The Basis of
A DEVELOPMENT PROGRAM
FOR COLOMBIA

23739
Volume 1

Report of a Mission

The Summary
The Basis of
A DEVELOPMENT PROGRAM
FOR COLOMBIA

Report of a Mission
headed by
Lauchlin Currie

and sponsored by the
International Bank for Reconstruction and Development

in collaboration with
The Government of Colombia

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His Excellency
Señor Mariano Ospina Pérez
President of the Republic
of Colombia

My dear Mr. President:

I take pleasure in transmitting to you herewith the Report of the Mission to Colombia, headed by Dr. Lauchlin Currie, which was organized last year under the sponsorship of the International Bank for Reconstruction and Development in cooperation with the Banco de la República. The Summary highlights the Mission’s major conclusions and recommendations, which are further explained and elaborated in the Comprehensive Report.

In the opinion of the International Bank, the Report provides an objective, unbiased analysis of Colombia’s development potentialities and problems by a competent group of independent experts. You will, of course, recognize that the Bank has not had the opportunity to consider fully the numerous recommendations contained in the Report and therefore must regard them as matters for study and future discussion with your Government rather than recommendations of the Bank to your Government. At the same time, we believe their analyses and recommendations are deserving of the most careful and sympathetic consideration by the Government and people of Colombia. This Report can be fully effective, however, only if it serves as a basis and guide for the Colombian authorities themselves to work out a sound, well-balanced development program, and as a means of educating public opinion.
To this end we believe it is important that the Report be carefully studied and discussed, from an objective, nonpolitical standpoint, to assure that its major implications are fully understood and that it can enlist broad support from the Colombian people. We are very pleased that your Government, recognizing this need, has decided to establish a nonpartisan Commission of outstanding citizens to study the Report and make recommendations thereon to the Government.

We are gratified also that your Government is already taking active measures in line with the Mission's recommendations to obtain expert assistance in the vitally important task of effecting improvements in governmental organization and administration.

The Bank will be greatly interested in the progress of the analysis of the Mission's findings by the nonpartisan Commission. It is our plan that the Bank's staff will undertake simultaneously an intensive study of the Report so that we may be in a position at the appropriate time to discuss with your government the program that emerges from your studies and to consider possible ways in which the Bank can help in the execution of Colombia's development program, through technical and financial assistance or by other means.

It is my sincere hope that this Report may be of positive and lasting benefit to the Republic of Colombia.

Sincerely yours,

[Signature]

Eugenio A. Blatch
June 28, 1950

Mr. Eugene R. Black, President
International Bank for
Reconstruction and Development
Washington, D. C.

Dear Mr. Black:

I take pleasure in submitting herewith The Basis of a Development Program for Colombia, prepared by a special mission of the International Bank for Reconstruction and Development.

On behalf of the Mission, I should like to record our appreciation of the arrangements made to facilitate our work in Colombia. President Mariano Ospina Pérez evidenced great interest throughout and gave freely of his time, as did members of his Cabinet. Dr. Luis-Angel Arango, General Manager of the Banco de la República, our host, left nothing undone to assist us. The help given us by the technical staff furnished both by the Colombian Government and the Banco de la República under the direction of the Coordinator General, Dr. Juan de Dios Ceballos, was invaluable. Names of the technical advisers to whom we are indebted are listed below. I regret that I cannot list by name the hundreds of officials and private citizens of both political parties, as well as many foreigners, who gave so freely of their time and knowledge in answering our thousands of questions.

The physical arrangements provided by the Banco de la República could not have been improved upon and the hospitality and cordiality we encountered on every hand were most heartening.
The translation of the Report was carried out under the supervision of Dr. Jaime Córdoba, the Assistant Coordinator General, who also has contributed many helpful suggestions on editing and drafting. He was ably assisted by Dr. José Camacho-Lorenzana of the staff of the Bank. Main responsibility for the editing devolved upon Miss Ruth Aull.

I am most appreciative of the complete cooperation furnished the Mission by the International Bank in making available helpful studies, in furnishing technicians from its staff, and in supplying the needs of the Mission in ways too numerous to list.

I am most grateful to the individual members of the Mission for their enthusiasm and complete devotion to their tasks. I am particularly appreciative of the assistance afforded by those members of the Mission who were on the staff of the Bank—Messrs. David L. Gordon, Jacques Torfs and Gordon Grayson—and who, following the return of the Mission, carried double burdens in working on the Report as well as performing their regular duties. Names of Mission members are appended.

I appreciate that the treatment could be considerably improved by the expenditure of somewhat more time. However, in view of the fact that action on certain projects is being delayed pending the receipt of the Report, that considerable time has already elapsed since our observations were made, and that the proposed arrangements for study of the Report in Colombia will facilitate refinements and other improvements, it appears that more would be lost than gained by delaying further the submission of the Report.

Sincerely yours,

[Signature]
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Preface

This Report is the outcome of nearly a year's work by an economic Mission, organized by the International Bank for Reconstruction and Development, which was assigned the task of working up the framework for a comprehensive, integrated development program for Colombia.

The Mission grew out of conversations late in 1948 between Mr. John McCloy, then President of the Bank, and Dr. Emilio Toro, a member of the Board of Executive Directors of the Bank. For many reasons, it appeared that Colombia, Dr. Toro's native country, was an admirable place to apply such a comprehensive approach. The idea received an enthusiastic reception from President Mariano Ospina Pérez, and the Bank was invited by Colombia to send the proposed mission. In May 1949, Dr. Lauchlin Currie was invited to act as Chief of the Mission and to assist in its organization.

The Mission's terms of reference were very simple and yet very broad. They were, in essence, to formulate a development program designed to raise the standard of living of the Colombian people. To fulfill this assignment the services of experts in many diverse fields were required. The Mission included staff members of the Bank and the International Monetary Fund, private consultants, and experts nominated by the Food and Agriculture Organization and the Pan American Sanitary Bureau. The first members of the Mission, accompanied by Mr. Robert L. Garner, the Vice President of the International Bank, arrived in Bogotá on July 11, 1949, and the last departed November 5, 1949. Expenses of the Mission were borne partly by the International Bank and partly by Colombia.

The Banco de la República acted as co-sponsor of the Mission in Colombia, and organized a staff of specialists to advise and assist the Mission in its work there. It assumes no responsibility, however, for our findings or recommendations. Final responsibility for both the overall program and
the specific recommendations rests on the Chief of Mission, although, of course, all members of the Mission made major contributions in their special fields and assisted in related fields.

As this was the first Mission of its kind sent out by the International Bank, there was little precedent to draw on. We have interpreted our terms of reference as calling for a comprehensive and internally consistent program—so far as is possible with the time, personnel and data available—rather than merely a series of disconnected recommendations. This has added to the difficulty and magnitude of the task in several respects. The relationships among various sectors of the Colombian economy are very complex, and intensive analysis of these relationships has been necessary to develop a consistent picture. We have tried also to make our conclusions and recommendations as specific and quantitative as possible. We realize that this attempt may, in some cases, lay us open to criticism, for definite proposals are inevitably more vulnerable than generalities, and the statistical data with which we have had to work have sometimes been incomplete, unreliable or insufficiently detailed.

Nevertheless, we believe this rather ambitious and hazardous approach has proved its value. Its very difficulty and complexity have perhaps led us to probe more deeply, to cross-check our results and their implications more carefully, than we might otherwise have felt necessary. We have been able thereby to correct some apparently inaccurate information and assumptions and to fill in certain statistical gaps. Moreover, the principle involved in this approach—that the attack on the problem of poverty must be coordinated on many fronts, all closely interdependent—is more important than any of our particular findings or recommendations. We have tried to illustrate the dynamics of economic development through an analysis of national accounts and of the processes which determine the volume of capital formation and the direction of investment. An understanding of these processes and an approximate estimate of the magnitudes involved are essential to any satisfactory determination of development priorities and the policies and measures re-
quired to carry them out. We have undertaken in this Report to construct this necessary framework as soundly as was possible with the materials at hand. In the course of further study and experience over the period of the proposed program, it will be possible to refine and fill out the statistical data, and to make appropriate modifications in the specific measures discussed.

The organization and presentation of the Report have posed certain other problems. It is addressed to several quite different audiences: to Colombians, who know a great deal about their own country; to foreigners, who know little; and to the general public as well as technicians. It has been necessary, therefore, to include enough facts and descriptive material to make the picture intelligible, yet not so many as to make the Report unmanageable in size and boring to those who are already well informed about many of the subjects discussed. Further difficulties of presentation arose from the very wide range of topics covered, some of them necessarily quite technical, and from the number of different contributors.

In an attempt to meet these problems, we have prepared the Report in two distinct forms. The Summary is designed for the general reader who wishes to ascertain the highlights of the program but has neither the time nor the interest to concern himself with detail. More extensive descriptive material, technical analysis and explanation of the recommendations are included in the Comprehensive Report, which in turn is divided into two parts—first, a description and diagnosis of economic conditions and problems in the various fields discussed and, second, proposed measures for improvement and estimates of financial and other requirements to carry them out. This arrangement of the Comprehensive Report is designed to permit purely descriptive material and most of the analysis to be kept separate from our conclusions and recommendations. The reader may then, if he wishes, consider the validity of the diagnosis quite apart from the prescription or, alternatively, may rely on the summary of the diagnosis contained in Chapter II and in the various chapters in Part II of the Comprehensive Report and concentrate his attention on the recommendations.
ably this results in some overlapping and repetition. Those who may wish to read together the diagnostic and prescriptive chapters on one subject, such as agriculture, will be most conscious of this.

Some technical appendices, relating mostly to methodology or presenting more detailed data of interest only to specialists, are not printed but may be obtained on request from the International Bank for Reconstruction and Development. These are listed in the Contents of the Comprehensive Report for ready reference.

Despite the range of topics covered, the Summary and the Comprehensive Report do not pretend to contain a complete economic description of Colombia. An effort was made to cover only those aspects of the economy that appear to have direct bearing on the standard of living and about which some recommendations could be made. One unfortunate consequence, however, has been to discuss mainly the weaknesses and shortcomings of the Colombian economy, which may convey a false impression to the reader. It is not our intention to assign either praise or blame, nor to make any comparisons with other countries unless they throw some light on Colombia's problems. All the members of the Mission, although they found need for improvement in many specific conditions and practices, became intensely interested in and most enthusiastic over Colombia's potentialities.

It is hoped that the entire Report will be regarded as a working paper. It is intended to be provocative, to raise many problems and to offer some suggestions for corrective action. It does not purport to offer precise or ultimate solutions for any problems; such solutions must derive from the experience and will and intelligence of the Colombian people themselves. Our analyses and recommendations will have fully served their purpose if they succeed in stimulating Colombians to think in terms of the whole economy, to take advantage of the experience of other countries and adapt that experience realistically to Colombian conditions, and on that basis to formulate a sound and internally consistent program of development which will enlist the broadest possible support.
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I. The Objectives

For nearly 400 years after the founding of Bogotá in 1538, economic development in Colombia was slow and limited in scope. In the early years of this century the economy was almost wholly agricultural and pastoral. Gold and agricultural products were exported in exchange for the country’s limited requirements of manufactured consumers’ goods and capital equipment. Travel over any distance was a major undertaking, the various regions of the country were almost wholly isolated from one another, and the people developed quite different accents and even different physical characteristics and outlooks. Throughout all this period, however, cultural and intellectual contacts with the outside world were zealously maintained by a small upper class.

In the past 40 years, the picture has changed drastically. Railways, highways and airplanes have opened every part of the country to travel and trade, and journeys that once took weeks are now a matter of hours. New areas are being opened to settlement, and some of the country towns and villages of a generation ago have grown into thriving cities. The population has increased from less than 4 million in 1900 to about 11 million today, and Bogotá, now a city of 600,000 people, looks forward to a million inhabitants in the not far distant future.

The spirit and the fact of economic progress are abundantly apparent. Numerous industries have been established—large textile and cement mills, food processing factories, oil and ore refineries, metal fabricating and chemical plants, power generating stations, etc. Ambitious new projects of many kinds are being started or are under active discussion. A modern banking system has been created and a stock exchange opened. A new class of entrepreneurs has emerged, vigorous and self-confident, to develop and manage these new industries and institutions.

Foreign and domestic commerce has expanded greatly. Colombia’s dollar receipts have increased from U.S.$81 million in 1938 to over $300 million in 1949. Not only did this provide the means of financing greater imports of manufactured
products of all kinds, both consumer and producer goods, but it also has enabled the country to contract and service more foreign debt and thereby enlarged its ability to secure capital equipment to expand future production.

With this economic growth have come far-reaching social and political changes. An extensive system of labor and welfare laws has been enacted and an income tax introduced. The Government has assumed an expanding role in promoting and guiding the development of the national economy.

The potentialities for development in the future are great. Colombia is rich in the basic sources of power—coal, oil, gas and hydroelectric potential—and in forest resources. Good land is limited, but there are a number of excellent agricultural areas and others capable of improvement by irrigation or drainage. The growing season lasts twelve months of the year, and variations in altitude permit a greater diversity of agricultural production than prevails in the whole North American continent.

The economic progress of the past 20 or 30 years, however, while very real, has been quite uneven. A great deal remains to be done, and there are many aspects of the situation that give thoughtful Colombians grave concern.

The darker side of the picture centers about the condition of the masses of the people. The great majority are inadequately fed, clothed and housed. Their health is poor and life expectancy short. A large proportion is illiterate, and few have had more than two or three years of primary schooling. Their condition is better, no doubt, than that of the people in many underdeveloped countries, particularly in the equatorial belt. But their standard of life is far below the level that it could attain if the country's potentialities were more adequately realized. This Report is focused, therefore, on the problem of how the general standard of living in Colombia can be raised—what use of the nation's physical and financial resources and what kinds of governmental and private action can best contribute to this end.

We have not, of course, tried to define the precise level and components of a satisfactory standard of living. The con-
cept is necessarily vague and largely subjective, to be summed up, perhaps, as a general state of material well-being. But its essential elements clearly include the consumption of enough food, and food of the right kinds, for good nutrition; the enjoyment of generally good health; the possession of adequate housing and clothing; education and training enough to meet the needs of modern life and to permit the development of the people's intellectual resources; and some opportunities for leisure and amusement.

The possibility of making these basic elements of a satisfactory living standard generally available depend upon (1) the size of the national product in relation to population, (2) the distribution of income among the population, and (3) the division of the national product between consumers' goods that can be enjoyed now and capital goods that will increase production in the future. Of these, the most important is clearly the first.

Certainly a wide disparity in levels of income exists between a small wealthy group and the great mass of the population, in spite of efforts by successive governments to bring about greater equality through progressive taxation of incomes and the extension of social services. So far as we can estimate, nearly one-third of the national income (over Ps.$900 million out of some Ps.$3 billion total in 1947) accrues to less than 100,000 recipients. But the basic problem is not so much the distribution of present income as the smallness of the income to be distributed. By the same token, while public and private capital formation is quite satisfactory in relation to gross national income—14 percent—it is small in absolute magnitude and in relation to the population.

We believe that a very striking improvement is possible in the factors that underlie the low levels of per capita production in Colombia. There appears to be considerable room for improvement in the efficiency of her manpower—in the education and training of workers, in their health and physical stamina, and to some extent in the proportion of productive

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1 To distinguish sums in Colombian pesos from those expressed in U. S. dollars in this Report, we prefix the $ sign used for both currencies with "Ps." or "U.S.", respectively. The official value of the peso is about 51¢ (U.S.$1 = Ps.$1.95).
workers to dependents. The country's abundant natural resources could be utilized more efficiently, and the handicaps of its mountainous terrain ameliorated. The flow of savings into investment could in many cases be directed into channels more productive and socially beneficial. The organization of the economy for the production and distribution of goods and services, both by Government and private enterprise, could be considerably improved.

The major ground for concern over the long term lies in the rapid rate of population increase (estimated at 2.15 percent per annum) and the prospect of an even more rapid increase as improved sanitation, diet and disease control methods produce a decline in the present high death rate. Really good level land, as well as capital resources, is already strictly limited in relation to population and an increase in the rate of population growth would raise serious economic problems.

The problem, therefore, is to bring about an increase in production considerably in excess of the increase in population. In our view this can be done, given adequate improvement in the present organization of the Colombian economy and better direction of the flow of savings and foreign funds available for investment.

In this Summary, and in the more detailed supporting documents, we cite a number of possibilities for such improvements. Some of them, probably most of them, can be expected to show significant results in increased productivity within a relatively short time. Others will take effect only over a longer period, but are no less important to achieve the progressive, cumulative advance essential for sound economic development.

II. The Nature of the Program

For the sake of simplicity we have given this Report the title "A Development Program for Colombia", and we refer from time to time to the "program". In reality, however—as we emphasize several times—it is not, and is not intended to be, a complete blueprint for action. It is a working paper, designed to assist the Government and people of Colombia
to frame for themselves a sound, balanced, adequately de-
tailed program of economic development.

Nevertheless, we believe it contains the essential elements
of a true development program. In order to make clear both
the potential utility and the limitations of this Report, as we
see them, it may be useful to summarize the broad assump-
tions which underlie our recommendations:

1. Our approach is comprehensive, for the causes and
characteristics of economic underdevelopment—poverty, ill-
health, ignorance, low productivity, and the like—are all inter-
related and mutually reinforcing. The chances for success
will be greatly enhanced if the attack proceeds simultaneously
on several fronts.

2. We base our quantitative recommendations, particu-
larly our estimates of capital requirements, on the assumption
that they will be carried out over a five-year period, 1951-55.
Actually, because of the need for more detailed studies in
certain fields, the time required to set up necessary admin-
istrative mechanisms, and other factors, it will probably not
be possible to make some of the contemplated investments
and other changes by 1955. On some of the longer-range
recommendations—in the field of education, for example—
five years will suffice only to make a start. Nevertheless, the
five-year period should prove useful as a rough yardstick of
what may be accomplished in many fields, and later as a
standard against which to measure actual performance.

3. Our conclusions and recommendations vary greatly in
detail and precision. In part this stems from the unavaila-
bility of certain information, or from limitations of time of
the Mission’s personnel. But some variations of this kind are
inherent in the nature of any economic program, which must
be implemented through innumerable decisions by many
thousands of individuals. Many of our recommendations call
for Government action of various kinds—investment, defini-
tion of policy, establishment or alteration of administrative
machinery, and so on. Others involve areas of non-govern-
mental activity, such as the desirability of expanding certain
industries or increasing acreage in certain crops; and in such
cases we are necessarily less explicit about how they are to be
carried out. We have tried, however, to indicate ways in which the Government can help to encourage and guide private economic decisions along desirable lines, by providing a favorable atmosphere for productive enterprise, improved financial regulations and machinery, and certain specific incentives. Some of our conclusions also, particularly some of those relating to the amounts of capital investment in certain fields set forth in Chapter XXX of the Comprehensive Report, involve merely expectations of what is likely to happen to be consistent with postulated growth patterns. We explain this distinction at some length here, because of a possible ambiguity in the connotation of the word "program".

4. In spite of these problems of analysis and presentation we have tried so far as possible to express our recommendations in quantitative terms. The most difficult decisions in any development program are the determinations of priorities in the allocation of limited resources, especially financial resources. We have tried to indicate, therefore, the general magnitude both of the overall investment program and of its main components, while appreciating that it may prove necessary or desirable to modify these magnitudes after further study. In our quantitative estimates, both of needs and of available resources, we have kept within limits we believe to be realistically and conservatively possible.

5. So far as we can ascertain the facts and anticipate future trends, we believe our proposals are internally consistent; they do not, for example, call for more foreign exchange than is expected to be available.

6. The program is designed so that it can be undertaken without producing inflation. The capital formation proposed, in other words, is approximately equal to the volume of expected saving and foreign capital imports under conditions of a balanced budget and stable prices. If the internal or external price levels do not remain stable, the size and character of the program will be considerably, and on the whole unfavorably, altered.

7. We have assumed that rises in wages will not exceed increases in worker productivity, and that no greater pecuniary incentives are necessary to secure the required shifts of
the working force into more productive (industrial and construction) employment.

8. Although the process of economic development inevitably entails, and should entail, extensive social changes, we should expect such changes to be gradual and evolutionary in character. Our present proposals do not call for any drastic changes in the political, social or economic organization of Colombia. Rather they involve a shift of emphasis and a multitude of relatively minor improvements and reforms.

9. The program we have outlined relies mainly on Colombia's own resources, although we assume that a satisfactory volume of foreign investment will be forthcoming if a favorable atmosphere is established and a satisfactory rate of progress is achieved in the development program.

10. In general, we have tried to avoid direct Government control and management, except where they were clearly necessary. We place reliance so far as possible on financial incentives and deterrents to influence the flow of capital and the employment of other production factors.

11. We emphasize the need for a thoroughgoing reorganization of the administrative machinery of Government at all levels to improve its planning and administration.

Based on these general considerations, the sections that follow contain conclusions and recommendations for improvements in production and other practices, and in the organization and direction of capital investment, in the various sectors of the economy. These conclusions, together with the reasoning on which they are based, are further elaborated in the Comprehensive Report, to which reference should be made for explanation of any unclear or controversial points.
III. Agriculture

Colombia is still preponderantly an agricultural economy. Some two-thirds of the population (including over 60 percent of the labor force) live in rural areas and are supported by agriculture, which accounts for about 40 percent of the national income.

Success in raising the general standard of living will depend in large part on the possibility of so improving agricultural productivity that a much smaller proportion of the population can raise the food, fibres and export crops that the country requires. Such a development would serve two complementary ends. First, it would release large numbers of workers for the production of other things, or in some cases for longer or more intensive education. Second, it would increase the income and living standard of individual farm families and make their life less laborious. Our recommendations in the field of agriculture are designed primarily to bring about this increase in output per worker.

In Chapter XVIII of the Comprehensive Report, we propose target figures for 1955 production of 20 major agricultural products—goals which we believe are realistically attainable and will provide a better balanced and more economic pattern of output. With regard to most farm commodities for domestic consumption we propose only a relatively small production increase—hardly more than the estimated rise in population—but recommend improvement in their quality and diversity to correct nutritional deficiencies. Our targets for certain export crops, and for products of which substantial imports are now required, represent a generally higher rate of increase.

It is important to emphasize that these targets are very tentative, since neither the data nor the planning and administrative organization now in existence is adequate for setting and achieving precise quantitative goals. Our targets are designed to illustrate the general objectives of a sound agricultural production program, which should be developed more precisely and intensively in the near future, and to call attention to the need for improving the organization of agri-
cultural activities so that carefully formulated targets can actually be attained.

The problem of raising agricultural productivity in Colombia is made more difficult by the complexity of the country’s agricultural pattern. The variations of altitude and climate make possible a diversity of production probably greater than that of any other country in the world. There is almost equal diversity in the techniques of cultivation; they range from highly efficient, mechanized operations on some of the large valley farms to semi-primitive methods (digging stick or hoe culture) used on tiny patches of steep hillside, often only a short distance away.

The most advanced cultural practices in coffee production afford a model of the progress that can be achieved through effort. By improved methods of soil preparation, seed selection and propagation, care of trees, and processing of beans, it has been possible almost to double coffee production in eight years. At the same time, the achievements in coffee culture point up the lack of progress in most other sectors of farm production.

Colombian farms average about 2 hectares (5 acres) of arable land, but the typical farm unit is even smaller, since the average is affected by inclusion of some very large sugar cane, rice and cotton haciendas. These small patches are too frequently farmed with practically no equipment and with little animal or machine power; the farmers have generally had almost no schooling or technical instruction, and often suffer from inadequate nutrition and debilitating diseases; they have little or no capital or access to credit and only the most rudimentary facilities for marketing the crops they grow.

Under these conditions, the surprising thing is not that productivity in agriculture is low, but rather that it is as high as it is. It affords Colombia’s 11 million population a diet adequate in calories, if somewhat unbalanced and lacking in protective foods, provides sufficient barley and tobacco to meet the country’s requirements for beer and tobacco products, and produces some 5½ million bags of coffee each
This augurs well for what could be done under really satisfactory conditions of efficiency.

**Land Use and Land Tenure**

The Mission was most forcibly struck by the paradoxical and uneconomic use of land. Although the amount of level, fertile land in the populated areas is strictly limited, it is devoted for the most part to cattle grazing on an extensive and inefficient basis, while most of the food crops are grown on small farms, generally on steep slopes, and in poor soil. The result is a twofold loss to the national economy—from the underuse of good land which should be producing much more efficiently, and from the destruction worked by erosion on slopes too steep to be cultivated without serious damage.

On the occasion of the Mission's first meeting with the President of the Republic, he directed our attention specifically to the importance of getting the farming people off the hillsides and onto the level plains and valley floors. We have given intensive thought to this problem, since it is perhaps the most important single factor making for low agricultural productivity. While such uneconomic and wasteful use of land—the nation's most important natural resource—might have been of relatively minor consequence in the last century when Colombia had only a fraction of its present population, its continuance today is dangerous to the country's welfare and progress.

The basic cause of this illogical pattern of land use lies apparently in Colombian social traditions and attitudes. Many large landowners are less interested in the income they derive from their holdings than in the value of those holdings as a source of security and as a hedge against inflation. Land taxes have been low and are more than covered by the periodic sale of a few cattle. Land prices have risen with inflation, and under the pressure of large funds seeking investment in the limited areas of good terrain, soil and water. Over the years it cannot be denied that such holdings have proved excellent investments from the standpoint of security and increase of principal.
The Government has undertaken a limited program of purchasing land from large holders and reselling it in smaller tracts to operating farmers. But the market price of good land is generally much above not only the assessed valuation but also that which would result from a fair capitalization of current earnings. Consequently, we question whether such a program can really succeed, on any large scale, in securing more intensive utilization of the best land. While we believe an extension of this program is desirable, mainly in areas where land can be purchased more cheaply, it must be supplemented by broader and more effective measures.

We propose specifically that underutilization be penalized. The good arable land of Colombia is part of the patrimony of the nation, and the nation has both the right and the duty to insist that it be used productively. We believe that an important incentive to better land use may be an adjustment in the patrimony tax as applied to land. One way of formulating such a tax would be as follows: the farm land would be assessed at its market value; the present usual tax rate of Ps.$4 per thousand valuation would apply only to land yielding the "normal" rate of return for land utilized reasonably efficiently in each area; and a progressively higher rate would apply to land yielding less than the "norm" for the area.

For example, assuming that land in the savannas of Cundinamarca should yield, if it is properly farmed, 10 percent on its market value, a farm worth Ps.$100,000 which yielded an annual return of Ps.$10,000 or more would be taxed at only Ps.$4 per thousand, or Ps.$400 in all. But if a comparable farm of the same value yielded only Ps.$5,000 a year because of inefficient use, it would be taxed at a substantially higher rate, say, Ps.$13 per thousand. The result would be to put a progressively higher penalty on serious underuse of land.

These rates are suggested only as examples. The details should be worked out with care, and various exceptions should doubtless be made to avoid hardships and to encourage certain socially desirable uses of land.

While we do not put this proposal forward as a panacea, nevertheless, we believe that it can be worked out practicably
and equitably, that the principle is sound, and that it merits serious study. Besides providing a direct stimulus to more intensive farming or stock raising, such a scheme would help to depress over-inflated land values and so bring better land nearer the reach of ordinary farmers. And by expanding agricultural productivity and incomes it would help to enlarge the market for manufactured products and thus lay the basis for a more efficient and diversified industry in Colombia.

**Technical, Educational and Credit Services**

The Caja de Crédito Agrario, Industrial y Minero is the principal agricultural credit agency. Its activities have been very useful and have expanded greatly in recent years. But the needs for agricultural credit, especially those of small farmers, are being met only to a very limited extent. We recommend that additional funds be made available to the Caja, and that its operations be modified in the following ways:

1. By instituting a program of long-term credit to finance the purchase of farms and such improvements as buildings, storage facilities and irrigation and drainage works.

2. By laying more stress on small loans. The cost of administering such loans, and providing the technical aid and supervision required to make them effective, is high in relation to the amounts lent. While the Caja’s rates may be raised slightly above present levels without causing hardship, we believe the Government should be prepared to assume part of these added costs as a subsidy.

3. By giving greater emphasis to assistance to cooperatives.

4. By divesting itself, where possible, of various sales and other activities only remotely connected with its credit program to give it greater freedom to handle a larger volume of credit operations.

It is important that expanded credit activities be closely associated with assistance in better farming methods. Colombia has an Agricultural Extension Service, but it has been able to reach the great majority of small farmers only
to a limited extent. They certainly need advice and instruction, but their capital is usually so limited that they cannot take proper advantage of such advice. At the same time their training is so meager that they cannot reap the full benefits from any credit they are able to secure. We recommend a closer linking of technical with financial assistance, along the lines of the Farm Security Program for low income farmers in the United States in the 1930's, either by means of the Caja's employing its own technicians, or through a close working arrangement between the Caja and the Extension Service.

**Administration of Agricultural Programs**

The numerous Government and Government-assisted programs for improvement of agricultural practices should be consolidated for greater effectiveness. The focal point of the coordinated program should be the whole farm and farm family, supplemented by sufficient attention to special aspects of farm problems to support a sound farm and home management plan. Special attention should be given to gardening and home production of meat, milk and eggs to improve farm diets. To carry out such a program we recommend an expansion of the Extension work as rapidly as personnel can be adequately trained, with a budget goal in 1955 of perhaps Ps.$2 million a year, compared with Ps.$334 thousand in 1949.

To facilitate marketing we recommend establishment of a better system of grades and standards, and of a reporting service to make information on current crop prices available to buyers and sellers. We also recommend that the appropriate agricultural agencies assist in the formation of soundly managed marketing cooperatives with advice and necessary credit.

The program of the Instituto Nacional de Abastecimientos for improving storage facilities should be expanded; the required expenditure is estimated at Ps.$17.5 million. We recommend special study of possibilities for improving the efficiency of small food-processing plants, particularly the panela
mills, and provision of limited technical and financial aid for improvements that appear definitely worthwhile.

No individual or agency in Colombia either has clear responsibility for developing a comprehensive, integrated farm program, or has the authority to carry out such a program. Besides the Ministry of Agriculture, there are about twenty agencies and institutions whose operations affect agriculture directly and a number of others that affect it indirectly. There is definite need for better coordinated governmental machinery for collecting and organizing agricultural statistics, analyzing rural problems, and formulating and carrying out a consistent program of agricultural development. This is an important subject for study by the proposed Public Administration Mission.

To achieve widespread improvement in agricultural techniques, and shifts to more desirable patterns of production, it is necessary to develop a closely-knit and flexible combination of (1) research, to adapt the best seed strains and production practices developed abroad to Colombian conditions, and to improve on the foreign developments where possible; (2) programming of production goals, in the light of estimates of yields and markets and the results of technical research; (3) education, to diffuse knowledge of technical improvements and market information; and (4) production and marketing credits, to provide ordinary farmers with the means and incentives to adopt improved agricultural practices, raise the most productive crops, and market them more intelligently and efficiently. All these functions are interrelated, and unless an effective organizational structure is created to carry them out, there is little prospect of bringing about general improvement of agricultural productivity in the near future.

CAPITAL REQUIREMENTS

Certain irrigation projects are undoubtedly profitable investments under present conditions which are, however, somewhat artificial. A sounder gauge of the economic justification of many proposed projects will be possible after Colombia makes better use of the good land it already has. Some works of this kind will certainly be justified, however, and we have
suggested that about Ps.$80 million be provided in the overall investment program for irrigation and for catch basins, ponds and drainage projects. Efforts should be made to make sure that the benefits of expensive, publicly-financed irrigation works are not confined to a few large landowners.

It is at least equally important, in our view, that a comparable investment of money and effort be made in reforestation of land unsuitable for agriculture and in improvement of pastures through reseeding.

In view of the large losses of crops, particularly grains, that occur each year for lack of storage facilities, we recommend that Ps.$17.5 million be made available for construction of such facilities.

Considering the semi-primitive character of many Colombian agricultural practices, it is apparent that substantial benefits would result also from increased use of farm equipment, fertilizers, insecticides and fungicides. We recommend increased expenditures for these products—to increase domestic output, step up imports where necessary, and develop a better distribution system, with a number of strategically located depots and a wide network of local sales agencies. It is possible that a supply of basic nitrogen for fertilizers may be obtainable as a by-product of gas from the proposed oil refinery or from the country’s natural gas resources.

Our rough summary of capital requirements in the major sectors of the agricultural economy over the next five years follows:

<table>
<thead>
<tr>
<th>Sector</th>
<th>Requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Irrigation and drainage projects</td>
<td>Ps.$ 80.0 million</td>
</tr>
<tr>
<td>Grain storage and drying facilities</td>
<td>17.5</td>
</tr>
<tr>
<td>Implements and equipment, fertilizers, pesticides, etc.</td>
<td>323.5</td>
</tr>
<tr>
<td>Development and reforestation of land (including reseeding of pastures)</td>
<td>78.5</td>
</tr>
<tr>
<td>Fisheries development</td>
<td>17.5</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>Ps.$17.0 million</strong></td>
</tr>
</tbody>
</table>

The recommended new capital outlays, averaging slightly over Ps.$100 million a year, represent a modest rise over the level of investment in this field in recent years. In addition, it is expected that a substantial amount of labor will be expended by individual farmers on improvements to their land,
on which we have placed no pecuniary value. These estimates do not include funds for the purchase of land required to carry out an expanded parcelization program, since such expenditures constitute no drain on the physical resources of the nation.

Much of this investment, of course, would be made through private or cooperative channels, as well as by Government agencies. Technical and credit assistance by the Government may have great value in encouraging and guiding the beneficial and effective use of private capital. In many fields considerable capital formation may be obtained without any corresponding loss of consumption by more effective use of labor, now employed only part time or in relatively unproductive occupations, to improve rural roads, land and buildings.

Finally, many of the capital investments and other improvements recommended in other sections of the Report will contribute substantially to raising agricultural productivity. Obvious examples are improvements in transportation (especially roads), primary and vocational education, health and sanitation, rural housing, and electric power.

IV. Industry and Fuels

Industry in Colombia has recently been undergoing a rapid expansion, particularly during and since World War II. We estimate that the value of industrial production, in plants producing more than Ps.$6,000 worth of products in the years 1944-1945, increased from Ps.$407 million in 1939 to Ps.$830 million in 1944-1945 and to Ps.$2 billion in 1948. Although this spectacular growth was due mainly to a 215 percent rise in prices, the actual volume of production increased by 143 percent. The value added to manufactured goods by labor, management and capital increased from about Ps.$120 million in 1939 to approximately Ps.$500 million in 1947, or from 11.5 percent of the national income to 15.3 percent.

Colombia is now producing domestically almost all of its current consumption of processed foodstuffs, beverages,
tobacco, textiles, shoes and fuels. It is fabricating a substantial part of its building material requirements. It has the foundation of a chemical industry in plants to make sulphuric acid and caustic soda, and could shortly be self-sufficient in the production of glass bottles and rubber tires. On the whole, the development of industry appears to have been logically and soundly based. For special reasons, however, the production of power and fuels has lagged behind what might reasonably have been expected and the development of lumbering and the forest products industry has been slow.

**INDUSTRIAL PRODUCTIVITY**

Colombian industry is characterized by great variations in efficiency. Some lines, including cotton textile and cement mills, are quite comparable in efficiency with many plants in more advanced industrial nations. In others, relatively inefficient workshop and handicraft conditions prevail. Also, the necessary increase in mechanization of industry has been hampered by lack of power.

Incentives to increased efficiency on the part of both management and labor appear necessary. The growth of the market and in the number of competing units will be important factors in strengthening the incentives for capital and management, and in altering the prevalent high price-low volume psychology. Relaxation of quantitative restrictions on imports, avoidance of excessive tariff protection, reduction of internal transport costs, particularly on imported goods, and maintenance of general price stability would be useful in fostering healthier competition. A relaxation in exchange controls or more certainty in their operation would help to further the same end: such measures would also tend to reduce the preoccupation of management with non-production problems and would permit industries to operate on lower inventories.

In the case of the workers, the key problems appear to be low levels of physical stamina and training, inadequate incentives, and lack of proper supervision. We suggest that experiments in varying the length of the work day, providing
better balanced diets, fostering in-shop training and promotion, and using piece-work rate methods of payment may point the way to effective methods of remedying these deficiencies. Creation of a much larger group of qualified plant foremen and supervisors is necessary to support a further expansion of industry; most persons in this group now in Colombia are foreigners or foreign-trained.

Colombian industrial development has, on the whole, benefited substantially from the formation of joint foreign and Colombian companies. Local entrepreneurs have thereby been able to take advantage of foreign experience in industries new to Colombia and of the managerial and technical skills developed in countries with more extensive and varied industrial backgrounds.

**Potential Expansion of Industry**

In Chapter XIX of the Comprehensive Report, the expansion requirements of a number of specific industries are examined in relation to the overall program. It may also be assumed that under competitive conditions capacity will be increased in some lines above what is strictly necessary to meet demand, and there will undoubtedly be opportunities for expansion in various lines not discussed in this general survey. The contribution of industry to national income may well amount to more than 20 percent of the total by 1955, as against 15 percent in 1947.

The field of industrial development is one in which private initiative is likely to be most effective and private capital amply available, given generally favorable economic conditions. We recommend, therefore, that Government policy stress the promotion of private industrial enterprise rather than state-owned undertakings.

**Iron and Steel**

Because of the magnitude of the proposed investment and the great public interest, the Mission made a special study of proposals for an iron and steel industry. Production of steel in Colombia is now quite small, aggregating approxi-
nately 3,400 tons of reinforcing rods a year from scrap in Medellín and approximately 5,000 tons of pig iron in Pacho. Most Colombian requirements for steel products—mainly wire, reinforcing rod, pipe and light structurals—are met from imports and there is a strong feeling that a substantial part of these requirements might be produced in the country.

There are two main possibilities for developing the Colombian steel industry. One is the creation of a completely integrated plant utilizing domestic iron ore, coal, and limestone. The other is the development of additional fabricating facilities for processing local and imported scrap and imported pig iron, with the prospect of eventually working into iron ore reduction. After intensive study, a summary of which is provided in the Comprehensive Report, it was our conclusion that it would be premature to embark on the development of an integrated steel industry in Colombia today, but that it would be a very sound investment to expand fabricating facilities sufficiently to supply most of Colombia's requirements for wire, rod, and light structurals.

We were influenced in this decision by many considerations. For one thing, the capital requirements for an integrated steel industry are very large. Two proposals were examined, one calling for expenditures of U.S.$95 million and the other, U.S.$41 million. Examination of the detailed estimates and consideration of experience in other similar projects gave little assurance that the cost could be kept within these estimates. In addition to the high cost of capital amortization, operating costs for the proposed plant would be high as a result of several factors, including the diversity of products required in Colombia in relation to the total demand, the geographical remoteness and altitude of the proposed site, the qualities of the ore and coal available, and the lack of trained labor and community facilities in the area. According to our estimates, the costs of producing steel, including amortization, would in some cases be more than three times the c.i.f. price of imported products: thus the proposed plant would require heavy subsidies, either direct or in the form of high tariff protection, to enable it to compete with foreign producers. Such subsidies would constitute a
serious burden on steel-using industries and on the whole economy, and would handicap further industrial development for many years to come. Anticipated savings of foreign exchange would be largely offset by the very large service charges on new foreign debt that would be necessary, and the cost of foreign materials and personnel required to operate the plant.

We appreciate that the Government wishes to provide new employment opportunities in the depressed area of Boyacá, but the amount of employment that would be provided at and around the mill site would be quite limited at best and would not justify the large expenditures which the entire country would have to pay. Much more effective aid and more productive employment could be provided in Boyacá through much less costly public works and through development of more efficient agriculture and lighter industries.

Generally, under free competitive conditions and in the absence of special governmental measures, the first step in the development of a steel industry is to establish relatively simple fabricating plants to process scrap. Japan built up a large steel industry on the basis of imported scrap. It was not until World War II that the wealthy and populous West Coast of the United States, with a steel market many times the size of the Colombian market, supplemented its scrap-melting facilities (open hearth furnaces) with ore reduction facilities (blast furnaces). The same process has been apparent in Chile and to a limited extent in Colombia itself.

The first project we recommend would be the creation of a steel industry at Barranquilla. This would consist of an open hearth furnace for the melting of imported scrap, a blooming, merchant and rod mill and a wire plant, together with necessary facilities. A power plant would not be required, as ample electricity is already available at Barranquilla, as are also essential community facilities. We estimate that a plant to melt 65,000 tons of scrap and pig per annum and process this into 5,000 tons of light structural, 30,000 tons of reinforcing rod and 25,000 tons of wire products, would not cost in excess of U.S.$9 million, of which foreign exchange
requirements would approximate U.S.$5 million. For this relatively modest capital investment the bulk of Colombia's finished steel requirements would be met for some time to come. We believe this operation would be economical and fully competitive with foreign production, and that the annual dollar savings would almost equal the total original dollar capital requirement. Moreover, it is probable that this project could be undertaken by private enterprise.

In addition, we would endorse the provision of additional smelting facilities for the existing plant at Medellin. This very successful plant has rolling capacity of 15,000 to 20,000 tons of reinforcing rod a year. The shortage of local scrap, however, has limited its annual production to 3,500 tons. This company has constructed a cement plant and a 4,000 kw. hydroelectric plant nearby and has developed coal mines and limestone deposits and acquired iron ore deposits. Since, therefore, the company already has power facilities, developed mines and rolling facilities, it would be possible to double its capacity of finished products by the relatively small investment of U.S.$550,000 for a larger electric furnace and auxiliary equipment to smelt ore into pig iron for the making of 4,000 tons of steel ingots a year. It is believed that this production would be at a price competitive with imports.

Petroleum

Present proven oil reserves in Colombia are very limited—less than ten years' supply at the present rate of production. Even if exports are sharply cut, the rising level of internal consumption, especially of gasoline, will require increasing amounts of petroleum. Moreover, the Barco reserves, which because of their quality should form the backbone of the domestic refining industry, constitute only one-third of the total.

We believe it is extremely important to encourage intensive further exploration by private oil companies, which have the experience and resources necessary to undertake this highly speculative function. It is urgent, therefore, that the Government clarify its relations with the oil companies without delay along lines that will give every encouragement to mutually advantageous exploratory work.
We also urge that the possibility of conserving Barco crude for internal use be studied. It may, for example, be possible to substitute increased exports of DeMares and Casabe crude for Barco petroleum in an equitable manner.

**Oil Refinery**

To meet Colombia's requirements for petroleum products, which are estimated to be increasing at a rate of 10 percent per annum, it is necessary to supplement the present topping units, which yield some 6 to 10 percent gasoline, and to add modern cracking facilities giving a yield of approximately 40 percent. The present capacity of the unit at Barrancabermeja is 21,000 barrels per day, and there appears to be justification for additional capacity to treat approximately 17,000 barrels of crude a day.

We recommend that the additional required capacity be established at Barrancabermeja to take advantage of its existing facilities, its central location and its system of connecting pipelines. Construction of a combination crude distillation and 2-coil thermal cracking unit could be started immediately there. The combination cracking unit would be economical to operate and should not cost over U.S.$10 million. This expansion would enable products to be kept in balance over the next ten years. Our recommendation assumes that the proposed unit will be operated by experienced private management.

One loop of the Andean pipeline could be modified to permit transportation to Barranca of Barco crude oil, which is the only crude entirely suitable for refining to the proper breakdown of products without going to extraordinary expense in refining equipment. Crude for export and cracked fuel oil could be alternated in the other loop of the Andean pipeline for transport to Cartagena. If the country should some time have to import crude it could be brought up one loop of the Andean line.

This recommendation differs from those put forth in the joint Foster-Wheeler-Consejo Nacional de Petróleos report, which calls for a new refinery at Mamonal as well as additional cracking facilities at Barranca, with further provisions
for expansion of the Mamonal refinery by 1955. We feel that in view of the shortage of proven oil reserves in Colombia such a program, involving expenditures of about U.S.$35 million, cannot be justified. Moreover, looking ahead, all cracking facilities should be at one location until a complete refinery of 40,000 to 50,000 barrels per day has been developed to secure full operating economies. Finally, the operation of the proposed distillation unit at Mamonal up to 1955 would be wasteful of Barco crude oil. Even thereafter, the refinery at Mamonal would be uneconomic and could not show a reasonable return on the investment involved without being allowed an additional spread between refined products and crude oil prices, an unjustifiable subsidy.

In conjunction with new oil refinery facilities the feasibility of producing anhydrous ammonia to supply Colombia's requirements for nitrogen fertilizer should be studied. This product has a very high nitrogen content (82 percent) and can be made quite cheaply either from the gas by-product of the refineries or from the natural gas that exists in Colombia. Methods have been worked out whereby it is now possible to apply anhydrous ammonia directly to the soil and, if these methods prove adaptable to Colombia, tremendous savings in comparison with imported nitrates will be obtained. Alternatively, it appears feasible to manufacture ammonium nitrate (33 percent nitrogen) or ammonium sulphate (20 percent nitrogen) for fertilizer use.

Coal

Colombia possesses great coal reserves which should prove of enormous value in the future. At the present time they are being mined most inefficiently so that the price is high and the consumption low. It is urged that study be given to the possibility of introducing efficient coal mining methods. In addition to supplying domestic fuel requirements it is possible that coal might become a significant export. There are substantial proven reserves of apparently excellent quality coal at Cerrejon near the Caribbean coast. The Mission arranged for analysis of this coal by the United States Bureau of Mines, and that agency's preliminary report indicates that the coal
has excellent fuel qualities. Further work to prove reserves appears to be amply justified.

**Forest Products**

Another industry of potentially great significance is lumber and forestry products. It appears that the technique of forestry has now been developed to the point where tropical forests may be economically exploited and for the first time industrialists are becoming interested in starting a modern lumbering and timber processing industry in Colombia. What is required is a multi-purpose operation that permits the use of a wide variety of wood for different purposes, such as fiberboard, construction timber, furniture, plywood, Kraft and other paper products. In the development of forest resources every effort should be made to enforce the conservation laws now on the statute books and to check the wasteful practice of burning forests to clear land.

**Other Industries**

The potentialities of other industries—including textiles, beverages, tobacco products, processed foods, leather and shoes, glass products, chemicals, building materials and rubber tires—are considered in more detail in the Comprehensive Report. It is apparent that Colombia has a substantial industrial potential and that in the next few years considerable expansion will be economically justified, both to replace certain current imports and to provide additional exports.

**Power for Industry**

Perhaps the most fundamental requisite for industrial development is cheap and adequate power, principally electricity. The exceptional rise in worker productivity and total industrial output in Colombia over the last few years may be ascribed in large part to the growth in power consumption as the principal motive force for machinery, for industrial heating and chemical processes. The use of electric power has expanded since the war at a rate considerably faster than the increase in generating capacity. Serious shortages have occurred and undoubtedly hampered industrial development in some areas.
As one result of the unsatisfactory power supply a number of industrial plants have established their own generating facilities. These are uneconomic, since both the initial investment and the operating costs per unit of output are normally higher for such plants than for larger public service facilities; they involve a large increase in the capital requirements for establishing new enterprises; and they increase the difficulty of obtaining a satisfactory balance in the power load between residential requirements (which are heavily concentrated in a few hours of the day) and non-residential uses. In some localities the building of these factory-owned power facilities has apparently resulted in part from the establishment of utility rates that give insufficient encouragement to off-peak industrial uses.

Because of the desirability of a balanced demand for efficient and economical power operations—in which residential, commercial and industrial consumption complement each other—it is impossible to deal realistically with industrial power requirements apart from other uses. Hence, capital requirements for power facilities to serve all these purposes are shown in Section VII on Electric Power and Community Facilities.

**CAPITAL REQUIREMENTS**

Aside from the investment of about Ps.$53 million indicated for petroleum refineries and iron and steel development, Ps.$93 million could be invested in priority projects which are of major interest to the country and are currently under study. We estimate that other related capital requirements for the next five years, if the high rate of economic activity and expansion prevailing in 1946-1950 is to be maintained, will be Ps.$500 million for other equipment and material and Ps.$100 million for industrial buildings. On this basis, investment in industries in the five years to come would total about Ps.$740 million, including foreign exchange requirements of U.S.$190 million.
V. Transportation

Transportation is an especially difficult problem in Colombia because of the very rugged topography. Most of the main centers of population are located on the slopes or the high plateaus, or in the valleys of the three Cordillera ranges which stretch the length of the country from south to north. These mountains divide Colombia into four principal zones; and interzonal traffic is largely confined to goods of high value in relation to their bulk and weight, which excludes any large-scale interchange of most domestic products. Transport difficulties also inhibit the flow and increase the cost of export-import shipments between interior cities and the major ports of Barranquilla and Cartagena on the Caribbean and Buenaventura on the Pacific Coast. Despite considerable improvement in recent years, high transportation costs, delays in delivery, and excessive breakage and pilferage still impose a heavy burden on almost every sector of the national economy.

The surface transportation system is fragmentary with no independent, integrated system of railways, highways or inland waterways. Almost all traffic must make use of a combination of at least two of these means, with consequent operational inefficiencies and relatively higher costs. The principal artery of commerce has traditionally been the Magdalena River, which provides the only surface connection between the Caribbean ports and the important centers of population around Bogotá, Medellin and Bucaramanga. Railways have been built to connect these cities with the river and to link the rich Cauca Valley with the major Pacific seaport, Buenaventura. In recent years a considerable highway mileage has been built to tap areas whose terrain is too difficult or whose traffic is too small to justify railway construction. Figure 2 shows all the present media of surface transportation, as well as the changes recommended for their expansion and integration.

Air transportation has developed rapidly and is now one of the principal means of transporting both passengers and freight. Because of the slowness and high cost of surface
transport, commercial aviation is able to compete on favorable terms; the airlines carry nearly half the passenger traffic and a much smaller but steadily rising share of the freight volume. It is estimated that in 1947 the railways accounted for about 32 percent of total freight ton-kilometers (excluding oil shipments by pipeline), the highways for about 36 percent, inland and coastal shipping for 29 percent and aviation for about 3 percent.

The Mission recommends certain changes in management and operating practices to increase the efficiency of existing transportation facilities, and also some extensions and improvements of these facilities. In addition we propose the establishment of more effective regulatory machinery to bring about better coordination of the various forms of transportation and better protection of the public interest.

**Regulation of Transportation**

We believe it is most important to establish adequate machinery for regulation of all media of transportation, in the interest of shippers, passengers and the public generally. The National Council of Transportation, established in 1948, is not a wholly satisfactory agency to perform this function. Its powers are not sufficiently broad or clearly defined. It is composed of top officials of the various Government bodies concerned with transportation, who have other extensive and pressing responsibilities. It meets only informally and has no adequate staff. Finally, its members generally represent special economic and bureaucratic interests, some of them as operators of particular transportation media. Such a setup is not conducive to careful, disinterested analysis of the complexities of the transportation picture, or to the development of a comprehensive, consistent, and objective policy with regard to the various overlapping and competing systems of transportation.

We recommend, therefore, that the proposed Public Administration Mission give special attention to the problem of securing a proper organization of regulatory functions, as distinct from operations, in the whole field of transportation.
Improvement of Operations

For administration and operation of the National Railways we recommend establishment of a Public Railways Corporation independent of the regular ministries, with an outstanding part-time Board of Directors and a General Manager with broad executive power and responsibility for day-to-day operations. We believe this administrative change would better insulate railroad operations from political influence, permit both greater continuity of policy direction and more managerial flexibility, and help to fix responsibility for direction and management. This appears to be a necessary prerequisite to increased operational efficiency, and a good starting point for other improvements.

There has been a failure to put into practice the many specific recommendations for improvement of operations which have been made in the past, particularly those by the United States Railway Mission of 1946. We strongly reiterate the recommendations of that Mission. We would emphasize our view that substantial improvements in efficiency can be obtained by those means at relatively small cost, and that there is little justification for large new capital investments unless operational improvements are made. In the Pacifico shops, for example, which are the best in Colombia, the average time required to make general repairs actually increased from 118 days per locomotive in 1945 to 145 days in 1949.

In addition to more efficient operating and maintenance practices for present equipment, we recommend the purchase of several diesel-electric units to replace steam locomotives on certain runs, and of lighter weight freight cars, as part of the re-equipment program projected by the National Railways. Through the use of double unit, yard-gauge diesel-electrics and lighter weight equipment, we believe that it is possible to increase train payloads on steep grades from the present average of 100 tons to 700 tons. Centralization of maintenance shops and purchase of improved types of machine tools, as recommended by the 1946 Railway Mission, are also very desirable.
We suggest certain changes in operating and management practices to raise the productivity of railway labor. We recommend also that the railway pension system be revised so that experienced, still productive workers can be usefully employed for a longer time, and wages and social security benefits can be raised to a more adequate level.

Proposed Expansion of Railroads

The present program of the Government for railroad expansion appears to be open to two main criticisms: (1) it involves the building of several lines to compete for the same traffic and an increase in the traffic handling capacity of the railroads in excess of any reasonable estimate of future demand; and (2) so many projects are being carried on at once that none of them can be completed for many years. Our recommendations for new construction are designed to focus on the most urgent projects, to get them completed as soon as possible and avoid further expenditures on undertakings of low economic value.

In our view the most important construction project is the building of a new railway along the Magdalena River from the head of year-round navigation at Puerto Wilches to La Dorada and Puerto Salgar. It would connect with the existing lines running west to Antioquia, Caldas and the Cauca Valley, south into Tolima and Huila, and east to Bogotá and into Boyacá. This new line would supplement the Magdalena River in its upper reaches where dependable navigation is impossible in the dry season, and thus would provide faster and cheaper year-round transportation for bulk commodities between the most important interior districts and the Caribbean coast; this would help also to relieve traffic congestion over the route from Buenaventura. Moreover, it would provide a connection between the Eastern and Western railway networks, and probably also tie the isolated Puerto Wilches-Bucaramanga line into the rest of the railway system. Thus it would help to avoid costly and time-consuming transfers of freight between the railways and other means of transportation and would permit much more efficient use of equipment and maintenance facilities.
The construction of the new Magdalena River railroad would greatly reduce the need for the following railway projects now under slow construction.

(1) The connection between the two sections of the Norte Railway, similarly designed to provide transportation for bulk traffic from Puerto Wilches south to the Bogotá area. The Magdalena River line would probably cost no more to build and its operating costs would be much lower; it would have greater traffic potential; and it would have the additional advantage of linking the major railway lines in Colombia and providing through railroad connections between the major centers of Bogotá, Medellín and Buenaventura.

(2) The Bolivar section of the proposed Western Trunk Railroad from Cartagena south and eventually intended to connect with the Western railway system at Anza in Antioquia. After completion of some 486 kilometers of new line this would provide an alternative route to the Caribbean. The prospective volume of traffic is not great enough, however, to justify such an additional route, and the local traffic in Bolivar could be adequately handled by highway transport.

(3) The Ibagué-Armenia railroad, designed to connect the Eastern and Western systems over the extremely difficult Quindío Pass. The objectives of this project are certainly desirable, but its cost is too high and consequently other means of achieving its objectives are preferable. The Magdalena River railroad would connect the Eastern and Western systems more cheaply and efficiently and would handle much of the traffic for which the Quindío route is proposed. The rest of that traffic could be handled more cheaply by efficient trucking methods than by the projected railway.

(4) The Buga-Buenaventura cutoff on the Pacífico railroad, to provide a shorter and easier route from the Cauca Valley to Buenaventura. This project is designed mainly to ease the traffic bottleneck between Buenaventura and Cali. However, construction of the Magdalena River railroad and the Western trunk highway will tend to reduce the volume of this traffic; and the new Buenaventura-Buga highway and
improvement of operations on the existing railroad through Cali would take care adequately of the remainder.

Consequently, we recommend that work on these lines cease and that the Government concentrate its major railroad construction effort on the Magdalena River route. In addition, the two meter-gauge lines serving Bogotá should be changed to the more generally used yard-gauge. The interchange of freight between the meter-gauge and the two yard-gauge railroads entering Bogotá is relatively small, but it is likely to increase. More important, standardization of these railroads would permit substantial operating advantages, notably centralization of shop facilities and more efficient use of equipment. The advisability of also changing the meter-gauge line running from Puerto Wilches to Bucaramanga depends on whether the new Magdalena River railroad is built on the east or on the west side of the river. Decision on a shift to yard-gauge should, therefore, be postponed until surveys for the new line are completed and its route determined.

Our preliminary estimate of the capital requirements for the Magdalena River railroad is Ps.$36 million, plus U.S.$12 million. A more detailed survey is necessary to define the best route and estimate the cost more accurately. The several other projects we recommend involve much smaller expenditures and can be initiated at once:

<table>
<thead>
<tr>
<th>Project Description</th>
<th>Cost Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Central shop facilities, Bogotá</td>
<td>Ps.$6,000,000 plus U.S.$2,000,000</td>
</tr>
<tr>
<td>Diesel locomotives</td>
<td>U.S.$1,000,000</td>
</tr>
<tr>
<td>Standardization of gauge (2 lines)</td>
<td>Ps.$2,200,000 plus U.S.$100,000</td>
</tr>
<tr>
<td>Relocation of facilities, Bogotá</td>
<td>Ps.$1,000,000 plus U.S.$200,000</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>Ps.$9,200,000 plus U.S.$3,300,000</strong></td>
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We recommend that two existing lines, isolated from the main systems of the National Railroads, be abandoned because of their low traffic volumes and high operating losses. These are the Nariño and the Cartagena-Calamar

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2 In addition to the foreign exchange expenditures, 33 percent of the c.i.f. cost of imported equipment should be added to cover transport and trade markups for such equipment. A similar addition of 33 percent should be made in all cases where internal distribution costs on imported material are not specifically included.
railroads. Other means of transportation—a highway in the former case and an improved waterway in the latter—would serve the areas involved more efficiently.

The savings from abandoning these lines are estimated at Ps.$1,300,000 annually. In addition, we believe that savings of Ps.$6 million per year can be achieved through improved operating practices, and perhaps Ps.$12,500,000 a year for construction projects now in the National Railroad Fund that we recommend be abandoned or postponed. These savings would cover capital requirements in less than four years.

**Highway Transportation**

Highway transportation has grown rapidly in importance since its inception in Colombia 25 years ago. Highways have several advantages over other media of surface transportation: they can be used efficiently by many types of vehicles for both local and long-haul traffic; they can traverse terrain too difficult for railway construction; and the investment in their construction can be adjusted in considerable measure to the economic utility of the route involved. However, a very high minimum investment is always required for a railroad. Despite these advantages, highway transportation has not yet assumed its proper place in the transport system of Colombia because of excessively high construction costs, poor road maintenance, and the incompleteness of the highway network.

**Operational Improvements**

The present unsatisfactory standards of highway maintenance are less the result of inadequate appropriations than of uneconomic administration of the funds available. The average National Government allowance of Ps.$1,000 per kilometer per year for maintenance and paving, which was approximately provided in the 1950 budget, should be sufficient if properly used, especially since it is supplemented by substantial departmental expenditures.

For many through highways with a high traffic volume, however, Ps.$1,000 per kilometer is far too low, while for
less important roads it is too high. It is important, therefore, that the allocation of maintenance funds be based on sound economic criteria and accurate and up-to-date surveys of present and prospective traffic. In view of the importance of good highway maintenance we suggest that it may be useful to make the experiment of turning over to private interests the reconditioning and maintenance of one or two bad stretches, or the construction of a new highway section to be financed by tolls. Alternatively, the Government might consider entering into a contract with competent and specially experienced private firms to maintain some important stretches of highway.

Greater use of mechanical road equipment is recommended. The equipment now in use should be concentrated in fewer larger pools to permit better supervision and maintenance and more flexible use. Budget allocations for purchase of highway machinery and parts should be larger than in past years; the 1950 figure is more adequate, however, and we recommend that this level be maintained for some years to come.

Unsatisfactory highway conditions have contributed greatly to the excessively high cost of truck operations. Maintenance and accident costs are heavy and the life of equipment is short; a large part of every truck fleet is always laid up. As a result of these hazards, light equipment and low speeds are generally used and reduce the efficiency of operations. The wide diversity of truck types in use and the foreign exchange restrictions of the past few years have made it difficult to maintain adequate inventories of spare parts, and have increased maintenance costs and delays. We believe it should be possible, by improving the quality of the major highways and using more uniform fleets of higher capacity trucks, to reduce truck operating costs by at least 50 percent.

**Major Highway Extensions**

We recommend that highway construction efforts, instead of being spread out over more than a hundred projects, as in 1949, be concentrated on a few projects of outstanding
economic importance. Most of these are relatively short segments required to complete important through routes. As we see them, the top priority construction projects are:

- the Taraza-Planeta Rica segment of the Cartagena-Medellin highway;
- the la Dorada-Sonsón segment between Bogotá and Medellín;
- the Cachira-Abrego gap and the cutoff from Rincón Hondo to Caracoli on the route from Bucaramanga to Santa Marta and Barranquilla;
- the Buga-Buenaventura cutoff;
- the Tumaco-El Diviso highway to replace the present railway;
- various parts of the Medellín-Turbo road.

We estimate the capital requirements for these undertakings at Ps.$33.5 million plus U.S.$1.5 million. An additional U.S.$3 million for road machinery would serve both for these construction projects and for maintenance work.

In addition, we believe consideration should be given to closing the gaps in the Bogotá-Neiva-Popayán route and to building the direct highway link between Barranquilla and Santa Marta.

**Water Transportation and Port Facilities**

Magdalena River transport, historically the most important medium for import-export traffic, has become increasingly unsatisfactory in recent years, partly because of the difficulties of navigation above Puerto Wilches at the low water season, and partly because of the inefficiency and high cost of cargo carriage and handling. The recommended new railway south from Puerto Wilches should remedy the first deficiency in large part, and certain river improvements which we have outlined are desirable below Puerto Wilches. The most immediate need, however, is to increase the operating efficiency of water transport, for otherwise investments in better facilities would be largely ineffective.
Improvement of Operating Efficiency

We recommend that:

(1) The present high uniform transfer charges be reduced and differentiated for commodities of different types and values, to attract a greater traffic volume;

(2) Greater use be made of mechanized loading and unloading equipment, and the resulting labor savings passed on in lower transfer charges;

(3) Shipping rates on the Magdalena River be differentiated for different cargoes and types of service;

(4) The "turn" system of assigning cargoes be changed to enable shippers to choose the vessels best suited to their requirements and to foster more effective competition among ship operators; and

(5) Crew labor practices be revised to permit efficient use of modern equipment.

Our recommendations with respect to terminal handling at ocean and river ports are similar. Emphasis should be placed on speeding up the loading and unloading process, especially at Buenaventura, by 24-hour work while ships are in port, greater use of mechanized equipment, payment of wages on an incentive basis, and use of lighters. Part of the difficulties of port operation apparently stems from division and confusion of administrative responsibility. We therefore recommend the establishment of a National Port Authority to administer and operate all ocean and river port facilities. Such a coordinated port administration would be in a better position than the various agencies now concerned, or private stevedoring companies, to install modern mechanical facilities, to adjust handling charges to fit economic and competitive conditions, and to negotiate fair agreements with the stevedores' organizations.

Several of the changes proposed involve substantial modification of present labor practices, which may be strongly resisted unless the workers understand how dangerous to their long-run interests is the decline of water transport. It is important, if serious labor difficulties are to be avoided,
that the higher productivity resulting from these changes be adequately reflected in higher wages or other benefits.

**River and Port Projects**

Three major projects for improvement of waterways appear to merit high priority. They are:

1. Stabilization of the shifting Magdalena River channel for 20 miles opposite and below Puerto Wilches. We believe the Government should be prepared to spend at least Ps.$3 million, plus U.S.$1.5 million for dredges, and to undertake annual maintenance expenditures of Ps.$250,000.

2. Dredging of the Bocas de Ceniza at the entrance to Barranquilla harbor. An initial outlay of Ps.$10 million and a continuing cost of perhaps Ps.$2 million annually are estimated.

3. Improvement of the Canal del Dique to permit fuller use of the excellent natural port of Cartagena and abandonment of the inefficient Cartagena railway. This is estimated to require Ps.$4 million and annual expenditures of about Ps.$285,000.

**Ocean and Coastwise Shipping**

We believe it is doubtful that further expenditures by the Gran Colombiana line for the purchase of more ships and the opening of new routes would yield returns as large as equivalent investments in Colombia itself, especially since the maritime shipping industry is becoming increasingly competitive. However, the acquisition of a 1,000-ton seagoing freight vessel, as planned by the government, would aid in maintaining adequate coastwise shipping and is probably justified for social and political reasons, although it is not likely to be directly profitable.

**Pipelines**

Pipelines now handle perhaps half of the total ton-kilometers of freight traffic in Colombia, consisting mainly of crude petroleum for export. However, as the domestic demand for petroleum products increases and supplies of crude diminish,
COLOMBIA
PRESENT AND RECOMMENDED
RAILROADS, HIGHWAYS
AND PIPELINES

Figure 2
as is anticipated, the pattern of pipeline transportation should increasingly stress internal distribution from the refinery at Barrancabermeja to the major consuming centers.

Two extensions of the existing pipeline that runs south from Barranca to Puerto Olaya appear fully justified on economic grounds: (1) from Puerto Olaya to Puerto Salgar, and (2) from Puerto Berrio to Medellin. The present pipeline should also be replaced, since it was built during the war with inferior materials. Distribution of petroleum products from Puerto Salgar to the Bogotá area and beyond, and from Medellín to Antioquia, Caldas and the Cauca Valley, can be adequately handled over the next few years by rail and truck. Consequently, we recommend against construction of a pipeline from Buenaventura to Cali or, for the present, from Puerto Salgar to Bogotá pending experience with the cost reduction measures we have recommended for railroads.

We estimate tentatively that Ps.$12 million, including perhaps U.S.$2.5 million, should be sufficient for these recommended projects.

**Air Transportation**

The development of commercial aviation in Colombia, almost wholly through private initiative and with little Government aid, has many favorable aspects. At the present stage, however, a greater measure of public assistance and the elimination of some uneconomic competitive practices are clearly necessary to enable the industry to maintain itself on a sound basis, to expand and improve its facilities to meet rapidly growing demands, and to serve the interests of the public and the needs of the national economy to its full capacity. A continuation of unrestricted competition, with all the cutthroat practices entailed, would be likely to undermine the solvency of the remaining lines and eventually to eliminate competition. Moreover, certain aspects of the competitive picture are clearly uneconomic (as, for example, the construction of duplicate airports) or prejudicial to safety (such as the inadequate system of air traffic control now in use).
We recommend, therefore, that:

(1) An appropriate regulatory agency be assigned responsibility for establishing and administering a system of route franchises, for reviewing and regulating air transport rates, safety regulations and standards of service.

(2) Communications, air traffic control and navigation equipment satisfactory to handle present and foreseeable needs be purchased and installed; we estimate the cost of such equipment at U.S.$1,750,000.

(3) Night flying be initiated on the major routes as soon as facilities permit, especially for cargo traffic, in order to improve the utilization of equipment and bring down unit costs.

(4) Top priority be given to the construction of an airport at Buenaventura and to the improvement of the fields at Bogotá (Techo), Medellín, Cartagena (López), Cali (AVIANCA), and Bucaramanga to permit their being used by heavier equipment; capital requirements are estimated at Ps.$6 million plus U.S.$2 million.

(5) Duplicate air fields at numerous localities be abandoned to ease the financial drain of maintaining and improving the extra facilities and to reduce safety hazards.

(6) The Government Air Force abandon its operation of commercial flights on certain marginal routes, and to the extent that service to these areas is deemed necessary in the national interest, that the Government provide subsidies to the private airlines to the extent necessary until sufficient traffic is generated to permit self-sustaining operations.

(7) The carriage of airmail, until recently a heavily subsidized monopoly of AVIANCA, be opened to all franchised air carriers on a contract basis at compensatory rates.

As a means of carrying out recommendations numbered (2), (4) and (5) above, and generally of putting air transportation on a sounder, more efficient basis, we recommend the establishment of an Airport and Communications Corporation, with the Government and the airlines as principal owners. This Corporation would take over (by purchase or lease) and operate a nationwide system of air fields—using
the best field in each locality where more than one exists at present—and air navigation facilities, for use on a fee basis by all licensed carriers and other flyers. This Corporation could be financed from communications and landing fees and other charges, the gasoline tax, and the subsidy now concealed in the airmail contract; probably an additional subsidy of about Ps.$1 million annually would be required, at least initially. However, such an arrangement would permit much safer and more efficient airline operations and would release large amounts of the companies' capital funds, now tied up in fixed installations, for other necessary investments.

CAPITAL REQUIREMENTS

The specific projects mentioned above amount to approximately Ps.$180 million, which include exchange requirements of U.S.$32 million. In addition, markups and internal transport charges for imported equipment bring the total to nearly Ps.$200 million.

The building and maintenance of highways, ports and airfields, other than those discussed above, to maintain past rates of growth would absorb another sum of approximately Ps.$400 million. Motor cars, trucks, buses, planes and other operating equipment will have to be bought and maintained and existing railways will have to be maintained to provide for the projected rates of growth of the entire economy. Required expenditures for this purpose we estimate at Ps.$920 million.

The grand total of capital expenditures for all forms of transport in the period 1951-1955, therefore, comes to about Ps.$1.5 billion, or 30 percent of the requirements of the entire program, of which U.S.$322 million represent foreign exchange requirements.
VI. Public Health, Welfare and Education

A natural tendency in formulating objectives and plans for economic development is to lay primary stress on expansion of facilities and improvement of efficiency in those sectors of the economy—notably agriculture, industry and transportation—which contribute most directly to the production of goods. The importance of increasing physical output is obvious, and the effect of such an increase on the standard of living is relatively easy to measure. But in the long run the raising of standards of health, welfare and education is likely to be even more fundamental in promoting sound economic development. For these services not only are major components of a higher standard of living in themselves, but also are vital means of improving the human resources of the nation and thereby laying the groundwork for further economic and social progress.

In recent years less rapid advances have been made in health and educational standards in Colombia than in production and national income. The Mission has, therefore, devoted considerable attention to these problems and to possible means of effecting improvements.

Public Health

Health is probably the most important single component of a people's standard of living, and at the same time one of the most important determinants of that standard. Poor health lowers productivity and constitutes a continuing drain on national wealth and resources, resulting from loss of working time, from the need for large capital outlay to build hospitals and similar facilities, and from increased costs of welfare, insurance, and sickness and accident benefits.

Colombia's health status compares favorably with the standard of most of her South American neighbors, but this standard is not very high. Although available statistics are not wholly reliable, it appears that life expectancy at birth is below 40 years, as against 70 in some of the most advanced countries. This short average life expectancy, and the destruction or grave impairment of the productive capacity of many
people as a result of ill health, results in a very high ratio of dependents to workers, apparently over four to one.

The people of Colombia suffer from a high incidence of disease, including those common to temperate zones as well as all the maladies found in tropical climates. Malaria, intestinal infections, tuberculosis and venereal diseases take a heavy toll of lives and account for much of the nation's disability. Nutritional disorders are widespread. Ordinary sanitary precautions are at a bare minimum, and adequate systems of water purification, milk pasteurization and sewage and waste disposal are practically non-existent.

A significant beginning has been made in attacking these problems. Anti-malaria measures and campaigns to eliminate or control some of the other major diseases have been started, numerous hospitals and asylums have been built, and an extensive program of water supply and sewer construction is under way. But much still remains to be done before satisfactory minimum health standards can be attained. And the financial and personnel resources presently available to undertake this task are seriously inadequate. Health workers are few, generally poorly trained, and inadequately paid. Medical practitioners and specialists of all kinds are in acute shortage. Hospital facilities are generally inadequate in quantity and quality.

Priority Objectives of the Public Health Program

Present public health activities are predominantly medical, with the first emphasis on treatment. This emphasis is perhaps natural in view of prevailing health conditions. But, while medical treatment is a vital aspect of any satisfactory program, the greatest need is for better preventive measures. In our view, major emphasis should be given to (1) strengthening the public health structure and reshaping its functions so that it concentrates more directly on the promotion of positive good health and the prevention of disease; (2) safeguarding environmental health, primarily through the provision and maintenance of sanitation facilities, such as water purification and sewage and waste disposal systems; and (3) training and recruiting more professional personnel of all kinds—especially
physicians, dentists, public health nurses and sanitarians—for public health service. Hospitals and related institutions also need improvement and expansion, but they cannot fulfill their purpose adequately in the absence of proper attention to the more fundamental requisites for good health.

Organization. Health problems are of most immediate concern to local authorities, and health services can normally be provided most efficiently and economically at the municipal and departmental levels. Because of the weakness of the great majority of municipal health administrations, however, (and to a somewhat lesser extent of departmental agencies) many functions that should properly be the responsibility of local bodies are performed by the National Ministry of Hygiene, because it has superior organization, funds and personnel resources.

We recommend that the relationship between the Ministry of Hygiene and the health agencies at lower levels be clarified, in general seeking to achieve the largest possible measure of local administrative and financial responsibility. National Government grants will continue to be necessary to assist local agencies to maintain satisfactory standards, and the Ministry clearly must supervise the allocation and use of such grants. Beyond this, we believe the Ministry should limit itself, in general, to broad areas of responsibility—issuance of regulations, setting of standards, provision of consultant services, research and statistical work, and the operation of certain institutions which serve the entire country or broad regions. Similarly, the departmental health agencies should provide certain department-wide services, such as diagnostic clinics and the distribution of drugs and biologicals, while most of the day-to-day treatment and preventive activities should be carried on through local agencies.

Environment. The major requisites for improving environmental conditions are the provision of more adequate housing and community facilities, particularly safe water supplies and sewage disposal systems in urban areas and satisfactory individual installations—wells or streams protected against pollution and sanitary privies or septic tanks—for rural
dwellings. It is essential that these facilities, once provided, be properly maintained. Protective measures for food and milk, through Government regulations and inspection and better refrigeration and other food preservation methods, are also very important. Present milk pasteurization plants and practices in Colombia are unsatisfactory in many cases; but until refrigeration facilities are more widely available, we believe the development of evaporating plants is preferable to large-scale investment in new pasteurization facilities.

**Personnel.** The possibility of accomplishing the necessary improvements in public health organization, disease control methods and hospital and medical care facilities depends, in the last analysis, upon the availability of sufficient numbers of properly trained professional and specialized personnel.

In Chapter XXII of the Comprehensive Report we estimate the number of professional personnel that will be required in 1955 to operate an expanded public health program and staff the proposed hospital and health center facilities. Indicated are 2,750 physicians (2,500 on a part-time basis), 870 dentists and dental assistants (250 part-time dentists), and 6,250 nurses. This represents a very considerable increase over the present numbers in these categories, and will involve the public employment, mainly on a part-time basis, of the great majority of the country's medical and allied personnel, especially physicians. This would not greatly alter present practices, since most doctors already devote part of their time to public medical care, but it emphasizes the importance of increasing the number of trained personnel not only in the public health service but also in private practice.

Several noteworthy steps have been taken recently to develop reservoirs of competent personnel in the public health professions, in particular the establishment of the National School of Hygiene. Training programs in this field need to be enlarged and systematized, with greater emphasis on up-to-date disease prevention and health protection techniques.

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3 Requirements in these fields are analyzed in some detail in Chapter XXIII of the Comprehensive Report.
Equally important is the need to increase the attractiveness of public health service. We recommend that serious consideration be given to a substantial increase in salaries to bring them more closely into line with the incomes of private practitioners and the cost of living. Better job standards, adequate security of tenure and opportunities for advancement through a genuine merit system will also be important factors in attracting qualified, public-spirited, professional personnel into the public health service.

In Chapter XXII of the Comprehensive Report we outline some of the elements of a disease prevention program for Colombia, emphasizing campaigns against the infectious and parasitic diseases. Advances in recent years in dealing with such diseases as malaria, smallpox, diphtheria, whooping cough, syphilis and gonorrhea have been such that soundly conceived, adequately organized and persistently conducted campaigns for their suppression should have excellent possibilities of success. Reduction in the prevalence of these diseases should help to mitigate both the incidence and the severity of tuberculosis, which is presently a serious problem; use of mass chest X-rays to find active or incipient cases, and a program of immunization with BCG vaccine, also offer considerable promise. We recommend modification of the present leprosy program, which now takes nearly one-fourth of the national health budget—far out of proportion to the importance of the disease in Colombia.

Effective health education on a wider scale is necessary to gain public acceptance and support for programs of preventive medicine, to promote good habits of personal hygiene, and to encourage the people to seek proper diagnosis and treatment of diseases in their early stages. In addition, education about dietary requirements will be an important means of improving nutrition.

**Hospitals and Health Centers**

The Ministry of Hygiene has estimated hospital requirements on the basis of a proposed ratio of 5.3 beds per thousand population. (The present ratio is about 2/1000.) We believe this is too ambitious an expansion to be realized in
five years, and suggest instead that the present objective be set at 3 beds per thousand for the nation as a whole, with no Department to have less than 2 per thousand. A tentative program of construction, by major regions and Departments, is outlined in Chapter XXII of the Comprehensive Report. It would call for over 17,000 new general hospital beds, at an estimated cost of Ps.$86 million. More than 4,500 additional are recommended for tuberculosis care, at an estimated cost of Ps.$13.6 million. For other custodial institutions we estimate capital requirements of something over Ps.$11 million for expansion and replacements.

We endorse the plans of the Ministry of Hygiene to establish a comprehensive system of health centers to serve as a framework for the entire public health program. The Ministry proposes to build some 146 primary centers for the larger cities and 648 secondary centers for the smaller municipalities, at an aggregate cost of Ps.$22 million.

In this connection also, it is important to bear in mind the basic problem of personnel: There would be little point in carrying out the proposed expansion of facilities for medical care unless sufficient doctors, nurses and technicians can be found to administer and staff them. Thus we would re-emphasize the necessity for giving top priority to building up an adequate corps of physicians and other trained personnel for public health work.

**Welfare**

Public welfare in Colombia, like the public health system, is only partially effective. Trained social workers and other professional personnel are lacking, funds are inadequate, and the organization is characterized by duplication in some places and important gaps in others. The most important welfare agencies are the departmental Beneficencias, controlled by autonomous “juntas” and supported mainly from lottery profits and earmarked taxes. The National Government exercises some general supervision over, and provides limited funds for, these departmental organizations.

Beneficencia activities are limited almost exclusively to the support and operation of hospitals and other institutions—
orphan asylums, homes for the aged and infirm, and the like. These institutions vary widely in the quality of their facilities and the care provided, although most of them need improvement or expansion. But in our view the trend should be away from this strictly institutional approach, and should emphasize more field work and, for children especially, placement in a suitable family environment rather than an institution. A much larger number of social workers will be needed to carry out such a program, and a program of recruitment and training for such workers should be initiated.

Colombia has an ambitious social security system on the statute books, which involves serious problems of costs and of coordination with other public welfare agencies and activities. It is estimated that when the social security program is in full operation, it may entail an outlay equal to 24 percent of payrolls—8 percent for health and maternity, 4 percent for old age, 4 percent for invalidism, 4 percent for survival, and 4 percent for work accident insurance. Financing is by joint contributions of employer, employee and Government.

The problem of the proper relationship of the social security system to other health and welfare programs is complex and difficult, and the Mission has not attempted to draw specific conclusions. However, in view of the importance we attach to preventive medical programs and certain Beneficencia activities, which do not lend themselves to the insurance approach, we feel it would be unfortunate if the development of the new social security program, however desirable in itself, were permitted to obscure the need for expansion and improvement of these older social services.

Education and Training

Education, like health, is both a determinant and a component of the standard of living. It has a direct relation to productivity and, at the same time, contributes to a fuller appreciation and enjoyment of life. The raising of educational standards, therefore, should receive high priority in any development program.

The Colombian Government is making earnest efforts, and is currently spending some Ps.$57 million a year, to edu-
cate its people, but educational standards—measured by school attendance, literacy and other criteria—are still unsatisfactory. Information supplied to the Mission by the Ministry of Education indicates that about 44 percent of the population is illiterate and that there were more illiterates among both adults and children of school age in 1947 than there were ten years previously. In 1948, only about half the children in the 7 to 11 age group attended primary schools.

The small number of students in the higher grades and in vocational schools is even more disquieting, for it is these sources that must be counted on to supply the majority of the trained people so sorely needed in Colombia's economic development. Although there were nearly 674,000 pupils enrolled in public primary schools in 1948, only about 17,000 graduate from such schools each year. The number finishing secondary schools is about 3,000 annually. In 1946 there were slightly over 4,000 pupils enrolled in industrial and arts and trades schools, and about 800 students in agricultural vocational schools. Total enrollment in the two general agricultural colleges is only 300.

The Mission did not attempt any intensive study of educational problems, but in view of the influence they have on almost all aspects of Colombia's economic development, we believe the following general observations are appropriate:

(1) It is clearly of primary importance to increase the numbers and improve the training of teachers. Out of some 16,650 primary school teachers in 1946, nearly two-thirds must be considered untrained, since they did not have any degrees or any certificates from either elementary or superior normal schools. The public and private normal schools produce perhaps 800 graduates per year but only 30 percent of recent graduating classes have gone into teaching. This is less than the number required for normal replacement of teachers now in the school system, and as facilities are expanded the average quality of teaching personnel will fall even more unless vigorous efforts are made to increase the number of qualified teachers. The normal schools should be capable of turning out many more graduates; short, intensive courses might well be instituted to raise the qualifications of
inadequately trained teachers now employed. Most important, salary levels should be increased to provide an inducement for properly trained persons to enter and stay in the teaching profession.

(2) Construction of schools at a faster rate is necessary to provide facilities for the many places which now lack them and to relieve widespread overcrowding. However, lack of school buildings does not seem to be the chief reason for the small proportion of the child population enrolled in school in many areas, and there would be little advantage in greatly expanding facilities unless teachers are available. Thus, expansion and improvement of the teaching staff remain the first priority. Appropriations at the present rate for primary school construction would probably be adequate over the next five years if building costs were brought down through use of cheaper materials and more efficient production methods.

(3) Special effort should be devoted to providing practical education for a much larger proportion of rural children.

(4) An expanded program of vocational training, in both industry and agriculture, appears to be very necessary as a means of raising individual productivity and extending the use of improved production techniques.

(5) Additional financial aid to promising students from lower income families would be of value in increasing the number of secondary school and university students.

In Chapter XXV of the Comprehensive Report we outline a modest program of capital investment in educational facilities, amounting to about Ps.$50 million over five years. Current expenditures for education might well increase over this period by 60 to 80 percent. At best, however, these figures are only very rough estimates. In view of the central importance of progress in this field, we urge that there be further intensive study, taking full advantage of foreign experience, to design a well-rounded educational program as an integral part of Colombia's over-all development program.
VII. Electric Power and Community Facilities

The difference in living standards between the most and the least developed countries can be expressed largely in terms of differences in the facilities available for modern community living—electric power, sanitary facilities, and similar public services. Their adequacy has a major bearing not only on the comfort and convenience of life, but also on the possibilities for industrial development, the efficiency of labor, and the general rate of scientific, technical and social advance.

In Colombia great strides have been made in recent years in the provision of community facilities. But the need for such facilities is almost everywhere far in excess of their availability, partly because of the rapid increase of urban population and partly because the advances of the past two or three decades started from a very low level in comparison with standards in most of North America or Western Europe.

Most of these facilities and services are provided and administered at the local (“municipio”) level. There are more than eight hundred “municipios” in Colombia, ranging from large cities to tiny hamlets and sparsely settled rural areas, so that generalizations as to the adequacy of community services and requirements for investment in these fields are difficult and hazardous. It was impossible, of course, for the Mission to make a first-hand examination of facilities in more than a very few localities, and statistical data on the subject are fragmentary and unreliable. We have tried, nevertheless, to reach some general conclusions as to the nature and magnitude of the needs, distinguishing wherever possible between different classes of towns and different regions.

Electric Power

Development of electric power is the essential foundation and stimulus for development in a wide variety of fields. It turns industrial machinery, heats electric furnaces, and is essential in many chemical processes; it provides lighting for homes and factories, energy for cooking and refrigeration, for irrigation pumps and urban water systems; and it makes possible new forms of mass education and recreation, such as the radio and motion pictures.
Present power capacity in Colombia is quite low. The Mission's estimate of total generating facilities is 241,000 kw., or 24 watts per capita. This compares with 359 watts in the United States at the end of 1947, 72 watts in Uruguay and about 63 watts per capita in Chile.

The pattern of power development prevailing in the past is proving inadequate in several respects:

(1) The rapid rise in current and prospective demand makes it necessary to build relatively huge generating stations to supplement and replace the existing small local plants. These new facilities involve capital outlays too large to be undertaken by most private or municipal enterprises.

(2) As power networks increase in size and scope, the traditional local administrative and regulatory mechanisms become less and less adequate.

(3) The rate structures in many places, designed to fit a residential and commercial consumption pattern and particularly to ease the cost of power to small consumers, provide insufficient incentive to industrial and other off-peak users. This has several disadvantages. It does not aid industrial growth, particularly in fields requiring large quantities of power; it tends to encourage the building of inefficient, factory-owned power plants; and it reduces the overall efficiency of the utility systems involved by holding down off-peak consumption.

**Expansion of Power Capacity**

We estimate that Colombia's electric generating capacity should be increased over the next five years to 475,000 kw., about 205,000 more than exist at present. This represents a rate of expansion (12 percent per year) about equal to the last five years' extraordinary growth in demand. The total cost of this program—for all necessary generating, transmission and distribution facilities—we estimate at Ps.$255 million, of which U.S.$51 million would be foreign exchange.

The proposed capacity would be sufficient to produce 3.4 times the amount of power generated in 1944-45, and nearly twice the estimated present production. It would support without difficulty the expansion of industrial production pro-
jected elsewhere in this Report, and would permit a very considerable increase in commercial and residential use of electricity.

In view of the time required for planning and construction work on such an ambitious scale, particularly in relation to hydroelectric projects, it is important that this work get under way at once.

**Type and Location of Facilities**

Most important Colombian power installations in recent years have been hydroelectric. For future expansion in certain areas, e.g., Bogotá, Cali and the Atlantic Coast region, it may be desirable, however, to lay greater stress on thermal plants. In many cases a combination of hydraulic and thermal units would make for the most flexible arrangement and the lowest cost per KVA.

The principal urban areas—around Medellin, Barranquilla, Bogotá, Cali and Manizales—offer an established and rapidly growing market for power and will be the chief centers of industrial and commercial expansion; they should clearly be assigned a high priority in the development of new power projects. Similar considerations apply to other potential industrial centers with a very limited power supply at present—e.g., Cartagena, Bucaramanga, Cúcuta and Popayán. From these centers the distribution of electricity should branch out progressively into rural districts. Special emphasis should be given to rural electrification in certain areas that offer particular promise for rapid agricultural development, such as the upper Magdalena Valley between Girardot and La Dorada, the Cauca Valley north of Cali, and the Sinú Valley.

**Planning and Administration**

The Institute of Water Utilization and Electrical Development is assigned the major task of planning and administering a national program of power development. The hydroelectric “centrales” of mixed ownership (usually national, departmental and local governments), in which the Institute plays the major role, will doubtless form the backbone of the proposed power expansion. They constitute a
practical administrative device, combining the advantages of national planning and supervision with decentralized management and flexible financing. However, the Institute is still relatively new and its plans are quite general. We recommend that it be provided with funds and staff adequate to (1) obtain accurate flow data on potential hydroelectric power sources; (2) survey comprehensively the present and prospective demands for power in Colombia; (3) develop a national program and priorities for providing generating facilities to meet these demands; (4) develop plans for interconnecting regionally, and eventually nationally, the major sources and markets for power as rapidly as is economically feasible; (5) plan efficient combinations of hydraulic and thermal power to meet varying conditions in the major power markets; (6) work out sound arrangements for financing power projects, including the difficult problem of the subscription of necessary funds from local sources; (7) review project designs and construction plans; and (8) exercise general supervision over the construction and operation of projects aided financially by the National Government.

Other Services

Water Supply and Sewerage

A good supply of pure water and satisfactory means for disposing of human waste are essential to the health and welfare of every community. Most of Colombia's large cities have some central water supply system (although a number in the 10,000 to 20,000 population range do not) but the volume or purity of the water is often unsatisfactory. Most small communities have to rely on wells and rivers, frequently polluted and difficult of access. Sewer facilities are even less adequate with sanitary sewers almost non-existent. No city has a sewer system covering the entire urban area, many have none whatever, and there are no sewage treatment plants.

In our recommendations regarding this field we give first priority to providing every community which now lacks a pure and adequate supply of water and sanitary means of waste disposal with at least minimum facilities, which will
(1) eliminate any substantial health hazard, (2) be at least as convenient as those presently available, and (3) not be unduly difficult to maintain. The second priority, we believe, is to improve the existing systems in those cities whose growth has far outrun their present facilities.

We therefore question the soundness for most Colombian municipalities of plans calling for quite elaborate and costly water supply and sewer facilities, suitable for communities in which a large proportion of the houses have interior plumbing. As a water supply system for the smaller towns and villages we envisage a number of outside taps at convenient intervals throughout the town, with community pumping and purification facilities kept as simple as possible. Waste disposal requirements for these communities can probably best be taken care of by sanitary privies, which are less expensive and easier to maintain than sewer systems. For the larger towns and cities, of course, more elaborate facilities will be required.

We estimate that capital requirements in these fields over the next five years will be as follows: for water supply, Ps.$71 million, of which U.S.$20 million would be foreign exchange; and for sewers and privies, Ps.$70 million, including U.S.$1.5 million.

Public Markets and Slaughterhouses

Many of the urban public markets in Colombia are unsanitary, decrepit and seriously overcrowded, and constitute a definite health hazard. It appears undesirable, however, to make very large new investments in facilities of the present character, in view of the inherent inefficiency and wastefulness of the present system of food retailing, often directly by the producer, in central public markets. We recommend, therefore, that expenditures for public markets and slaughterhouses be limited in the main to (1) improvement of sanitary conditions in existing markets and slaughterhouses through paving, screening, water supply, etc.; (2) improvement of refrigeration and storage facilities for meat and other perishables; (3) construction of new public wholesale markets where necessary; (4) such expansion of existing markets and
slaughterhouses as may be required for short-term needs. We estimate roughly that about Ps.$40 million, including U.S.$4 million, will be required for these purposes.

Meanwhile we believe that the possibilities of instituting a more efficient food marketing system should be thoroughly explored. The increasing shortage and rising cost of space in the existing public markets may actually encourage such a change, by strengthening the position of more efficient retailers and forcing the decentralization of other retail meat and produce shops.

**Telephones**

In 1948 the number of telephones connected in Colombia was something less than 70,000—about 7 per thousand of population compared with 14 per thousand in Latin America generally. Substantially all telephone facilities are in cities over 20,000 population; rural service is not provided. There has been a rapid expansion of telephone service in the last few years but there is a continued strong demand. On the basis of this demand and the plans of the operating companies, so far as they have been defined, we estimate that an additional 70,000 telephones may well be installed over the next five years; the cost of such an expansion would be about Ps.$48 million, of which the foreign exchange component would be approximately U.S.$21 million.

**Street Paving and Cleaning and Waste Collection**

The indicated capital requirement for expansion and improvement of street paving and cleaning and waste collection services is about Ps.$53 million, including U.S.$1.5 million of foreign exchange. We recommend that the possibilities of greater use of concrete for street paving and of a large-scale sanitary fill for garbage and waste disposal, as used in Barranquilla, be explored by other cities.

The estimated capital requirements indicated in this section, including electric power, total Ps.$537 million, including U.S.$98.5 million of foreign exchange. These figures, of course, are only a rough estimate. Further analysis will be necessary.
to fill out the data that were available to us and to provide a firm basis for definite plans.

**Administration and Financing of Community Facilities**

Public utility enterprises in Colombia were established initially by private capital. Many have been taken over by the Government, and the prospect is that most future undertakings of this kind will be publicly administered and financed. The major responsibility for such administration and financing devolves on local authorities, which are presently the weakest part of Colombia's governmental structure. Some of the problems involved are discussed in the following paragraphs.

**Utility Rates**

About 70 percent of the capital requirements indicated above are for power, water and telephone facilities, which are largely self-liquidating and which may be either privately or publicly owned, although public ownership is more common. In either case, however, a sound rate structure to provide adequate and stable revenues for the enterprises involved, and at the same time protect the public interest, is of crucial importance to the healthy development of these services.

Utility rates in Colombia are established by the respective municipalities, subject to review by the National Ministry of Industry and Commerce. Despite this review, both the level and the pattern of rates vary widely from one locality to another. With the prospective expansion of power systems from local to regional scope, these disparities are likely to create substantial problems. Moreover, the rate structure in numerous cities appears to be ill-suited to promoting efficient use of electric power, and a superficial analysis of water rates reveals similar problems.

We recommend, therefore, that consistent general principles for setting utility rates be established as soon as possible for the country as a whole, and that effective administrative machinery be set up to apply and enforce these principles. We suggest that it may be advisable to establish an autonomous, quasi-judicial regulatory commission to conduct studies.
of utility finances and rate structures, to develop sound standards of rate-making, and to approve or modify specific rates for all the power, water and telephone systems in Colombia, whether publicly or privately owned. In addition, we believe consumption of power and water should be metered insofar as possible in order to discourage waste.

**Municipal Finances and Administration**

Although the national and departmental governments provide considerable help in the financing of power and other community facilities, a major share of this financing must come from local sources, principally municipal governments. At present, however, the smallest municipalities, which constitute by far the largest number, are incapable of financing more than a bare minimum of community services. Moreover, the allocation of aid from the National Government is too often arbitrary and determined by considerations of politics rather than need or equity. The poorest communities, in fact, receive the smallest amount of national assistance in proportion to their population.

The principal channel for National Government financial aid to the municipalities is the Municipal Development Fund, which also exercises some supervision over the construction of municipal facilities—primarily power, water and sewer systems, schools and hospitals—it helps to finance. We suggest that the Municipal Development Fund be strengthened and reorganized to enable it to aid municipal governments more extensively and effectively, specifically by: (1) serving as a center for studies on municipal development problems and as a clearing house for technical and financial advice to municipalities; (2) administering the National Government's grants-in-aid on the basis of clearly established and equitable criteria; (3) guaranteeing loans to municipalities from private sources, in appropriate cases, to finance desirable projects; (4) setting and enforcing standards for the planning, design, construction, management and maintenance of community facilities built with National Government aid; and (5) having a staff of qualified technicians, and supplies of repair parts and equipment, at convenient field stations for the maintenance of local installations.
VIII. Housing and Other Building

Population in Colombia appears to have been increasing more rapidly than housing units have been provided, so that the average occupancy per dwelling unit has risen from 6 persons in 1938 to nearly 6\(\frac{1}{2}\) in 1948. Since the typical dwelling unit measures about 10 by 20 feet, this indicates serious overcrowding. In addition, most houses have no running water, lights or sanitary facilities.

The great majority of houses are built privately. The Instituto de Crédito Territorial has built, or has financed the building of, less than 10,000 units. Funds for this organization have always been inadequate, and the average cost per house has been excessive, ranging from Ps.$5,000 for rural dwellings to Ps.$18,000-$30,000 for housing for salaried employees. The Federación Nacional de Cafeteros has assisted its members in building truly low-cost homes, but because of inadequate funds it financed the construction of only 388 houses in 1948.

On the basis of the standards set forth in Chapter XXIV of the Comprehensive Report, we estimate that 350,000 new housing units should be built in the period 1951-55. Construction at this rate would not reduce the occupancy per house, but it would make available somewhat more living space and better facilities. Of the total number, 190,000 units are needed to take care of the increase in population and 160,000 to replace dilapidated dwellings. Requirements for new urban houses are estimated at 106,000 and for rural houses at 244,000, but because of higher costs for construction, the urban portion of the program will be the more expensive.

In view of the low income of most of the people and the large proportion spent on food, it is doubtful that they can be expected to spend more than 10 to 15 percent of their income for housing. On this basis—and assuming that interest rates will be kept relatively low, if necessary through Government assistance or guarantee—we estimate that the average cost of rural housing should be kept down to Ps.$2,250 and of urban housing, to Ps.$3,550 per unit, to enable farmers and workers either to acquire new houses or to pay rent in line with their income. In the poorer areas of the country, the cost should
not exceed Ps. $1,000-1,200. We are satisfied that dwellings superior to those now available can be built at this cost.

Government action will be necessary to promote large-scale, low-cost building of houses to assure the observance of minimum construction and hygiene standards, and to keep interest rates within reach of those who need housing. In general, we believe actual construction should be performed by private enterprise, with the Government providing incentives and setting standards. We suggest that the agency responsible for administering the national housing program should be granted power to guarantee mortgage loans made on specified terms by commercial banks and savings institutions, for dwellings that meet established standards. We recommend a close study of the guarantee provisions of the U. S. Federal Housing Administration in this respect. In order to keep down monthly rental or amortization and interest payments for the lowest income group, some public subsidy in the form of financing charges below the market rate will undoubtedly be required.

We believe that through the use of new building materials, reduced transportation charges and improved building practices, the cost of construction can be substantially reduced.

To meet the postulated housing needs would require capital expenditures of Ps.$230 million a year, or Ps.$1.15 billion for the five-year period. In addition, we estimate five-year capital needs for commercial buildings, factories and public buildings, exclusive of hospitals and health centers, at about Ps.$450 million. Approximately half of this total expenditure of Ps.$1.6 billion would be for domestic labor, and 17 to 20 percent would represent foreign exchange requirements.

IX. Public Finance and Fiscal Policy

Financial policies and mechanisms are vitally important as means of using the country's natural resources and manpower efficiently for economic development. Thus the proper formulation and execution of financial measures are essential to a comprehensive development program.
In 1947, total public expenditures on goods and services in Colombia, including national, departmental and municipal governments, amounted to about 12 percent of the gross national product. Adoption of the recommendations in this Report would involve a rise to about 16 percent.

In view of the size of this figure, it is most important that the Government obtain its revenues in a way conducive to economic stability and which will contribute to a broad distribution of purchasing power as well as encourage private business to develop in such directions as will contribute most to the country's welfare. Thus the overall magnitude and structure of taxation, as well as the volume and pattern of public expenditures, are important elements in economic progress. Improper fiscal policy may not only result in an improper use of scarce capital resources but may produce inflation with its attendant evils.

**Taxes**

Like all Western countries, the National Government has relied increasingly on direct taxation; nearly half of the national revenue is derived from such sources, including both personal and business income taxes. On the whole, the tax structure is rather well designed and balanced. In Chapter XXVI of the Comprehensive Report, however, we recommend that:

1. The present income tax structure with three sets of rates should be consolidated into one;

2. Individual rather than corporate income tax rates should apply to the entire salary income of corporation executives instead of only partially, as at present;

3. The capital gains tax should be broadened and applied more generally to capital gains, possibly being graduated according to the type of gain;

4. Additional required revenue should be raised, first, by better tax collection; second, by raising rates and lowering exemptions on income tax; third, by selectively increased excise taxes and customs duties, particularly on luxury articles.
The National Government undoubtedly loses a considerable amount of revenues from undercollection. We believe that a substantial expansion in the number of employees in the fiscal service, and an increase in their salaries to attract higher caliber personnel would yield manifold returns in the form of increased tax revenues. Because of the shortage of qualified personnel in these fields, an extensive training program is essential; we believe that consideration should also be given to sending a number of key members of the revenue staff abroad for advanced training.

**Budgetary Practices**

The Mission has given some study to the problems of budget reform and to the proposals now under consideration in Colombia for their solution. The present procedures, based on a series of amendments to the original legislation of 1923, are quite unsatisfactory. The changes recently enacted by Decree would improve the situation in many respects, but they still appear to have certain weaknesses.

The previous requirement that the budget must always be balanced by taxes and other non-loan revenue, which has proved unsatisfactory and ineffective, is modified to require a balance only in the "ordinary" budget. While it may well be desirable to impose some restraint on legislative action to increase expenditures without providing corresponding revenue, this kind of distinction between "ordinary" and other expenditures seems of dubious validity and doubtful wisdom. It is suggested that as a substitute for this and other provisions of the plan, a two-thirds majority of Congress might be required for incurring debt beyond that needed to finance expenditures recommended by the Government.

The adoption of a less rigid formula for estimating revenues is a desirable step, and the new formula has the advantage of favoring a compensatory fiscal policy. On the other hand, the practice of limiting drawings by the Administration against authorized appropriations to the rate of actual receipts interferes with sound administration. Finally, the new provisions do not alter the trend toward earmarking certain revenues for

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4 Decree No. 164, January 24, 1950.
specific purposes, which makes the budget structure unduly rigid and hampers adaptation of the fiscal program to changing conditions.

In our opinion there is need for a review and recasting of the entire system of budget accounting and presentation, so that the Government's revenue and expenditure accounts, their impact on economic activity, and the level of the public debt can be adequately appraised. This task is a difficult one and may well require special technical help.

**DEPARTMENTAL AND MUNICIPAL FINANCE**

The decline in the financial importance and strength of the Departments and municipalities in relation to the National Government, and particularly the great disparity in resources among the various Departments and municipalities, have hampered the development of health, welfare, sanitation, educational and other services for which these latter levels of government are responsible. The financial difficulties of the Departments are aggravated by the narrowness of their tax base and their heavy dependence on revenues from the production and sale of liquor by departmental monopolies. Most of the municipalities have very limited revenues, derived mainly from real property taxes, which are inadequate to support any satisfactory standard of public services without extensive outside aid.

Arrangements for sharing of revenue sources among various levels of Government, or for matching National Government grants, have only limited application in meeting these problems since there is often little revenue to share, or with which to match national contributions. On the other hand, the transfer of responsibilities for various functions to national agencies, with a view to relieving the burden on local governments, tends to produce overcentralization. In general, the allocation of responsibilities among the various levels of Government has not been based on any consistent principles, but is the outgrowth of a series of ad hoc expedients, and has led to considerable overlapping and confusion of authority. Finally, the present methods of apportioning and administering direct grants from the National Treasury are quite unsatisfactory; their effect is often to aggravate rather
than to mitigate the disparity in the resources of various local governments.

We recommend, therefore, that the division of functions and of sources of revenues among the three levels of Government be reviewed comprehensively to reduce inequities and undue complexities of the present structure. Departmental and municipal taxes which interfere with the free flow of trade within the country should be eliminated. The proposals for reforms made by the Committee of Financial Experts in the Ministry of Finance appear to deserve careful and sympathetic study. The establishment of a more effective Municipal Development Agency should help considerably to improve the financial organization and administration of the weaker municipalities and to strengthen their ability to borrow for development purposes.

Municipal revenues could be substantially increased by improving local tax collections. The reassessment of property valuations now in progress should help to increase receipts from the real property tax, which is the basic source of municipal revenues. Collections of other taxes should be improved, and inequities reduced by simplifications in the tax structure. Some upward adjustment in the average rate of real property taxes from the present "emergency" level of Ps.$4 per thousand (the "normal" level is only Ps.$2 per thousand) seems desirable; a higher average rate may, in fact, have positive value in promoting sound development, especially if the principle (proposed in Section III of this Summary) of progressive rates of tax on underused land is adopted.

X. Monetary and Banking Policy

Inflation has been an almost universal economic problem in the past decade, and it has profoundly influenced the economy of Colombia. The adverse effects of inflation are many: it intensifies inequalities of income distribution; gives excessive windfall profits to investors in many fields and fosters extravagance on the part of those who reap such profits; encourages speculative rather than productive investments; and often necessitates resort to drastic controls over prices and exchange in an attempt to avoid, or lessen the seriousness
of, its consequences. Inflationary pressures will almost cer-
tainly be a major problem in Colombia for years to come; it
is important, therefore, to recognize their causes and devise
measures to control them more effectively in the future.

The index of consumer goods prices rose from an average
of 100 in 1940 to 182 in 1946 and 272 in December 1949, or an
increase of 172 percent; and still further increases have since
occurred. In the same period, the total money supply (cur-
rency in circulation plus demand deposits) increased from
Ps.$212 million in 1940 to Ps.$740 million at the end of
1946, and to Ps.$940 million in June 1949, an overall increase
of 343 percent. In the period up to 1945, when many goods
were unobtainable, the money supply increased more rapidly
than prices rose, but this relationship was reversed in the
period 1946-49.

In part the rise in prices was an almost unavoidable reflec-
tion of world developments. The rise in prices abroad, and
the inability of Colombia to import many articles, led to an
increased flow of exchange proceeds, an increase in bank
reserves and a multiple expansion of deposits. To prevent
any rise in the price level during such a period would have
caused severe hardships. The actual price rise, however,
exceeded that necessary to adjust to inflation abroad, and the
monetary expansion resulting from exchange inflow was sup-
plemented by expansion of commercial bank credit and
Government borrowing from the Central Bank. An attempt
is made in Chapter XIV of the Comprehensive Report to
trace the increase in money supply to these three sources.
In very general terms, the increase up to 1945 can be attrib-
uted primarily to acquisition of foreign exchange, and that
from 1946 to 1949 primarily to expansion of commercial bank
and Central Bank credit, which far more than offset the
loss of foreign exchange. That chapter also includes a table
which provides for the first time an accurate accounting for
changes in the reserve funds of commercial banks due to
such factors as changes in foreign exchange, Central Bank
credit, Treasury deposits at the Central Bank and currency
outside banks.\footnote{See Table 108, Chapter XIV of the Comprehensive Report.}
The Colombian banking system is based in part upon the commercial loan theory of banking—that is, the theory that if bank credit is restricted to short-term commercial loans, its volume and the resultant volume of deposits will so adjust themselves as to obviate any danger of inflation. In general, this theory has not proved valid. Rather, it appears that continuous and deliberate measures are required to adjust the supply of money to the needs of the economic situation. To do this the Central Bank must be in a position to exert effective control over commercial bank reserves on which deposits are based. In the absence of an open market in public debt, this control must operate primarily through the rediscount operation. But such control has been handicapped by statutory requirements under which commercial banks are entitled to ample rediscount. We recommend, therefore, that the Banco de la República be given power to ration its credit advances. This might be done by giving it power to vary periodically the upper limits of rediscounts as a percentage of a commercial bank's capital and reserves.

We have noted that one cause of the expansion in the money supply was the borrowing by the Government from the Central Bank. For example, in the years 1947 and 1948, the extension of Banco de la República credit to the National Government and the Stabilization Fund reached the relatively large figure of Ps.$73 million which, of course, tended to increase commercial bank reserves. We urge that under conditions of full employment the Government should make every effort to avoid borrowing from the Central Bank either to cover deficits or to finance long-term development projects. In either case, the borrowings result in an addition to commercial bank reserves and make possible a multiple expansion of bank deposits.

While the commercial banks have made available an ample, and at times excessive, volume of commercial credit, their contribution to longer term investment has been slight. We recommend that commercial banks be permitted to invest, under proper safeguards, an increased proportion of their assets in longer term loans in sectors of the economy where credit is very short. This will help to improve the direction
of capital flow and, if held within proper limits, may be done
without endangering the liquidity or solvency of the banking
system which, in the last analysis, can only be assured by
a healthy and expanding national economy.

From this brief discussion, it is apparent that the formul-
lation of correct central banking policy is a matter of great
difficulty, requiring a knowledge of some of the most technical
aspects of economic theory, an ability to assess the future
impact on the economy of developments in the exchange,
fiscal and monetary fields, and the courage and disinterested-
ness to pursue unpopular restrictive policies at certain times.
The Mission of experts from the Board of Governors of the
Federal Reserve System of the United States affords an
opportunity to study the basic organization of the Banco
de la República and its relation to the Government on the
one hand, and the Exchange Control Board on the other, with
a view to improving its effectiveness.

XI. Foreign Trade and Exchange

The foreign trade position of Colombia is relatively favor-
able, particularly in relation to hard currency markets. The
country's dollar earnings derive principally from the export
of coffee, and rising demand and prices for this commodity
have largely accounted for the increase in the value of Colom-
bia's exports from U.S.$81 million in 1938 to U.S.$284 million
in 1948. Should coffee hold at anywhere near its price in early
1950, foreign exchange receipts might very well approach
U.S.$400 million annually. Over the longer term, however,
this dependence on the fortunes of a single crop may be a
source of weakness. In past years coffee has been subject to
serious fluctuations in supply and demand and consequent
wide variations in price, and less favorable conditions might
well recur in the future.

For the next few years, however, Colombia's satisfactory
trade position should greatly ease the problems of develop-
ment, if wise financial policies are followed. The foreign
exchange resources prospectively available should be suffi-
cient to finance both the necessary purchases of capital equip-
ment from abroad and an adequate volume of consumer goods imports as well. At the same time, domestic production of goods and services may be expected to increase at an accelerating rate, replacing some of the products formerly imported.

Another relatively favorable aspect of Colombia's international position is that the service on its external debt of approximately U.S.$130 million amounts to less than 4 percent of current exchange receipts.

Colombia has been able in the past to produce enough oil to meet its own requirements, has received a steady dollar revenue from royalties on exported oil, and has attracted a very substantial amount of foreign capital for oil exploration purposes. The country's petroleum situation, however, has recently become less favorable. No major new fields have been discovered, domestic consumption has grown steadily, and exploratory work has been sharply curtailed.

**Foreign Exchange Policies**

In spite of Colombia's generally favorable international economic position, the country's foreign exchange reserves were subjected to a severe drain in 1946-48, which was curbed only by resort to detailed, complex controls over imports and exchange transactions.

These controls have succeeded in their primary purpose of restricting the loss of exchange, but as they have been administered they have entailed serious adverse consequences as well. They have increased the cost and complexity of foreign trade, have weakened competition, have caused certain distortions in business policies, and have encouraged high markups and permitted excessive profits on both legitimate and illegitimate imports. They have frequently been used to promote economic self-sufficiency without much regard for the relative costs of domestic and foreign production. Their complexity and discretionary character have tended to discourage foreign investment and to distort the pattern of domestic investment.

The heavy demand for imports which so endangered Colombia's exchange reserves was caused essentially by the
relatively greater rise in prices and incomes at home than abroad—a rise that was not sufficiently compensated by a fall in the exchange rate, so that prices of foreign goods were low relative to domestic products.

It is clear that the system of multiple rates and complicated, discretionary controls over foreign trade and exchange transactions constitutes a substantial hindrance to orderly economic development along the lines outlined in this Report. It is clear also, however, that these controls can safely be relaxed only as part of a complex of measures that will reach to the inflationary pressures underlying the exchange disequilibrium. The whole problem is a highly technical one, tied in with almost every aspect of the development program.

We recommend, therefore, that an intensive study of possible changes in monetary and exchange policy be undertaken as an integral part of the study of the overall development program outlined herein; and that this aspect of the study be carried on in close consultation with the International Monetary Fund, which has special responsibility and competence in this field.

**Foreign Investments**

The great bulk of direct foreign investments in Colombia have been in oil and gold mining. Only a relatively small amount of foreign capital has gone into manufacturing, although the experience of firms that have established plants in Colombia, either on their own account or in partnership with Colombian capital, has generally been very favorable. The Colombian economy could derive considerable benefit from larger and more diversified equity investments from abroad. Such investments usually are accompanied by technical skills and managerial experience from the more highly industrialized countries, which in many cases would be of value not only to the particular enterprises in which the investment is made but also as a stimulant to the industrial growth in the whole economy. Our estimates in Chapter XXX of the Comprehensive Report indicate that the overall program can be realized within the period specified only if there is a net inflow of foreign capital of approximately Ps.$60 million a year. The gross inflow must be much larger.
Unfortunately, however, an atmosphere and economic environment unfavorable to extensive foreign private investment appear to have developed. The actual treatment of foreign capital in the middle of 1949 seemed to be reasonably fair, but a feeling of uncertainty was prevalent about the exchange rate, the operation of exchange controls and about the way in which the many other laws and regulations affecting foreign investment might be applied in the future. Private capital can adjust itself to many conditions, but not to extreme uncertainty. Whatever rules may be established relating to the export of earnings and the re-export of capital, it is of primary importance that they be fixed, known and changed as seldom as possible.

**Trade Policy**

Advantage should be taken of the present favorable conditions to encourage the diversification of Colombian exports and thereby reduce the importance of coffee in the country's foreign trade. Sugar, bananas, forestry products and coal appear to offer possibilities worthy of further investigation. It seems desirable also to encourage exports of both manufactured and agricultural goods to Venezuela, as a means of earning dollars. The present relatively high external value of the peso tends to discourage exports of many commodities by imposing unduly high prices in terms of foreign currencies; it may also handicap the development of domestic manufactures to replace imported goods.

In recent years, a beginning has been made in inaugurating a system of bilateral trades with a number of other countries. Although such trades offer a possibility of stimulating world consumption of coffee and thus strengthening its price, the disadvantages attendant upon bilateral trading in general raise serious question as to the wisdom of extending this policy.
XII. Government Organization and Economic Data

A development program cannot be soundly formulated and successfully carried out unless a well-organized and efficient administrative structure exists and unless adequate economic and statistical data are available.

GOVERNMENT ORGANIZATION AND ADMINISTRATION

The Mission has had neither the time nor the personnel to undertake an intensive study of the administrative structure and problems of the Government. We recommend that this task be undertaken by a special public administration advisory mission. But our substantive recommendations in every field inevitably have important administrative implications, and at numerous points in the Summary and the Comprehensive Report we have had occasion to call attention to the need for certain administrative improvements and to make suggestions as to their general character.

Among the most important of these needs, in our view, is to strengthen the Office of the President to enable him to exercise more effectively his constitutional function as Chief Executive and his responsibility for coordinating the programs and operations of the Executive Branch of the Government as a whole. Specifically, we propose the establishment, directly under the President, of a Resources Planning Agency to undertake continuing analyses of the economic potentialities and needs of the nation; to review, from the standpoint of overall economic policy, the programs and proposals of the various Government agencies; and to advise the President on these matters. We also recommend that the Budget Bureau be located in the Office of the President, to serve as his agent and technical adviser on the interrelationships and requirements of the various governmental agencies, in order to help secure more efficient administrative coordination and a well-conceived budgetary program. Such changes should be of value not only to improve efficiency and coordination in the Executive arm of the Government, but also to make it easier for the Congress to review the policies, opera-
tions and fiscal requirements of the Government in proper perspective.

The need for strengthening the President's office is emphasized by the growth in the size and complexity of governmental functions in recent years. The many new agencies created to meet new needs frequently have closely related or overlapping jurisdictions. As a result there has been considerable confusion and diffusion of authority, without any clear cut assignment of responsibility for working out and administering a coordinated program in various important fields. For example, twenty or more agencies are concerned with various aspects of agriculture in addition to the Ministry of Agriculture, and similar situations exist in other functional areas. We have recommended some specific organizational changes in appropriate sections of the Summary and the Comprehensive Report.

One matter which we have given particular attention is the importance of distinguishing between operational and regulatory functions. We recommend, for example, the establishment of autonomous, semi-judicial commissions for the regulation of utility and transportation rates, divorced from the agencies concerned with development and operation of these services. In the case of functions akin to those of private business, such as the operation of railways and certain municipal services, we suggest the advisability of concentrating administrative authority and responsibility in the hands of a general manager, responsible in turn to a board of directors chosen for their business and administrative competence rather than on political grounds.

The relations among the different levels of government—national, departmental and municipal—also reveal a serious diffusion of authority and responsibility. The administrative and financial weakness of most local governments gives special ground for concern because of the importance of the facilities and services—electric power, sanitation, education, health and the like—which must be furnished at that level.

Finally, one of the most urgent necessities is the improvement of Government personnel. A large reservoir of trained
and enterprising personnel is not available in Colombia, and
the Government has not been too successful in recent years
in competing with private industry for existing personnel.
With the rapid development of industry, this problem may
become more acute. We believe it is of the utmost importance
to make a career in the public service more attractive; im-
provements in salary scales, greater security of tenure, and
better definition of responsibilities would be important factors
contributing to this objective.

**Economic Data**

The Mission spent much of its time working over the
rather abundant but often undigested statistical data in
Colombia, in order to establish some approximation of the
relevant magnitudes of the problems discussed in this Report.
Series depicting the gross national product and its sources,
the national income and its distribution, the amount spent
yearly on capital goods produced domestically and imported,
the balance of payments, the sources and uses of reserve
funds and money supply, and the like, are indispensable for
intelligent determination of the overall size and composition
of a feasible and desirable program. Despite our best efforts,
much significant information is still lacking and many of
the data we have had to use are still not precise or reliable.
In consequence, some of our conclusions and recommenda-
tions have had to be more general or tentative in character
than we would have wished.

We urge, therefore, that every effort be made to build
up within the Government a competent group of analytical
economists, statisticians and accountants to fill in the gaps,
 improve the quality of basic statistics and study their signifi-
cance more fully, and thus provide a firm basis for future
planning and implementation of national development policies
and programs.
XIII. The Overall Program

Throughout this Summary and the Comprehensive Report we have stressed a coordinated approach to the task of economic development in Colombia. The problems we have discussed are closely, inseparably interrelated, and we have tried to ensure, so far as possible, that our conclusions and the recommendations are integrated and internally consistent. We have tried also to make these recommendations as specific and quantitative as possible, so that they may serve as useful guides to action and not merely as expressions of general aims.

Because we have followed this coordinated, quantitative approach, it is possible to make some judgment as to the general economic feasibility of the contemplated volume of investment—whether it is within the physical and financial capacity of the nation, whether it can be realized without inflation, and whether sufficient foreign exchange will be available to finance the required imports. We devoted considerable time to study of these questions, and our judgment entailed a number of rather technical calculations and projections of past trends, which are reflected throughout Part II of the Comprehensive Report, and especially in Chapter XXX. In summary, therefore, we are satisfied that the capital expenditures indicated are reasonable in magnitude and are consistent with an integrated pattern of economic growth.

Total capital outlays required for this program in the years 1951-55 are estimated at approximately Ps.$5 billion—assuming stable price conditions—or an average of about Ps.$1 billion each year. This compares with an estimated level of investment of Ps.$850 million in 1950. Of the total capital requirements, Ps.$1 billion would be for imported equipment. Table 1 presents a breakdown of the projected total investment by end use.
### Table 1

**Projected Investment Program by End Use, 1951-1955**

<table>
<thead>
<tr>
<th>End Use</th>
<th>Total Imports (millions)</th>
<th>Private Investment (Ps.)</th>
<th>Public Investment (Ps.)</th>
<th>Total Investment (Ps.)</th>
<th>Percentage Composition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Industries</td>
<td>U.S.$191.5</td>
<td>741.5</td>
<td>741.5</td>
<td>14.5</td>
<td>14.5</td>
</tr>
<tr>
<td>Agriculture</td>
<td>109.0</td>
<td>341.0</td>
<td>176.0</td>
<td>517.0</td>
<td>10.3</td>
</tr>
<tr>
<td>Transport</td>
<td>322.5</td>
<td>878.0</td>
<td>645.5</td>
<td>1,523.5</td>
<td>29.9</td>
</tr>
<tr>
<td>Mining</td>
<td>46.0</td>
<td>135.5</td>
<td>-</td>
<td>135.5</td>
<td>2.7</td>
</tr>
<tr>
<td>Construction Trade</td>
<td>14.0</td>
<td>40.5</td>
<td>-</td>
<td>40.5</td>
<td>0.8</td>
</tr>
<tr>
<td>Housing</td>
<td>43.5</td>
<td>1,145.4</td>
<td>-</td>
<td>1,145.4</td>
<td>22.5</td>
</tr>
<tr>
<td>Buildings</td>
<td>28.5</td>
<td>150.0</td>
<td>297.7</td>
<td>447.7</td>
<td>8.8</td>
</tr>
<tr>
<td>Municipal Facilities and Power</td>
<td>98.5</td>
<td>-</td>
<td>536.6</td>
<td>536.6</td>
<td>10.5</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>U.S.$853.5</strong></td>
<td><strong>Ps.$3,431.9</strong></td>
<td><strong>Ps.$1,655.8</strong></td>
<td><strong>Ps.$5,087.7</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

1 This table also appears as Table 156 in Chapter XXX of the Comprehensive Report.

In attempting to determine the amount of capital available to meet these requirements, we have calculated that in 1953, the mid-year of the period, it is reasonable to expect, from past trends and under certain assumptions, investment amounting to Ps.$1 billion. The main assumptions involved are that price and exchange stability will prevail throughout the period, that an increase in productivity of 4 percent per year will be achieved, and that net foreign capital inflow will be approximately Ps.$60 million per year, after servicing external debt charges and payment of dividends. Gross national product for the same year, on the basis of the same assumptions and trends, would be some Ps.$6.7 billion compared with about Ps.$5.7 billion for 1950. Private capital formation would be 10.2 percent of gross national product in 1953 compared with 12.1 percent in 1947; but in that period the high rate of capital formation was sustained by considerable inflation. The lower rate here projected for 1953 should not exceed the country's voluntary saving plus net capital inflow.

So far as can now be determined, therefore, the program could be carried out without inflation. We believe great care should be taken not to initiate a greater volume of capital expenditures than can be financed out of voluntary savings and foreign borrowing. Continued inflation would hamper
effective execution of the program by fostering waste, throwing out of balance the planning and completion of essential projects, and creating additional social and administrative problems.

Under our basic assumptions, total foreign exchange requirements for consumers' goods and services, as well as capital goods, in the average year of the program would amount to approximately Ps.$900 million. Assuming no drastic decline in the price of coffee and a gross inflow of U.S.$200-250 million in foreign loans and equity investments during the entire period, this figure does not appear unreasonable.

National, state and local government expenditures amounted to about Ps.$500 million in 1947. In view of the trend since then and the requirements estimated in the present program, we anticipate that total government expenditures may amount to over Ps.$1 billion by 1953, of which Ps.$650 million might be for current account and Ps.$350 million for capital formation. Expenditures of this magnitude—16 percent of the projected gross national product—could be met through an increase in the yield of the various direct taxes from 4 percent of estimated personal incomes in 1947 to 6 or 7 percent, and through an increase in the yield of indirect taxes from 8.2 percent to 9.6 percent of gross national product. The required increase in yield might be achieved partly through the increase of the tax base which will result from a rising level of national income and partly through improved collections. Only slight, if any, increases in the level of tax rates should be required. Also, a portion of the public expenditures can safely be covered through borrowing from abroad.

Physical limitations should not obstruct a program of the magnitude we envisage since the basic assumptions of growth we have made are the same for all the component parts of the program. Consequently, the shifts in population and employment involved are matched by programs to provide necessary electric power, housing, school, hospital and transportation facilities. The looked-for improvement in agricultural
productivity would free a larger percentage of the growing working force for industrial employment in general and for the building industry in particular.

It is perhaps well to reiterate that all our calculations are tentative. Our Report should be regarded as a working paper, not as a precise or immutable program. Various of its components need to be analyzed in more detail. Many of our estimates can be refined in the course of the intensive study of our proposals which is planned by the Colombian authorities. Better and more complete data will undoubtedly become available, and will indicate the need for modifications, during the period 1951-55. And changes in any of our assumptions as to prices, employment, balance of payments, public expenditures and revenues, and so forth, would set in motion a series of other changes and necessitate adjustments in the program. This emphasizes the need for continuing analysis of current and developing trends, so that prompt fiscal and monetary action may be taken to compensate for excessive fluctuations in investment and consumption expenditures. This type of analysis would properly be a major responsibility of the technical staffs of the proposed Resources Planning Agency and of the Banco de la República.

In general, however, we believe the Report indicates realistically the development potentialities of Colombia over the next few years, and the measures necessary for their realization. The proposals, in their quantitative aspects, appear to be well within the capacity of the economy. They call for no more saving and capital formation than may reasonably be anticipated at rising levels of income; and we suggest various means by which this investment may be improved through appropriate tax and credit policies, public investment in certain fields and other measures. Qualitatively, our proposals envisage no drastic reforms, except possibly with respect to land use. We stress rather a multitude of relatively simple improvements in many fields, designed to secure a better direction of national effort and higher productivity. We rely on a simultaneous attack on many fronts as the best way to break the vicious circle of ignorance, poverty, ill health and low productivity, and to initiate a self-generating and self-sustaining rise in the standard of living.
The proposals sketched herein, and spelled out in considerable detail in the Comprehensive Report, are merely the first phase of a long campaign against these complex and closely related problems. They cannot be solved in five years. But we believe it is wholly feasible, in this relatively short period, to make substantial progress toward a much stronger, better balanced, more productive economy in Colombia and a fuller, healthier, more comfortable life for its people.