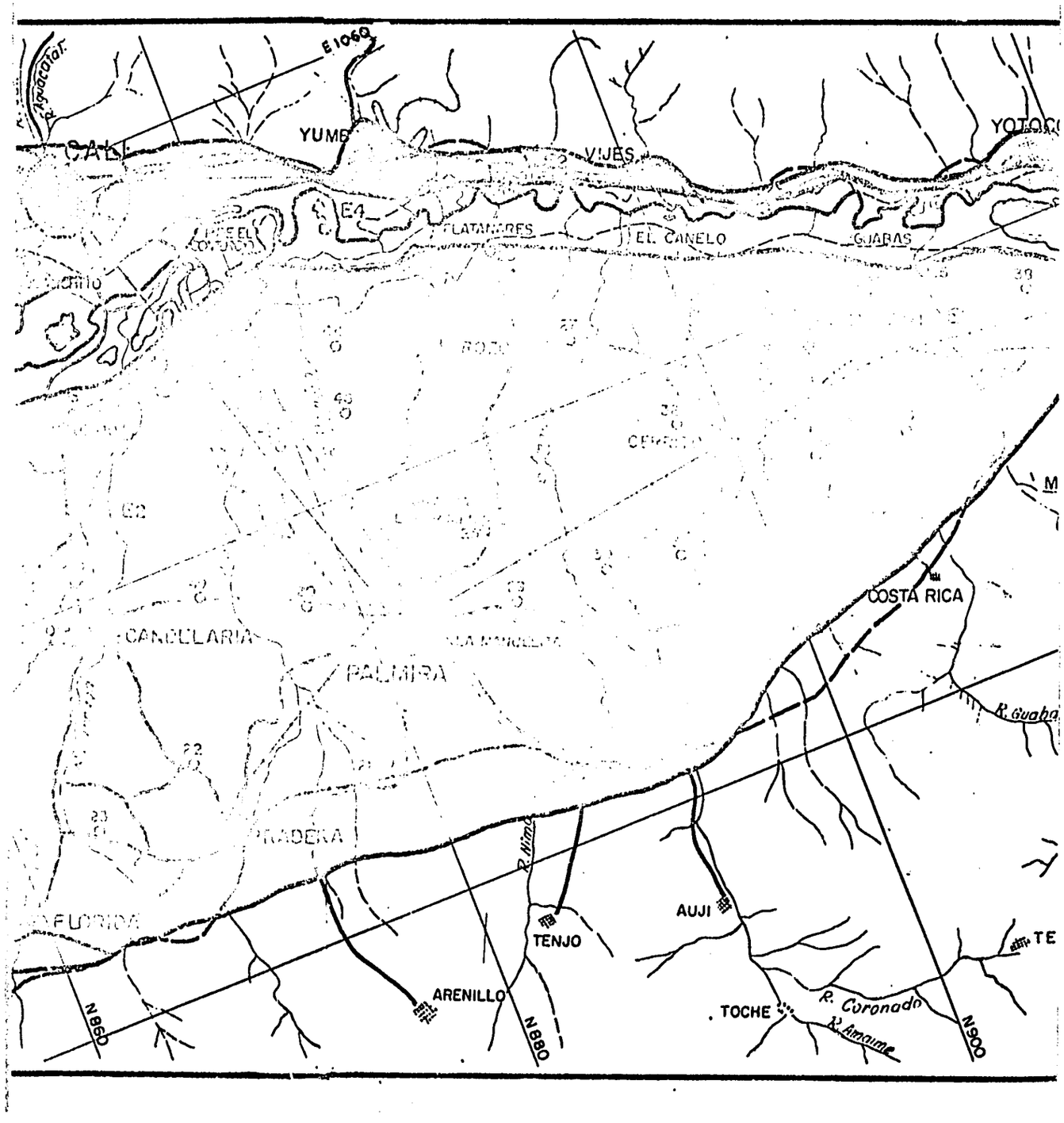
An indispensable part of the work on soils studies initiated by the CVC included the establishment of short courses for the training of technical personnel in this field. During 1956 and 1957 short courses in photo-analysis and photointerpretation were held, and those attending included not only CVC personnel but a good number of technicians from the Geographic Institute "Agustín Codazzi". The directors in charge of the course were Mr. W. E. Reese and Mr. Dacko Gossen, technicians from FAO. The results were considered highly beneficial and achieved the complete acceptance in Colombia of photogrametry as a valuable instrument for soils studies.

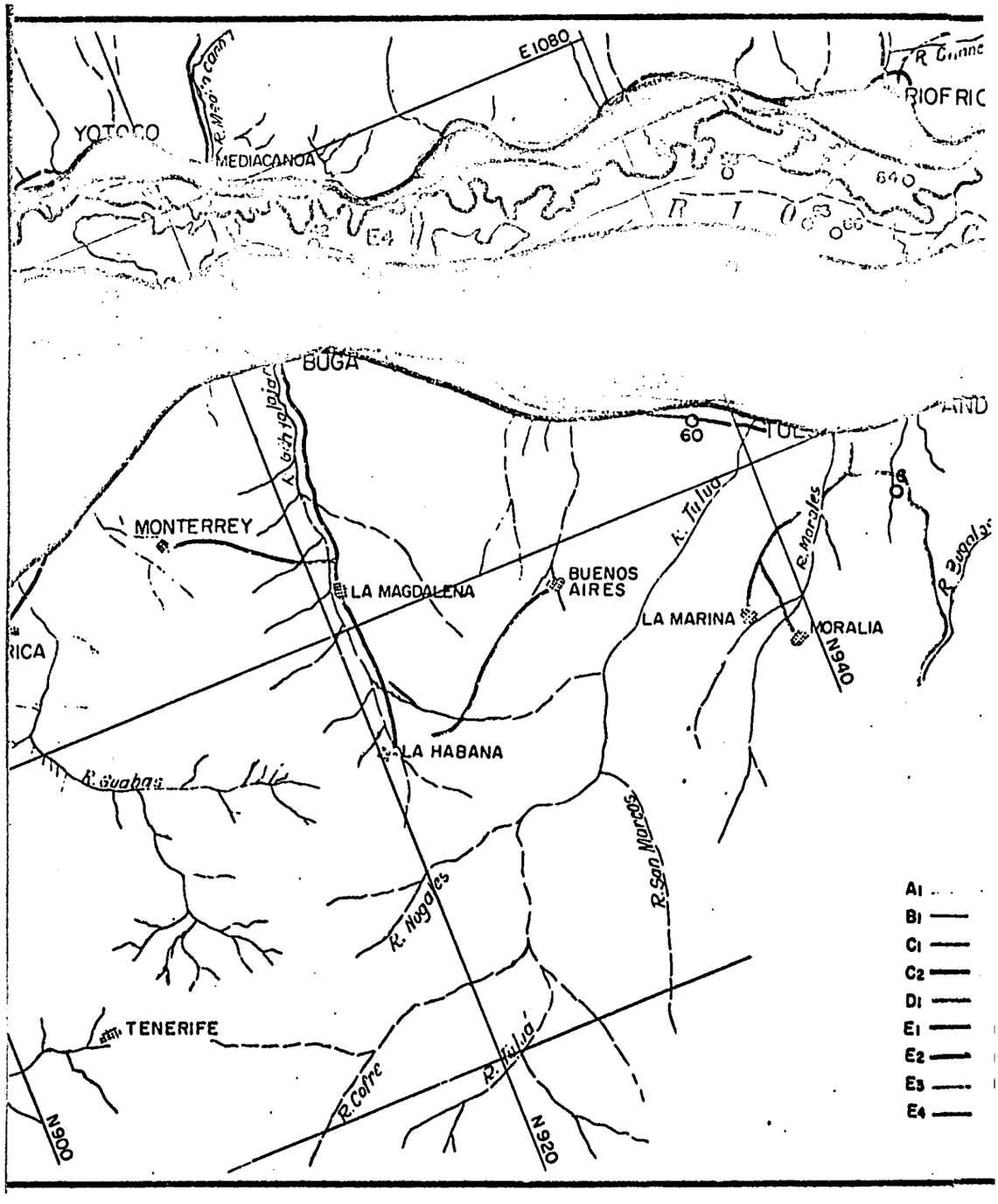
c. *Technical Assistance*

Attempts have been made to publicize the results of the studies carried out and to awaken interest in the study and conservation of soils.

When National Decree 0290 of 1957 concerning Agricultural Development was promulgated, the Soils Section of the CVC carried out, as a


R. Silvacioso
R. Tamba
E 1040
R. Agua Blanca
SAN ANTONIO
R. Claro
R. Ponce
YANACONAS
R. Coli
R. Agua Clara
R. Melendez
SAN FRANCISCO
TIMBA (C)
TIMBA (V)
COTRERITO
DI
BUENOS AIRES
ROBLES
LA BASCA
JAMUNDI
54
E4
R. La Tela
R. Mazamorrero
PASO DE LA BOLSA
R. San Francisco
12
LLA RICA
52
16
R. Palo
13
14
SANTANDER
8
GUACHENE
E3
R. Quilichao
CALOTO
7
R. Jaguai
R. Guengué
PADILLA
BI
R. La Paila
R. Palo
CORINTO
N 820
N 840
MIRANDA


E1060
YUMB
VIJES
YOTOC
E4
PLATANARES
EL CANELO
GUABAS
COSTA RICA
CANDELARIA
PALMIRA
R. Guaba
AUJI
TENJO
ARENILLO
TOCHE
R. Coronado
R. Amaime
N860
N880
N900


E1080
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MEDIACANOA
RIOFRIO
640
E4
BUGA
60
MONTERREY
LA MAGDALENA
BUENOS AIRES
LA MARINA
MORALIA
N940
LA HABANA
R. Guabas
R. Nogales
R. San Marcos
R. Tuluá
R. Morales
R. Cofre
TENERIFE
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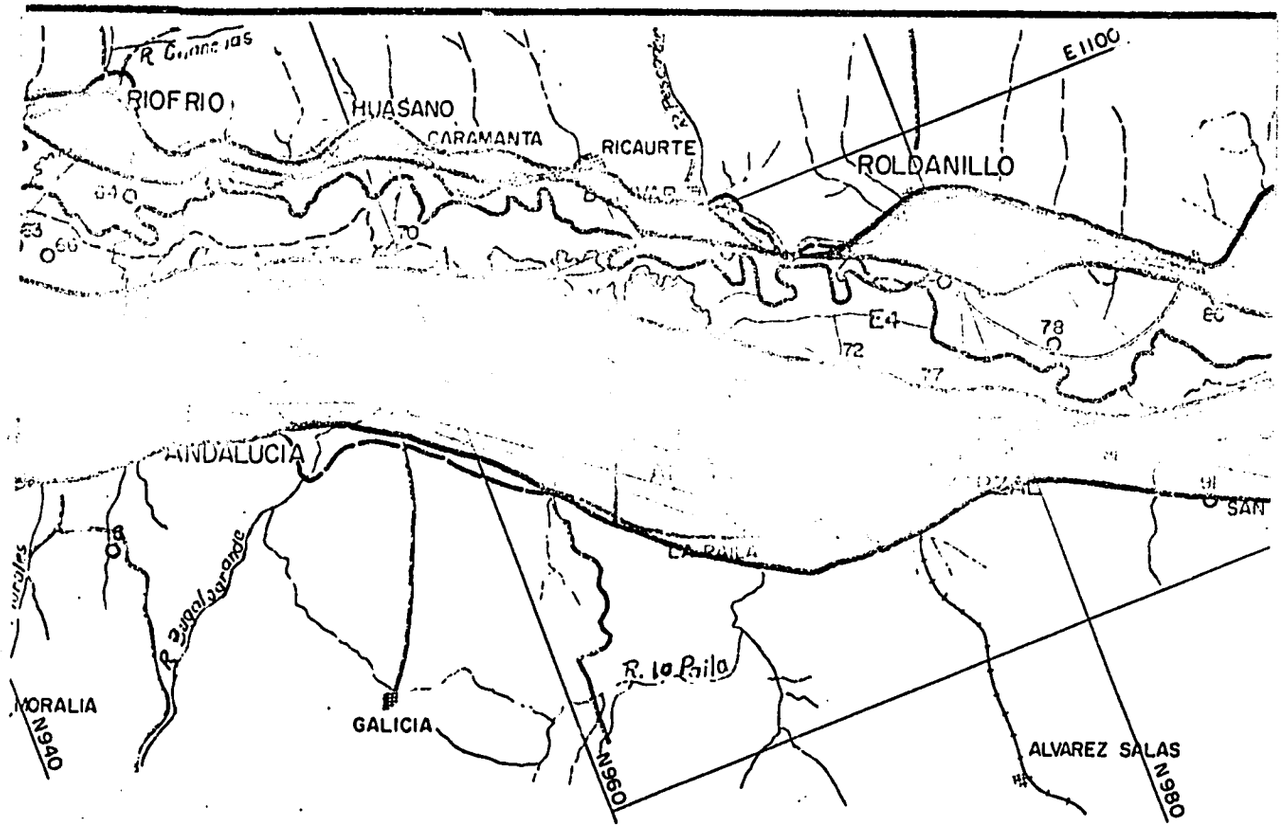
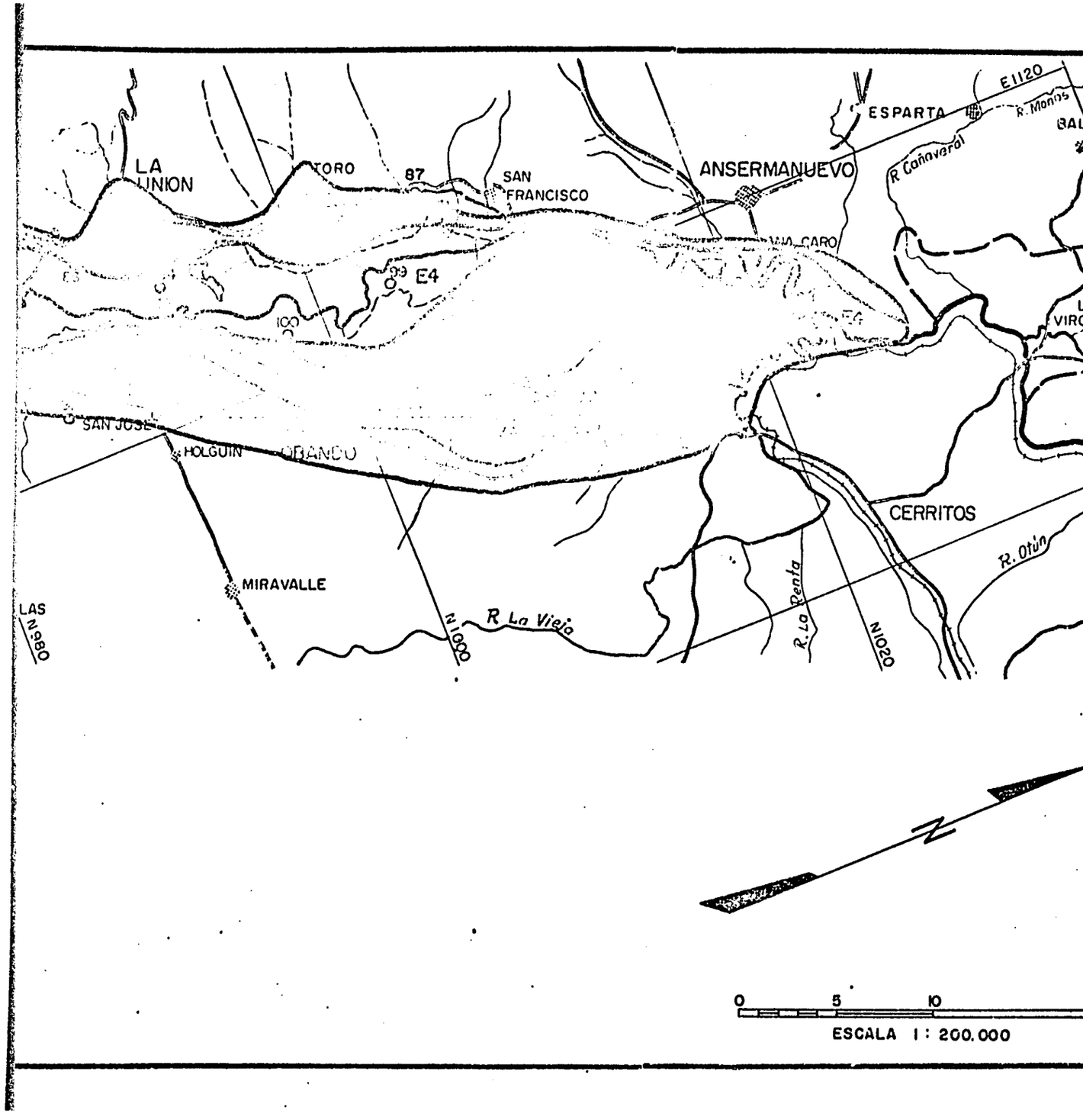
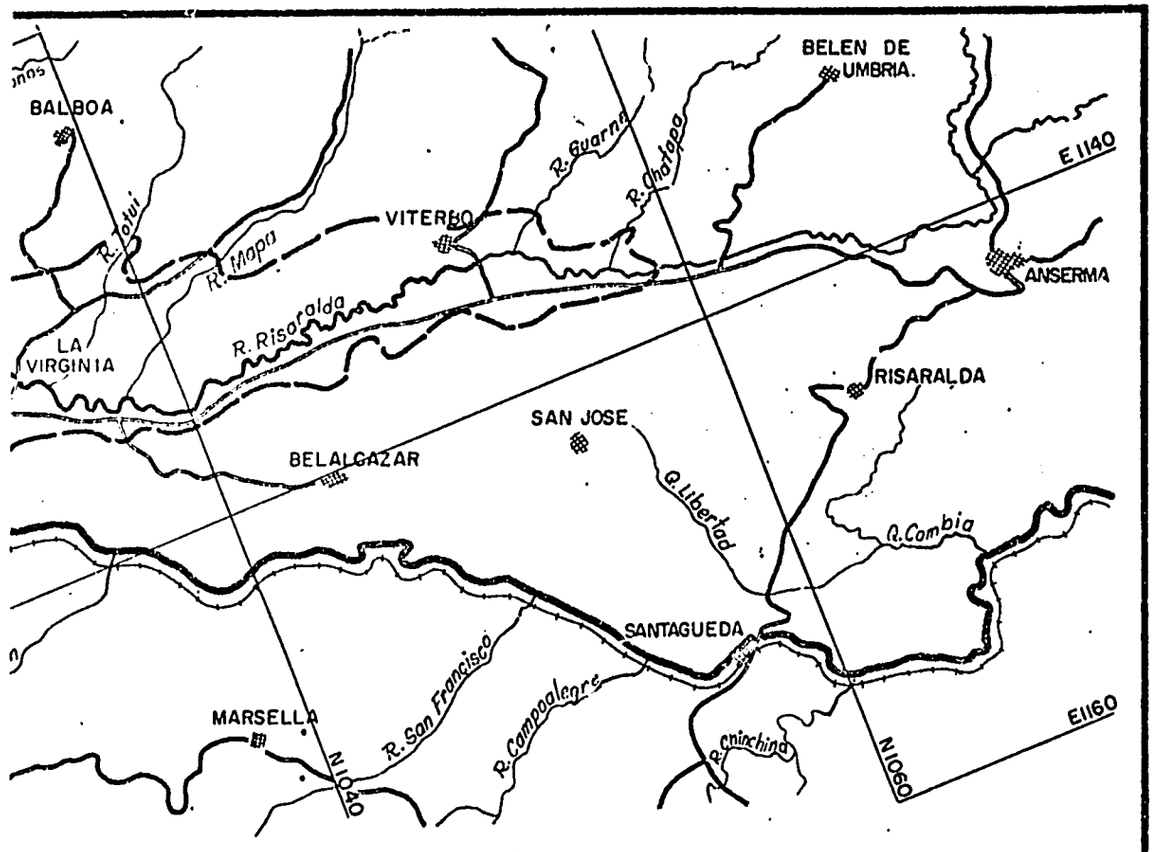
N920
A1
B1
C1
C2
D1
E1
E2
E3
E4



CONVENCIONES

A1 — LA TERRAZA ALTA DISECTADA DE ZARZAL.
B1 — LA TERRAZA DISECTADA DE CALOTO
C1 — LA TERRAZA POCO DISECTADA DE VILLA RICA
C2 — LA TERRAZA NO DISECTADA DE CARTAGO
D1 — EL COMPLEJO DELTA - ABANICO DE JAMUNDI
E1 — EL ABANICO PEDREGOSO DE MIRANDA
E2 — LOS ABANICOS Y PLANOS ALUVIALES
E3 — EL PLANO ALUVIAL DE PUERTO TEJADA
E4 — LA PLANADA ALUVIAL DEL RIO CAUCA


LA UNION
TORO
87
SAN FRANCISCO
ANSERMANUEVO
ESPARTA
E1120
R. Monos
R Cañaveral
E4
SAN JOSE
HOLGUIN
CERRITOS
R. Otún
MIRAVALLE
R La Vieja
R. La Penta
N1000
N1020
LAS
N980
0
5
10
ESCALA 1 : 200.000



CVC
CORPORACION AUTONOMA REGIONAL DEL CAUCA

LOCALIZACION DE PERFILES Y SU POSICION RELATIVA A PAISAJES FISIOGRAFICOS

SOIL PROFILES AND THEIR RELATION TO PHISIOGRAPHIC DIVISIONS

20 Km.

Gráfica, *Figure.* V. 6

Cortesía de la CVC *Courtesy of the CVC*

first stage, the demarcation of the pilot zone of the Cauca Valley to which this Decree was to apply, then the location of the respective properties, and later on the realization of several edaphological studies for a group of individual farms, in order to determine the predominating soil types and establish specific recommendations for the management and use of the land. Although this type of aid is now provided by the Agricultural Extension Service, the Soils Studies Section has followed up the cases of these 173 individual farms, in addition to continuous collaboration supplied to agro-industrial enterprises, such as Empresa Agrícola del Occidente, Inc., concerning the potentials of their soils.

As a result of the close cooperation maintained in this field with the National School of Agronomy in Palmira, officials of the CVC have supervised six theses for students graduating from this School, which besides interesting the writers in possible future professional work with the CVC, were on topics on which the CVC needed research. The theses supervised were:

1. Study of the waters in the saline region of the Valley;
2. Study of the physical and chemical properties of the acid soils in the south of the geographic Cauca River Valley;
3. Study of the salinity of some soils in the Department of Valle;
4. Detailed soil survey of a part of the Municipality of Palmira;
5. Study of soils, conditions of exploitation, and pasture grasses in Palmira.

The determination of forest reserve zones for the Cali, Meléndez, Lilí, Cañaveralejo, and Pance Rivers, at that time administered by the Municipal Utility Company of Cali, as well as the Anchicayá River watershed required important orientation work in soils, and these were carried out entirely by the specialized personnel of the CVC.

Besides their work directly within the CVC development area, CVC soils personnel carried out (1) a general soils survey of 17,000 hectares in the north of the Department of Cauca between the Palo River and Santander de Quilichao, in 1963, by contract between the CVC and INCORA, and (2) a photoanalytic study of the Department of Atlántico, covering an area of approximately 2,000 square kilometers, in cooperation with the Geographic Institute "Agustín Codazzi".

Further, the CVC Soils Section is conducting experiments on individual farms with respect to the effects of different kinds of fertilizers on different soils, in cooperation with the CVC Extension Service and FAO, in order to make the necessary recommendations.

Finally, the close cooperation that exists between the CVC Soils Service and the Geographic Institute "Agustín Codazzi", the Agricultural

Experiment Station, and the National School of Agronomy at Palmira brings about continuous and mutual loan of technical assistance and advice, and even financial aid, between these three entities.

4. ADMINISTRATION OF WATERSHEDS

(Forest and Soil Conservation Service)

All the watersheds of Colombia suffer from serious problems of deforestation and erosion. The causes of these problems are always the same: poor land use, destruction by fire (accidental or intentional) of the natural layer of vegetation, and cultivation of crops on hillsides so steep that erosion is inevitable. And these causes are in turn the result of the system of land tenure. On the one hand, the squatters, not having access to the flat areas, settle on the hilly and mountainous public lands —and even that privately owned— and here they are allowed to cut down trees and plant crops in areas that should remain in permanent forests; and on the other hand, individuals who have property rights in certain hilly areas already opened, expand into adjacent forest lands by cutting down the trees.

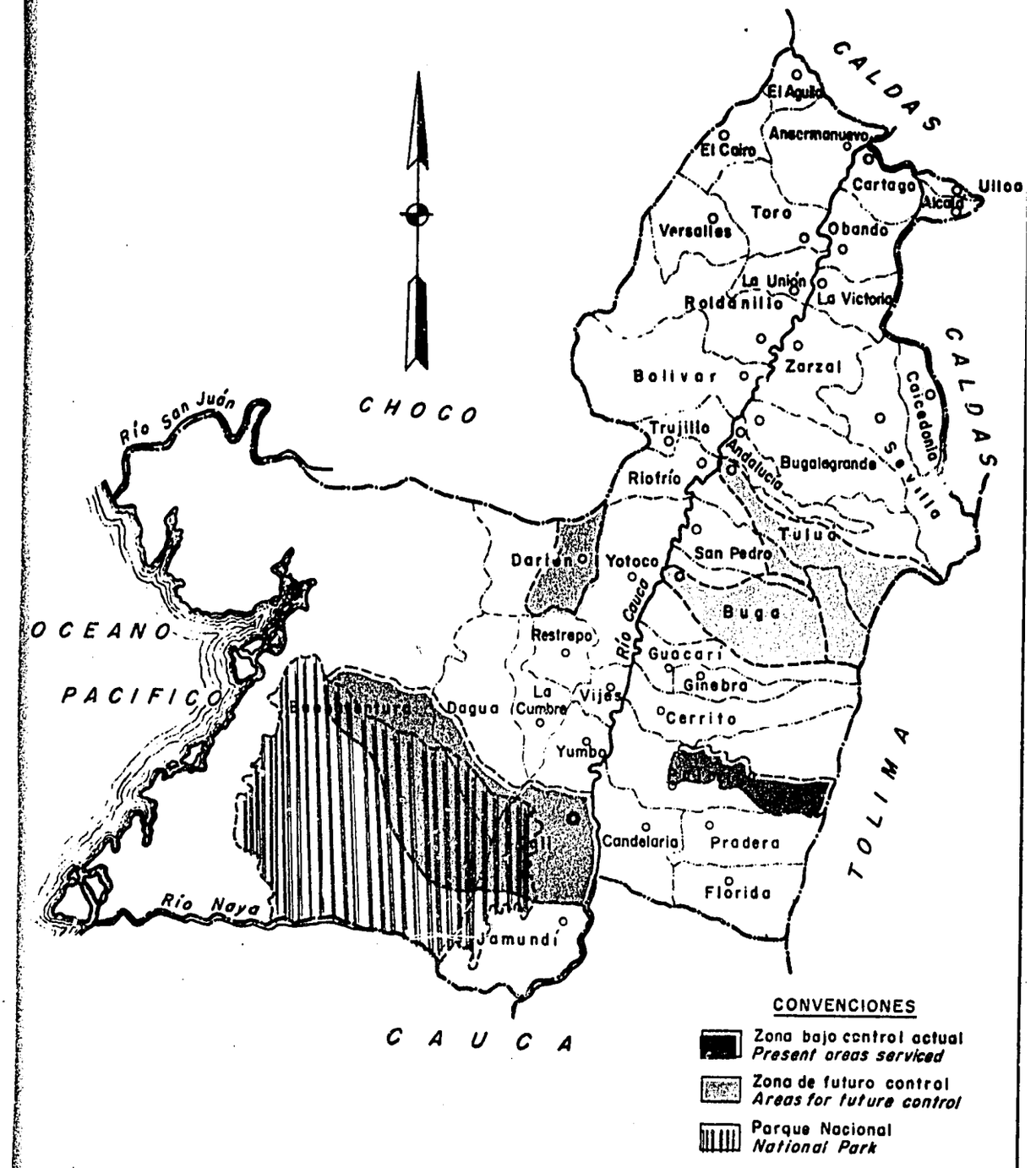
The results of this situation are critical in some parts of the country and have seriously affected the sources of water for human, agricultural, and industrial use.

The organizations in charge of stimulating and executing agricultural policy have been responsible for soil conservation and the preservation of fauna and flora and watersheds. Unfortunately, the budget appropriations that each agency receives separately for this work are too small to carry out an adequate program, besides the fact that there has never existed sufficient competent personnel trained in any consistent and coordinated way. Only during the past decade have there been some few but decidedly vigorous attempts designed to correct certain specific problems in Medellín, Pereira, and Cali.

The national government, convinced that only local action could awaken interest in the adoption of the appropriate corrective measures, delegated the task of administration of watersheds to the departmental governments, by means of Decree 703 of October 7, 1959. In the case of the Cauca Valley, however, this was delegated a year later to the CVC, by Decree 1707 of 1960 (Article 4, paragraph i, j, and k). Only the activities of a specifically policing nature were not —nor could be— delegated and exercised by departmental officials.

a. *Watersheds Serviced*

In spite of the legal authorization which permits intervention in the management of all the watersheds in the region under its jurisdiction, the CVC considered it wiser to begin activities in this field on a limited



Escala aprox. 1 : 200 000	CUENCAS FORESTALES *WATERSHEDS* VALLE DEL CAUCA	

scale, and only in forestry, in order to acquire experience which would later allow it to assume total responsability on a more solid basis. Furthermore, it has attempted to interest the municipal authorities in whose jurisdictions the watersheds are located, or agencies which by nature of their functions are directly involved with them, in the management of these watersheds. As a result of this policy, the CVC has undertaken responsibility for forest conservation programs in only three zones up to early 1964, as follows:

1. In the Municipality of Cali, by virtue of a contract signed with the Municipal Utility Company of Cali, for the Cali, Cañaveralejo, Meléndez, and Pance Rivers, beginning May 1, 1962.

2. In the Municipality of Palmira, since November 1963, for the Nima River watershed, in cooperation with the authorities of that city and the Municipal Utility Company of Palmira. In contrast to the case of Cali, where the CVC acts only by delegation from that Municipality and its Municipal Utility Company, in the case of the Nima River the CVC is, on the one hand, co-proprietor with the Municipality of Palmira of the forest reserves and public lands existing there (National Decree 0090 of 1960), and on the other hand, administers the respective program with the assistance of a Board composed of representatives from the CVC and from the Municipality of Palmira and from its Municipal Utility Company.

3. In the Municipality of Buenaventura, the Anchicayá River watershed forest reserves have been assigned by the national government to the Anchicayá Hydroelectric Plant (CHIDRAL), one of the enterprises affiliated with the CVC. This zone was managed jointly by CHIDRAL and the Ministry of Agriculture until December 31, 1963.

At present, steps are being taken to incorporate the Amaime River watershed in the Municipality of Palmira, that of the Guadalajara River in the Municipality of Buga, that of the Tuluá River in the Municipality of Tuluá; and that of the Calima River in the parts located in the Municipalities of Darién and Restrepo.

The experience of the few months that the CVC has been administering the Cali, Nima, and Anchicayá watersheds reveals that with only a slight increase in supervising personnel, the latter two could be assured the necessary effective unity of administration.

b. *Forestry Program*

In the Cali, Cañaveralejo, Meléndez, Lilí, and Pance River watersheds, for which protection measures had been initiated by the Municipal Utility Company of Cali and the Ministry of Agriculture with the assistance of the Colombian-American Technical Agricultural Service (STACA), the CVC has continued exercising strict vigilance to prevent brush and forest fires, as well as licensing for selective cutting and some clearing of underbrush for agricultural purposes.

For the carrying out of these tasks the CVC has fortunately had sufficient well-trained personnel available, as well as the necessary equipment —horses and donkeys, corrals, complete riding equipment, arms, radio-telephonic equipment, binoculars, vehicles, and housing and offices at key points.

Simultaneously, measures have been taken to begin more long-range activities, such as the acquisition of lands (on behalf of the Municipal Utility Company of Cali, which obtained a loan from the Agricultural Credit Bank for this purpose) and reforestation programs, both natural and artificial.

With respect to artificial reforestation, a contract was made at the end of 1962 with the Forestry Institute at Medellín to establish an experimental nursery of pine trees on the farm "Brasilia" at Pichinde, some 1,700 meters above sea level duplicating simultaneous experiments at "Piedras Blancas" (Medellín) and at Neussa (Bogotá). The Forestry Institute at Medellín has provided the cost of supply and maintenance of the saplings, and the CVC the cost of transplanting and vigilance. As of December 31, 1963, 18,432 pines of the elliottii, patula, taeda, echinata, palustris, montezumae, michoacana, equisetifolia, and labertina species had been transplanted to definitive sites. Some 10,000 saplings of the Cypressus lusitanica were also obtained from the Forestry Institute of Medellín half of which were planted in the El Diamante Sector and half at Yanaconas.

In addition to this cooperative activity with the Forestry Institute at Medellín, the CVC carries on intensive activities in this region of collecting seeds from native species (especially the *cascarillo* and *tumbamaco)*, as well as studies of regional flora which are progressing satisfactorily.

Preservation of wildlife has also been a concern of the CVC. Headquarters for this activity are at the "El Silencio" Experiment Station which it administers in cooperation with the departmental government. Research on several native bird species (pavas, guacharacas, etc.) as well as some imported ones (pheasants), and on the ichthyology of the water sources of the region is being carried out.

The attitudes of the people living in these areas toward the activities of study and reforestation, and above all, with respect to control and vigilance, has improved substantially with the passage of time. At the beginning the attitudes were openly hostile, but when the CVC acquired some of the property essential to these programs and through the joint action of its Forestry and Extension Service began to set standards and give concrete assistance concerning the possible agricultural activities which could be carried on on some of the farms of the area, the farmers, and particularly the squatters, have gradually begun to cooperate fully. On the Brasilia Farm an orchard of temperate climate fruit trees has been established, planted on terraces; and on several farms crops of strawberries

and *curubas* have been started. In addition, the farmers have been given aid in the care of their animals such as medicines, vaccinations, etc.

2. In the Nima River watershed the activities being carried on have been initially concentrated on the establishment of a service of vigilance and control at strategic points, with well-trained personnel; and the demarcation of areas in which agriculture can be carried on without great damage is advancing rapidly. The existence of an increasing number of squatters, and even of proprietors in this region, makes the achievement of the goals set particularly difficult. However, it is hoped that the encouraging experiences of the Cali area can be repeated there. By virtue of an agreement between the CVC and INCORA, the joint acquisition by the two agencies of private lands which should be totally reforested has recently been started.

3. In the Anchicayá River watershed, the CVC has continued the programs of vigilance and control begun by CHIDRAL and the Ministry of Agriculture, and has made them even more strict. Progress in the work there will permit the initiation within a short time of real reforestation programs in areas which were unfortunately completely deforested.

c. *"Los Farallones" National Park*

Not only for purely recreational facilities, but also for the purpose of conserving in its primitive state, for the enjoyment of present and future generations, the outstanding aspects of geology, flora and fauna, —and for the purpose of preserving them from total destruction—, the CVC sponsored, in cooperation with various private and official agencies, the creation of the Farallones National Park and of the Museum of Natural History of Valle. While the Museum is already functioning, and is provided with its own patrimony and autonomy, the park is still only under study. These studies, however, are necessary before future action can be undertaken. The Coordinating Board for this Park, which is responsible for these studies, is comprised of representatives from the CVC, the Ministry of Agriculture, the Governor of the Department, the III Brigade of the Army, the Cali Society for Public Improvements, the Cauca Valley Action Unit, the Farallones Lions' Club, the Rotary Club, and the Tourist Office of Valle. The Board has organized itself into five committees for the purpose of making these studies, as follows: Legal, scientific, recreation, education and publicity, and finance, all of which are working actively.

The Coordinating Board of the Farallones National Park also acts as the Board of Directors for the Museum of Natural History of Valle.

With regard to both the Museum and the Park, it should be noted that cooperation has been received from agencies such as the International Union for the Conservation of Nature and its resources, with headquarters in Switzerland; from the Department of the Interior of the United States, and from the National Audubon Society.

d. *Cooperation with other Agencies*

An essential part of the work carried on by the Reforestation and Soil Conservation Serevice of the CVC, it should be emphasized, is the continuous and close collaboration with both public and private agencies, national as well as international, such as the Forestry Institute of Medellín, the School of Agronomy at Palmira, the School of Agronomy at Ibagué, the Ministry of Agriculture, the Municipal Utility Companies of Cali and Palmira, the Anchicayá Hydroelectric Plant, and the Colombian subsidiary of Paper Container Corporation of America located in Cali, all of which are presently carrying on some type of cooperative activity with the CVC, as can be seen from the discussions of this chapter.

VI

Financing the CVC

A. BRIEF GENERAL HISTORY

Financing the CVC has not been an easy task. There have been moments when pressures by a small but influential group of large landholders on the one hand, and lack of understanding on the part of the government on the other, made it seem that the plan would have to be suspended. Only the will and the persistence of the directors saved the institution from failure on more than one occasion.

As in many other cases, the statutes which established the CVC were initially limited, as far as financing is concerned, to setting aside an appropriation [1] for the advancement of its initial projects; on future occasions the respective possible appropriations would be considered and regulated as they arose. The general consensus, however, was that the national government and the departmental governments of Caldas, Cauca, and Valle would provide the new organization with sizable annual contributions for the basic studies and execution of projects, until profits from some of these projects could contribute toward self-support. And as a means of assuring local support, which would represent concrete efforts on the part of the people of the region, a property surtax levied in the departments included in the program would perhaps be established.

As mentioned earlier, the CVC began activities with the good will of President Rojas; in fact, its creation was a legal act of his Government. But as the Chief Executive began to concentrate in his hands and those of his lackeys all the means of power, he soon discovered that the strengthening of a decentralized and apolitical institution was not the best means to satisfy his insatiable thirst for power. It was for this reason that he began, and carried out until his overthrow, a sustained campaign designed to obstruct the programs of the CVC, particularly with regard to its financing. To this end he gained the firm support of the latifundistas and other persons in Valle and Cauca who opposed the plan because of their vested interests.

1 One-half million pesos, which were to be provided in equal parts by the central government and the Department of Valle.

1. *Studies, Proposals, and Promises*

The last days of 1954 and the first four months of 1955 were employed in the task of organizing the new institution, preparing the basic statutes of the organization, and deciding upon the major projects to be undertaken. It was only around the middle of March 1955, and then when the first contribution from the Department of Valle had already been exhausted, that serious and intensive studies were begun regarding the possible future sources of current and other income for the Corporation. As it would obviously be some time before the Corporation could derive any income from its projects, its immediate energies were devoted to obtaining (a) income which did not come from its operations (a national real estate surtax and taxes on the sale of domestic alcoholic beverages in the Cauca Valley), (b) contributions, grants, and transfers, and (c) initial steps to secure loans.

After a long series of proposals and counter-proposals, towards the end of 1955, the CVC Board of Directors agreed to ask the government for the following:

1. A contribution of 100 million pesos in cash in installments between 1956 and 1960, of which 77.5 million would be used for electrification, 4 million for channel correction of the Cauca River, 14.8 million for irrigation and drainage, and 3.7 million for administration, management, and planning;

2. The establishment of a national real estate surtax levied in the departments of Valle, Cauca, and Caldas, which should take effect on January 1, 1956. The proceeds of this surtax collected by the municipal treasuries would be turned over to the CVC directly and used only for electrification projects;

3. The transfer of the interests owned by the national government in the Anchicayá Hydroelectric Plant to the CVC;

4. The establishment of a valorization tax to be applied to the CVC's land reclamation projects; and

5. Authorization to obtain foreign loans for some of the Corporation's projects.

The income gained from the first four sources would provide, over time, sufficient capital for future projects, and the CVC would presumably not have to request additional official help.

The Corporation received only promises during the remainder of 1955. The expected action was to have been taken immediately, but was delayed for another nine months. Finally, in an interview with President Rojas on December 1, 1955, the directors of the Corporation clearly explained to him that "the only remaining alternative was that, if the government did not fulfill its promises of contributions to the CVC, the Cor-

poration would have to suspend its activities". Rojas promised to try to find an immediate solution to the problem, but he warned them of the opposition that existed to both the 4 per 1000 surtax and the national contribution of 100 million pesos proposed for the CVC.

2. *Eighteen Critical Months*

The CVC directors continued to exert pressure on the national government; and on January 31, 1956, Decree 0160 was issued authorizing, (a) the municipalities to levy a real estate surtax of 4 per 1000, and (b) a national contribution of 100 million pesos to the CVC during the period 1956-60.

As a result of this measure, opposition to the CVC became unusually strong; and national public officials, departmental officials in Cauca and Caldas and in other official establishments in Valle, and, of course, the landowners of Valle, represented by the Sociedad de Agricultores and the Sociedad de Ganaderos all united against it.

Sra. Josefina Valencia de Hubach, Governor of Cauca, warned that her department was not able to increase its real estate tax nor to make a direct cash contribution, which if made, would have been equivalent to only 5 percent of the total contributed by the national government (30 percent), by the departmental government of Valle (50 percent), and by that of Caldas (15 percent) together. The Governor also claimed that her department would not receive any benefit from the CVC's programs; and she even expressed doubts that "it would be technically possible to bring power generated in Valle as far as Popayán". In conclusion, she thought that it would no longer be beneficial for Cauca to continue as a part of the CVC.

With respect to Caldas, the Governor at that time, Col. Gustavo Sierra Ochoa, although less violent than Sra. Hubach, shared her opinions in so far as they were applicable to Caldas. As a result of the position taken by these two partners in the Corporation, the only agreement that could be reached concerned joint operation of agricultural extension services in Caldas, Cauca, and Valle by the CVC and financed jointly by the departments and the Ministry of Agriculture. Caldas and Cauca never carried out their part of the promise, and Valle only in 1956-57.

Meanwhile the large landowners and ranchers of Valle, organized into a pressure group that has been picturesquely known since then as the *Orden del Bramadero* (The "Order of the Moo-ers") redoubled their efforts to prevent the establishment of the 4 per 1000 surtax throughout Valle. Nevertheless, the then Governor of Valle, Colonel Alberto Gómez Arenas, decreed that the surtax would begin to take effect on July 1, 1956; but only after he had learned in the CVC Board of Directors that on June 18, 1956, there was a deficit balance in the Banco Industrial of 1,350,000 pesos, and that the Board of Directors had issued a statement which said:

"The Board of Directors empowers Colonel Alberto Gómez Arenas to find out from the President of the Republic if there exists any obstacle to the normal development of CVC programs because of the presence of any member or members on the Board, and, if such be the case, authorizes him to present to the President the resignation of that member, or if also the case, the collective resignation of the Board".

This statement was made because it was thought that the Corporation's opponents had succeeded in planting suspicions of a political nature in the President's mind with respect to some of the directors.

Yet, no move was made by the national government to make the contribution which was due in 1956, even after a formal promise had been made by President Rojas to CVC Consultant David Lilienthal and to the Board members in mid-July following a long series of evasions, promises, and withdrawal of promises on the part of the President.

The relations between the CVC and the government seemed to be deteriorating to such an extent that the government found it necessary to have the Minister of Finance, Luis Morales Gómez, make a public statement in Cali that the nation was giving its full support to the CVC. The announcement further stated that: (1) the nation would transfer its shares in Anchicayá to the CVC as a contribution; (2) the nation would make a cash contribution of 26.5 million pesos to the CVC between 1957 and 1959; (3) the construction of the Calima Power Project and the Manizales-Popayán transmission system were authorized; (4) CVC would have charge of the agricultural extension service for Caldas, Cauca, and Valle; (5) the CVC was authorized to begin planning irrigation and drainage programs, and (6) various other basic studies for the region.

But of all these promises, the only result, four and one-half months later (April 2, 1957), was an announcement to the Board of Directors made by the then Governor of Valle, General Jaime Polanía Puyo, on behalf of the national government to the effect that:

1. The CVC "should completely disengage itself from programs of electrification, which will be developed by the Corporación Nacional de Servicios Públicos, and that for this reason, the nation's shares in Anchicayá will not be transferred to the CVC;

2. The national government has decided that there will be no cash contributions to the CVC, as had been repeatedly offered. On the contrary the corporation should limit itself exclusively to agricultural projects, using the proceeds of the 4 per 1000 surtax".

Simultaneously with the above statement General Polanía Puyo (as a member of the Board of Directors), presented to the Board the letter of resignation by the Executive Director of the Corporation which the latter had sent to him on April 16, 1957. The Board did not accept the resig-

nation of the Executive Director, but instead requested that Polanía Puyo transmit the resignation of the entire Board to President Rojas.

Meanwhile, an attempt to obtain a foreign loan to finance the Calima Hydroelectric Plant and to expand the Yumbo Thermoelectric plant had been frustrated because of the hostile attitude of the government and the latifundistas, who intervened to discourage it, before the International Bank of Reconstruction and Development.

In May 1957, however, the dictatorship fell and with it the long period of extreme government hostility toward the CVC.

3. *The Recovery of Official Favor*

The fall of the dictatorship opened new horizons of hope for financing the CVC and especially for its permanent survival as an official institution in spite of the desperate and redoubled efforts of the latifundistas throughout the entire nation, as well as in Valle, to impede it [2].

During the first four months that the Military Junta governed the country —between May 10, 1957, and August 7, 1958—, the directors of the CVC explained to the new officials the objectives of the Corporation and the urgency of obtaining the nation's support for its financing so that it could continue and advance all of its programs and plans and not merely those very limited projects to which the Rojas regime had reluctantly agreed to.

The new government was sympathetic to the Corporation's situation, and at the beginning of October 1957, announced it would contribute to the CVC's financing. Agreements were subsequently made to transfer, as the nation's contribution to the CVC, the national government's shares in Anchicayá. Negotiations were reinitiated to obtain a loan in pesos from the proceeds of the sale of United States agricultural surpluses in Colombia and another loan in dollars from the International Bank. The national government gave its guarantee for these loans. The first two measures were completed by June-July 1958, and the IBRD loan was obtained in May 1960, under the administration of Alberto Lleras. It was during Lleras' term of office that the CVC received its strongest official support [3].

2 At the request of the Valle Division, the Sociedad de Agricultores de Colombia (Colombian Society of Agriculturalists), acting through Jorge Steiner, one of its officials, announced its opposition to the CVC.

3 In spite of this support, it was impossible to get the revenue collected in the Department of Valle under Tax Reform Law 81 of 1960, which provided that two-thirds of the proceeds of a special 3 percent tax on taxable cash income of all contributors be devoted to electrification, and which had been until that date devoted to the financing of the Paz del Río Steel Mill, delivered to the CVC. The Department of Valle pays the entire tax but the proceeds go to other departments. This was a gross injustice, an incomprehensible discrimination against this region of the country. That the CVC already had other resources

But at the same time that these significant advances were taking place, the CVC was facing tremendous difficulties with its local opponents over the 4 per 1000 surtax. In fact, on August 2, 1957, Attorney Gonzalo Gaitán presented a charge of inequity before the Supreme Court involving the third, fourth, and fifth articles of Decree 0160 of 1956 that authorized the municipalities to impose the surtax. And, on September 18, 1957, various demands for nullification were raised against the resolutions in municipalities where these had been put into effect [4]. All these demands were immediately challenged by the CVC. And even before the Supreme Court could hand down a verdict, a judge of the first instance of the Valle Court of Administrative Disputes hastened to set in motion the repeal of the municipal resolutions, even after he had been challenged and was without the legal competence for dealing with the case, for which act he was sued by the CVC. The then Governor of Valle, Absalón Fernández de Soto, objected to the acts of repeal of the 4 per 1000 surtax resolutions, which was followed by resistence to payment of the tax on the part of a growing number of proprietors and even to its levy by some of the municipalities. The situation with respect to this land surtax was finally normalized when by reducing it from 4 per 1000 to 3 per 1000, Law 25 of 1959 established it as a national surtax in the Department of Valle.

Later, as the CVC gradually consolidated its position, it began to obtain other sources of revenue and capital and a series of contributions, grants, and transfers in addition to new IBRD loans and loans from the proceeds of the sale of U. S. agricultural surpluses in Colombia, which enabled it to execute and initiate expensive and important major projects.

4. *New Official Coolness*

But, upon the completion of its tenth anniversary as an autonomous regional institution, the CVC once again finds many of its negotiations over the financing of some of its projects frustrated. In part, this is due to a new outbreak of official misunderstanding at high government levels, which are apparently interested in the development of local endeavors; but also in part to all-absorbing centralism and even to indecision on the part of the International Bank with respect to some of the immediate programs of the CVC, ie. Calima II and Salvajina.

B. SPECIFIC SOURCES OF INCOME

Table VI.1 shows, by years, the different sources of income which the CVC has had during the years 1955-1963, and the amount. Of the

available was the rationalization given to justify this refusal. The remaining third of the proceeds of this tax continued to be devoted, as the entire tax had been before, to the Paz del Río Steel Mill.

Nor did other attempts to obtain shares of the national revenue meet with the success hoped for.

4 See Chapter III for the motivations behind these requests.

TABLE VI.1

CVC: Sources of Income, 1955-1963

		1955	1956	1957	1958
1.	*Current Income*	—	2,527,018	9,318,900	11,563,300
1.1.	*From Operations*	—	—	98,197	122,649
1.1.1.	Sale of Electric Power (Excluding Anchicayá)	—	—	98,197	122,649
1.1.2.	Sale of Other Services	—	—	—	—
1.2.	*Not Derived from Operations*	—	2,527,018	9,220,703	11,440,651
1.2.1.	National Real Estate Tax	—	2,527,018	9,220,703	8,600,774
1.2.2.	Tax on Domestic Liquors sold in the Department of Valle	—	—	—	2,839,877
2.	*Appropiations, Grants, and Transfers*	1,300,000	1,143,065	376,180	20,768,448
2.1.	*From the National Government*	250,000	259,065	120,180	20,768,448
2.1.1.	For Agricultural Extension Services and Others Works	250,000	259,065	120,180	500,000
2.1.2.	Cession of the Nation's share in CHIDRAL	—	—	—	20,268,448
2.1.3.	Appropriation for Power Distribution Companies	—	—	—	—
2.1.4.	Appropriation for Improvement Works at Buenaventura	—	—	—	—
2.2.	*From the Department*	1,050,000	884,000	256,000	—
2.2.1.	For Agricultural Extension Services and Other Works	1,050,000	884,000	256,000	—
2.2.2.	Appropriations for Power Distributions Companies	—	—	—	—
2.3.	*From the Municipalities of Valle*	—	—	—	—
2.3.1.	Appropriations for Power Distribution Companies	—	—	—	—
2.4.	*From other Agencies*	—	—	—	—
2.4.1.	From INCORA for Land Reclamation Works	—	—	—	—
2.4.2.	From the Municipal Utility Company of Palmira for Reforestation	—	—	—	—
3.	*Capital Income*	—	—	—	3,000,000
3.1.	*Bank Loans*	—	—	—	3,000,000
3.1.1.	International Bank (BIR)	—	—	—	—
3.1.2.	Agricultural Credit Bank (Caja Agraria)	—	—	—	3,000,000
3.1.3.	Local Banks	—	—	—	—
3.2.	*Credit Resources*	—	—	—	—
3.2.1.	National Federation of Coffee Growers	—	—	—	—
3.3.	*Share in CHIDRAL Profits*	—	—	—	—
3.4.	*Advances for Miscellaneous Works*	—	—	—	—
	a) From CHIDRAL	—	—	—	—
	b) From Others	—	—	—	—
3.5.	*Capital Contributions*	—	—	—	—
4.	*Other Income*	—	—	—	—
		1,300,000	3,670,083	9,695,080	35,331,748
	Balance (or Deficit)	66,874	(1,491,715)	5,820,814	7,479,195
	Accumulated Balance (or Deficit)	66,874	(1,424,841)	4,395,973	11,875,168

Source: CVC, Division of Finance.

1958	1959	1960	1961	1962	1963	Total	%
563,300	10,649,308	12,077,409	13,526,539	17,041,176	21,496,883	98,200,533	24.36%
122,649	153,785	296,078	879,054	4,114,090	7,267,216	12,931,069	3.21
122,649	153,785	296,078	879,054	3,823,080	6,285,700	11,658,543	2.89
—	—	—	—	291,010	981,516	1,272,526	0.32
440,651	10,495,523	11,781,331	12,647,485	12,927,086	14,229,667	85,269,464	21.15
600,774	9,123,064	10,357,447	10,916,700	10,765,687	12,707,221	74,218,614	18.41
839,877	1,372,459	1,423,884	1,730,785	2,161,399	1,522,446	11,050,850	2.74
768,448	6,136,210	416,667	2,450,129	3,621,000	14,517,233	50,728,932	12.59
768,448	6,136,210	416,667	1,515,129	2,407,734	10,296,048	42,169,481	10.46
500,000	500,000	416,667	458,329	458,334	6,875,003	9,837,578	2.44
268,448	5,636,210	—	—	—	—	25,904,658	6.43
—	—	—	1,056,800	449,400	921,045	2,427,245	0.60
—	—	—	—	1,500,000	2,500,000	4,000,000	0.99
—	—	—	883,000	886,600	1,110,468	5,070,068	1.26
—	—	—	—	—	—	2,190,000	0.54
—	—	—	883,000	886,600	1,110,468	2,880,068	0.72
—	—	—	52,000	326,666	88,217	466,883	0.12
—	—	—	52,000	326,666	88,217	466,883	0.12
—	—	—	—	—	3,022,500	3,022,500	0.75
—	—	—	—	—	3,000,000	3,000,000	0.74
—	—	—	—	—	22,500	22,500	0.01
000,000	15,304,076	26,382,372	48,846,315	56,671,831	103,063,962	253,268,556	62.83%
000,000	12,200,000	25,476,725	43,393,919	47,796,954	70,134,967	202,002,565	50.11
—	—	8,976,725	32,003,919	34,796,954	66,045,500	141,823,098	35.18
000,000	12,200,000	16,500,000	1,890,000	4,000,000	4,000,000	41,590,000	10.32
—	—	—	9,500,000	9,000,000	89,467	18,589,467	4.61
—	236,953	386,491	—	746,947	262,092	1,632,483	0.40
—	236,953	386,491	—	746,947	262,092	1,632,483	0.40
—	2,867,123	—	—	—	17,682,000	20,549,123	5.10
—	—	519,156	4,961,307	7,437,351	13,988,968	26,906,782	6.68
—	—	519,156	4,961,307	7,437,351	11,257,235	24,175,049	6.00
—	—	—	—	—	2,731,733	2,731,733	0.68
—	—	—	491,089	690,579	995,935	2,177,603	0.54
—	—	—	90,703	129,952	667,409	888,064	0.22%
331,748	32,089,594	38,876,448	64,913,686	77,463,959	139,745,487	403,086,085	100.0%
479,195	2,514,611	(16,069,887)	6,431,817	(9,204,625)	1,961,563	(6,414,479)	
375,168	14,389,779	(1,680,108)	4,751,709	(4,452,916)	(6,414,479)		

corresponding total, 24.36 percent came from current income; 12.59 percent was provided by appropriations, grants, and government transfers of stocks or shares; revenue from capital investments accounted for 62.83 percent; and other income amounted to only 0.22 percent.

Of current income, that not derived from operations equaled 21.15 percent (national land surtax 18.41 percent and liquor tax 2.74 percent); the proceeds from operations amounted to 3.21 percent, almost entirely —2.89 percent— from the sale of electric power, excluding, of course, that from Anchicayá, which is managed in a separate account by the subsidiary of the CVC.

The contributions, grants, and transfers made by the national government to the CVC represent 10.46 percent of the total revenue in this period. The most significant (6.43 percent) figure is that representing proceeds from the transfer the national government made of its shares in the Anchicayá Hydroelectric Plant to the CVC.

With regard to capital income, internal and external bank loans represent half of the total revenue of the Corporation during the nine reference years, and the share of the profits of CHIDRAL and the advance payments it has made to the CVC for various works, represent 11.10 percent.

The various specific sources of revenue are described briefly below.

1. *Current Income*

1.1. *Income Derived from Operations*

This heading includes income obtained from the sale of electric power and from various services.

1.1.1. *Sale of Electric Power.* This heading includes the sale of power generated in small diesel plants belonging to the CVC, or of power which it purchased from Anchicayá, from the Electric Power Company of Tuluá, or from the Municipal Utility Company of Cali, in order to meet special agreements to provide electricity to all the urban centers of the Department. The principal customers for the electric power sold directly by the CVC are the Power Distributing Companies of the various municipalities of Valle, some important industrial and rural consumers, the Municipal Utility Company of Cartago, and the Hydroelectric Plant of Caldas. The significant increase registered in these sales since 1962 is due to the fact that in that year the high-tension transmission line (115 kilowatts) between Cali and Cartago was completed and put into service and to the addition to the system of the third generator unit at the Yumbo Thermoelectric Plant.

1.1.2. *Sales of Various Services.* At present the CVC administers and operates in a centralized form 24 municipal electric power distri-

buting companies in which it has a controlling interest. The cost of these services, plus a small fee, is completely reimbursed by these companies. This heading includes this income; in addition, some income is derived from the rendering of various electric engineering services to private businesses and individuals.

1.2. *Income Not Derived from Operations*

The income under this heading includes (a) the principal source of local financing for the CVC —the real estate surtax— and (b) 50 percent of the proceeds of the national liquor tax levied in the Department of Valle.

1.2.1. *National Real Estate Surtax.* By means of Decree 0160 of January 31, 1956, the national government authorized the municipalities included in the CVC program (the Departments of Caldas, Cauca, and Valle) to increase the land tax by 4 per 1000 on all rural and urban appraised properties. The proceeds were authorized to go to the CVC. This was effective only in the municipalities of the Department of Valle, beginning July 1, 1956. Over a year later, and for the purpose of favoring small urban and rural proprietors, Decree 0282 of October 31, 1957, provided that (a) contributors whose patrimony was less than 50,000 pesos would be exempt from the surtax, and (b) "at the option of small rural proprietors, the Corporación Autónoma Regional del Cauca would give bonds for the total value of the 4 per 1000 land surtax collected from January 1, 1958 on, provided that the corresponding payments were made on time during the periods established by the municipalities for payment of the real state tax" [5].

Later on, and as a result of the intensive campaign of the Valle *latifundistas* against this basic means of financing the CVC, —a story told in another section of this work—, the corresponding articles of the 4 per 1000 land surtax of Decree-Laws 0160 of 1956 and 0282 of 1957 were repealed by Law 25 of 1959 (May 25). But the landholders did not completely succeed in their efforts, because this law, at the same time, and with the same intention of applying its proceeds "to the execution of the plans and economic development projects for which (the CVC) was created", established "a national tax on real estate in the Department of Valle equivalent to 3 per 1000 annually, over the total of appraised properties" (Article 1). However, "persons whose patrimony does not exceed one hundred thousand pesos ($ 100,000) will be exempt from paying the tax established by

5 Article 9 of Decree-Law 0282 of 1957 (October 31). The paragraph of this article adds that "these bonds have a nominal value of ten pesos ($ 10.00), and they will be liquidated gradually over a period of twenty (20) years; they will not earn interest and will be negotiable. Sums smaller than ten pesos ($ 10.00) do not entitle one to the receipt of bonds nor can they be accumulated for that purpose".

this law" (Article 9) [6]. Thus many more taxpayers than was the case under Decree 0282 of 1957 could be creditors upon receiving CVC bonds, as follows: (1) all "taxpayers, for the total value of the sums paid because of this surtax, on urban and rural properties located in the Municipalities of Alcalá, Argelia, Buenaventura, Caicedonia, Calima, Dagua, El Aguila, El Cairo, La Cumbre, Restrepo, El Dovio, Sevilla, Trujillo, Ulloa and Versalles" (Article 13); and (2) all "taxpayers, for the total value of the sums paid because of this surtax, when the properties are located in municipalities not mentioned in the previous article, in the following proportions: Seventy-five percent (75%) of the value, if the property is rural; and twenty-five percent (25%) of the value if the property is urban" (Article 14). The bonds in question would have a nominal value of five, ten, one hundred, and one thousand pesos; they would not earn interest; are to be liquidated gradually over a period of 20 years; and are to be negotiable (Article 15). That is, in large part the national 3 per 1000 land surtax that was to be collected in Valle for the CVC, really only amounted a loan by the taxpayers over a period of 20 years from the time it was collected. The CVC is not safisfied with this arrangement and, with the consent of the national government, it has not to this day complied with the provisions concerning the issuing of the bonds. The directors and promoters of the Corporation are trying to have the provisions concerning the bonds repealed retroactively to May 25, 1959.

The 3 per 1000 surtax is collected and kept in a separate account by the municipal treasurers, who hand it over to the CVC. The municipal treasurers collect the surtax at the same time as the municipal real estate tax, as one single account. If the tax is not paid when due, the Corporation charges a moratory interest of 1 percent monthly, which the municipal treasurers can make legally compulsory in cases of delayed payment, together with the municipal real estate tax. The municipal treasurers are to

6 Besides taxpayers with a real estate patrimony of less than 100,000 pesos, the following were also exempted from paying the national 3 per 1000 land surtax —the same that were exempt from the 4 per 1000 land surtax— in accordance with the laws in effect; (a) buildings used by the Catholic Churches, Catholic seminaries, and the rectories of bishops and priests (Article 6 of Law 35 of 1888); (b) property belonging to cooperatives duly registered with the government (Article 2 of Law 128 of 1936); (c) houses of employees and workers constructed by the Caja de Vivienda Popular, as well as family farms to a value not exceeding 50,000 pesos during the ten years after their construction (Article 5 of Law 120 of 1936 and Article 8 of Law 166 of 1938); and (d) the property of the Caja de Vivienda Militar (Military Housing Bank) (Article 17 of Law 87 of 1947).

The affected taxpayers should in each case verify their right to exemption, In the case of those with patrimonies less than 100,000 pesos, the verification should be by means "of a certificate of the amount of their patrimony declaration, or a copy of their income tax declaration of the previous tax year, authenticated by the appropriate administrator or revenue collector". In each case the municipal treasuries must make the decision concerning the corresponding exemption, but in order that the tax not be collected this exemption must be recognized beforehand by the CVC. This provision certainly created a tedious chore.

refrain from issuing certificates of tax clearance for every type of municipal tax to taxpayers who are delinquent in payment of the 3 per 1000 surtax.

This tax, notwithstanding the resistance to which it has been subject by a small group of influential persons with respect to the philosophy that inspired it, and some inevitable practical problems which arose in its implementation, has constituted the cornerstone of the Corporation's current income (18.41 percent of the total) between 1956 and 1963, and to varying degrees has provided the necessary guarantees for the obtaining of foreign and domestic loans. With the exception of 1958, when tax collections diminished somewhat, due to the temporary annulment of the surtax regulations in 13 municipalities, [7] the income from this surtax has steadily increased year by year; and indications are that by 1970 this income will be double what it was in 1963. In fact, bearing in mind that, on the one hand (a) the value of assessed valuations of property taxed during the period 1961-1963 has shown an annual average increase of 16 percent, and that (b) according to legal regulations now in effect (Decree 2895 of November 26, 1963), rural assessed valuations must approximate their real commercial values, which, it is estimated will reach an increase of 14 percent in 1964, which is the year of readjustment, and of 7.5 percent annually during the following six years; and that on the other hand, (c) a relatively stable relationship of 0.20 percent will be reached between collections and assessed valuations of taxable property, the Finance Division of the CVC has estimated the amount of income to be derived from the national land surtax between 1964 and 1970 as follows:

Year	*Estimated Proceeds*
1964	Ps.$ 16,296,420.00
1965	17,518,651.00
1966	18,832,549.00
1967	20,244,290.00
1968	21,763,364.00
1969	23,395,616.00
1970	25,150,287.00

Another important fact to note concerning the respective contributions of the urban and rural sectors to the CVC through the national land surtax, is that, taking the Department as a whole, the contributions are equal for both sectors —50 percent for the rural and 50 percent for the urban— which can be seen in Table VI.2, which records the assessed valuations of taxable property as of December 1962. Furthermore, this table reveals that urban property assessed valuations as of December 1962, in Cali alone represent 93.3 percent of the total for the Municipality and those of rural properties 6.7 percent; while for the remaining 41 municipalities of the Department of Valle, urban assessed valuations reach only 25 percent and the rural 75 percent.

7 Alcalá, Bolívar, Buga, Bugalagrande, Caicedonia, Cerrito, El Aguila, Jamundí, Obando, Palmira, San Pedro, Sevilla, and Yotoco.

TABLE VI.2

Valle del Cauca: Value of Assessed Valuations of Taxable Property under the National Land Surtax Destined for the CVC, as of December 1962, and Corresponding Percentages

Sectors	Cali Value (Thousands of pesos)	%	Rest of Valle Value (Thousands of pesos)	%	Totals Value (Thousands of pesos)	%
Rural	131,291	6.70	2,571,258	74.71	2,702,549	50.05
Urban	1,827,208	93.30	870,205	25.29	2,697,413	49.95
Total	1,958,499	100.00	3,441,463	100.00	5,399,962	100.00
% of Total	36.26		63.74		100.00	

Source: CVC, Division of Finance.

The total value of assessed valuations of urban and rural property taxed at that time represented 36.26 percent for the Municipality of Cali and 63.74 percent for the remaining municipalities of the Department.

1.2.2. *Tax on Domestic Liquors in the Department of Valle.* By means of Decree 2956 of 1955, the national government created a tax on domestic liquors of one peso ($ 1.00) per bottle, the proceeds of which were allotted to the Public Utilities Corporation. This decree was later modified by Decree 3144 of 1956 to make the Institute of Water Use and Electric Development (Electraguas) the beneficiary of these tax proceeds, proceeds which were later, by Decree 1368 of 1957, divided into equal parts to be shared by Electraguas and the Institute of Territorial Credit, and to be used for electrification and housing projects. Because CVC is in charge of power development in the Department of Valle and therefore Electraguas has no jurisdiction there, the Directors of the Corporation requested and obtained from the national government the cession to the CVC of 50 percent of the proceeds of the domestic liquor tax due to Electroaguas and collected in the Department of Valle. The corresponding provision was legalized under Decree 0111 of April 16, 1958. The income from this tax for the year 1958 appears as higher than that of subsequent years because, besides the share of the tax proceeds of that year, the corresponding amounts already collected by Electroaguas in 1956 and 1957, were handed over to the CVC. This tax is collected by the Departmental Secretary of Finance who then turns it over to the CVC, sometimes very late. Altogether this tax has constituted 2.74 percent of the total income of the CVC during the period 1955-1963.

2. *Appropriations, Grants, and Transfers*

2.1. *From the National Government*

2.1.1. *For Miscellaneous Works and Extension Services.* From its inception and up to December 31, 1963, the CVC had received as appropriations in cash from the national government for various general

projects Ps.$6,450,000.00 distributed as follows: (a) Ps.$250,000.00 in 1955 for initial surveys and basic works, according to the provisions of Decree-Law 3110 of 1954, which created the CVC, and (b) Ps.$6,200,000.00 in 1963 according to the general provisions for financing (Articles 11 and 12) included in Decree 1707 of July 18, 1960, reorganizing the Autonomous Regional Corporation of the Cauca Valley. In 1964 the CVC will receive Ps.$15 million under these provisions, even though 2 million pesos of this amount will be specifically allotted for electrification works in a few towns in the north of the Department due to lobbying activities of a few Valle parlamentarians during the passage of the annual national budget appropriation law, (The CVC never received any appropriations under the authorizations contained in Decree 0160 of 1956).

In addition, through transfers of funds from the Ministry of Agriculture for the purpose of contributing to the support of the Agricultural and Livestock Extension Service in the Department of Valle, which it administers in part (the CVC bears two-thirds of these costs), the CVC has received Ps.$3,387,578.00 from the national government between 1956 and 1963.

2.1.2. *Cession of CHIDRAL Interests.* Of the contributions that the national government has made to the CVC, the most important has been the transfer of its stock in the Anchicayá Hidroelectric Plant (CHIDRAL) to the CVC, which, moreover, made it possible for the CVC to integrate its electric power program. The negotiations leading up to this transfer were long and difficult [8]. They were formally initiated before the President of the Republic on July 20, 1955, and terminated exactly three years later, when on July, 1958, the corresponding title deed was signed, which had been authorized by Decree 0282 of October 31, 1957. The total value of these interests reached the sum of Ps.$20,268,448.00, including subscribed and paid shares, and profits from years prior to June 30, 1958. The CVC and the national government absorbed the debts of CHIDRAL. Later on, under Law 25 of 1959 (Articles 24, 25, and 26), the national government took charge of paying the entire debt which CHIDRAL owed the Bank of the Republic and the Stabilization Fund; the credit that it acquired because of these payments, it transferred to the CVC as an appropriation. Through these operations the value of the total interests of the national government in Anchicayá transferred rose to Ps.$25,904,658.00.

Since the economic situation of Anchicayá was extremely precarious at the time that the CVC received the transfer and became the principal stockholder, the CVC had to make continuous loans to CHIDRAL, which

8 This negotiation was repeatedly obstructed by those interests opposing the CVC, in Valle as well as in Bogotá, including even personnel of Anchicayá. Among the main arguments advanced against the transfer, neither of value, were: (a) that it was a bad deal for Anchicayá because it lost its strongest partner, and (b) that Electroaguas would lose its influence in the Department of Valle. The director of Electroaguas of that time, Carlos Sanclemente, commented on the operation as "a plunder of Valle upon the Nation".

reached a total of Ps.$8,402,000.00 up to April 18, 1960. On this date, in order to consolidate the position of CHIDRAL, the CVC appropriated this sum as its additional capital to the enterprise. Due to this step and to a general readjustment in rates for the power which it generates and sells principally to the Municipal Utility Company of Cali, the economic situation of Anchicayá has improved substantially, to a point that, from 1960 on, it has been able to make annual payments to the CVC for the construction of additional generating units and even yield profits to the CVC in 1963, points which will be discussed in greater detail under headings 3.3 and 3.4 of this section.

2.1.3. *Contributions for Power Distribution Companies.* The partial or total power distribution systems in 26 municipalities of the Department of Valle [9] are assured by private companies in which the stockholders are the respective municipal government (20 percent), the Department of Valle (20 percent), and the CVC (60 percent). The CVC administers all these companies, guaranteeing in this way the use of technically qualified personnel and services and well-cordinated administration. Several of the Municipalities have not been able to find the resources to make corresponding contributions; and therefore since 1961, the national government has been aiding some of them through grants to the CVC for all or part of the contributions which each should make to the respective Power Distributing Companies. This type of aid from the national government reached a total of Ps.$2,427,245.00 during the period 1961-1963.

2.1.4. *Appropriations for Works at Buenaventura.* By means of delegation of authority from the national government (Ministry of Public Works), the CVC is at present carrying out several important projects at the Port of Buenaventura: a hospital, a girls' high school, pavement of streets, remodeling of the hotel, etc. For these purposes the CVC received from the national government in 1962-1963, Ps.$4,000,000.00. The total cost of these works is, however, Ps.$10,000,000.00.

2.2. *From the Departments*

2.2.1. *For Miscellaneous Works and Extension Services.* During the early years of the CVC, the Department of Valle made three cash contributions to it for several projects, as follows: (a) Ps.$250,000 in 1955 for initial surveys, according to the regulations set forth under Decree-Law 3110 of 1954; (b) Ps.$800,000 during that same year; and (c) Ps.$650,000 in 1956, both of the latter as special appropriations. Altogether these total Ps.$1,700,000.00. In the matter of budget transfers for the support of the Extension Service of the Department of Valle, the CVC received Ps.$234,000 in 1956, and Ps.$256,000 in 1957, or a total of Ps.$490,000.

9 *Total systems:* Andalucía, Argelia, Bolívar, Bugalagrande, Caicedonia, Candelaria, Dagua, Darién, El Cairo, El Dovio, Florida, Jamundí, La Cumbre, La Unión, La Victoria, Obando, Pradera, Restrepo, Roldanillo, Toro, Trujillo, Versalles, Vijes, and Zarzal.
Partial systems: Palmira, Tuluá.

2.2.2. *Appropriations for the Power Distribution Companies.* In its positions as stockholder with a 20 percent capital interest in the Municipal Power Distributing Companies, the Department of Valle has contributed for this purpose a total of Ps.$2,880,068.00 between 1961 and 1963.

2.3. *From the Municipalities of the Department of Valle*

2.3.1. *Appropriations for the Power Distribution Companies.* Those municipalities in which Power Distribution Companies have been established have contributed Ps.$466,883 for this purpose between 1961 and 1963. Their contributions ought to have been much greater, but as was noted in heading 2.1.3 of this section, some were not able to make these appropriations, and the national government made it for them.

2.4. *From Other Agencies*

2.4.1. *From INCORA for Land Reclamation Work.* In May and July of 1963, the CVC and INCORA (Colombian Institute of Agrarian Reform) signed work contracts, by means which under the first contract CVC would carry out, and INCORA would finance, the completion of (a) drainage and irrigation works for the Roldanillo-La Unión-Toro Project and (b) basic studies and plans for the new land reclamation project in the zone lying between La Victoria and Cartago, both of which had already been initiated by the CVC; and (c) the execution of other preliminary studies for new land reclamation projects. The appropriation recorded in Table VI.1, of Ps.$3,022,500.00 for 1963 corresponds exactly to the investments made in that year for these projects.

2.4.2. *From the Municipal Utility Company of Palmira.* By means of an agreement signed late in 1963 between the municipal government of Palmira, the Municipal Utility Company of Palmira, and the CVC, the latter will in the future administer the river basin of the Nima River, with appropriations to finance this from all three entities. The appropriation of the Municipal Utility Company of Palmira reached Ps.$22,500 in 1963.

3. *Capital Income*

Although additional capital has not always been received with the timeliness to be desired, the certain degree of liberality with which the CVC has been granted capital income, has permitted it to undertake several costly but vital public works for the region, the completion of which, one may be absolutely certain, would not have been possible using sources of income from other entities.

The domestic and foreign bank financing which it has received has been due entirely to the excellence of the projects presented, not only from the point of view of their technical presentation, but also because of the economic wealth which the projects will produce.

TABLE VI.3

Loan Nº 255-CO: List of Goods (and Adjustments)

(US dollar equivalent)

Category	*Original Distribution (May 1960)*	*1st. Modification*	*2nd. Modification*	*3rd. Modification (April-May 1963)*
1. *Yumbo Thermoelectric Plant*				
a) Boiler plant, steam turbine, generator, transformer, switchgear, auxiliary plant and equipment, construction materials, shipping expenses, erection, supervision of construction	3,800,000	3,400,000	3,350,000	3,350,000
b) Engineering fees	240,000	300,000	350,000	350,000
c) Contingencies	360,000	—	—	—
	4,400,000	3,700,000	3,700,000	3,700,000
2. *Calima Hydroelectric Project*				
a) Civil construction works, gates, steel lining, construction equipment and materials, shipping expenses, and erection	9,500,000	9,500,000	9,500,000	7,100,000
b) Turbines, generators, auxiliary mechanical and electrical equipment, shipping expenses, and erection	1,800,000	2,500,000	2,900,000	2,900,000
c) Engineering fees	2,200,000	2,200,000	2,200,000	2,200,000
d) Contingencies	1,300,000	1,300,000	1,300,000	1,300,000
	14,800,000	15,500,000	15,900,000	13,500,000

(Continued)

TABLE VI.3 *(Continuation)*

Category	*Original Distribution (May 1960)*	*1st. Modification*	*2nd. Modification*	*3rd. Modification (April-May 1963)*
3. *Transmission System (115 Kw)*				
Transmission line equipment and materials, transformers, switchgear auxiliary equipment, shipping expenses, engineering fees	4,175,000	4,175,000	3,200,000	3,200,000
4. *Transmission System (34.5 and 13.2) Kw*				
Transmission line equipment and materials, transformers, switchgear auxiliary equipment, shipping expenses, engineering fees	625,000	625,000	800,000	800,000
5. *Distribution System*				
a) Equipment and materials for distribution system in Cali *	354,000	354,000	354,000	354,000
b) Equipment and materials for distribution system in Cartago *	212,000	212,000	212,000	212,000
c) Equipment and materials for distribution system in 24 towns and villages *	434,000	434,000	834,000	834,000
	1,000,000	1,000,000	1,400,000	1,400,000
6. *Interest and other charges during construction*	—	—	—	2,400,000
Total CVC	20,600,000	21,300,000	21,300,000	21,300,000
Total Loan	25,000,000	25,000,000	25,000,000	25,000,000

* Includes engineering services.

Source: CVC, Division of Finance.

3.1. *Bank Loans*

3.1.1. *Loans from the International Bank for Reconstruction and Development.* The International Bank has granted the CVC and CHIDRAL together, beginning in 1960, two loans for a total of US$33,800,000.00 for electrification works in the region included under the CVC [10]. At present negotiations are under way for additional loans to be devoted to the construction of Yumbo 4 and the Salvajina Dam.

3.1.1.1. *Loan 255-CO.* The first IBRD loan made to CVC and CHIDRAL was dated May 10, 1960, for "a quantity in different currencies equivalent to twenty-five million dollars (US$25,000,000.00)", to be guaranteed by the national government. The first IBRD loan could have been received as early as 1956, if it had not been for the hostile attitude of the Government of that time toward the CVC, stimulated by the opposition interests in the Cauca Valley. Furthermore, at that time the international credit rating of Colombia had begun to deteriorate rapidly; and the IBRD began to operate more cautiously in Colombia.

The loan made in May 1960 bears as the final date for its use May 31, 1965; interest of 6 percent annually will be charged on all sums delivered; and a commission of contract of 3/4 of one percent annually will be charged on the principal of the loan which is not used periodically as planned. Payments for amortization of the loan and interest will be every six months (May 15 and November 15, of each year) during the 20 years agreed upon for total payment of the loan. The CVC and CHIDRAL issued and delivered to the IBRD bonds which represent a value equal to the principal of the loan, as provided in the Loan Regulations of the Bank.

The proceeds of this loan, according to the provisions in Appendix 2 of the corresponding agreement, will be used to meet the needs of (a) power generation, (b) high and low tension transmission systems and (c) improvement of local distribution systems. For the purpose of improving local distribution systems, CVC and CHIDRAL must loan from the proceeds of Loan 255-CO, US$354,000 to the Municipal Utility Company of Cali and US$646,000 to other power distribution companies of the Department of Valle. Table VI.3 shows a breakdown according to the principle uses of Loan 255-CO in original form and at various later dates, in accordance with the modifications agreed upon from time to time betwen the IBRD, the CVC, and CHIDRAL. As of December 31, 1963, US$19,220,597.00 of this loan had been used leaving a remainder of US$5,779,403.00.

According to the terms of the agreement, the borrowers agreed that after each one of the parts of the projects is completed, a deed to the

10 Prior to this date, the IBRD had made three loans to CHIDRAL for expansion, as follows: US$3.53 millions in 1950, US$4.5 millions in 1955, and US$2.8 millions in 1958.

corresponding property, plant, and equipment would be turned over exclusively to CHIDRAL, tax-free. For this reason, CHIDRAL will not be able to dispose of part or all of its property at any time without the consent of the IBRD, until such time as the entire loan has been repaid.

This means, then, that the payments which the CVC makes to the IBRD for this loan, which will reach a total of US$21,800,000 for amortization of the principal, and US$3,650,000 for interest during construction, will constitute a forced contribution of the CVC for CHIDRAL, which is also the case with regard to the profits of CHIDRAL, since by statutary regulations these profits must be reinvested as a capital increase. In this manner, the CVC's profits in CHIDRAL will contribute extensively toward the expansion of the power system of the region, but will not in any direct way aid other projects of the Corporation, with the exception, perhaps of some multiple-purpose projects such as the projected dam at Timba.

3.1.1.2. *Loan 339-CO.* A second loan of the IBRD to CVC and CHIDRAL jointly, also over a period of 20 years but with interest of only 5½ percent annually on the sums delivered, was signed on June 3, 1963, for the sum of U.S.$8,800,000, of which U.S.$1,000,000 may be loaned to the Municipal Utility Company of Cali for continued expansion of the distribution system for the Municipality of Cali. This loan, which took effect on October 31, 1963, has as its deadline for use December 31, 1965; and the CVC and CHIDRAL must pay the IBRD a commission of 3/4 of one percent annually on the balance of the loan not used periodically on the dates agreed upon. The amortization payments, interest payments and other expenses must be made by CVC and CHIDRAL every six months on February 15, and August 15, of each year. The borrowers granted and delivered to the IBRD bonds equivalent to the value of the principal of the loan and promised that CHIDRAL would not contract additional debts, except in such manner as shall be agreed upon by the Bank so long as CHIDRAL's net income is not less than 1.3 times the maximum required to service the debt on all of CHIDRAL's debts, including the Bank loan and the additional debt proposed. As in the case of the first loan, it was agreed that when this loan was paid, the IBRD would deliver the deed to all resulting property, plants, and equipment to CHIDRAL. An important characteristic of this loan, in contrast with the first loan, is that certain local expenses in pesos, corresponding to engineering and planning for power projects may be paid from the funds of this loan. Negotiations for this second loan began around the middle of 1961.

The official list of works to be covered by the proceeds of this loan is the following, but only US$587,446 has been withdrawn for carrying out these projects, as of December 31, 1963:

CATEGORY			DOLLARS
1.	*Calima I Hydroelectric Plant*		
	Completion of work for Units 3 and 4		3,900,000
2.	*Transmission Line (115 KW.)*		
	Equipment and materials for the Anchicayá-Buenaventura line		360,000
3.	*Distribution System of Cali*		
	Materials and equipment for the expansion of the Cali distribution system		1,000,000
4.	*Machinery and Equipment for Coal Mines*		
	Equipment for subterranean and surface shafts at the CHIDRAL mines		420,000
5.	*Engineering and Planning for Power Programs*		
	Fees, salaries, and equipment:		
	(a) expenses in foreign currency	1,050,000	
	(b) expenses in local currency	1,050,000	2,100,000
6.	*Interest Payments and Other Charges during Construction*		440,000
7.	*Not Yet Assigned*		620,000
	TOTAL		8,000,000

Up to the present time here have been no formal modifications in the above distribution. All leads one to believe, however, that very shortly the Bank will be requested to make an adjustment to reinforce the appropriation for the Calima I project, possibly using the surplus assigned under category 4 for "machinery and equipment for coal mines" and the total under category 7, the funds of which (US$620,000) have not yet been assigned.

Under category 5, "Engineering and Planning for Power Programs", preliminary studies and engineering designs for the following projects are under way: (1) Timba, (2) Salvajina, (3) Tunnels at Riofrío and Copomá (additional resources for Calima), (4) Calima II, (5) Cali-Salvajina transmission line, (6) Cali power lines, (7) Calima II-Yumbo tranmission line, (8) general power planning, (9) interconnection of power systems, and (10) hydrological studies.

3.1.2. *Loan from the Caja Agraria (Agricultural Surpluses).* Of the domestic loans in pesos, obtained by the Corporation during the six-year period between 1958 and 1963, the Caja de Crédito Agrario (Agricultural Credit Bank) has granted the CVC two of these from the proceeds of the sale of United States agricultural surpluses in Colombia. These make a total of Ps.$41,590,000, and constitute 10.32 percent of the total income of the CVC between 1955 and 1963.

3.1.2.1. *First Caja Agraria Loan: Ps.$33,590,000.* On July 18, 1958, a loan contract was signed with the Caja de Crédito Agrario for Ps.$33,590,000 from proceeds of the sale of United States agricultural surpluses to the Colombian government, a loan which the CVC had been negotiating before the Caja for a long time. This loan would have an amortization period of ten years, counted from the date paid of each delivery of funds, and would earn interest of 7 percent annually, beginning on the fourth year of the 10-year amortization period. Later on (July 1961) it was seen that it would become necessary to extend the amortization period, and the request was made before the Caja Agraria; in August 1962, a new loan contract was signed with the Caja extending the terms of the loan, which consists basically of: (a) reduction of the amortization quotas to half until the year 1970; (b) extension of the amortization period which was originally to expire in 1971, to the end of 1974, and (c) increasing the quotas in 1971-1974 by the amount they were reduced during the years prior to 1970.

Of this loan it was agreed that the sum of Ps.$9,500,000 would be invested by the CVC in the construction of power transmission lines, and the rest, Ps.$22,090,000, for land reclamation works, as follows: Aguablanca Ps.$6,150,000; Roldanillo-La Unión-Toro Ps.$8,120,000; Bugalagrande-Zarzal Ps.$9,600,000; and Río Párraga Ps.$220,000. This first distribution was modified in July 1960, as follows: of the Ps.$9,600,000 originally assigned to the Bugalagrande-Zarzal project, Ps.$3,200,000, were set aside to reinforce the appropriation for Aguablanca and Ps.$6,400,000 to that of Roldanillo-La Unión-Toro.

The CVC guaranteed this loan before the Caja Agraria in the following way: (a) mortgaging 25 percent of the proceeds of the land surtax; (b) for the appropriation devoted to power transmission lines, mortgaging the proceeds of the sales of domestic liquors; and (c) for the part assigned to land reclamation works, mortgaging the proceeds of the valorization tax which it collects for the execution of the respective works.

3.1.2.2. *Second Caja Agraria Loan: Ps.$8,000,000.* On November 26, 1962, the Caja de Crédiato Agrario conceded the CVC a second loan from the proceeds of the sale of agricultural surpluses for a total amount of Ps.$8,000,000, and for the purposes of electrification works, as follows:

(a)	Completion of Calima I	Ps.$3,000,000
(b)	Substations at Buga, Tuluá, Zarzal, Cartago, Sevilla, and coresponding sub-transmission lines	3,000,000
(c)	Completion of the Yumbo-Cartago 115 KW line ..	2,000,000

This new loan has an amortization period of ten years, interest payments of 8 percent annually; and as collateral, the same mortgages were granted as those mentioned for the first loan under heading 3.1.2.1.

3.1.3. *Loans from Local Banks.* Early in 1961, the Boards of Directors of the CVC warned that the only way to obtain funds to meet the budget-

ary deficit foreseen for that year would be to resort to loans from local banks, based upon the regulations contained in Law 26 of 1961, since that deficit would be caused by land reclamation and rural electrification works. The Board authorized the Executive Director to take the necessary steps; and as a result the Cali branches of several national banks loaned the CVC during the second semester of 1961, Ps.$18,500,000 for a four year period, with the first year and a half (later extended to two years) as period of grace for repayment of capital, at an 8 percent annual interest rate. The specific amount loaned by each of the banks is as follows:

	Millions of Pesos
Banco Cafetero	8.0
Banco Francés e Italiano	2.0
Banque Nationale pour le Commerce et L'Industrie	1.5
Banco de Comercio	1.5
Banco Comercial Antioqueño	2.5
Banco de Colombia	3.0
Total	18.5

As security for these loans, the risk of which the Banco Cafetero assumed in entirely, the CVC offered 80 percent of the proceeds of the 3 per 1000 land surtax.

3.2. *Credit Resources*

3.2.1. *Loan from the National Federation of Coffee Growers.* Through the signing of the respective loan contracts, and utilizing the barter system of foreign trade for coffee, the CVC has imported materials and equipment from Finland and Spain earmarked for electrification works to an equivalent of Ps.$1,632,483 between 1959 and 1963. The respective loans were made by the Federation for three years at 6 percent interest annually.

3.3. *Share in the Profits of CHIDRAL*

During the period 1959-1963, the CVC has received a total of Ps.$20,549,123 as its share in the profits made by the Anchicayá Hydroelectric Plant, all the profits of which must be reinvested for capital increase, according to the statutes of CHIDRAL.

3.4. *Advances for Various Works*

Beginning in 1960, CHIDRAL has been advancing the CVC funds for the construction of the Calima I Hydroelectric Plant, which when completed will be transferred to CHIDRAL as a capital contribution. The appropriations for this purpose up to December 31, 1963, amounted to a total of Ps.$24,175,049, or 6 percent of the total income of the CVC during the period 1955-1963. The total amount of advances for other works up to December 31, 1963, was Ps.$2,731,733.

3.5. *Capital Contributions*

This category includes various donations as well as contributions paid by private individuals to finance the cost of electric connections constructed by the CVC for their properties. By the end of 1963 this sum amounted to Ps.$2,177,603.

4. *Other Present Income*

Various miscellaneous sources of income are included under this category, such as sales of sets of specifications for bids, sales of reports, profits from the sale of surplus materials, etc.

5. *Future Additional Sources of Income (Short Term)*

Besides the sources already mentioned above, the Corporation will have at its disposal three new sources of income in the immediate future. These are: (a) the valorization tax on land reclaimed by the construction of the Aguablanca dike and pumping station (beginning in 1964) and by the land reclamation works at Roldanillo - La Unión - Toro; (b) the national subsidy guaranteed by Law 83 of 1962; and (c) the profits which may be derived from the administration of the electric system of the former Colombian Electric Company (COEDEC) which operated principally in Palmira, Buga, and Buenaventura. This company was purchased by the national government, and the branches in Valle are now being transferred to the CVC as a donation.

5.1. *Valorization Tax*

According to Resolution 3 of January 8, 1958, the Board of Directors of the CVC authorized the initiation of reclamation works on the low, flat lands in the Municipality of Cali which border the Cauca, Lilí, Meléndez, Cañaveralejo, and Cali Rivers, comprising an area of approximately 5,000 hectares. By Resolution 4 of the same date, ratified by Decree 0703 of April 21, 1958, —and which was partially modified by Decree 2133 of September 1, 1961—, the Corporation established, based on Decrees 3110 of 1954 and 1829 of 1955, a valorization tax on the improvements resulting from these reclamation works. This tax will be distributed among the properties benefited proportionate to the benefits received as a result of the reclamation works. The amount of the tax will be equivalent to the total cost of the works plus the value of the interest on the capital invested, at a rate of 6 percent annually plus 10 percent for cost of administration. On lands devoted to agricultural and livestock enterprises the valorization will be estimated according to net capacity of production increase, through rational land use. On urban zones or urbanizable areas or lands suitable for industrial installations, or for similar uses, the valorization will be equivalent to the highest commercial market

value that the land acquires. In the event that the improved land covers both urban and rural zones, the valorization tax to be charged will be calculated separately for each lot. For purposes of tax assessment, special assessed valuations will be made both before and after the completion of the reclamation works by experts appointed, one by the CVC and one by the proprietor, and these in turn will appoint a third expert who will intervene when the first two are in disagreement. The value of the lands will be fixed by the experts upon the following bases: (a) the production capacity of the lands, by hectare and by lot, before benefits of land reclamation works; (b) the increase in production capacity from benefits of land reclamation works, by hectare and by lot; and (c) the increase in commercial value of the properties or enterprises as a result of the benefits from land reclamation works when such be the case.

The valorization tax described above may be paid (a) in cash, or (b) in semester quotas with interest at 8 percent annually when the due date for payment of the debt is not over five years, and at 10 percent interest annually if the due period is over five but less than 10 years; or (c) it may also be paid in an equivalent value of land. Up to 30 percent of the value of the tax may be paid with CVC bonds, described under section 1.2.1. No proprietor can sell his property unless it is free of unpaid taxes or unless the seller leaves a written notarized statement in the deed that he will pay the taxes when the CVC charges them, or that the new proprietor will assume them. Claiming the lack of adequate basic studies deemed necessary for their work, the experts appointed to appraise for the valorization tax on lands affected by the Aguablanca works delayed their work for an unexplainably long period. Only towards the beginning, of May 1964, did they make the corresponding report, so that the CVC could begin to put the tax into effect, beginning July 1, 1964. Since the CVC has still not issued the bonds with which part of the tax may be paid, only 66 percent of the tax will be charged at the beginning. But in spite of this, the CVC will obtain approximately 18 million pesos, even considering the exemptions that the law allows for property-owners whose patrimony is less than Ps.$50,000 as of December 31, 1957, duly recorded in their respective income tax declaration [11].

11 According to Article 42 of Decree 0703 of 1958, the following exemptions may be presented:

"Landowners whose patrimony is not worth more than ten thousand pesos (Ps.$10,000) will be exempt from payment of the tax.

"Landowners whose patrimony is worth more than ten thousand pesos (Ps.$10,000) but not exceding twenty thousand pesos (Ps.$20,000) will pay a fifth of the value of the tax.

"Landowners whose patrimony is worth more than twenty thousand pesos (Ps.$20,000) but not over thirty thousand pesos (Ps.$30,000) will pay two-fifths (2/5) of the value of the tax.

"Landowners whose patrimony is worth more than thirty thousand pesos

The necessary appraisal work for the valorization tax to be levied on lands benefited by reclamation works of the Roldanillo-La Unión-Toro project has not yet begun.

5.2. *Subsidy Law 83 of 1962*

Under paragraph (c) of Article 1 of Law 83 of December 26, 1963, the national government subsidizes the Departments, Municipalities, and official public service enterprises for the purpose of facilitating, under the new official foreign exchange rate of 9 pesos to the dollar, capital and interest payments of foreign debts contracted before this law took effect. The amount of the subsidy is to be the resulting difference, in pesos between the value of the debt before and after the currency devaluation.

5.3. *Profits from COEDEC*

By Law 13 of April 13, 1962, the national government acquired all the property of the North American enterprise entitled Colombian Electric Company; and this same Decree also specified that once the evaluation of the properties of this enterprise in different areas of the country was completed, those located in the territory of the Department of Valle would be ceded to the CVC. This will take place by around the end of 1964; and the CVC, which had been administering them since 1962, would receive the profits which the installations of that company might yield at its agencies in Buenaventura, Palmira, and Buga.

C. EXPENDITURES

Table VI.4 shows CVC expenditures by programs during the period 1955-1963; and Table VI.5 by economic categories for the same period.

When analyzing either of the two tables, the fact that excites most attention is that even in the initial years of the CVC, when the costs of administration were proportionately the highest, and would logically be so, these costs were only 3.72 percent of the total expenditures of the CVC during 1955-1963. This is certainly surprising in a public agency, and constitutes visible proof of the efficiency with which the directors

(Ps.$30,000) but less than forty thousand (Ps.$40,000) will pay three-fifths (3/5) of the value of the tax.

"Landowners whose patrimony is worth more than forty thousand pesos (Ps.$40,000) but not exceeding fifty thousand (Ps.$50,000) will pay four-fifths (4/5) of the value of the tax.

"Landowners whose patrimony exceeds fifty thousand pesos (Ps.$50,000) will pay the entire tax.

"The patrimony referred to in the six preceding paragraphs is that which was possessed as of December 31, 1957; and its value should be accredited by a copy of the income and patrimony tax declaration of the year cited, and authenticated by the respective tax collector, or administrator, from the National Ministry of Finance".

TABLE VI.4

CVC: Expenditures by Pr

(Pesos)

Activity	*1955*	*1956*	*1957*
A. *Costs of Administration*	—	—	—
I. *Administration*	193,170	453,683	604,923
1. Personnel and Legal Counsel	—	—	—
2. Finance	—	—	—
3. General Services	—	—	—
4. Accounting and Auditing	—	—	—
Distributed Costs	(193,170)	(453,683)	(604,923)
B. *Operating Expenses*	—	—	—
I. *Operation and Maintenance*	—	—	—
1. General Supervision and Power Purchases	—	—	—
2. Generating Plants	—	—	—
3. Transmission Systems	—	—	—
4. Distribution Systems	—	—	—
5. Land Reclamations Works	—	—	—
C. *Investments*	1,233,126	5,161,798	3,874,266
I. *Engineering Studies*	644,761	1,475,424	402,059
1. General Development Plan	534,959	457,893	3,028
2. Hydrological Studies	469	63,748	22,475
3. Topography and Mapping	5,533	51,704	168,986
4. Soils and Foundations (Timba and Calima)	—	784,978	12,983
5. Others	103,800	117,101	194,587
II. *Land Reclamation*	17,975	146,462	728,787
1. Aguablanca	1,164	58,603	380,252
2. Roldanillo-La Unión-Toro	—	—	235,107
3 Bugalagrande-Cartago	2,180	26,037	105,992
4. La Victoria-Cartago	—	—	—
5. Other Projects	14,631	61,822	7,436
III. *Power*	279,762	2,638,958	2,134,896
1. Calima I	44,089	1,728,136	1,032,976
2. Calima II	—	—	—
3. Salvajina	—	—	—
4. Timba	218,165	330,921	210,353
5. Small Plants	5,089	—	—
6. Transmission Systems	12,313	393,213	735,740
7. Distribution Systems	—	—	—
8. Rural Connections	—	—	—
9. Other Power Projects	—	38,242	57,127
10. Power Assistance to Municipalities	106	148,446	98,700
11. Indirect Investments	—	—	—
IV. *Subsidies on Debt Payments (Law 83 of 1962)*	—	—	—
V. *Miscellaneous Works*	—	—	—
1. Buenaventura Improvement Works, by delegation of the National Gobernment	—	—	—
VI. *Agricultural Programs*	—	557,487	543,786
1. Agricultural and Livestock Extension Programs	—	540,679	354,872
2. Soil Studies	—	12,319	183,640
3. Reforestation	—	—	—
4. Others	—	4,489	5,274
VII. *Regional Studies*	—	3,819	9,572
VIII. *Investments*	—	—	—
1. Anchicayá Hydroelectric Plant	—	—	—
2. Power Distribution Companies	—	—	—
3. Others	—	—	—
IX. *Purchase of Equipment*	290,628	339,648	55,166
TOTAL	1,233,126	5,161,798	3,874,266

Source: CVC, Division of Finance.

ograms, 1955-1963

1958	1959	1960	1961	1962	1963	Total	%
—	—	—	—	—	—	—	—
789,908	1,332,679	2,074,029	2,421,278	3,450,226	3,899,784	15,219,680	(3.72)
—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	
(789,908)	(1,332,679)	(2,074,029)	(2,421,278)	(3,450,226)	(3,889,784)	(15,219,680)	(3.72)
183,525	333,304	408,695	846,325	4,429,979	7,045,686	13,247,511	3.24
183,525	333,304	408,695	846,325	4,429,979	7,045,686	13,247,511	3.24
—	—	—	200,837	2,709,553	4,789,995	7,700,385	1.88
183,525	333,304	407,663	537,715	800,697	915,466	3,178,370	0.78
—	—	—	32,761	213,017	578,043	823,821	0.20
—	—	1,032	6,421	311,208	762,179	1,080,840	0.27
—	—	—	68,591	395,504	—	464,095	0.11
27,669,028	29,241,679	54,946,335	57,635,544	82,238,605	134,661,367	396,253,053	96.76
1,858,528	(5,429)	1,088,416	526,626	734,467	1,454,835	8,179,687	2.00
47,461	(23,496)	180,335	(179,972)	25,732	—	1,045,940	0.26
54,996	34,148	110,675	295,027	509,343	754,841	1,845,722	0.45
1,036	—	1,249	8,344	119,850	128,095	484,797	0.12
1,090,477	—	—	—	—	—	1,888,438	0.46
664,558	(16,081)	796,157	403,227	79,542	571,899	2,914,790	0.71
3,567,503	9,532,023	12,580,653	12,616,646	6,376,727	7,508,749	53,075,525	12.96
2,392,303	4,742,150	7,065,175	5,218,533	2,185,012	2,271,260	24,314,452	5.94
1,115,909	4,663,279	5,258,536	7,072,141	3,637,619	3,835,363	25,817,954	6.31
46,000	93,557	154,330	282,287	478,579	302,037	1,490,999	0.36
—	—	—	—	—	1,017,296	1,017,296	0.25
13,291	33,037	102,612	43,685	75,517	82,793	434,824	0.10
691,144	6,036,349	28,390,434	39,273,898	48,338,092	97,156,101	224,939,634	54.94
(1,070,787)	2,654,138	9,900,553	26,995,439	36,138,533	70,062,997	147,486,074	36.02
—	—	—	—	1,364,072	7,122,690	8,486,762	2.07
—	—	—	—	2,824	1,291,437	1,294,261	0.32
333,119	109,344	174	61,083	1,343,111	37,198	2,643,468	0.65
609,737	1,388,915	1,344,201	786,973	3,006	16,354	4,154,275	1.01
571,048	819,100	16,273,721	8,783,068	7,306,715	12,601,967	47,496,885	11.60
—	531,522	544,465	1,756,554	1,093,107	2,950,197	6,875,845	1.68
—	—	—	—	368,819	1,892,503	2,261,322	0.55
178,219	152,735	122,403	122,660	50,050	148,638	870,074	0.21
69,808	154,450	130,917	45,521	—	—	647,948	0.16
—	226,145	74,000	722,600	667,855	1,032,120	2,722,720	0.67
—	—	—	—	21,392,426	—	21,392,426	5.23
—	—	—	—	—	3,489,534	3,489,534	0.85
—	—	—	—	—	3,489,534	3,489,534	0.85
1,070,656	1,276,369	1,398,235	1,951,934	2,733,149	3,539,242	13,070,858	3.19
830,453	1,055,856	1,198,176	1,517,758	1,822,777	2,027,920	9,348,491	2.28
222,676	208,944	200,059	434,176	606,798	703,102	2,571,714	0.63
—	—	—	—	303,574	807,883	1,111,457	0.27
17,527	11,569	—	—	—	337	39,196	0.01
—	—	196,189	291,936	365,438	335,066	1,202,020	0.29
20,354,295	11,364,460	9,080,320	2,105,384	1,028,051	18,922,460	62,854,970	15.34
20,297,000	10,715,000	8,402,000	—	—	17,682,000	57,096,000	13.94
—	618,000	644,000	1,572,000	997,000	1,217,580	5,048,580	1.23
57,295	31,460	34,320	533,384	31,051	22,880	710,390	0.17
126,902	1,037,907	1,803,393	869,120	1,270,255	2,255,380	8,048,399	1.96
27,852,553	29,574,983	54,946,335	58,481,869	86,668,584	141,707,050	409,500,564	100.00

TABLE VI.5

CVC: Expenditures by Economic Activities,

(Pesos)

Activity	*1955*	*1956*	*1957*	*1958*
General Services	—	—	—	—
I. *Upper Administrative Levels*	—	—	—	—
(Distributed Expenses)	(193,170)	(453,683)	(604,923)	(789,908)
Economic Services	1,233,126	5,161,798	3,874,266	27,795,258
I. *Agricultural, Livestock and Foresis*	308,603	1,047,416	1,337,311	4,765,061
a) Administration and Technical Services	—	3,819	9,572	—
b) Agricultural Extension	—	540,679	354,872	830,453
c) Agricultural Research (soils)	—	12,319	183,640	222,676
d) Protection and Use of Natural Resources				
1. Land Reclamation	17,975	146,462	728,787	3,567,503
2. Reforestation and Soil Conservation	—	—	—	—
3. Agricultural Engineering	—	4,489	5,274	17,527
e) Purchase of Property and Equipment	290,628	339,648	55,166	126,902
II. *Power and Fuels*	279,762	2,638,958	2,134,896	21,171,669
a) *Electric Power*				
1. Operation and Maintenance of Systems	—	—	—	183,525
2. Calima I Hydroelectric Plant	44,089	1,728,136	1,032,976	(1,070,787)
3. Calima II Hydroelectric Plant	—	—	—	—
4. Salvajina Project	—	—	—	—
5. Timba Project	218,165	330,921	210,353	333,119
6. Minor Plants	5,089	—	—	609,737
7. Transmission Systems	12,313	393,203	735,740	571,048
8. Distribution Systems	—	—	—	—
9. Rural Connections	—	—	—	—
10. Anchicayá Hydroelectric Plant	—	—	—	20,297,000
11. Other Power Projects	106	186,688	155,827	248,027
12. Subsidies for Foreign Debts (Law 83 of 1962)	—	—	—	—
b) *Industry*	—	—	—	—
1. Various (Industrial Development)	—	—	—	—
III. *Economic Development Studies*	644,761	1,475,424	402,059	1,858,528
a) Project Studies	644,761	1,475,424	402,059	1,858,528
Social Security	—	—	—	57,295
a) Life Insurance	—	—	—	57,295
Other Community Services	—	—	—	—
a) Miscellaneous Municipal Development Works	—	—	—	—
	1,233,126	5,161,798	3,874,266	27,852,553
Supplementary Analyses				
1. Administration	193,170	453,683	604,923	789,908
2. Investments and Programs	1,039,956	4,708,115	3,269,343	27,062,645
3. Relation of 1 s/2 (percent)	18.57	9.63	18.50	
4. Amortization of Debts	15.66	8.78	15.61	
5. Relation of 1 s/2 + 4 (percent)				
6. Relation of 1 s/ Total Expenditures (percent)				

Source: CVC, Division of Finance

.5

ıic Activities, 1955-1963

1958	*1959*	*1960*	*1961*	*1962*	*1963*	*Total*	*%*
—	—	—	—	—	—	—	
—	—	—	—	—	—	—	
(789,908)	(1,132,679)	(2,074,029)	(2,421,278)	(3,450,226)	(3,899,784)	(15,219,680)	3.72
27,795,258	29,543,523	54,912,015	58,448,485	86,700,546	138,194,636	405,800,640	99.09
4,765,061	11,846,299	15,978,470	15,798,227	11,204,086	13,638,437	75,860,897	18.52
—	—	196,189	291,936	365,438	335,066	1,202,020	0.29
830,453	1,055,856	1,198,176	1,517,758	1,822,777	2,027,920	9,348,491	2.28
222,676	208,944	200,059	434,176	606,798	703,102	2,571,714	0.63
3,567,503	9,532,023	12,580,653	12,685,237	6,772,231	7,508,749	53,539,620	13.07
—	—	—	—	303,574	808,883	1,111,457	0.27
17,527	11,569	—	—	63,013	337	39,196	0.01
126,902	1,037,907	1,803,393	869,120	1,270,255	2,255,380	8,048,399	1.97
21,171,669	17,702,653	37,845,129	41,623,632	74,761,993	123,101,364	321,260,056	78.45
183,525	333,304	408,695	777,734	4,034,475	7,045,683	12,783,416	3.12
(1,070,787)	2,654,138	9,900,553	26,995,439	36,138,533	70,062,997	147,486,074	36.01
—	—	—	—	1,364,072	7,122,690	8,486,762	2.07
—	—	—	—	2,824	1,291,437	1,294,261	0.32
333,119	109,344	174	61,083	1,343,111	37,198	2,643,468	0.65
609,737	1,388,915	1,344,201	786,973	3,006	16,354	4,154,275	1.01
571,048	819,100	16,273,721	8,783,068	7,306,715	12,601,967	47,496,885	11.60
—	1,375,667	1,262,465	4,051,154	2,757,962	5,199,897	14,647,145	3.58
—	—	—	—	368,819	1,892,503	2,261,322	0.55
20,297,000	10,715,000	8,402,000	—	—	17,682,000	57,096,000	13.94
248,027	307,185	253,320	168,181	50,050	148,638	1,518,022	0.37
—	—	—	—	21,392,426	—	21,392,426	5.22
—	—	—	500,000	—	—	500,000	0.12
—	—	—	500,000	—	—	500,000	
1,858,528	(5,429)	1,088,416	526,626	734,467	1,454,835	8,179,687	2.00
1,858,528	(5,429)	1,088,416	526,626	734,467	1,454,835	8,179,687	
57,295	31,460	34,320	33,384	31,051	22,880	210,390	0.05
57,295	31,460	34,320	33,384	31,051	22,880	210,390	
—	—	—	—	—	3,489,534	3,489,534	0.86
—	—	—	—	—	3,489,534	3,489,534	
27,852,553	29,574,983	54,946,335	58,481,869	86,668,584	141,707,050	409,500,564	100.00
789,908	1,132,679	2,074,029	2,421,278	3,450,226	3,899,784	15,219,680	
27,062,645	28,242,304	52,872,306	56,060,591	83,218,358	137,807,266	394,280,884	
				1,597,727	4,574,963	6,172,690	
2.91	4.72						
2.84	3.83	3.92	4.32	4.14	2.83		3.86
				4.06	2.74		3.80
		3.76	4.16	3.98	2.75		3.72

of the Corporation have managed it, and also that a decentralized agency may turn out to be a more economical way of managing public services than a centralized one. Later on, costs of administration were distributed proportionally among the various programs and sub-programs in which the CVC is engaged.

Once assigned to the different programs and sub-programs, as is seen in Table VI.4, the administration costs of the CVC represented only 3.24 percent of total expenses, and those of investment 96.76 percent, distributed as follows: Engineering studies, 2 percent; land reclamation programs, 12.96 percent; power, 54.94 percent; subsidies on foreign debts (Law 83 of 1962), 5.23 percent; miscellaneous engineering works 0.85 percent; agricultural programs, 3.19 percent; purchase of equipment, 1.96 percent; and other investments 15.34 percent.

Thus, a little over half of the expenses of the Corporation have been devoted to electric power development, and within this category, about two-thirds to power generation programs, representing 40.07 percent of the total investment of the Corporation. In power transmission 11.60 percent was invested, and in systems of urban and rural distribution a little over 2 percent. To the above it should be added that almost the entire amount invested directly by the CVC in other agencies during this period comprising 15.34 percent of its total expenditures, were also in the field of power generation (Anchicayá, 13.94 percent) and distribution (1.23 percent).

The second category, then, represents expenditures on land reclamation, as follows: Aguablanca, 5.94 percent; Roldanillo-La Unión-Toro, 6.31 percent; and other projects, 0.71 percent.

Within the agricultural programs, the sub-program entitled agricultural extension represents 2.28 percent; soil studies, 0.63 percent; and reforestation, 0.27 percent.

As far as the relation between expenditures of the Corporation for economic categories is concerned, it may be observed in Table VI.5, that, during the period 1955-1963, 18.52 percent correspond to "Agriculture, Livestock, and Forestry"; 78.45 percent to "Power and Fuels"; and 2 percent to "Economic Development Studies". Beginning in 1963, the CVC devoted a sizable part of its budget to investments in various community services which over the total period under study amounted to 0.86 percent.

VII

The Administration of the CVC: A Rational Bureaucracy in a Traditional Society

There were various factors which caused the CVC to be cast in a different mold from traditional bureaucracies in Colombia: Generations of struggle with initiative-suffocating centralism, the impatience of a foreign-educated modernizing elite with old bureaucracies whose yield in terms of real benefits to the clients they were ostensibly designed to serve were far below reasonable expectations, and the belief on the part of this same group of new technocrats that political intervention in technical affairs was one of the principal roots of the evils in terms of the retarded economic development that Colombia suffered.

A. "CHARISMATIC" PERIOD

That there was a need for a fresh start, for an entirely different type of bureaucracy for the CVC, designed along efficient, business-management lines was the conclusion reached by this group of modernizers, all of them economists, businessmen, and engineers by profession. It is not a coincidence that the CVC is termed a "corporation". The statutes which govern it state specifically that, "in the realization of its functions the Corporation will apply the techniques of, and will model its administration on, modern methods used by private enterprise, insofar as these do not conflict with the established systems of public administration" [1]. These innovators, who were largely responsible for the writing of the statutes, not only had a vision of what modern agricultural and engineering techniques could mean when combined with the near-ideal physical resources of the Cauca River Valley to make it produce food and fibers for the country, but also had knowledge and experience, both at home and abroad, in rational, technical, business administration. Thus, the organization they were instrumental in designing for the CVC tended from the very beginning to be economical and efficient in terms of the ratio of personnel to budget and accomplishments [2]. Economy, efficiency, ration-

1 Decree 1707 of July 18, 1960, Article 6.

2 As pointed out in Chapter VI, CVC expenses for administration have averaged only 3.72 percent of the total budget, the rest being used for capital investments. Compare this figure with those of national bureaucracies whose functions

ality, and results seemed to be the guiding watchwords for all those Colombians who formed its still stable nucleus of officials. The new development corporation was also, however, to be a public service organization, designed to meet the needs of all the clients of the region —farmers and industrialists, urban and rural dwellers, the small entrepreneur as well as the wealthy, the public at large— were all to benefit from the projects undertaken. And direct services were to be given, insofar as possible, on a business basis: pay-as-you-go, in proportion to benefits received, in order to make projects self-liquidating and to yield profits which could provide the capital for further projects.

Precisely because the CVC Development Corporation was new and different for Colombia, and therefore in its "charismatic" period, it lacked legitimacy, or acceptance, which is only achieved by the proof of survival and effectiveness over time. Indeed, because its claim to legitimacy had been under constant attack from the central government and bureaucracy as well as local pressure groups, special care has been taken from the very beginning by CVC officials to ensure that the new agency would not slip into the pitfalls that have made traditional, patronage-ridden Colombian bureaucracies so open to attacks. Care has been taken that the CVC would remain an apolitical agency, on all levels, from the policy-making Board of Directors on down, and with highly technical service and development functions.

Removal of partisan political considerations in the election of Board members would permit the "placing of effective authority in the hands

are most similar to those of the CVC: the Ministries of Agriculture, Development, and Public Works, for the years 1961 and 1964.

	1961		*1964*	
	Ps.$	*%*	*Ps.$*	*%*
Ministry of Agriculture:				
Administration	22,737,295	28.3	14,734,516	9.3
Investments	57,436,605	71.7	145,275,152	90.7
Totals	80,173,900	100.0	160,009,668	100.0
Ministry of Development:				
Administration	8,213,547	5.6	17,820,796	7.1
Investments	137,975,675	94.4	234,848,491	92.9
Totals	146,189,222	100.0	252,669,287	100.0
Ministry of Public Works:				
Administration	42,576,060	7.0	15,570,000	4.2
Investments	560,894,390	93.0	351,920,052	95.8
Totals	603,470,450	100.0	367,490,052	100.0

Sources: Presupuesto de Colombia: 1961. Imprenta Nacional, Bogotá, 1961, p. xxvii.
Presupuesto de Colombia: 1964. Imprenta Nacional, Bogotá, 1964, p. xvii.

of ... citizens of the highest reputation and experience ... who generally do not consent to serve in positions depending upon political considerations" [3]. Recruitment of administrative personnel on the basis of technical training and ability, rather than patronage or nepotism, would ensure that the jobs would get done efficiently and with despatch, and that scarce resources would be put to the best advantage in the common interest.

Apolitical also meant for them the elimination of political influences in the award of project contracts. The functions of research, design, and financing on the one hand, and construction, on the other, were clearly separated, in the interests of economy and honesty. Research is carried on by CVC officials; design farmed out to engineering firms of international and national repute, or more often now, performed in the CVC's own growing engineering department. Financing is shopped for on the same basis, always in the search for the lowest interest rates and most favorable repayment terms possible. Subcontracting for construction and supply of machinery is awarded on the basis of open international bidding to the lowest bidders, quality and technical considerations being equal. It has been difficult at times to live up to this principle, so accustomed are Colombian firms to the use of friendships, influence, and pressure in their dealings. But the general level of performance, technical wisdom, economy, and enforcement of delivery of contracts has been high, given the difficult environment in which the CVC operates.

Apolitical also meant the elimination of political pressures in the choice and order of project priorities. Their experience has been —and Colombian history is full of examples— that any political considerations allowed to prevail over technically-sound decisions can only result in higher, over-all financial and social costs, and too often in seriously detrimental long-term sunk costs. Although the CVC has been able to hold its ground on *choice* of projects, that it has not succeeded in preventing political pressures from influencing *priority* decisions, is amply documented elsewhere in this study [4]. Since every organization is an "adaptive organism", [5] and is therefore limited in its search for legitimacy by the commitments of the groups and interests that make up the political, economic, and cultural environment in which the agency must operate, this aspect of political interference could not be avoided.

But the CVC has succeeded, to a degree unexcelled elsewhere in Colombia, in the formation of a real civil service, a cadre of technically-trained, competent persons, recruited on the basis of these qualifications rather than party affiliation or family, and devoted to serving the public. Because of this, the stability of this civil service has been unusually high

3 Garcés-Córdoba, Bernardo. "Charla en la Sociedad de Amigos del País". Bogotá, November 30, 1961. Mimeo, p. 3.

4 See Chapter IV, pp. 91-93.

5 Selznick, Philip. *TVA and the Grass Roots*. University of California Press, Berkeley, 1949, pp. 250-259.

—a very low rate of turnover compared to other organizations—, and its personnel has been unaffected by changes in national party administration, which is not the case in other public bureaucracies in Colombia.

During the early years of "charismatic" leadership, with a small nucleus of innovating administrators devoted against great odds to the survival and realization of a dream, there was a real *esprit de corps* which pervaded the the entire organization. Indeed it was the very struggle for survival against the attacks by the powerful local press and cattle-raising interests, and centralist obstructionism, that united CVC personnel and bound them into a kind of "family group". While good personnel techniques were observed from the very beginning, such as the preparation of job descriptions for all posts as they were created, strict observance of statutory functions and responsibilities, according to a rational division of labor, the keeping of records, and the maintenance of salary levels high enough to attract qualified candidates, major emphasis was devoted to getting something done —hard work on basic research and design, planning, organization and the search for financial resources— so that public support would be justified and forthcoming, and the survival of the organization and its program assured. The staff during this early period was small. In addition to the Board of Directors, who at that time served ad honorem, there were: an Executive Director, a Secretary General, a Chief of Finance, a Chief of Personnel and General Services, a Chief of Extension Services, a bi-lingual secretary, a few stenographers, bookkeepers, and draftsmen, an official in charge of publicity, and the group of foreign and national consulting engineers.

The attempt at division of labor did not always succeed, however. On more than one occasion the entire skeleton staff of Colombian administrators and foreign engineers were needed for the desperate fight against the repeated attempts at absorption by the Central government and at the limitation and stripping of CVC functions by local pressure groups. For example, much of the time of the chief engineer from the consulting firm KTAM was spent during the crucial "lost years" on the preparation of special reports and on trips to Bogotá in order to aid the Board of Directors in refuting arguments against their estimates for future demand for power in Valle and the order of project priorities put forth by the national power development agency "Electroaguas" and the Ministries of Development, Finance, and Agriculture. He also made numerous appearances at CVC Board meetings to aid in refuting the non-technical suggestions and thinly-disguised personal and regional interests advanced by representatives of the Associations of Cattlemen and Agriculturists, by certain individuals who enjoyed the confidence and ear of the President, and by the Governors of the Departments of Cauca and Caldas which were at that time included in the CVC development area. The Governor of Cauca was then Señora Josefina Valencia de Hubach, sister of the present President Valencia and wife of an Electroaguas official. Other specialized CVC officials with specific programs to carry out were also involved in making

contacts and lobbying with key central officials, congressmen, and party leaders —to use whatever personal, family, or political influence they might have in getting support for passing the crucial financial legislation (the 4 per 1000 real estate surtax to be levied in the CVC development area) and in persuading public and private, national and international financial agencies to provide capital in loans for the expensive, long-range power dam and reclamation projects. Since the group was small and the programs vast, everyone's help was needed in these lobbying activities.

B. ACCOMMODATION

The CVC's fight for legitimacy was finally won primarily through the absorption by cooptation [6] of representatives of both the central government and leading local opposition groups into the CVC Board of Directors.

Since the original founders of the CVC were from the very beginning operating in a hostile, traditionalist environment —not only a feudal land tenure system, rigid class structure, and generalized authoritarian attitudes, but a military dictatorship to boot—, and without the popular mandate which the Depression emergency gave the United State government for trying new forms of unified resource planning, the realization of the need for accommodation with these opposition forces came almost immediately, far earlier than in the case of the TVA.

On November 8, 1954, the original group of Valle leaders met in the regional offices of the Colombian National Association of Industrialists (ANDI), to organize themselves as the CVC Board of Directors. These included Diego Garcés Giraldo, merchant and farmer, in his capacity as Governor of Valle, as president; José Castro Borrero, corporation lawyer, as vice-president; Manuel Carvajal, paper and printing industrialist; and Harold Eder and Luis E. Sanclemente, both sugar industrialists, the latter in his capacity as Departmental Secretary of Finance. Their first act after organization was to appoint British-educated economist Bernardo Garcés Córdoba as Executive Director. Then they presented a draft of the proposed CVC statutes, which incorporated suggestions by CVC advisor, David E. Lilienthal, to a legal advisor for correct form, then again for approval by the Board, and finally to the President of the Republic. These first statutes, which were not fully legalized until July 1955, provided that the Board of Directors was to be composed of seven members: the Governors of the three Departments comprised in the CVC development area —Cauca, Valle, and Caldas— or their alternates, and four representatives or their alternates, chosen by the President of the Repub-

6 *Ibid.*, p. 259. Cooptation is "the process of absorbing new elements into the leadership or policy-making structure of an organization as a means of averting threats to its stability or existence".

lic [7]. While is was assumed that important regional leaders would be retained to provide for continuity, the first accommodation, then, was the cooptation of a majority of representatives of the central government (and Governors are also appointed directly by the President, although he often caters to regional desires as to choice of governor when under the normal democratic parliamentary regime). This distribution on the Board of Directors was designed to eliminate fear of loss of control by the central government, of this new type of decentralized agency. This fear was so great that approval of the statutes was delayed more that six months, and it was necessary to persuade and "reassure" the President through outside pressure. It required the intervention at the request of the CVC Board, of David E. Lilienthal, who also had influence in the International Bank for Reconstruction and Development (IBRD) before President Rojas. In a letter he pointed out that: "... the methods provided [in the draft now before you] for the selection of the managing board are exceptionally well-suited to the kind of enterprise which is to be administered. It provides ... (1) *Complete Control by the President of the Republic;* (2) Continuity of administration, so essential in an enterprise based as it is upon modern technology; (3) Regional responsibility, but in a national framework ... yet with no encouragement to petty localism and provincialism; and (4) Freedom from small gauge and petty political pressures, which could poison the grand vision, drive away technically able people, destroy business and public confidence, and in my opinion, dilute, if not *destroy the World Bank's interest* in the enterprise" [8].

Even after approval of the 1955 Statutes there remained a long struggle with centralist interests, political and bureaucratic, and with local economic interests. Then the military dictatorship was terminated, and a caretaker military Junta took over in May 1957. One of the Junta's early acts was to reaffirm the legal status of the CVC, since many attacks were being directed against it on the theory that the creation of the CVC was the arbitrary act of a dictator. But in the act of reaffirming the legality of the CVC, the central government suggested that the 1955 Statutes be reformed, permitting further cooptation, this time of regional pressure groups. In the discussion of the reform, Brigadier General Navas Pardo of the Junta Militar and the Minister of Development (Harold Eder) and the Minister of Agriculture (Jorge Mejía Salazar, son of the long-time magnate of the National Federation of Coffee Growers) stated that, "the desire of the Government was that the Board of Directors of the Corporation be expanded to include representation from various interested associations, especially those of the Agriculturists and Cattlemen of the Department" [9]. The CVC Board took care, however, to see that industrial

7 Decree 1829 of July 5, 1955. Article 25.

8 Letter reproduced in CVC, *Actas*, of May 9, 1955, pp. 88-90. The letter was dated April 27, 1955. Underlining by authors.

9 CVC. *Actas* of August 23, 1957, p. 394.

interests generally favorable to the CVC, would be equally represented on the Board with the landowning interests, and thus be able to counteract any move on the part of the latter to destroy the CVC and the power program in which industrialists were vitally interested. According to Decree 2226 of 1957, the CVC Board of Directors was to include seven members, [10] as follows:

The Minister of Development, or his representative;
The Governor of Valle, or his representative;
The Governor of Cauca, or his representative;
Two representatives chosen by the President of the Republic;

One representative chosen from among the Cattlemen's Association, the Society of Agriculturists, the Federation of Coffee Growers, and the Society of Agricultural Engineers, together as a group; and

One representative chosen from among the Bankers' Association, the National Association of Industrialists, the Federation of Merchants, and the Society of Engineers, together as a group.

This reform was approved by the CVC Board of Directors on August 23, 1957. It is interesting to note that the cattlemen at first refused to be "coopted" [11]. They were the strongest, die-hard opposition group, and felt they had the most to lose from the induced land use and tenure reforms of the CVC— until they at last realized that they had far more to gain than lose through participation, once the possibility of totally destroying the CVC entirely disappeared. Today the Board includes:

The Governor of Valle: Gustavo Balcázar, or his effective alternate;

The Governor of Cauca: Daniel Solarte, or his alternate, Alfonso Arboleda;

The Minister of Development: Aníbal Vallejo, or his alternate, who is Alvaro Lloreda, owner of *El País*, a Conservative Cali newspaper that has consistently fought the CVC;

The two representatives of the President of the Republic: Manuel Carvajal, industrialist, and Guillermo Becerra Navia, a sugar hacienda owner, or their alternates Eduardo Cabal Molina and Eugenio Castro, both with agricultural interests;

The representative of agricultural interests, at present the President of the Association of Cattlemen and Agriculturists, Salustio Victoria, or his alternate, Silvio Esquivel Cruz; and

The representative of industrial and commercial interests, at present Juan Berón Caicedo, an engineer and contractor, or his alternate, Joaquín Losada, manufacturer.

10 By this time the Department of Caldas had withdrawn from participation in the CVC, in the belief that Caldas would not benefit from the development plan.
11 CVC. *Actas*. of May 15, 1958.

This cooptation, while essential for neutralizing the virulence of the opposition and ensure the survival and stability of the CVC, has had the serious consequences mentioned elsewhere in this study, of diverting the emphasis of CVC programs to an almost exclusive concentration on power production, and retarding or indefinitely postponing other vital land reclamation projects which could modify the land tenure and land use patterns of the Valley, and as a result, double or triple agricultural production.

Fortunately the cooptation of interests inimical to decentralized authority and unified regional resource development have not produced even more serious effects, as might have been expected under the circumstances. This has been due to the fact that there has been continuity, a stable group of Board members and administrators who have been at the helm since the founding of the CVC. For while the representatives of the interests coopted have changed periodically, regional leaders such as Manuel Carvajal, Bernardo Garcés Córdoba, and José Otoya [12] have remained. Because of their intimate knowledge of the history of CVC problems, of the technical reasons for project choices and priorities, of methods and procedures in dealing with national bureaucracies, international financing agencies, and national and foreign engineering, construction, and manufacturing firms, because of their experience in refutation of the same attacks that arise again and again, and because of personal friendships built up over the years with IBRD and other officials, have been able to counteract to a considerable degree, negative actions by other Board members, proving once again, the axiom that knowledge, and access to information, is power.

However, once the CVC's fight for legitimacy was largely over, and the financial resources for its support assured, the CVC was able to begin the actual construction of some of the projects that had been carefully planned during the "lost years". This required the opening of new lines of activity and the rapid expansion of its staff. In the space of two or three years, the size of the CVC bureaucracy became what it is today. (See Table VII.1.)

12 José Otoya, an engineer and Manager of the Anchicayá Hydroelectric Plant (CHIDRAL) since the founding of the CVC, has been a very important figure in the stability of the CVC. Although he is not a CVC Board member and consequently does not frequently appear as an actor in the CVC drama, he is a "power behind the scenes". Not a day passes without these three notables conversing on CVC problems. Both Manuel Carvajal and Bernardo Garcés also sit on the Board of Directors of CHIDRAL.

TABLE VII.1

Personnel of the CVC, 1954-1965

Year	*Employees*	*Laborers*	*Total*
1954	3	—	3
1955	66	35	101
1956	217	47	264
1957	135	26	161
1958	206	38	244
1959	245	230	475
1960	230	324	554
1961	455	195	650
1962	590	239	829
1963	692	401	1,093
1964	751	345	1,096
1965	678	196	874

Source: CVC, Department of Personnel.

Although there still permeates through the institution a spirit of dedication, especially among the professional levels of personnel, the "routinization" of the CVC, predicted by Max Weber for every bureaucracy, is setting in. The expansion of departments, divisions, and sections, together with increasing numbers of personnel, as the CVC opened more fronts in research, extension, and construction, implied increasing division of labor and redefining of functions. This condition, plus the rational-technical-business commitment of the Corporation, brought about the contracting of a Bogotá administrative consulting firm, Joseph Berumen, Industrial Relations Consultants, Inc., to prepare a detailed organization chart (Figure VII.1), a complete job analysis and description, and salary scales.

C. ROUTINIZATION OF THE CVC

1. *Preference for Business Management Techniques*

The preference for, and commitment to, business management techniques or organization was, of course, the reason that the advice of industrial relations consultants was chosen over that of public administration experts. One might add also that the discipline and study of public administration is in its infancy in Colombia; [13] and again, that in the

13 The first elementary course in public administration as such was given by one of the authors at the School of Economics at the University of Valle from 1960 to 1962; the first Superior School of Public Administration was set up by the National Government in 1959, and only began actual teaching activities in 1962.

eyes of many Colombians, public administration is discredited, being associated with politics, patronage, and bureaucracy in its pejorative sense.

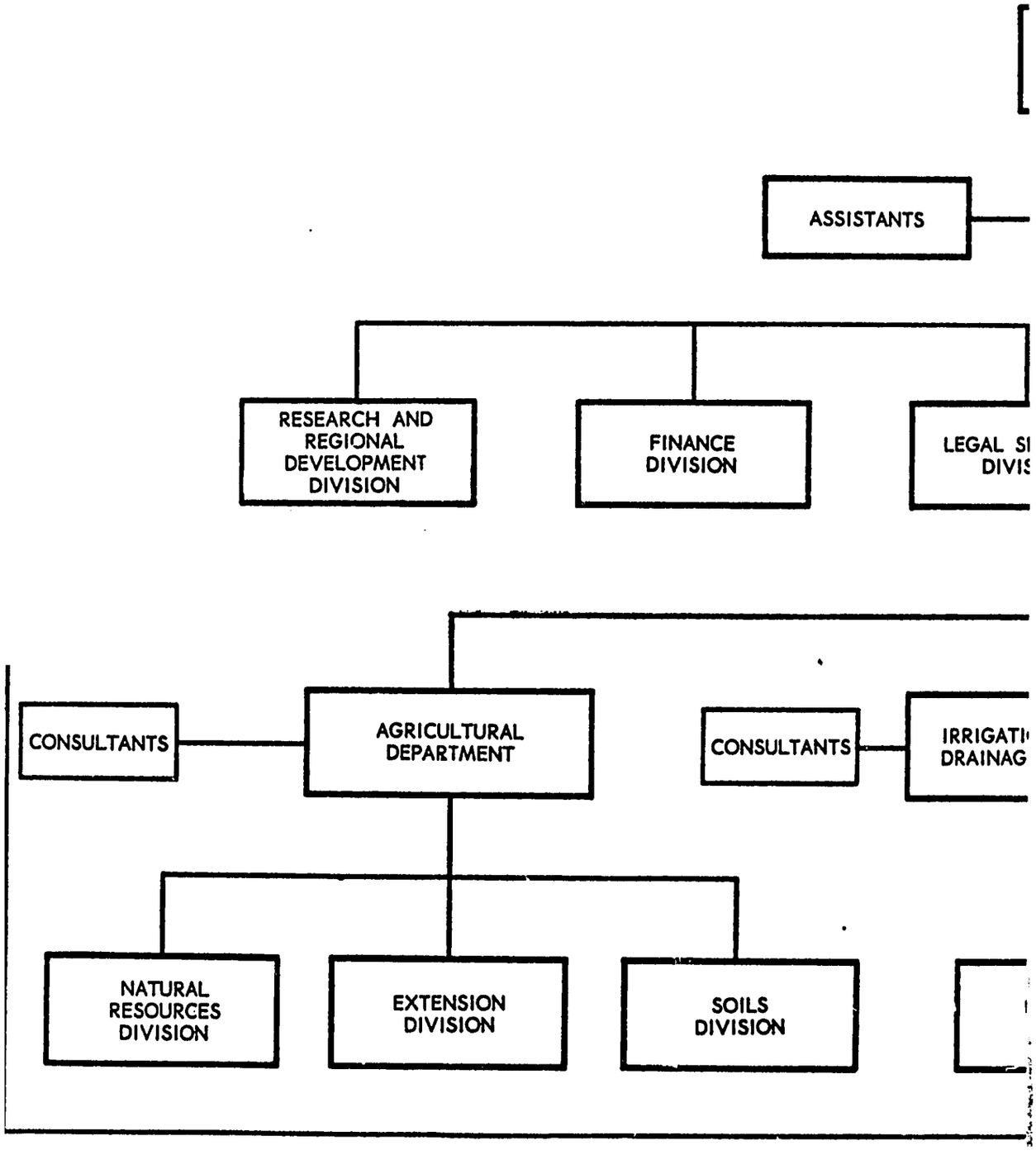
The preparation of the CVC *Personnel Manual*, which includes all basic statutary regulations with regard to personnel, salary and promotional scales on three levels (professional-directive, semi-professional, and occupational), job analyses and individual job descriptions, finished in 1963, took nearly three years to complete, at a total cost of Ps.$100,000. The Manual was prepared in the best management traditions, with the active participation of all department, division, and section heads, the Directive Board, and the labor unions. As such, it has also served as an educational experience for the administrative and policy-making personnel, forcing them to analyze their own functions, delineate more clearly their spheres of action or division of labor, and point up areas in which they may have fallen short of their responsibilities.

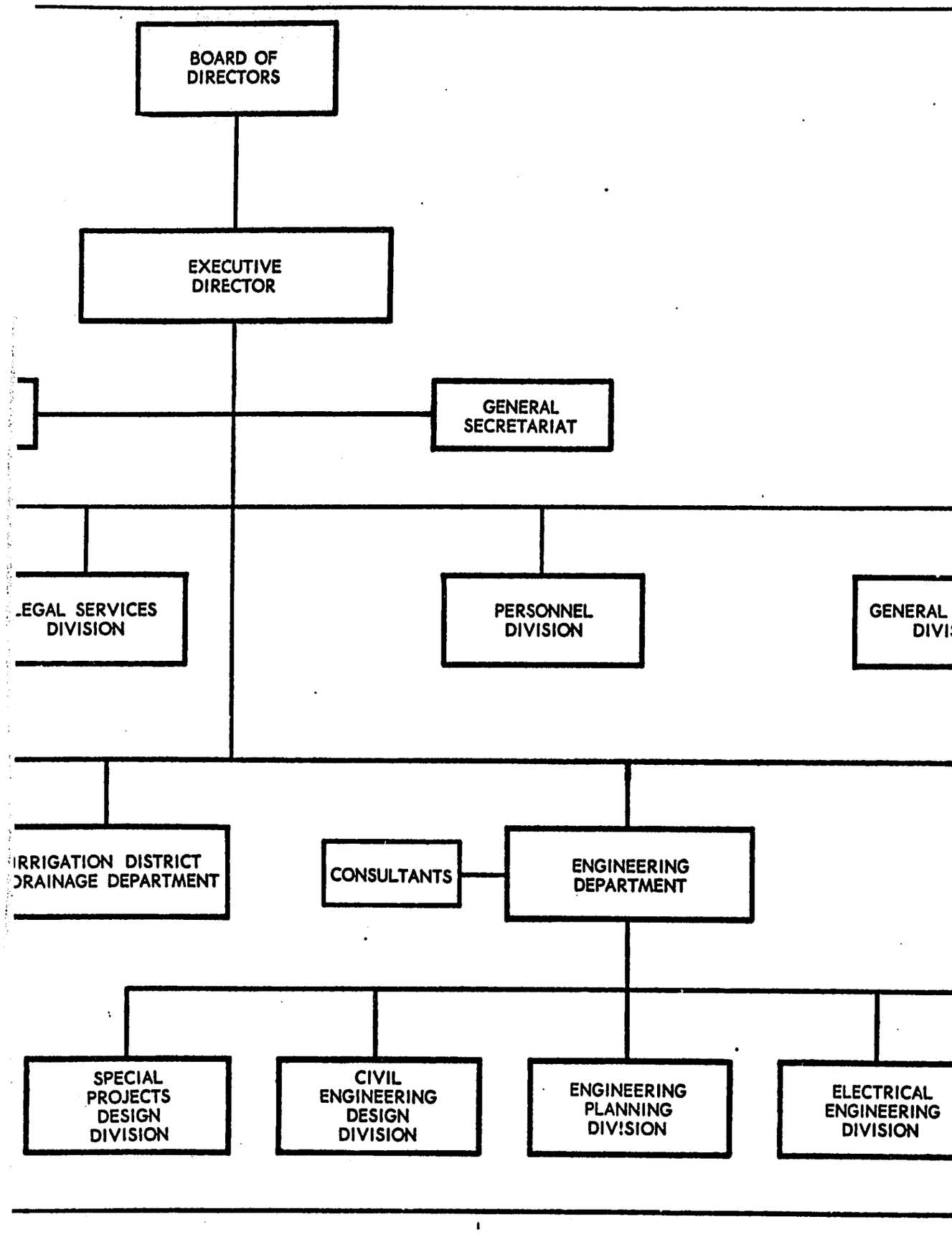
The broad outlines of general personnel policy were originally set by the Board of Directors in Agreement No. 12 of April 24, 1958 [14]. It included statements that "the employment of personnel by the Corporation and their promotion will be exclusively according to aptitude, behavior, and efficiency"; that "it is a basic objective of the Corporation to promote the training of Colombian personnel; and for that reason it will try to achieve stability in its personnel by offering opportunities for further training and promotion within the organization whenever possible"; and that "in order that the CVC be able to obtain and retain the services of competent employees, a salary scale comparable to those of other public and private agencies will be maintained". The original system of classification set up by the Board was similar to that of the United States Civil Service Commission, and antedated a similar adaptation now being imposed on the national bureaucracy by the Colombian Civil Service Commission, that is, 14 groups in ascending order, with several classes and five salary steps within each group. Groups I to VII are occupational positions; group VIII, "semi-professional", or clerical; and groups IX to XIV, professional-administrative positions. The Executive Director is empowered to create positions and appoint personnel in Groups I to IX; and the rest are created and appointed with the approval of the Board of Directors.

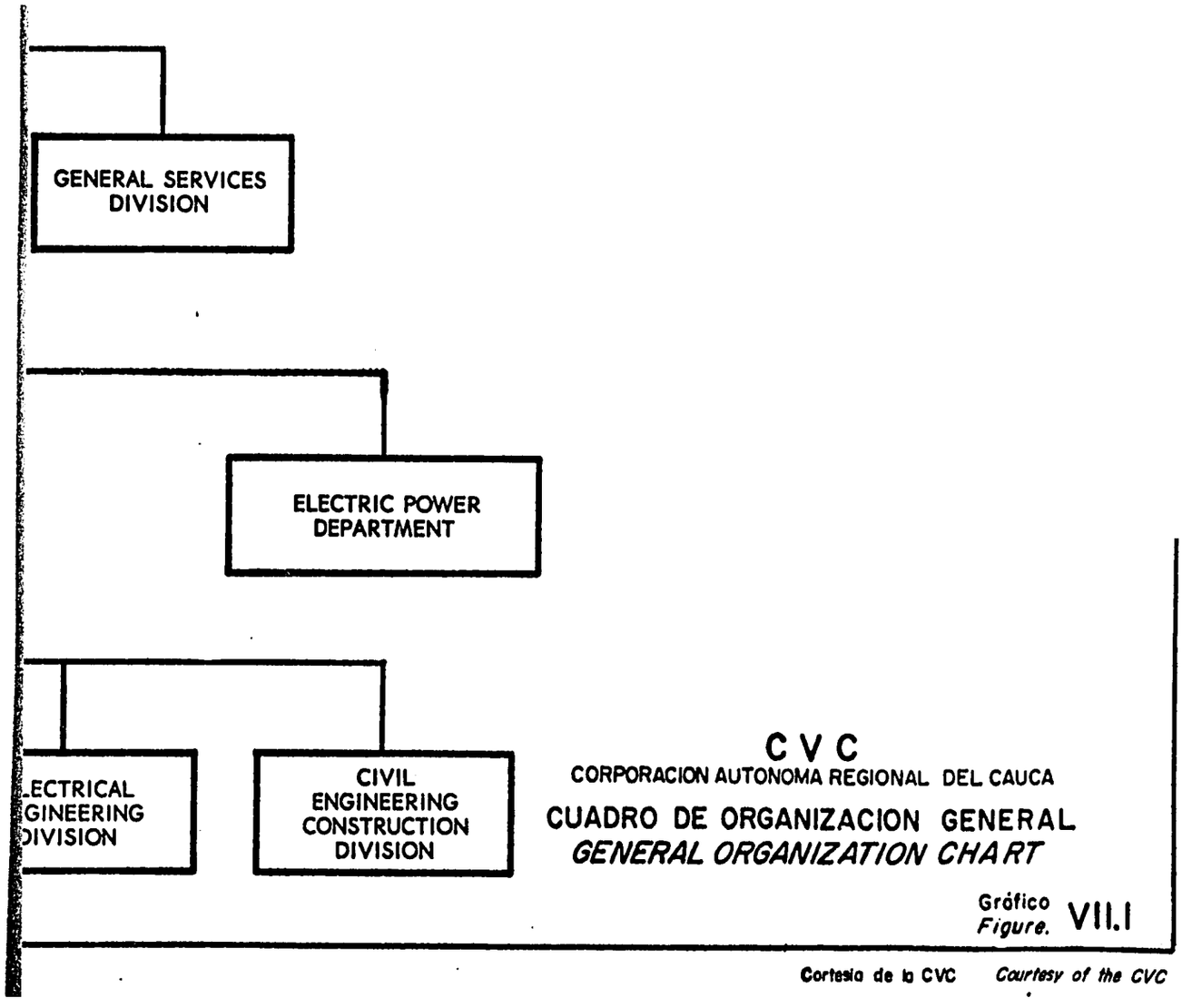
It is possible, and has ocurred on several occasions, for professional and semi-professional employees to rise to high administrative positions when they prove to be especially capable. The results have been notably better, however, when the individual's educational background has been that of a "generalist", i. e., in law, social sciences, or humanities, rather than that of the highly technical engineer.

This modern and rational personnel policy which the Board initiated from the very beginning, made the task of the industrial relations consultants relatively easy. There were few dislocations and reorganizations.

14 CVC, *Actas* of April 24, 1958, pp. 468-9.


ASSISTANTS
RESEARCH AND REGIONAL DEVELOPMENT DIVISION
FINANCE DIVISION
LEGAL SI DIVIS
CONSULTANTS
AGRICULTURAL DEPARTMENT
CONSULTANTS
IRRIGATI DRAINAG
NATURAL RESOURCES DIVISION
EXTENSION DIVISION
SOILS DIVISION


BOARD OF DIRECTORS
EXECUTIVE DIRECTOR
GENERAL SECRETARIAT
EGAL SERVICES DIVISION
PERSONNEL DIVISION
GENERAL S DIVIS
RRIGATION DISTRICT RAINAGE DEPARTMENT
CONSULTANTS
ENGINEERING DEPARTMENT
SPECIAL PROJECTS DESIGN DIVISION
CIVIL ENGINEERING DESIGN DIVISION
ENGINEERING PLANNING DIVISION
ELECTRICAL ENGINEERING DIVISION



C V C

CORPORACION AUTONOMA REGIONAL DEL CAUCA

CUADRO DE ORGANIZACION GENERAL

GENERAL ORGANIZATION CHART

Gráfico *Figure.* VII.I

Cortesia de la CVC *Courtesy of the CVC*

It was primarily a matter of putting things down on paper in a systematic (routine) way, in a form easily accessible to both officials and employees. The principal recommendation made was that the positions of Executive Director and Chief of Personnel and General Services were overloaded and should be broken down, and some of the functions delegated. Many persons have also made off the record comments which substantiate this: that too many decisions which could easily be made at lower levels are forced to the top; that when the Executive Director is absent, nothing gets done; that his deputies are loath to take the responsibility for any decisions. This would seem, however, from observation and experience, to be not so much an authoritarian attitude on the part of the Director, but a cultural trait with bases in the extremely hierarchical structure of Colombian society, in paternalism, in the "father-figure" need. On occasion, the Director has been delighted when someone capable and energetic has been willing and able to take responsibility. Nevertheless, there should be more serious and consistent efforts to train and groom two or three able, potential replacements for every crucial position in the organization. The survival of the CVC is at present too vulnerably dependent upon the continued good health of three of four key people.

Other recomendations made by the Consultants were merely of a formalistic nature: the presentation of statutory responsibilities in graphic form; the increasing of the number of occupational positions from 14 groups distributed among the three levels, to ten for the professional-administrative level, ten for the clerical level, and 12 for the occupational level; the creation of a point system of job evaluation corresponding to a salary scale; and uniform presentation in book form.

The increase in the number of groups was necessary because of the increased specialization and division of labor in the CVC, the expansion of personnel when actual construction of projects began, and the entrance of personnel in the occupational level into labor unions. The clear-cut division between the clerical and occupational levels has been especially important and helpful during the labor disputes which have plagued the CVC administration itself and have caused serious delays in the Calima I dam construction. The labor union claimed that CVC clerical workers also fell under its jurisdiction; and the CVC made the contrary claim that personnel of the clerical level were "public employees", since the CVC is a "public establishment", and thus these were forbidden by law to enter into strike activities [15]. The legal dispute was long and involved; but it appears that the unions have accepted the CVC position. The rational personnel policy, together with the reasonable, conciliatory atti-

15 Law 25 of 1959 states that CVC is a decentralized, regional, and apolitical public establishment but *subject to the norms of public administration*. Decree 550 of 1960 placed public establishments under the jurisdiction of the Executive Branch of the national government. And Decree 1678 of 1960 set up the norms for the Colombian civil service, which includes all dependencies of the national government and therefore all employees of the same.

tude of CVC officials, avoided what could have been an acrimonious problem.

The point-rating system of job evaluation instituted by the Consultants for all CVC positions except that of Executive Director is similar to that used in many industrial firms in the United States. Each job was factored into its component elements and a numerical value assigned according to the degree that each factor enters into the functions and responsibilities of the particular position. For the administrative-professional level the factors are as follows: Responsibility for planning; Responsibility for decisions which affect costs; Responsibility for creative work; Responsibility for study and research; Contacts with others; Type of supervision; Number of employees supervised; Influence upon results or in the rendering of services.

For the semi-professional and clerical level, the factors are: education, experience, complexity of functions, initiative and ingenuity, responsibility for care and precision, type of supervision, contacts with others, physical effort, and working conditions. For the occupational level they are: training, mental ability, manual ability, responsibility for materials, responsibility for tools and equipment, responsibility for the safety of others, mental effort, physical effort, working conditions, and personal risks. The number of points represented by the job evaluation were then totaled and the position placed in its proper rank in the salary scale. Within each group there is a minimum and maximum point value, and a corresponding minimum and maximum salary.

The margin between these basic minimum and maximum salaries may be used for individual annual merit raises; and there is to be an evaluation of performance and of the functions and responsibilities of each job every six months. Further, merit raises are never to be under 4 percent or over 10 percent of the present salary, and these are given on the anniversary of entrance to the CVC or of the last promotion. Individual increases because of promotion are to be the basic salary of the new post to start with, but if this increase is under 10 percent of the previous salary, it is to be adjusted accordingly, except when this 10 percent is over the maximum for any job classification. General increases may be made by decree of the national government as a result of labor union contract in the case of occupational personnel, or by voluntary disposition of the Board of Directors.

However, according to Law 1 of 1963, the top level of salaries, such as that of the Executive Director, are limited by the fact that the Director may not earn more that a cabinet minister who presently earns Ps.$6,600 a month. This has had a depressive effect upon salary levels for all professional personnel; and it is becoming increasingly difficult to compete with private industry in attracting the few available qualified Colombian engineers, economists, and administrators to the CVC. As a result, the CVC has had to resort to the awarding of special contracts,

which do not imply permanent employment with the CVC, and which usually can be justified only in the case of foreigners. Thus, instead of fostering the CVC policy of in-service training of Colombian professionals, the salary ceiling has prolonged the use of foreign professionals, which has been a source of jealousies and discontents ever since the beginning of the CVC. This condition has been especially serious since the currency devaluation of 1962.

2. *Formal and Informal Organization*

The organization chart (Figure VII.1) is a rough description of the formal organization of the CVC. Although most formal organization charts do not necessarily reflect the real chains of command and communications channels, nor the real locus of power and decision-making, a case can be made that this is not true of the CVC. The CVC formal organization chart may reflect these real situations to a far greater degree than is the case of organizations in the United States.

First, Colombian society and its social class structure are far more hierarchical and authoritarian in nature. Thus there tends to be a close congruence between the hierarchy of the social class structure and the organizational hierarchy, and therefore between the formal and real organizational structure. Most of the members of the Board of Directors, the Executive Director, and the head of the Engineering Department are members of the oldest and wealthiest families of the region --conservative, accustomed to roles of power and command, with an attitude of noblesse oblige, and not dependent upon their CVC incomes. They consider their positions as civic duties and opportunities to exercise their training and talents, at least as much as for ways of furthering their long-range economic interests. (Most of them own haciendas or industries, and while careful to maintain high standards of honesty by avoiding the possibility of immediate personal gain, they *are* interested in the over-all welfare of their respective sectors.) Their authority is never questioned by lower ranking officials, based as it is upon social status, as well as knowledge, training, and intelligence. Informal communications tend to follow the hierarchical levels horizontally and upward in a fairly orderly fashion. Chains of command and formal communications tend to flow downward rather than upward except when formal reports and technical advice are specifically requested. As mentioned before, there is also a very pronounced tendency to push decisions to the top. The fact that the directors of the CVC, whether founding members or coopted, are members of the ruling class has also lent the institution an aura of legitimacy it might not otherwise have enjoyed. Division and section heads and technicians are well-trained professionals from the middle sectors, very few of whom have any independent wealth. Clerical personnel are almost exclusively from the lower middle class, except for a few bilingual secretaries of the upper middle class; but since women are hierarchically in-

ferior, the relationship is not disturbed. Occupational personnel are from the lower or lower-middle classes [16].

Because of the sharp social class divisions and the consequent congruence of the two hieraerchies —social and organizational— then, plus the cooptation of antagonistic interests, most of whose vocal elite are also upper class, the real as well as formal locus of administrative power, authority, and decision-making resides in the Board of Directors and the Executive Director.

Perhaps the only exceptions to this general situation are the foreign engineers and consultants. Precisely because they are foreign and are thus a deviant subculture within the organization (although a far from homogeneous one, since they come from many different countries), most of the personnel problems, though not all, have arisen in this group. These foreign consultants sometimes do not feel bound by the formal chains of command and have on occasion used their informal power and access to members of the International Bank Board or other influential persons in order to influence or modify policy decisions. This problem will gradually be solved as sufficient well-trained Colombians become available to take over all positions, and provided the financial situation is improved sufficiently to permit the CVC to raise its salary levels and abandon the practice of farming out special contracts.

16 These statements are not based on a statistical survey, but are merely the result of long observation and knowledge of the region and its social structure. Factors such as family name, country club membership, wealth in land, dress, language, education, race, and social attitudes have been taken into account in evaluating class position.

VIII

General Evaluation of the CVC

A. DECENTRALIZATION

With the passage of Legislative Act No. 3 of 1959, [1] amending the National Constitution, which states that public establishments may be created on a regional basis to provide public services and aid in economic development, the beginning of a dynamic which may eventually lead to a redistribution of territorial and political power in Colombia was ratified. Before the establishment of the CVC, Colombia had a clearly unitary type of government administration in which all locuses of power were pulled into a strong president at the apex. In this unitary form of government the President appoints the national cabinet and governors; governors appoint departmental cabinets and mayors; mayors appoint municipal administrators. Functions are also delegated and controlled from the top; the tax power is reserved for the national congress; and all auditing, is done by the all-powerful Contraloría General de la República. As described before, this centralized hierarchical mold had been adapted from the French unitary and North American presidential-federal systems, in order to clamp into a structural order the amorphous and anarchical groups of colonial and post-Independence society. Political decentralization had been experimented with in the first half of the 19th Century, since it seemed indicated by the obvious geographic configuration of the country, divided into semi-isolated and clearly defined regional units. But the trial was premature and soon discarded. Political and social cohesion was insufficient for the development of a national consciousness, for a concept of the "patria", so that federalism, as then attempted, degenerated into separatism and anarchy.

The political experience of the framers of Colombia's constitution had been very limited; participation in political decision-making had been in general thwarted by the authoritarian Spanish colonial regime; so that it was inevitable that the constitutional theorists should look elsewhere for models of government structure, instead of inventing original forms to fit local conditions.

1 And prior to this date, Legislative Act Nº 5 of 1954.

Now political, social, and economic cohesion is beginning to catch up; political experience is becoming more varied and diffused; and the spontaneous result is the readjustment of the ill-fitting constitutional suit into a new dynamic toward regional decentralization. Political decentralization is also the inevitable result of the gradual formation of interest groups and the consequent transformation into a more pluralistic society.

Thus, the natural regional boundaries of the Cauca River Valley and the richness of its resources, the ever-increasing awareness of these potentials on the part of a growing technical and intellectual elite, the increasing politicization of the populace, the urgent and ever-compounding needs of an exploding population, and the coagulation of interests into well-defined groups in search of breakthroughs with respect to an increasingly complicated network of economic and social problems —all of these elements had been combining and coalescing over a period of several years to form irresistible pressures upon the centralized unitary structure to yield to increasing regional autonomy. That the dynamic began in the Cauca Valley is due to this very fortunate and opportune combination of privileged conditions. A new type of technical, apolitical layer of government structure has been inserted at a regional level between the national structure and the local. The departmental governments, being largely extensions of the national government, and suffocated by bureaucratic centralism —especially hamstrung by the lack of tax powers— could not develop this dynamic spontaneously from within. The pressures quite naturally originated outside, from the agricultural and business world. These newly formed interests began their onslaught upon the very source of power, the central government and bureaucracy, for the chipping, or siphoning off of national and departmental functions and powers into a rational, integrated regional structure. The success of the CVC in creating this new regional, semi-autonomous layer has naturally stimulated similar developments in other regions of the country.

Yet the tests of true political and administrative decentralization [2] have not been completely met, even though the process is fast moving in that direction. The first test, that is, whether the power of policy and project decisions rests in the hands of the regional leaders and technicians in charge of the CVC, suffered a setback in the recent attempts of the President of the Republic to alter the priorities of projects, which had been set by CVC technicians according to the technical agricultural and power needs and financial limitations of the region. It is hamstrung by the lack of power to set its own rates for the sale of electric power, and therefore, operating at a loss, it has been unable to develop financial independence. Even the foreign intervention by the IBRD Board through its power to grant or deny loans has restricted the independence of the CVC. Unfortunately the International Bank does not always fully comprehend the local reasons for CVC decisions; and of late, through its insistence on

2 Lilienthal, David. *TVA: Democracy on the March.* Harpers, N. Y., 1953, p. 142

interconnection of national power systems and postponing power dam construction seems to be weakening rather than strengthening the decentralization process. Since 1962, the CVC has also had to reach an additional accommodation with the passage of the Land Reform Law. This law establishes that where land reclamation works are being carried out, and specifically where irrigation districts are organized, property in land should be redistributed. The land reclamation works themselves should be carried out by INCORA, although the latter may delegate construction of these works to regional corporations such as the CVC. Before 1962, the CVC enjoyed complete autonomy in this field. As to the second test, whether the people of the region, together with their private and public local institutions, are actively participating in the enterprise, the answer is a far more heartening "yes", and is amply documented throughout this report.

The CVC now seems to be an institution which in the broad sense is here to stay. Its effects in inserting a new regional layer of semi-autonomous government structure are extensive and transcendental, although it unfortunately is still not entirely out of danger due to its precarious financial status. This condition, of course, is not limited to the CVC but extends throughout all governmental levels.

B. SHIFT IN POWER DISTRIBUTION

The decentralization process both reinforces, and is reinforced by, the shifts in political, economic, and social power it generates.

1. *Shift in Political Power*

The CVC has gathered in, through persuasion, pressures, negotiation, contract, delegation, agreement, and coordination, a good many of the functions of the government agencies which deal with economic development, public works, agricultural extension, and economic and technical research, for the Cauca Valley region. This has meant a gradual shift from central to regional responsibility for a great many of the most important services of modern government in the field of social and economic development. The CVC has also assumed, through contract, delegation, and coordination, some of the corresponding functions and responsibilities of the departmental governor and his bureaucracy. So that it has meant not only a diminution of central power, but a parallel and increasing overshadowing of the departmental government.

2. *Shift in Economic Power*

The increase in the local tax base, earmarked for, and collected by the CVC, for the financing of its functions, has brought direct benefits to the region where the taxes are collected, in contrast with the previous system whereby taxes collected locally were delivered to the central

government which absorbed the funds for its own bureaucracy with little filtering back to the regions. The patrimony of the CVC as owner or co-owner of large power stations, dams, flood control, irrigation, and drainage systems, land for reforestation and protection of watersheds, together with a bureaucracy of its own, has increased the economic power of the regional autonomous corporation at the expense of the national, departmental, and municipal governments.

Through its stimulation of intensive agricultural cultivation, made possible by flood control, irrigation, and drainage, extension service, and of industrialization due to the provision of cheap power, the CVC has contributed significantly, and will continue to contribute with ever-increasing momentum, to the tremendous growth of the entire region, and particularly of Cali and several other urban centers of the region. This reinforces an already rapid shift in economic and population power from the centralist domination of the capital city towards a more even distribution and balance with the provinces.

3. *Shift in Social Power*

The projects which the CVC has realized to date and which are now under way and projected for the future will increasingly result in the shift from the present almost monopolistic power of the great latifundistas and industrialists, together with the oligarchic class structure, towards increasing power in the hands of small farmers and small industrialists through fiscally-induced land reform, agricultural extension and education, *acción comunal* programs, stimulation of cooperatives, and the availability of cheap power and urban real estate. The social power shift is still embryonic, however, and is being met with strong resistance at every turn.

C. A MODEL CIVIL SERVICE

The CVC has successfully maintained a neutral position with respect to the political parties, and made startling headway towards acceptance of the idea that nepotism, intrigue, and patronage should play no part in the performance by an official bureaucracy in the carrying out of its legally assigned functions. It has trained the public to accept an apolitical civil service devoted to the public interest. The value of a non-political public bureaucracy, based on rational administrative techniques, has been proven by the realization of concrete projects, which although not astounding by the standards of advanced industrialized countries, are most encouraging when compared with the accomplishments of other Colombian bureaucracies, and when taking into consideration the tremendous financial and political obstacles which the CVC has had to confront and overcome during its first decade as a regional, non-political institution highly atypical of Colombia.

Personnel standards are high and compare very favorably with those of any advanced industrialized nation. Further, the CVC, precisely due to its youth and vigor, to the hope and vision of a better world it generates, has been able to maintain a mystique and morale which is quite unusual in Colombia. And the high morale has brought great stability, as shown by the comparatively low rate of turnover of its personnel.

Financial, accounting, administrative, and technical standards are also very high, owing largely to the fact that the early nucleus of directive officers, and professional personnel consisted almost entirely of foreign-educated Colombians in the positions of control and administration; and highly qualified foreign engineers and technicians experienced in such large-scale complexes as the TVA, in positions of research, planning, and execution of the engineering projects. In spite of the expansion of the CVC bureaucracy during the last few years, this stable nucleus has thus far been able to maintain the standards, morale, and mystique of the early years. Due to its comparative success, the CVC has thus been a kind of show-place for the demonstration of good, efficient, and economical public administration techniques and principles of unified planning. The danger lies in the almost continuous precarious financial state in which the CVC finds itself, due only to the lack of public financial support. The constant state of crisis is a war of nerves which at times overtaxes the dedication and faith of its directors.

D. STIMULATION OF COOPERATIVE ATTITUDES

As has been seen, one of the prime obstacles to more rapid development in Colombia as a whole, has been the culturally determined attitudes of its people. The fatalistic, dependent, and authoritarian attitudes of the vast majority of Colombians are no aid to generating the initiative, cooperation, skills, pride in work, creativity, self-confidence, and optimism which will enable them to attack and solve their own problems. Generation of these cooperative and constructive attitudes throughout the region has been one of the most important contributions of the CVC, one that is destined to have more profound and far-reaching consequences than any other of its programs. For it is only upon people that a successful development program can be built with firm foundations —only the quality of the human resources of a nation can make it great.

One of the most heartening sights observed was the leading of a CVC 4-S Club meeting by a 12-year old pig-tailed negro girl, in the best parliamentary tradition, and with more poise than is often found among children in the private schools of the privileged classes. The meeting involved the calling to order of 30 other children, the reading of minutes and treasurer's report, the discussion of the relative value of several home-making projects, and the financial resources (dues) at their disposal. Another equally impressive performance was the clear exposition by a

10-year old boy on the best methods of hog-raising in front of an audience of adults at the 4-S Club Exposition held annually at the Palmira Agricultural Experiment Station in December. Or a small girl explaining how to cut and sew a dress without the aid of a pattern. These are only a few examples. One must see in order to believe, the quality and variety of projects carried out by children and young people with a minimum of resources. The projects include arts and crafts for beautifying the home, such as rugs, linens, flower pots, centerpieces, pictures, furniture of bamboo and fique; clothing and toys; home repairs (floors, walls, roofs, lighting, construction of latrines, showers, and sinks); agricultural projects, such as the breeding and care of pigs, poultry, bees, rabbits, and cattle, vegetable gardening, cultivation of fruit trees and some industrial plants; construction of some implements and tools; instruction and participation in sports; projects in nutrition, food preparation, and children's breakfast program; and projects oriented to the establishment of better living relationships in family and community [3]. It is a joy to watch the enthusiastic and proud faces of these young people as they demonstrate their accomplishments of the year at these fairs. The young peasants of the Cauca Valley are learning the pride of achievement, the love of beauty and of the land, and to work cooperatively and democratically together for a common purpose. The only defect in this program is that it is still far too limited —in funds and in trained personnel, and therefore in the numbers of children it can reach.

Another interesting achievement has been the grouping of members of the respective communities into organizations through which they are developing their civil responsibilities in a democratic way. In each of the principal villages where the program is in operation, a village Civic Board has been created, composed of the leading citizens (informal leaders) of each village. At the head of the Municipality functions the Municipality Civic Board, composed of the formal leaders — the mayor, the municipal manager *(personero)* and treasurer, the parish priest, the chief CVC agronomist for the sector, the director of the municipal pilot health center (set up as in Candelaria in cooperation with the Schools of Medicine and Nursing of the University of Valle) and a representative from each one of the village civic boards. These boards aid the CVC extension personnel in preparing projects and social activities which meet the expressed needs of the respective communities, and in generating genuine community-wide spirit and participation.

E. CONCLUSION

In conclusion, the prospects for continued economic and social development that the CVC has initiated, are neither overly optimistic, nor are

3 Posada, Antonio J. "Candelaria, An Experiment in Integrated Community Development". CVC, Cali, June 5, 1960. Mimeographed, 7 pp.

they grounds for despair. On the contrary, the lesson, unfinished though it is, is there for those who wish to see. The CVC experiment has proved that it is possible to do great and constructive work when social and economic problems are studied and attacked in an integrated way; that people do respond when given the opportunity to solve their own problems; that cooperative, democratic community relationships are possible.

Unfortunately, the CVC does not exist in a vacuum, and its future will be largely determined by the national financial and political conditions of the next 10 years. The CVC's financial security must be guaranteed before it can really produce the shining model for the future which the Cauca River Valley can become. While the CVC's accomplishments to date are quite remarkable in view of the hostile and unfavorable political, social, and financial environment in which it was born and had to struggle for existence, most of the projects are not yet completed, cover only a part of the territory they were designed to benefit, or are filed away, complete with engineering designs and necessary research data, awaiting the day when funds become available. It will indeed be a tragedy if this wonderful dream is allowed to die away.

Yet perhaps precisely because of this hostile harsh infancy, the CVC has become accustomed to endure and survive the long battle. It is to be sincerely hoped that the leaders who have done so much to make the CVC possible will not lose heart, but find new strength to take up arms and continue the fight. Only institutions such as the CVC can provide any real hope for raising the standards of human dignity.

Bibliography

I. GENERAL

ADAMS, RICHARD, et al.: *Social Change in Latin America Today*. Random House, N. Y., 1961.

BLANKSTEN, GEORGE: "The Politics of Latin America" in *The Politics of the Developing Areas*, by Almond, G. and Coleman, S. Princeton University Press, 1960.

CREVENNA, THEO: *Materiales para el Estudio de la Clase Media en la América Latina*. Unión Panamericana, Washington, D. C., 1950.

DUBUYST, FEDERICO: *Las Clases Sociales en la América Latina*. Documentos Latinoamericanos (FRERES), Bogotá, 1962.

FOSTER, GEORGE: *Traditional Cultures and the Impact of Technological Change*. Harper Bros., N. Y., 1962.

HAGEN, EVERETT: *On the Theory of Social Change*. Dorsey Press, Homewood, Illinois, 1962.

HIRSCHMAN, ALBERT O.: *Journeys Toward Progress: Studies of Economic Policy-Making in Latin America*. Twentieth Century Fund., N. Y., 1963.

ICAD (Comité Interamericano de Desarrollo Agrícola): *Inventario de la Información Básica para la Programación del Desarrollo Agrícola en la América Latina: Colombia*. Washington, D. C., November 1962.

INSTITUTO NACIONAL DE INDUSTRIA, Presidencia del Gobierno de España: *El Plan de Badajoz*. Gráficas Casado, Madrid, 1958.

INTERNATIONAL CENTER FOR SOCIAL RESEARCH: *Planificación Latinoamericana*. New York, April 1963.

JOHNSON, JOHN J.: *Political Change in Latin America: The Emergence of the Middle Sectors*. Stanford University Press, 1958.

JOHNSON, JOHN J.: *The Military and Society in Latin America*. Stanford University Press, 1964.

JOHNSON, JOHN J.: *The Role of the Military in Underdeveloped Countries*. Stanford University Press, 1962.

KAUTSKY, JOHN H.: *Political Change in Underdeveloped Countries: Nationalism and Communism*. Wiley, N. Y., 1962.

KERR, CLARK, and SIEGEL, A.: "Inter-Industry Propensity to Strike: An International Comparison" in *Industrial Conflict* by A. Kornhauser and R. Dubin, McGraw-Hill, N. Y., 1954.

LIEUWEN, EDWIN: *Arms and Politics in Latin America*. Praeger, N. Y., 1961.

LILIENTHAL, DAVID: *TVA: Democracy on the March*. Harpers, N. Y., 1944, 1953.

McCLELLAND, DAVID: *The Achieving Society*. Van Nostrand, Princeton, N. Y., 1962.

REID, P. A.: *Appraisal of Irrigation Projects in Under-developed Countries*. (unpublished article). N. Y., August 1962.

SELZNICK, PHILIP: *TVA and the Grass Roots*. University of California Press, Berkeley, 1949.

SILVERT, KALMAN: *The Conflict Society: Reaction and Revolution in Latin America*. Hauser Press, New Orleans, 1962.

SMITH, T. LYNN: "The Growth of Population in Central and South America". Committee of the Judiciary, U. S. House of Representatives: *Study of Population and Immigration Problems, Western Hemisphere II*. Washington, D. C., 1963.

U. S. SENATE COMMITTEE ON FOREIGN RELATIONS: *United States-Latin American Relations*. 86th Congress, Second Session, Document 125, August 31, 1960.

WHYTE, WILLIAM, and HOLMBERG, ALLAN: "The Human Problems of U. S. Enterprise in Latin America". *Human Organization*. Vol. 15, Nº 3, Fall 1956.

II. COLOMBIA

ASOCIACION COLOMBIANA DE UNIVERSIDADES: *Educación Superior*. Boletín Nº 3, Bogotá, 1961 (?).

COMITE DE DESARROLLO ECONOMICO: *Informe Final: Septiembre 1950-Agosto 1951*. Imprenta del Banco de la República, Bogotá, 1952.

COMITE NACIONAL PARA REFORMA AGRARIA: *Actas, 1960-1961*, (mimeo). Bogotá, 1960, 1961.

CONSEJO NACIONAL DE POLITICA ECONOMICA Y PLANEACION, DEPARTAMENTO ADMINISTRATIVO DE PLANEACION Y SERVICIOS TECNICOS: *Colombia: Plan General de Desarrollo Económico y Social* (Parte I: General; Parte II: Industria). Imprenta del Banco de la República, Bogotá, 1962.

CONSEJO NACIONAL DE POLITICA ECONOMICA Y PLANEACION: *Colombia: Plan Cuatrienal de Inversiones Públicas Nacionales 1961-1964*. Bogotá, December 1960.

CURRIE, LAUCHLIN: *Operación Colombia: Un Programa Nacional de Desarrollo Económico y Social*. Sociedad Colombiana de Economistas, Bogotá, 1962.

FALS BORDA, ORLANDO; GUZMAN, MONSEÑOR GERMAN; and UMAÑA LUNA, EDUARDO: *La Violencia en Colombia: Estudio de un Proceso Social*. Facultad de Sociología, Universidad Nacional de Colombia, Vol. I, Bogotá, 1962; Vol. II, Ediciones Tercer Mundo, Bogotá, 1964.

FEDER, ERNEST: "The Rational Implementation of Land Reform in Colombia and its Significance for the Alliance for Progress" in *America Latina* for January - March 1963, Río de Janeiro, Brazil.

FLUHARTY, VERNON: *Dance of the Millions: Military Rule and the Social Revolution in Colombia, 1930-1956*. University of Pittburgh Press, 1957.

GUTIERREZ, JOSE: *De la Pseudo-Aristocracia a la Autenticidad*. Ediciones Tercer Mundo, Bogotá, 1961.

GUTIERREZ, JOSE: *La Revolución Contra el Miedo: Psicoandlisis de un Pueblo Irracional*. Ediciones Tercer Mundo, Bogotá, 1964.

HOBSBAWM, E. J.: "The Anatomy of Violence" in *The New Society*. London, April 11, 1963.

HUNTER, JOHN M.: *Emerging Colombia*, Public Affairs Press, Washington, D. C., 1962.

INCORA (Instituto Colombiano de Reforma Agraria): *Ley 135 de 1961: Reforma Social Agraria*. Imprenta Nacional, Bogotá, 1962.

INCORA: *Boletines Informativos* (various). Bogotá, 1963.

INCORA: *Decretos Reglamentarios Nos. 1902, 1903 and 1904 of 1962*, in *Revista Negocios*, Nº 123, Bogotá, 1963.

INCORA: *Informe con Destino a la Comisión Interamericana Económica y Social de la Organización de Estados Americanos sobre los Aspectos Relacionados con los Programas Desarrollados por el Instituto en el año 1962*. (mimeo). Bogotá, 1963.

INCORA: *Informe de Actividades en 1962*. Imprenta Nacional, Bogotá, April 1963.

INTERNATIONAL BANK FOR RECONSTRUCTION AND DEVELOPMENT: *Basis for a Development Program for Colombia*. Washington, D. C., 1950.

INTERNATIONAL BANK FOR RECONSTRUCTION AND DEVELOPMENT: *El Desarrollo Agrícola de Colombia*. Bogotá, May 1956.

LANNOY, JUAN LUIS, y PEREZ, GUSTAVO: *Estructuras Demográficas y Sociales de Colombia*. Centro de Investigaciones Sociales, Bogotá, 1961.

LLERAS CAMARGO, ALBERTO: *El Primer Gobierno del Frente Nacional* (2 volúmenes). Imprenta Nacional, Bogotá, 1960.

LLERAS RESTREPO, CARLOS: *Análisis de un Propósito Nacional de Gobierno*. Sociedad Económica de Amigos del País. Bogotá, April 4, 1960.

LLERAS RESTREPO, CARLOS: "Planteamientos de la Reforma Social Agraria" in *La Nueva Economía*, Bogotá, February 1961.

LLERAS RESTREPO, CARLOS: "Ponencia para Segundo Debate del Proyecto de Ley sobre Reforma Social Agraria", in *La Nueva Economía*, Bogotá, December 1961.

LONDOÑO Y LONDOÑO, FERNANDO: *Memoria del Ministro de Gobierno al Congreso, 1962*. Imprenta Nacional, Bogotá, 1962.

MESA BERNAL, DANIEL: "La Educación Agrícola en Colombia" in *Agricultura Tropical*, Bogotá, January 1958.

MISION ECONOMIA Y HUMANISMO (LEBRET MISSION): *Estudio sobre las Condiciones de Desarrollo de Colombia; Atlas* (2 vols.). Comité Nacional de Planeación de la Presidencia de la República. Editorial Cromos, Bogotá, September 1958.

MITCHELL, C. CLYDE: *Desarrollo Económico, Teoría y Práctica: El Caso de Colombia*. (mimeo). Bogotá, 1961 (?).

NACIONES UNIDAS (CEPAL): *Análisis y Proyecciones del Desarrollo Económico III: El Desarrollo Económico de Colombia*. México, 1957.

NIETO ARTETA, LUIS EDUARDO: *Economía y Cultura en la Historia de Colombia*. Editorial Siglo XX, Bogotá, 1944.

OTS-CAPDEQUI, JOSE MARIA: *El Estado Español en las Indias*. Fondo de Cultura Económica, México, 1941.

PARSONS, JAMES J.: *Antioqueño Colonization in Western Colombia*. University of California Press, Berkeley, 1949.

PINEDA, VIRGINIA: *La Familia en Colombia*. Centro de Investigaciones Sociales, Bogotá, 1962.

POSADA F., ANTONIO J.: *The Economics of Colombian Agriculture*. (Ph.D Thesis). Madison, Wisconsin, 1952.

PRIETO, RAFAEL, y ORTEGA, FRANCISCO J.: *Colombia: Proyecciones de Pc blación y Métodos Empleados, 1951-1975. Resumen.* Centro de Estudios sobr Desarrollo Económico, Universidad de los Andes, Bogotá, November 1961.

ROBERT A. NATHAN ASSOCIATES: *Programa de Desarrollo Económico del Vall del Magdalena y Norte de Colombia* (Directed by Lauchlin Currie). Ministerio d Obras Públicas, Bogotá, 1960.

RODRIGUEZ, ROMILIO: *La Colonización Agrícola y Algunos Problemas de l Tenencia y Uso de la Tierra en Colombia.* (mimeo). FAO, Bogotá, 1957.

RODRIGUEZ, ROMILLO: *La Colonización Agrícola en Colombia: Estudio Histó rico-Legal.* (mimeo. FAO, Bogotá, March 1957.

TASCON, TULIO ENRIQUE: *Derecho Constitucional Colombiano.* Editorial La Grai Colombiana, Bogotá, 1944.

UNITED NATIONS, DEPARTMENT OF ECONOMIC AND SOCIAL AFFAIRS: *196 Report on the World Social Situation.* United Nations, N. Y., 1963.

VELEZ-GARCIA, JORGE, editor: *Devaluación: Historia Documental de un Proces Económico* (anthology of articles by principal Colombian statesmen). Edicione Tercer Mundo, Bogotá, 1962.

WHITEFORD, ANDREW: *Two Cities of Latin America: A Comparative Descriptior of Social Classes in Popayán and Querétaro.* Logan Museum of Anthropolog Publications, Beloit College, Beloit, Wisconsin, 1960.

III. CVC AND VALLE

ARBOLEDA, GUSTAVO: *Historia de Cali.* Biblioteca de la Universidad del Valle, Cali, 1956.

ARIAS GIRALDO, HELIO FABIO: "Uso de la Tierra en Pequeñas Fincas de Roldanillo". *Acta Agronómica,* Vol. VI, Nº 2, Palmira, April 1956.

AUTECO (L'Auxiliaire Technique et Comptable): *Republic of Colombia: Cauca Valley Coal Survey.* Brussels, Belgium, 1963-1964.

CAMACHO PEREA, MIGUEL: *El Valle del Cauca: Constante Socio-Económico de Colombia.* Imprenta Departamental del Valle, Cali, June 1962.

CARVAJAL, MANUEL: *Dos Cartas.* CVC, Cali, October 1958.

CHARDON, CARLOS E.: *Reconocimiento Agro-Pecuario del Valle del Cauca.* Informe de la Misión Agrícola Puertorriqueña al Gobernador del Valle. San Juan, Puerto Rico, 1930.

COLMENARES, JESUS HUMBERTO: *Análisis de la Producción Agrícola en el Departamento del Valle: Números Indices de Producción Agropecuaria, 1955-1962.* (Tesis de grado). Facultad de Ciencias Económicas, Universidad del Valle, Cali, Junio 1964.

CONTRALORIA GENERAL DE LA REPUBLICA: "Aspectos Jurídicos y Socio-Económicos de la CVC", in *Economía Colombiana,* Bogotá, November 1957.

CRIST, RAYMOND E.: *The Cauca Valley, Colombia: Land Tenure and Land Use.* Waverly Press, Baltimore, 1952.

CVC (Corporación Autónoma Regional del Cauca): *Actas, 1954-1964.* (mimeo). Cali, 1954-1964.

CVC: *Análisis Económico de 109 Fincas en el Area de Roldanillo-La Unión-Toro, 1961-1962.* Unpublished, Cali, 1963.

CVC: *Bugalagrande-Cartago Project, Preliminary Report.*

CVC: *CVC Land Reclamation Program*, Cali, 1961 (?).

CVC (Central de Anchicayá): *Central Termoeléctrica de Yumbo* (public relations pamphlet), Cali, 1963.

CVC: *Curso de Capacitación en Problemas de Desarrollo Económico*. Cali, November 1960.

CVC: *Estado de Avance de los Programas de Inversión: Parte Física*. Cali, December 1962.

CVC: *Estado de Avance de los Programas de Inversión: Parte Financiera*. Cali, December 1962.

CVC: *Estados Financieros* (monthly and annual). Cali, 1958-1964.

CVC: *Evaluación Agroeconómica del Proyecto de Irrigación Río Palo, Departamento del Cauca, Colombia*. Cali, 1963.

CVC: *General Information*. Cali, December 1960.

CVC: *Información General*. Cali, July 1961.

CVC (Departamento de Ingeniería): *Informe de Progreso Nº 1: Trabajos Financiados con Préstamo 255-CO del BIR*. Cali, January-June 1961.

CVC: *Informe Nº 36*. Cali, October-December 1960.

CVC: *Informe sobre la Educación en el Valle del Cauca*. Cali, August 1958.

CVC: *Manual de Organización y Salarios*. Cali, 1963.

CVC: *Power Program: Financial Forecast for 1961-1968: Report C-4041C*. Cali, August 1962.

CVC: *Programa de Desarrollo de la Comunidad en el Valle del Cauca*. Cali, February 1961.

CVC: *Programa Presupuestal* (annual). Cali, 1958, 1959, 1960, 1961, 1962, 1963, 1964.

CVC: *Programa de Tarifas y Cargos por Cuenta de Energía. Tarifa de Venta en Bloque, Programa A*. Cali, August 3, 1962.

CVC: *Proyecto de Aguablanca* (public relations pamphlet). Cali, 1960 (?).

CVC: *Proyecto Ciro Molina Garcés*. Cali, 1962 (?).

CVC: *Proyecto Hidroeléctrico de Calima I* (public relations pamphlet). Cali, 1963.

CVC: *Report on the Calima II Project*. Cali, June 30, 1963.

CVC: *Roldanillo-La Unión-Toro Project: Hydrologic and Hydraulic Design: Report C-1271*. Cali, August 1960.

CVC: *Sentencia del Consejo de Estado sobre Nulidad de unas Providencias de la Junta de Beneficencia de Cundinamarca*. Cali, February 14, 1962.

CVC (Servicio de Extensión Agropecuaria): *Plan Anual de Trabajo* (annual). Cali, 1962, 1963, 1964.

CVC (Servicio de Extensión Agropecuaria): *Informe Correspondiente a 1962*. Cali, 1963.

CVC: *Solicitud de Crédito a la Alianza para el Progreso*. Cali (?), date (?).

CVC: *Training and Research Center for Land Use, Land Tenure, and Area Development in Colombia*. Cali, 1960.

CVC, Facultad de Ciencias Económicas de la Universidad del Valle, and OLAP (Ospina, Olarte, Arias and Payán, Ltda.), G&H (Gibbs & Hill of N. Y.), KTAM (Knappen, Tippetts, Abbett, McCarthy of N. Y.): *Bugalagrande - Cartago Project: Report C-4204.* Cali, April 1962. (Cooperative study).

CVC and OLAP-G&H-TAMS: *Cauca Pacific Diversion.* Cali, November 1957.

CVC and INGETEC-G&H-TAMS: *CVC Advance Planning Requirements: Report C-4885.* N. Y., May 1962.

CVC and OLAP-G&H-TAMS: *CVC Power Program, 1960-1970: Report C-1107.* Cali, September 1959.

CVC and INGETEC-G&H-TAMS: *Proposed Studies: The Calima II Project and Diversions to the Calima Reservoir, Report O-4886.* N. Y., May 1962.

CVC, FACULTAD DE CIENCIAS ECONOMICAS and INGETEC-G&H-TAMS: *Roldanillo-La Unión-Toro Project, Status of Development: Report C-4267.* Cali, April 1962.

CVC and OLAP-G&H-TAMS: *The Timba Project.* Cali, April 30, 1958.

CVC and OLAP-G&H-TAMS: *The Unified Development of Power and Water Resources in the Cauca Valley.* N. Y. and Bogotá, January 1956. (Spanish version: *El Desarrollo Coordinado de Energía y Recursos Hidráulicos en el Valle del Río Cauca).*

CVM (CORPORACION AUTONOMA REGIONAL DE LOS VALLES DEL MAGDALENA Y DEL SINU): *CVM, 1962.* Editorial Nueva Prensa, Bogotá, 1962.

EDER, PHANOR J: *El Fundador, Santiago M. Eder.* Editorial Antares, Bogotá, 1959.

EMPRESAS MUNICIPALES DE CALI: *Solicitud de Préstamo Complementario al Banco Interamericano de Desarrollo para Financiación del Alcantarillado de Cali.* Cali, July 1961.

EMPRESAS PUBLICAS DE MEDELLIN (COLOMBIA): *Power Development Program 1963-1967, and Preliminary Plans for 1967-1978.* Ingeniería Técnica General, Ltda., Medellín, November 1960.

FEDER, ERNEST, and POSADA F., ANTONIO J.: *Análisis Socio-Económico de Dos Zonas de Recuperación de Tierras en el Valle del Cauca, Colombia y su Significación para un Programa de Reforma Agraria.* (to be published) Cali, 1962. (also English version).

GARCES CORDOBA, BERNARDO: *Speech of October 14, 1960 to Conference of Departmental Secretaries of Agriculture.* Cali, 1960.

GARCES, CORDOBA, BERNARDO: *Charla Radial del 22 de Diciembre de 1960.* CVC, Cali, 1960.

GARCES CORDOBA, BERNARDO: *Address to the American Men's Society of Cali.* Cali, June 27, 1961.

GARCES CORDOBA, BERNARDO: *Discurso ante la Sociedad de Amigos del País.* Bogotá, November 30, 1961.

GOBIERNO DE COLOMBIA, JUNTA MILITAR DE GOBIERNO: *Decreto Legislativo Nº 0282 de 1957.* (concerning CVC) Bogotá, October 31, 1957.

GONZALEZ PIEDRAHITA, ERNESTO: *Estado de Conflicto entre la CVC y los Postulados Democráticos Colombianos.* Sociedad de Agricultores del Valle, Cali, December 1957.

INSTITUTO DE FOMENTO INDUSTRIAL: *Investigación de los Yacimientos de Carbón del Valle del Cauca, Colombia.* Bogotá, May 1961.

INTERNATIONAL BANK FOR RECONSTRUCTION AND DEVELOPMENT: *The Autonomous Regional Corporation of the Cauca and the Development of the Upper Cauca Valley.* Washington, D. C., November 1955.

IRURITA, DOMINGO: *Los Grandes Problemas Nacionales: La irrigación del Valle del Cauca.* Imprenta Nacional, Bogotá, 1936.

"LA CVC EN COLOMBIA": in *Economía Grancolombiana* (special supplement to Nº 15). Bogotá, March, 1962.

LILIENTHAL, DAVID E: *Address to the University of Valle.* Cali, December 11, 1959.

LLERAS RESTREPO, CARLOS: *Concepto Relacionado con el Decreto Legislativo Nº 0160 de 1956 que Autorizó un Aumento del Impuesto Predial para Dotar de Recursos a la Corporación Autónoma Regional del Cauca.* CVC. Cali, April 1958.

PALACIOS, GRACIELA and ROA M., CARLOS: *Programa de Estadísticas Agrícolas en el Valle del Cauca* (Tesis de grado). Facultad de Ciencias Económicas de la Universidad del Valle, Cali, June 1963.

PAREDES CRUZ, JOAQUIN, and CAMACHO PEREA, MIGUEL, editores: *Indices Vallecaucanos.* Cali, May 1960.

PLAZAS Y PERRY, Ltda.: *Manuelita: Una Industria Centenaria, 1864-1964.* Editorial Agra, Bogotá, April 20, 1964.

POSADA, ANTONIO J: *Candelaria: An Experiment in Integrated Community Development* (mimeo) Cali, June 1960.

POSADA F., ANTONIO J.: *The Economic Growth of Cali and Medellín.* (Mimeo). CVC, Cali, 1960.

POSADA F., ANTONIO J.: *Memorandum sobre los Problemas de Buenaventura.* (mimeo) Consejo Nacional de Política Económica y Planeación, Bogotá, January 12, 1961.

POSADA F., ANTONIO J.: "Sentido y Espíritu de la CVC" in *La Nueva Economía.* April 1961, Bogotá.

RAFFO, TULIO: *Historia de Palmira.* Imprenta Departamental, Cali 1953.

RAMSAY, JORGE: *Coordinación de la Extensión con Programas para el Desarrollo de Comunidades.* CVC, Servicio de Extensión Agropecuaria y el Instituto Interamericano de Ciencias Agrícolas de la OEA. Cali, December, 1960.

RAMSAY, JORGE: *Estudio de la Realidad Rural en la Localidad de la Tupia, Municipio de Pradera, Departamento del Valle.* Instituto Interamericano de Ciencias Agrícolas, Costa Rica, February 1962.

SANDOVAL A., ALBERTO: *Estudio Geo-Económico del Valle del Cauca.* Instituto Vallecaucano de Estadística, Cali, 1960.

SOCIEDAD DE AGRICULTORES DE COLOMBIA: *Apelación a la Justicia: Demanda Contra los Decretos Reglamentarios de la Ley 135 de 1961. Reforma Social Agraria.* Editorial Pax, Bogotá, October 1962.

TEULON, HENRY P: *Borrador de un Plan de Operaciones para un Programa Integrado de Nutrición y Alimentación en el Valle del Cauca.* Instituto Nacional de Nutrición, Cali, 1961.

TRIBUNAL DE ARBITRAMENTO DEL GOBIERNO NACIONAL DE COLOMBIA: *Laudo Arbitral of November 20, 1962.* Bogotá, 1962.

UNITED NATIONS SPECIAL FUND: *Plan de Operaciones, Proyecto del Fondo Especial de las Naciones Unidas: Colombia, Centro de Formación Profesional e Investigación Agrícola, Valle del Cauca.* Bogotá, 1960 (?).

UNIVERSIDAD DEL VALLE FACULTAD DE CIENCIAS ECONOMICAS-CVC: *Censo Agropecuario del Valle del Cauca: 1959.* Editorial El Mundo, Cali, October 1961.

VIDAL, PERDOMO, JAIME: "Las Corporaciones Regionales" in *Revista del Colegio Mayor de Nuestra Señora del Rosario.* Bogotá, 1962.

WEST, QUENTIN M.: *Estudio General del Uso de la Tierra del Area Demostrativa de Roldanillo, Departamento del Valle del Cauca, Colombia.* Instituto Interamericano de Ciencias Agrícolas de la Organización de Estados Americanos, Zona Andina, Proyecto 39, Programa de Cooperación Técnica. Lima, Perú, 1954.

WEST, ROBERT C.: *The Pacific Low lands of Colombia.* Louisiana State University Press, Baton Rouge, 1957.

ZULETA ANGEL, EDUARDO: "Dictamen Jurídico referente al Juicio Ejecutivo del Señor Nathan A. Moore contra la Corporación Autónoma Regional del Cauca", Bogotá, 1960 (?).

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THE CVC: Challenge to Underdevelopment and Traditionalism

The ideology of economic and social development is the basic ingredient of all political platforms of the developing nations. The question of how to transform this ideology into practical reality within a democratic and humanistic framework is a concern of the most vital importance to all public policy-makers and administrators with responsibility for development projects. The Autonomous Regional Corporation of the Cauca Valley (CVC) is considered internationally as a model for regional economic and social development. Thus it is hoped that the experience of the CVC may serve elsewhere, not only as a guide in order to aid others in avoiding similar pitfalls and deficiencies, but also as an inspiration in the knowledge that the CVC is a going concern and that such multi-purpose unified regional planning projets can succeed if the human and natural resources are properly organized. This book is the story of that CVC experience. It shows that the need for favorable social attitudes is at least as important as the presence of an adequate material resource environment in initiating a self-perpetuating cycle of economic and social change.

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