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9. ABSTRACT

This revised book was published in Spanish in 1976 as El Desarrollo Rural en Costa Rica (Rural Development in Costa Rica.) It is a study of the socio-economic situation in rural Costa Rica. It gives the conditions in the rural areas of the country and suggests possible solutions to solve problems. The work is based on the opinions of residents, farmers, merchants, teachers, and local government officials of 860 communities. The interviews explored employment, population and migration, agricultural production and obstacles to increased production, basic services, farm-to-market roads, educational and health facilities, industry, commerce, and the effects of action by local and national government. The study finds that small farmers generate between three and four times more employment per hectare than large farms and are generally as productive as medium and large farms. This suggests a program aimed at intensified agriculture production, primarily by moving away from using land for pasture to use for annual and perennial crops and by encouraging technologies appropriate for efficient production on the smaller farms. It is essential that this be complemented with small scale industries to insure steady markets and better prices. The agriculture policy must be focused on employment generation, production, the protection of national resources, the creation of rural industries, and the improvement of basic services and infrastructure. A national, regional, and local planning program is considered to help coordinate efforts toward these goals.

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Rural Development in Costa Rica

Jeffrey Ashe

ACCION International

ACCION/AITEC is responsible for this edited and revised text based upon a report entitled *El Desarrollo Rural en Costa Rica* which was published in Spanish in 1976 by AITEC and the Institute of Municipal Development of Costa Rica.

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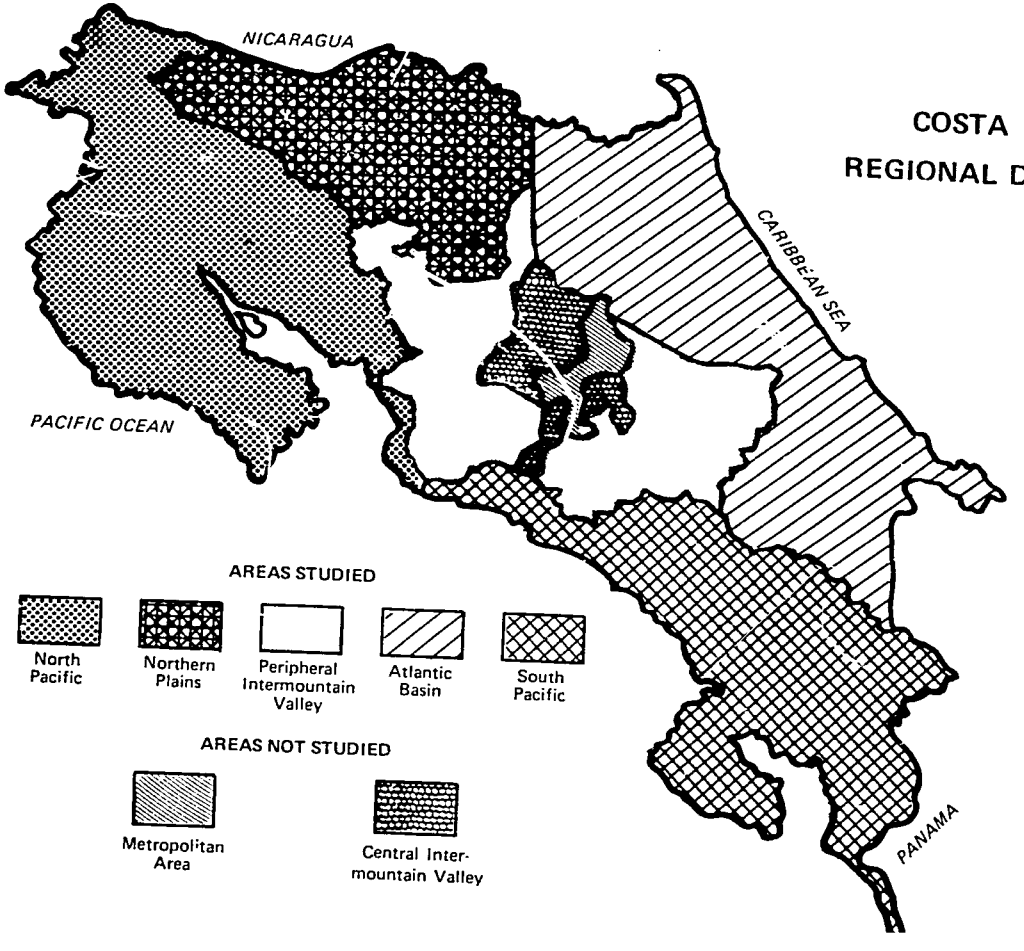
COSTA RICA
REGIONAL DIVISIONS
NICARAGUA
CARIBBEAN SEA
PACIFIC OCEAN
PANAMA
AREAS STUDIED
North Pacific
Northern Plains
Peripheral Intermountain Valley
Atlantic Basin
South Pacific
AREAS NOT STUDIED
Metropolitan Area
Central Inter-mountain Valley

Foreword

The Instituto de Fomento y Asesoría Municipal (Institute of Municipal Development) and AITEC (Division of ACCION International), in the summer of 1976 published a book in Spanish entitled *El Desarrollo Rural en Costa Rica* (Rural Development in Costa Rica.)[1] That document presented the results of an extensive study of 860 rural communities (those with a population of 200 or more) located in five of the seven geographic areas of Costa Rica. The areas studied were the Peripheral Intermountain Valley, the North Pacific, the South Pacific, the Atlantic Basin and the Northern Plains (see Map 1). The latter four are often grouped as the "peripheral regions." Excluded from the study were the Metropolitan Area and the Central Intermountain Valley which are more highly developed than the others and have a more urban character.

In each community, an interview was conducted with local residents who knew the community well—farmers, merchants, teachers and local government officials. The interviews explored employment, population and migration, agricultural production and obstacles to increased production, basic services, farm-to-market roads, educational and health facilities, industry, commerce and the effects of action by local and national government.[2] Largely as a result of these interviews, more than 250

[1] The Institute of Municipal Development and Training (Instituto de Fomento y Asesoría Municipal, IFAM) provides administrative and financial assistance to local county (cantonal) governments in Costa Rica and has expanded its role to include planning and project development in the rural cantones. AITEC is a private non-profit corporation chartered in New York State which provides assistance to social and economic projects in both the private and public sectors in various Latin American countries.

[2] A more detailed explanation of the methodology used for this study is presented in *Resumen de Labores: El Marco Teorético, Metodología, Logios Principales y Variables Usadas en el Estudio del Régimen Municipal*, May 1975, IFAM/AITEC, San José, Costa Rica; also in *Manual for Rural Research*, in preparation by AITEC.

reports were published dealing with various aspects of rural development in Costa Rica. (A listing of these sources may be found in Appendix II.) The community interviews were supplemented by data from the agricultural, housing and population censuses carried out by the National Office of Statistics and Census in 1973, 1963, 1955 and 1950.

AITEC is deeply grateful to the Institute of Municipal Development and Training, whose full support is in large part responsible for the success of this project. We respectfully acknowledge the collaboration of Ing. Jorge Arturo Castro H., current President of IFAM, as well as that of his predecessor, Lic. Armando Arauz A., and that of Sr. Omar Aguilar G., IFAM's Executive Director. AITEC's special thanks go to IFAM's Planning Division and its director, Lic. Oscar Padilla S.; its subdirector, Sr. Alvaro Hernández C.; and the chief of the investigation unit, Sr. Mario Sánchez G.

We are deeply indebted to all IFAM and AITEC personnel who were directly involved in the implementation of the study:

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We particularly acknowledge the cooperation of the residents of the communities involved in the study and the collaboration of

the municipal governments and other governmental entities who made this research possible. The assistance of the National Office of Statistics and the Census, and its director, Lic. Rene Sánchez B. has been indispensable.

For this English edition, the original Spanish version of *El Desarrollo Rural en Costa Rica* has been edited and its focus altered. Our intent here is to present to a transnational audience the case for a new rural sector approach; we have therefore omitted much of the data specific to the cantones studied and some of the more particular programmatic recommendations made to the Costa Rican government.

I would like to thank those persons who helped revise and prepare the English language version of the study: Catherine Boyer, John C. Hammock, Nancy Morales and Mary Zinniel.

Jeffrey Ashe
Research Director

May 1977

Prologue

In its desire to collaborate more closely with municipal governments in efforts aimed at local integrated development, the Institute of Municipal Development (IFAM) has undertaken this study of the current socio-economic situation in rural Costa Rica. To assist us in this task we contracted AITEC (a division of ACCION International) under whose guidance and technical direction these studies were realized.

The product of this collaboration has been the publication of detailed reports on conditions in each of the 56 counties studied. This final document summarizes the general conditions in the rural areas of the country and suggests possible solutions to help combat existing problems. The opinions expressed here are those of AITEC based on its observations in the rural areas and do not necessarily represent the opinions of IFAM.

IFAM's primary interest of identifying concrete municipal projects might limit the scope of this study. However, given that the work has been based on the actual opinions of the residents of the 860 communities, the final results go far beyond municipal action and extend into those areas which require coordinated national attention. Herein lies our interest in presenting this document to as many organizations and entities as possible.

The effort put forth by AITEC's technicians and staff made the entire undertaking possible. IFAM hopes that this work contributes to a better understanding of the present situation and helps define concrete courses of action which will bring about an improvement in the conditions of life for all Costa Ricans.

Jorge Arturo Castro H.
Executive President, IFAM

Introduction

A new approach to the development of the rural areas of Latin America is needed. Many of these areas suffer from ecological destruction and concentration of land in the hands of a few individuals. To slow the flood of migrants to the cities, and insure the balanced growth of the urban and rural sectors, increased employment and an improvement in the quality of life for the rural dweller, along with increased production, must be at the center of any development effort. We therefore propose programs leading to increased viability of small farms and small businesses and industries.

This study finds that small farms generate between three and four times more employment per hectare than large farms and are generally as productive as medium and large farms. This points the way for a program aimed at intensified agriculture production, primarily by moving away from using land for pasture to use for annual and perennial crops and by encouraging technologies appropriate for efficient production on the smaller farms. It is essential that this intensified agricultural production be complemented with small-scale industries throughout the rural areas, especially those which process the produce of small farms, thus insuring steady markets and better prices.

To insure the generation of more jobs, a number of specific interrelated problems need to be solved. First, credit (and venture capital) must be made available to small farmers and small industries. This credit should be accompanied by basic managerial and financial assistance to insure success. Second, to bolster labor-intensive production, appropriate technologies should be developed and encouraged. Third, to insure the sale of products, a program of farm-to-market roads is essential, as is an improved marketing and distribution system. Fourth, legal steps must be taken to vest title in small farms to small operating landlords, and insure that they have an adequate share of the land. Fifth,

since the goal is long-range viability of the rural economy, complementary programs of reforestation, soil conservation, energy-saving technologies and prudent use and protection of natural resourcesm ust be paramount. Finally, technical assistance services in all phases of production and marketing must be made available.

The need to create more employment is the cornerstone of the program being proposed here. Only as a complement should programs be promoted which spread basic services such as education, electricity, water and housing. Our studies clearly show that migration is closely linked to employment and will not be slowed by improving social services. It is also true, however, that once economic survival is assured, people will look for an improvement in the quality of their life through the provision of services.

The way in which these general ideas are put into practice is crucial to success. The development program sketched in the chapters which follow emanates from the rural dwellers, not from planners living in the capital city. This study shows dramatically that campesinos in Costa Rica are astute in perceiving their situation and recommending specific courses of action. Most realize clearly what products can be grown in their small plots of land or which small industries need development. Most know the reasons for the deterioration of the employment situation and are highly sophisticated about their prospects for economic survival.

Many development efforts founder because they do not recognize the economic, social and political fabric of the communities they aim to help. Since ideas and programs are brought in from the outside, interventions are often inappropriate and sometimes exacerbate the problems they intend to solve. In contrast, the program for rural development which is presented in this work is the result of an intensive process of community involvement and dialogue. The suggestions for change stand an increased likelihood of acceptance and success *because* they derive directly from the target population.

Within this process of participation, the crucial first step was the perception of the conditions, problems and solutions to

problems as defined by the people who live in the regions. Comprehensive interviews with key groups (selectmen in town government, farmers, local club members and agency personnel, teachers, businessmen, unemployed laborers) were conducted, in which topics ranging from migration to employment to production and community services were discussed. Additional questions focused on the specific problems of each sector (production, infrastructure, services, resource potential).

Data from rural Costa Rica developed from this study supports this new development strategy—one that places at its center a sub-regional planning process which begins with the rural dweller and ensures his participation in decision-making.

The following chapters present a comparative analysis of the conditions in five rural regions in Costa Rica and conclude with a series of recommendations for action. Chapters I and II demonstrate the close relationship between economic conditions and migration; emigration is greatest where there is little economic activity and a high unemployment rate. Employment, in turn, is related to changes in land use (Chapter III). In recent years there has been a significant increase in the percentage of land used for pastures; pasture land is on the average seven to twenty times less intensive in the use of labor than land used for grains or export crops. The substitution of pastures for land in annual and permanent cultivation, in the face of rapidly diminishing land reserves and a mushrooming rural population, explains much of the worsening employment in some regions.

Chapter IV demonstrates the importance of small and medium size farms in Costa Rican agriculture. Representing only 20% of the total farm area in 1973, these farms produced over half of Costa Rica's production of 22 major crops. Because of more intensive land use, these farms generated over a third of the total demand for agricultural labor while attaining a level of productivity for most crops nearly equalling, and in some cases surpassing the national average.

Chapter V analyzes the barriers to increased agricultural productivity. The problems most frequently mentioned by owners of small and medium-size farms during interviews were the lack

of bank credit and economic resources; the lack, or more frequently the high price, of seeds, fertilizers, insecticides and machinery; the lack of land and opportunities to own land; the need for technical assistance and for solutions to marketing problems. All these point to important areas for future programs.

An inventory of the basic services, infrastructure and community organization in these rural regions is detailed in Chapter VI. There is no doubt that the improvement in basic services is not sufficient in itself to slow emigration or to attract immigrants; strikingly, though, one of the two regions with the highest rate of emigration also has the highest level of services and the most comprehensive infrastructure.

The last chapter presents a series of recommendations for an agricultural policy focused on employment generation, production, the protection of natural resources, the creation of rural industries and the improvement of basic services and infrastructure. Finally, a national, regional and local planning program is contemplated which will help to coordinate efforts toward these goals. This final chapter presents the outlines of a major radical departure from traditional development policies in the rural areas. It is an integrated approach at the regional level which will provide for citizen participation and useful government and private action.

I Population and Migration

The five regions under study comprise 96.5% of the surface area of Costa Rica and 54% of its population, virtually the entire rural area of the country. Within these rural regions the population density of the long-settled Peripheral Intermountain Valley (50 inhabitants per square km) is more than twice that of both the North Pacific (20) and the South Pacific (19). The Atlantic Basin and the Northern Plains have much lower population densities (11) due to large areas of unexploited land and it is these regions that are attracting colonists.

The most important factor in any discussion of Costa Rica's population is the rapid growth rate. In the 46 years between the census of 1927 and that of 1973, the population increased fourfold, from 471,780 to 1,871,780 inhabitants. By conservative estimates the population could reach 3,630,000 by the year 2000. Virgin land available for agricultural expansion is dwindling to a critical level (as will be discussed in Chapter III); it is no longer adequate to absorb the increase in population through unplanned settling. The need for a coordinated rural development policy is becoming increasingly obvious.

The hazards of this unplanned growth can be seen indirectly in the marked changes in the contribution of some regions to the total increase in population. Of concern is the increasing concentration of the country's population in the two more urbanized regions—the Metropolitan Area and the Central Intermountain Valley. These two regions accounted for 46% of the total increase between 1950 and 1963 but this increased to 54% between 1963 and 1973. Although this tendency toward the concentration of the population in a single urban center is not as marked as in many Latin American countries, it is evident Costa Rica's rural regions are losing population to the greater San José area. Equally alarming is the declining importance in the rate of population growth of the North Pacific and the

Peripheral Intermountain Valley regions. Between 1950 and 1963, the North Pacific contributed 15% of the national increase in population; but this decreased to 9% between 1963 and 1973. In the Peripheral Intermountain Valley, these percentages decreased from 16% to 10% respectively. Rather than using land resources in these two regions to absorb the increasing population, there has been a conversion to land-extensive cattle raising and capital-intensive grain production which has led to a forced migration from these regions to the city and to other rural areas.

Migration by Region

The data presented in Table I-2 indicate that between 1968 and 1973, 52,267 more people migrated to San José and the Central Intermountain Valley than left, a number equivalent to a net immigration of 9% of the 1973 population for the Metropolitan Area and a net immigration of 3% for the Central Intermountain Valley.[1]

Within the area studied, three regions registered more emigration than immigration between 1968 and 1973. This was most pronounced in the North Pacific and the Peripheral Intermountain Valley, where a number equivalent to 10% of the population was lost in this five-year period. In all 23 cantones of the Peripheral Intermountain Valley there was more emigration than immigration, the rate varying from −1% to −31%

We asked the respondents, "Why have people left this community? " or "Why have they come here to live? ". In nearly all of the responses the possibility of gaining a livelihood stands out as the most important factor. The reasons expressed for coming to live in a community or leaving to live in another are compared here for two cantones:[2] Upala of the Northern Plains, which had a net immigration of 11% between 1968 and 1973 and San Mateo, which lost a number equivalent to 22% of its population in these five years.

[1] All the percentages in this discussion refer to net immigration, which is defined as immigration minus emigration—thus giving the total change in population due to migratory movements and which may be either positive or negative. The base for calculating these percentages is the population five years of age or older in 1973.

TABLE I-1
Population/Area/Density of Population

Region	Total Population	% Total Population	Area per km²	% Area	Inhabitants per km²
Costa Rica	1,871,780	100%	50,905	100%	37
Metropolitan Area	520,069	28	543	1	958
Central Inter-mountain Valley	340,803	18	1,223	2	279
Peripheral Inter-mountain Valley	337,927	18	6,787	13	50
North Pacific	263,327	14	12,950	25	20
South Pacific	200,661	11	10,550	21	19
Atlantic Basin	127,761	7	11,649	23	11
Northern Plains	31,232	4	7,203	14	11

Source: "Regionalización de Costa Rica," OFIPLAN, Mimeo, March 1975.

San Mateo

Explaining why their communities had attracted few new residents and why people had left, the villagers of San Mateo said:

Higuito: "No one has come because there is no work."
Labrador: "There is no land for sale. The land belongs to a few people who are not willing to sell it."
San Mateo: "They have left to look for work elsewhere."
Higuito: "They go to the city to continue their studies and never return."
Unión: "The farms have been bought by a few people and the others have gone to look for land elsewhere."

Upala

Contrast this with the comments from Upala. Explaining why new people have come to live in their communities, the villagers mentioned these factors.

Brazilia: "Agricultural production has increased and this attracts people to the region and to the town."
Colonia Jesús María: "People come looking for good cheap land."

[2] A cantón is a county or sub-regional area.

TABLE I-2
MIGRATION AMONG REGIONS (1968-1973)
as a percentage of regional population

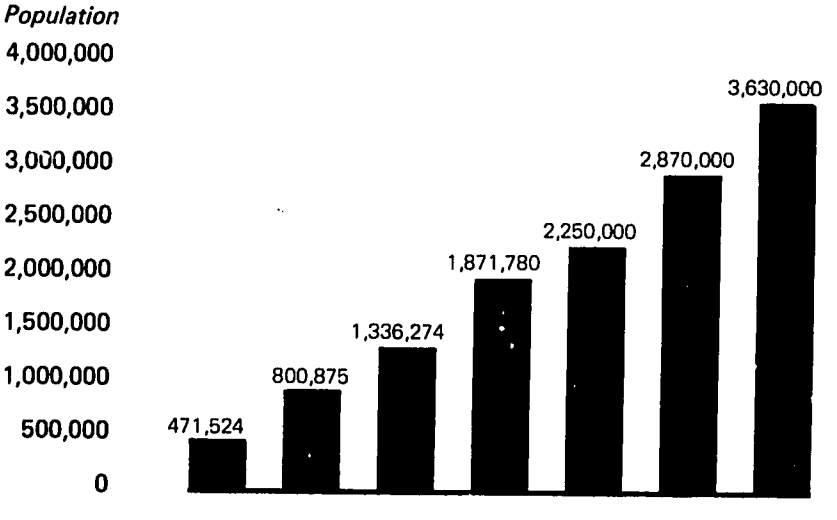
Region	In-Migration		Out-Migration		Net Migration	
	No.	%	No.	%	No.	%
Metropolitan Area	60,281	13	18,797	4	41,484	9
Central Intermountain Valley	30,621	10	19,783	7	10,783	3
Peripheral Intermountain Valley	14,079	5	43,569	15	–29,490	–10
Peripheral Area	59,575	11	67,817	12	– 8,242	– 1
North Pacific	10,327	4	31,517	14	–21,190	–10
South Pacific	15,163	10	20,149	13	– 4,986	– 3
Atlantic Basin	26,146	24	8,490	8	17,656	16
Northern Plains	7,939	12	7,661	11	278	1

Source: National Office of Statistics and the Census. Population Census, 1973.
Elaborated: IFAM/AITEC, 1976.

San Isidro: "Now there are better roads. This is a very productive zone."

Bijagua: "They come to work in agriculture. If people are going to stay, they need work; to work they need, as a minimum, land and roads."

FIGURE I-1
Rate of Population Increase in Costa Rica and Projections until the year 2000

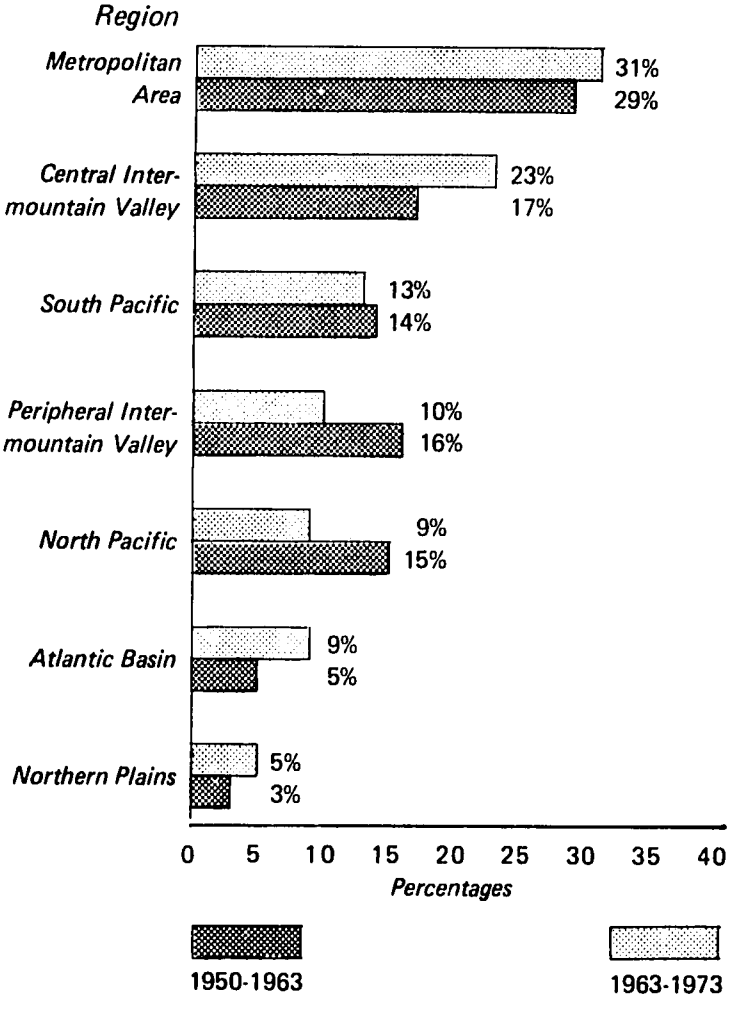


Source: National Office of Statistics and the Census, Population Census, 1927, 1950, 1963, 1973.

Projections: "Economic-Demographic Projections for Costa Rica," Agency for International Development Costa Rica.

In making this projection, it is assumed that the population will increase by 30 persons per 1,000 in 1974 and will increase by 25 per 1,000 in 1980, by 24 per 1,000 in 1990 and by 21 per 1,000 in the year 2,000

FIGURE I-2
Increase of Population as a Percentage of the National Population Increase
1950-1963 1963-1973



Source: National Office of Statistics and the Census Population Censuses 1950, 1963, 1973.

II Employment

In all of Costa Rica, nearly 37% of the economically active population works in the agricultural sector, 20% in the industrial sector and 38.5% in the service sector. (See Table II-1 for components of each sector.)

Whereas in 1927 61.8% of the economically active population worked in agriculture, this percentage decreased to 54.7% in 1950, to 49.2% in 1963 and to 36.5% in 1973. This dramatic decrease indicates conversion from subsistence to commercial agriculture with its demand for transportation and processing and the expansion of services.

In the Metropolitan Area, 60% work in the service sector and 30% work in the industrial sector.

This contrasts sharply with the peripheral regions where the agricultural sector employs 70% of the active labor force in the South Pacific and Northern Plains, 58% in the Peripheral Intermountain Valley and the Atlantic Basin, and 53% in the North Pacific. In some isolated cantones the percentage working in agriculture reaches 85%. These data confirm the obvious: in the peripheral zones, agriculture is the most important occupation; changing what is produced and how it is produced is key in improving the employment situation.

Salaries

In all of Costa Rica, 42% of the workers earn less than ¢400.00 (colones) per month (U.S. $1.00 = ¢8.6). A breakdown of income by regions demonstrates the sharp dichotomy between the central areas and the peripheral zones. (See Table II-2.) In the Metropolitan Area, 29% of the workers earn less than ¢400.00 per month. In contrast, in the North Pacific and the Peripheral Intermountain Valley (the two regions with the least favorable migration statistics) considerably more than half the workers, 57% in the North Pacific and 63% in the Peripheral Intermountain Valley, earn less than ¢400.00 per month.

TABLE II-1
Percentage of Economically Active Population Working in Each Activity Sector (by Region) 1973

Region	Economically Active Population	Agriculture	Industry	Service	Not well Specified
Costa Rica	585,313	37.0%	20.0%	38.5%	4.5%
Metropolitan Area	179,584	5.0	30.0	60.0	5.0
Central Intermountain Valley	108,615	24.0	27.0	42.0	7.0
Peripheral Intermountain Valley	97,332	58.0	13.0	24.0	5.0
Peripheral Area—includes 4 regions:	199,782	61.0	10.0	24.0	5.0
North Pacific	75,946	53.0	13.0	28.0	6.0
South Pacific	57,635	70.5	7.0	18.0	4.5
Atlantic Basin	42,096	58.0	8.5	27.5	6.0
Northern Plains	24,105	70.0	8.0	19.0	4.0

Source: National Office of Statistics and the Census. Population Census 1973.

Agriculture: Includes cattle raising, hunting, forestry, fishing and the exploitation of mines and quarries.

Industry: Includes construction, electricity, gas and water.

Service: Includes commerce, restaurants and hotels, transportation, warehousing, financial and insurance firms, community, social and personal services.

In the Atlantic Basin, 75% of the workers receive more than ¢400.00 per month, because of the higher salaries paid to workers on banana plantations.

Employment

The 1973 census indicates that 48% of the Costa Rican population over 12 years old is economically active (working or looking for work). Students, housewives, retired persons, etc. comprise the other 52% of the population over 12 years of age. The unemployment level for the country is 7% of the economically active population, and underemployment (defined here as working less than 33 hours per week) is an additional 5%.

The Atlantic Basin is the most economically active, with 53% of the population working or looking for work. In the North Pacific and the Peripheral Intermountain Valley, only 47% and 46% respectively are working or looking for work, indicating probably that many of those desiring work are not looking because they have little or no chance of finding it.

Statistics on unemployment and underemployment by region are indicated in Table II-3.

To compare the employment situation between regions and cantones, an "employment index" was created to indicate the percentage of the population 12 years old or older working over 33 hours during the week of May 7-12, 1973, when the data for the national census was collected.[1]

Within the area studied, the employment index for the Atlantic Basin and the Northern Plains, both with 46% of the population of 12 years and older working more than 33 hours a week, is the most favorable, followed by the South Pacific, with 43%. (See Figure II-1.)

The index for the other two regions studied is much less favorable: in the Peripheral Intermountain Valley only 41% of the population 12 years of age or older is working full time; in the North Pacific, only 39%. The importance of a few percentage points in this index is evident. If the employment index for the

[1] This index is determined by adding to the number of economically inactive people, the number of unemployed and the number of the underemployed and subtracting this sum from the total population of 12 years of age and older.

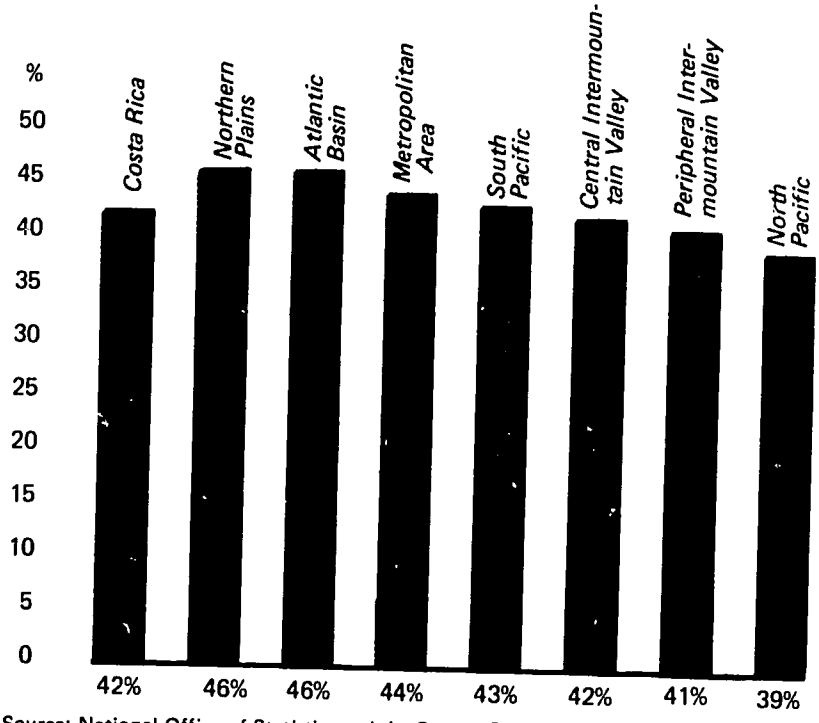
TABLE II-2
Monthly Income of Paid Workers

Region	Total Employed Salaried Workers	Percentage of Workers Earning: Less than ¢400.[a]	¢400. to 699.	¢700. to 999.	¢1000. to 1599.	¢1600 2799	¢2800. or more
Costa Rica	410,076	42%	28%	13%	10%	4%	3%
Metropolitan Area	144,354	29	31	16	13	6	5
Central Intermountain Valley	83,253	41	31	13	10	3	2
Peripheral Intermountain Valley	62,392	63	21	7	6	2	1
Peripheral Area—includes 4 regions:	120,077	47	28	12	9	3	1
North Pacific	46,898	57	24	8	7	3	1
South Pacific	30,428	49	22	14	11	3	1
Atlantic Basin	29,799	25	42	19	10	3	1
Northern Plains	12,952	61	24	6	6	2	1

Source: National Office of Statistics and the Census. Population Census 1973.

a. ¢8.6 = $1.00 U.S.

FIGURE II-1
Percentage of the Population 12 Years or Older Working more than 33 Hours per Week



Source: National Office of Statistics and the Census. Population Census 1973.

North Pacific were 46% (equal to the Atlantic Basin), 11,300 more full-time workers would be added to a labor force of 63,000. If the 11,300 people earned as little as ¢400.00 monthly, over 32 million colones would be added annually to family income in the region.

The census data defines the employment situation only for the one week the census was carried out. To get a view of employment trends over the past five years, the following question was posed: "Is there more, less, or the same amount of work (jobs) available now as five years ago?"[2] In 48% of the 860

[2]This is not the same as saying that the present situation is good or bad; it is, rather, an attempt to get at the changes over time. For example, it is possible

TABLE II-3
Economically Active Population Unemployment and Underemployment
(by Region)

Region	Population 12 yrs. or older	Economically Active Population[a]		Unemployed[b]		Underemployed[c]	
Costa Rica	1,209,993	585,313	48%	42,981	7%	28,881	5%
Metropolitan Area	364,673	179,584	49	11,965	7	7,165	4
Central Intermountain Valley	226,568	108,615	48	9,959	9	5,197	5
Peripheral Intermountain Valley	211,217	97,332	46	7,055	7	4,282	4
Peripheral Area—includes 4 regions:	407,535	199,782	49	14,002	7	12,237	6
North Pacific	161,426	75,946	47	6,123	8	6,584	9
South Pacific	118,531	57,635	49	3,452	6	2,695	5
Atlantic Basin	79,493	42,096	53	3,218	8	2,036	5
Northern Plains	48,085	24,105	50	1,209	5	922	4

Source: National Office of Statistics and the Census. Population Census 1973.

a. Those who are working or looking for work. This is given as a percentage of the population 12 years or older.

b. This data is based cn the employment situation during the week of May 7 through May 12 of 1973. This is given as a percentage of the economically active population.

c. Those who work less than 33 hours per week. This is given as a percentage of the economically active population.

communities studied, the interviewees felt the employment situation had improved in the past five years, in 23% that it had remained about the same, and in 29% that it had worsened. Although 29% is less than one-third of the sample, this means that the interviewees perceive the employment situation had worsened in 258 of the 860 communities studied.

The region where the employment situation is thought to have worsened most is the North Pacific, where the groups interviewed in 38% of the communities said there was less work now than there had been five years ago. The region with the most improved employment situation is the Northern Plains, which is in an active stage of colonization and where the expansion of the road network has made commercial production feasible for some regions for the first time. Of the community groups interviewed, 69.5% believe the employment situation has improved in the last five years.

Perceived Motives for the Changes in the Employment Situation

After commenting on the change in the employment situation in the past five years, the villagers were asked why these changes had occurred. Two factors stand out in their answers; the employment situation has improved when there has been:

1. An increase in the area in production; or
2. An increase in agricultural production (as opposed to an increase in the production of cattle).[3]

Generally, the employment situation is perceived as having worsened when:

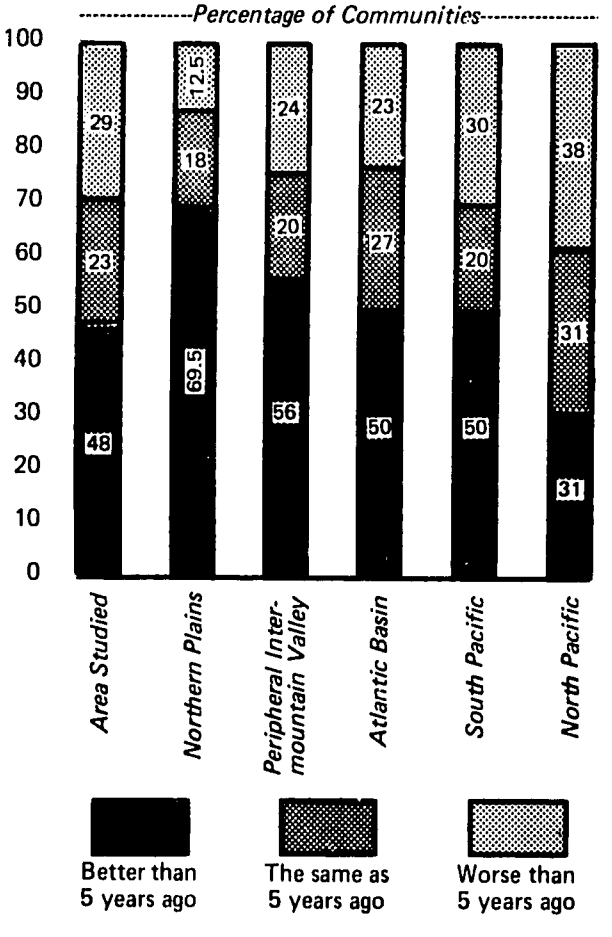
1. Agricultural production has been highly mechanized;
2. When there has been an increase in the importance of cattle raising, at the expense of agricultural production; and

that the employment situation of five years ago was bad, and according to the 1973 census data, it is still bad. However, it may have shown some improvement from five years earlier to the perception of the interviewees.

[3]Other less frequently mentioned motives for an improved employment situation were: better markets for certain agricultural products, greater access to credit, more and/or better roads, the creation of new industries and the expansion of commerce.

FIGURE II-2
Percentage of Communities in which the Employment Situation has Improved, Worsened, or Remained the Same in the Past Five Years (According to Interviewees—by Region)

(Regions ordered from best to worst according to percentage of communities in which it is perceived that the work situation has improved.)



3. Where the demand for workers to clear land has been sharply reduced because most of the agricultural land near the community is in production.[4]

It should be emphasized that rarely were factors such as industry, commerce and tourism mentioned for either the improvement or worsening of the employment situation. A change in the labor market in these rural regions comes almost exclusively with changes in agricultural production. Without a restructuring of the rural economy, only the wise generation of production in the agricultural sector will significantly improve the employment situation.

Quotes taken from the interviews in two cantones clearly indicate the reasons for an improving or worsening employment situation.

San Carlos

San Carlos is typical of the cantones where the situation has improved. In 20 of the 34 communities studied, the employment situation was felt to have improved, while in only eight, it was felt to have worsened; in six it had remained stable. Of the eight communities where the situation had worsened in the past five years, an increase in cattle raising was blamed in three, in four the decrease in land dedicated to coffee and sugarcane, and in three the increase in the use of machinery in agricultural production.[5]

These comments were typical:

El Tanque: "There is less work because of the mechanization of agriculture."

Sucre: "The farm owners are converting their farms to cattle raising, and this requires fewer workers."

In nine of the 20 communities where the situation had improved in the past five years, they mentioned the increase in the area in farms; in seven communities, the increased area in crops

[4] Other motives given for a worsening situation are: the high cost of required social fringe benefits which the state requires of the employer, thus discouraging the employer from hiring as many workers as before; the disappearance of some agricultural sources of work (usually linked to the expansion of cattle raising); and the disappearance of some non-agricultural sources of work.

[5] The number of communities does not necessarily coincide with the total number of motives given, as in some communities more than one motive was mentioned.

such as grains, pineapple and yucca; in four, the increase in sugar cane production; and in three, the increase in coffee production. The following are typical responses:

Dulce Nombre: "Coffee, sugarcane and yucca are demanding better prices in the market, and for this reason farm owners are planting more."

Muelle: "There are more farms, as well as new dairies and saw mills."

Nicoya

Of the 31 communities studied in Nicoya, in only one was it perceived that there was more employment than five years ago; in 16 the situation was considered to be worse, and in 14, the same.

Of the 16 communities where the situation had worsened, seven perceived the cause as the expansion of cattle raising linked to a decrease in agricultural production. In seven other communities, required payment of the minimum wage and social security benefits was a factor in hiring fewer workers.

San Antonio: "Agriculture has decreased because they have brought in cattle raising. Therefore, there is less work because cattle requires much less labor than agriculture."

Acoyapa: "Since before more rice and millet were cultivated, the people generally had more work. But now the increase in cattle raising had displaced the workers in this area to other regions."

Loma Bonita: "Because there are more machines which have displaced the workers, and also because there is more land in pasture."

Curime: "The employers hire fewer people because they have to insure their workers and because salaries have increased."

Florencia: "They are cultivating less coffee and sugarcane."

Conclusions

In this chapter the close relationship between migration and employment has been demonstrated. In every case, the ranking of the regions on the employment index corresponded to the ranking of the regions on the rate of migration. The higher the loss of population through migration, the worse the employment situation; people migrate to regions where they expect to be able to earn a living.

III Land Use

Expansion of the Area in Production

The land area in production—that being used for annual and perennial crops and pasture—has increased rapidly in Costa Rica; in 1955, according to the agricultural census of that year, the area in production was 1,327,061 hectares, 26% of the total land area. By 1973, the area in production had increased to 2,148,516 hectares, or 40% of the total land area, indicating an average annual increase in the area of production of 0.8% of the total land surface between 1955 and 1973.

The expansion of the area in production was general throughout the country except in the Metropolitan area and the Central Intermountain Valley where urban expansion dominated. Table III-1 details the change of land in production according to area; a comparison is made with the national average.

The rate of expansion has been high in the Northern Plains, the North Pacific and South Pacific; however, the possibilities for a significant future expansion in the area in production are minimal in the North Pacific, where 65% is already being utilized for agricultural production, and in the Peripheral Intermountain Valley where 41% of this very mountainous region is now in use. There are much greater possibilities for the expansion of increased production in the South Pacific, the Northern Plains and the Atlantic Basin; indeed, these regions are proving to be attractive to immigrants who are searching for possibilities of establishing new farms and expanding existing farm area.

Changes in Land Use

As we have indicated, the quantity of land in Costa Rica which is dedicated to agricultural production has increased significantly between 1955 and 1973. This increase has resulted in the generation of labor—workers are needed to cut the forest and prepare the land for agricultural use. This explains to a large

TABLE III-1
Changes in the Area in Production

Region	in hectares	Hectares in Production 1955	Hectares in Production 1973	% total land change/year
Costa Rica	5,090,040	1,327,061	2,048,516	0.8%
Metropolitan Area	54,300	27,515	26,964	0.1
Central Inter-mountain Valley	122,366	82,883	80,651.9	0.1
Peripheral Inter-mountain Valley[a]	982,574	311,176	401,016.3	0.5
Peripheral Area includes 4 regions:	3,930,800	905,487	1,539,883.3	0.9
North Pacific	1,294,990	569,416	847,087	1.2
South Pacific	1,055,010	172,788	363,157	1.0
Atlantic Basin	1,164,900	100,741	164,423.1	0.3
Northern Plains[b]	415,900	62,542	165,216.7	1.4

Source: General Division of Statistics and the Census. Agricultural Census, 1955-1973. "División Territorial Administrativa de la República de Costa Rica," 1972 (Territorial Administrative Division of Costa Rica).

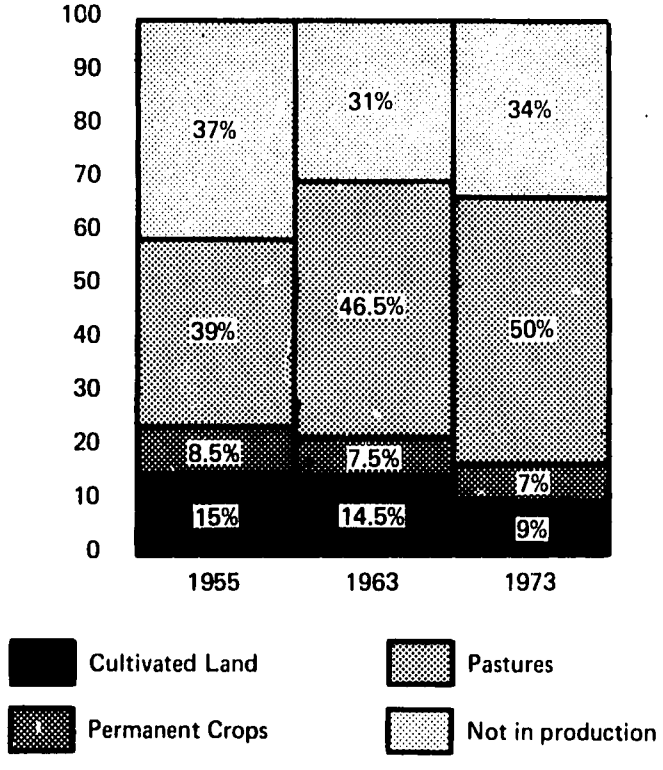
Elaborated: IFAM/AITEC, 1976.

a. Includes the cantones of Upala, Los Chiles and Guatuso.
b. Includes only the canton of San Carlos.

extent the migration into the peripheral areas. For example, during these 18 years, 570,715 hectares of forests and other lands were converted into agricultural production in the Northern Plains, the North Pacific and the South Pacific—a total of 79% of the total increase in land area in production in the entire country.

During the same years, however, the need for manpower on an average hectare of land decreased due to changes in land utilization. According to the agricultural censuses of 1955, 1963 and 1973, the area devoted to annual crops decreased from 15% of the total farm area in 1955 to 14.5% in 1963 to only 9% in 1973. The percentage of land in perennial crops (coffee, sugarcane, etc.) decreased from 8.5% to 7.5% and then to 7% of the total farm area. During this same 18 year period the percentage

FIGURE III-1
Changes in the Use of the Land in Agricultural Production
1955 – 1963 – 1973
Costa Rica



Source: National Office of Statistics and the Census. Agricultural Census 1955.
Elaborated: IFAM/AITEC, 1976.

of the farm area in pastures increased from 39% in 1955 to 46.5% in 1963 and to 50% in 1973. This is significant for employment since, as we shall see, pasture land requires much less labor than does crop land.

According to the 1973 census, in three regions more than 70% of the land in production is in pastures: 88% in the North Pacific, 79% in the Northern Plains and 73% in the Peripheral

Intermountain Valley. This percentage is 60% and 50% respectively for the South Pacific and the Atlantic Basin.

In comparison, land in annual crops occupies 28% of the land in production in the South Pacific and 17% in the Atlantic Basin but only between 10% and 11% in the other three regions. Perennial crops occupy 33% of the area in production in the Atlantic Basin, indicating the importance of bananas and cocoa production in that region, a much higher percentage than the other four regions.

Forest Reserve

The inevitable consequence of the rapid increase in the area in production has been the massive destruction of the forests which are necessary to slow erosion, protect water sources and provide materials for construction and wood for cooking. (See Table III-2.) To obtain an approximate measure of the forest reserve, a calculation was made of the area not occupied by farms

TABLE III-2
Estimated Forest Reserve
(by Region)

Region	Hectares in Estimated Forest Reserve	Percentage of Total Land Surface
Costa Rica	2,684,064	53
Central Intermountain Valley	34,205	28
Peripheral Intermountain Valley	302,803	45
Peripheral Area includes 4 regions:	2,375,932	56
North Pacific	317,504	25
South Pacific	661,232	58
Atlantic Basin	958,023	82
Northern Plains	439,173	61

Source: National Office of Statistics and the Census, Agricultural Census, 1973.
Territorial Administrative Division of Costa Rica, 1972.
Elaborated: IFAM/AITEC, 1976.

plus the existing forested area,[1] as indicated by the agricultural census.

The result of this analysis is alarming: for *each year* between 1955 and 1973, an area in forests equivalent to 1% of the total land area of the country had been destroyed. The forest reserve diminished from an estimated 71% of the total surface area in 1955 to 58% in 1963 and to 53% in 1973. An average of 50,593 hectares of forest have been cleared annually.

Much prime forest land has already been cut; many of the remaining forests are in areas too steep or too swampy to be exploitable and much of the rest must be preserved to maintain the soil and water resources so vital to agricultural productivity. Tragically, most of the trees that have been cut down to open new farm lands were simply burned or left to rot. It has been estimated that of the 9 million cubic meters of wood cut annually, only 1.5 million, or 14%, is taken to the sawmills, while the greater part of the other 86% is wasted.[2]

There has been much more deforestation in some regions than in others. As an extreme example, in the Nicoyan Peninsula of the North Pacific region it is estimated that the forests have been destroyed at a rate of 2% of the total area per year between 1955 and 1973. The forest reserve, which in 1955 was 56% of the total area in this subregion, was reduced to 38.5% in 1963 and to only 20% in 1973. If the same rate should continue there would be no forest remaining in 1983. With the exception of only one canton, the 19 most severely deforested cantones are in the North Pacific and the Peripheral Intermountain Valley.

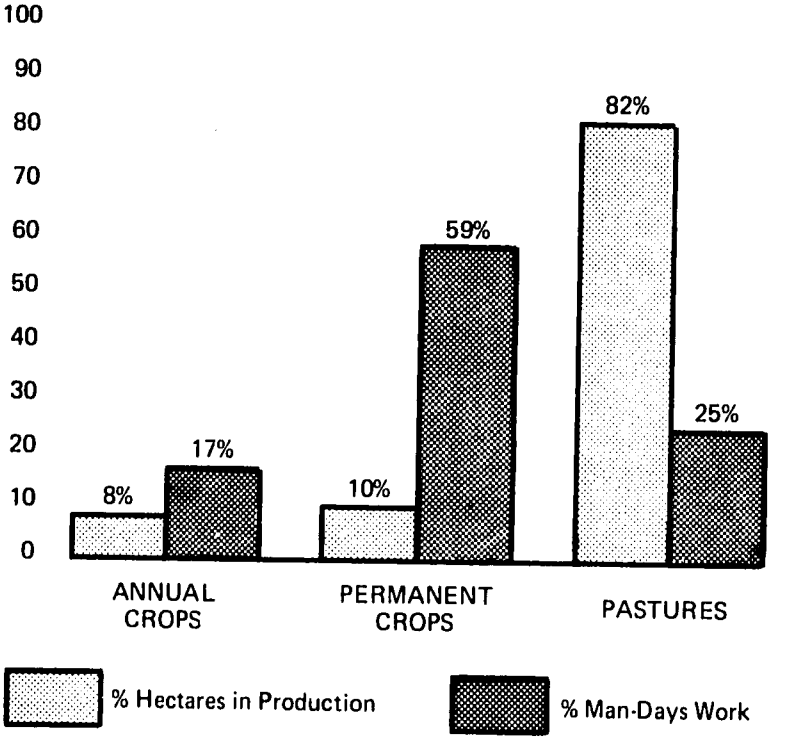
Land Use and Demand for Labor

Although the area in agricultural production has increased greatly, a most significant finding is that the number of new jobs created in the agricultural sector each year has declined. The

[1] This measure of the forest reserve is probably too high, because much of the area not in farms which is included in this measurement is actually not in forests, but rather is occupied by communities, roads, rivers, and other types of land, such as swamps or open plains.

[2] "Los Recursos Forestales en Costa Rica" (The Forest Resources in Costa Rica), Dr. Joseph A. Tosi, Jr., Centro Científico Tropical, 1974, p. 8, San José, Costa Rica.

FIGURE III-2
Man-Days Work per Year by Hectares in Production by Type of Land Use



Source: National Office of Statistics and the Census. Agricultural Census, 1973. P.R.E.A.L.C. "La situación y perspectiva del empleo en Costa Rica" (The situation and perspective of employment in Costa Rica), Part II, May, 1972, p. 15.

Elaborated: IFAM/AITEC, 1976.

agricultural sector, which between 1927 and 1950 generated an average of 2,037 new jobs annually while the national population increased by 350,000 and which between 1950 and 1963 generated an average of 3,498 new jobs annually while the population increased another 500,000, created only 1,892 new agricultural jobs per year between 1963 and 1973 while the population grew by 600,000. The percentage of the population working in the agricultural sector dropped from 61.8% of the economically active population in 1927 to 36.4% in 1973.

Land Use Patterns and the Employment Situation in 1973

Changes in land use have direct and dire consequences for the inhabitants of the rural areas. To understand the decline of agricultural jobs requires a careful analysis of the number of man-days of work per year needed for different land uses. Table III-3 indicates that pastures generate an average of only 6.6 man-days of work per hectare per year, while annual crops generate an average of 48 man-days and perennial crops 130–20 times more labor than a hectare of pasture. Because the greater part of the land in production is dedicated to pastures, the average number of man-days of work generated per hectare per year is only 22 in Costa Rica.

One can see in Figure III-2 that while perennial crops (which account for 10% of the land in production) generate 59% of the demand for labor, pastures (82% of the land in production) generate only 25% of the total demand for labor.

Due to differences in land use there are great variations in the number of man-days of work generated on an "average" hectare of land in each region. In the North Pacific, the principal cattle raising region, the average number of man-days of work per hectare per year is only 10.5. Where perennial crops are grown (the South Pacific and the Atlantic Basin), up to 46 man-days of work per year are generated on the average hectare of land.

TABLE III-3
Man-Days Work per Hectare of Land in Production
Approximation[a]

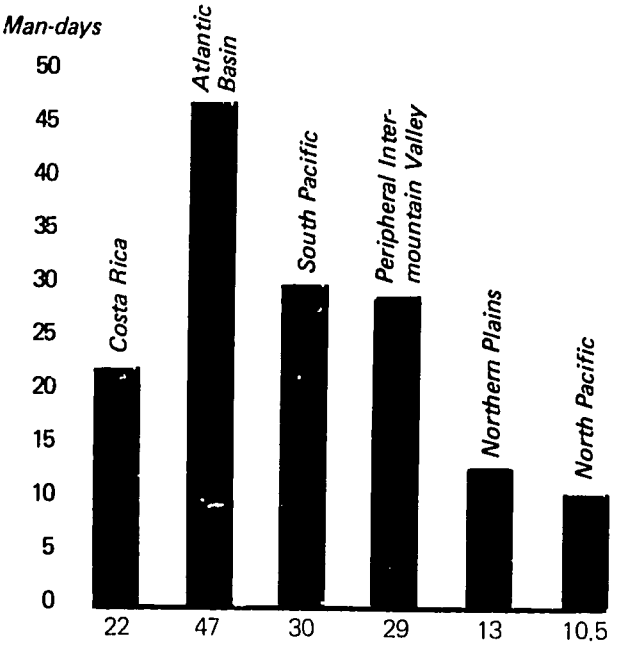
Crop	Man-days work/yr./hectare	Hectares	% Total Hectares	Man-days work	% Total Man-days work
Annual Crops	48	149,231	8.0%	6,893,292	17.0%
Rice	49	65,458	3.4	3,207,442	8.0
Corn	38	51,888	2.7	1,971,744	5.0
Beans	34	26,681	1.4	907,154	2.0
Yucca	52	2,077	0.1	108,004	0.3
Potatos	178	2,001	0.1	356,178	1.0
Tomatos	273	494	–	134,862	0.3
Onions	346	333	–	115,218	0.3
Cabbage	310	299	–	92,690	0.2
Perennial Crops	130	186,713	10.0	24,468,972	59.0%
Coffee	155	83,407	4.4	12,928,085	31.0
Sugarcane	76	35,763	2.0	2,717,988	7.0
Bananas	206	36,155	1.9	7,447,930	18.0
Cocoa	43	20,305	1.1	873,115	2.0
Platano	36	6,429	0.3	231,444	0.6
Guineo Cuadrado	36	3,507	0.2	126,252	0.3
Pineapple	151	738	–	111,433	0.3
Oranges	80	409	–	32,720	0.1

Pastures	6.6	1,558,053	82.0%	10,265,168	25.0%
Pastures	6	1,466,368	77.4	8,798,208	21.0
Pastures for hay and silage	16	91,685	4.8	1,466,960	4.0
Total	**22**	**1,893,997**	**100.0%**	**41,627,432**	**100.0%**

Source: National Office of Statistics and the Census. Agricultural Census, 1973. P.R.E.A.L.C. "La situación y perspectiva del empleo en Costa Rica," (The Situation and Perspective of Employment in Costa Rica). Part II, May, 1972. Page 15.
Elaborated: IFAM/AITEC, 1976.

a. These figures representing the use of the land in production vary from those presented in other chapters because here we are considering both cultivated land actually in production and land *not* in production. Also, some crops of farm lands in production are not included because sufficient data from the census did not exist, e.g., avocado, garlic, sweet potato, coconut, young corn, lettuce, papaya, beets, sorghum, pods and carrots.

FIGURE III-3
Man-Days Work per Year by Hectares in Production (by Region)



Note: These calculations only consider the 13 products over which figures exist at the cantonal level—this might distort to some degree the indications of man-days work per hectare.

Source: P.R.E.A.L.C. "La situación y perspectiva del empleo en Costa Rica" (The Situation and Perspective of Employment in Costa Rica). Part II, May 1972, p. 15.

National Office of Statistics and Census. Agricultural Census, 1973.

Elaborated: IFAM/AITEC, 1976.

IV Land Distribution and Agricultural Production

One-third of the total farm area in Costa Rica is in units of less than 100 hectares and these include 93% of the total farm units. Large farms (of 100 hectares or more), with only 7% of the total number of farms, occupy two-thirds of the total farm area.

There are marked differences in land distribution among regions. Two regions have a greater concentration of their land in small and medium-sized farms (less than 100 hectares): the South Pacific with 45% and the Peripheral Intermountain Valley with 43%. The other three regions devote considerably less land to small and medium-sized farms: 31% in the Northern Plains, 27% in the Atlantic Basin and 23% in the North Pacific, where the land is least equitably distributed.

The demand for labor on an "average" hectare of land decreases markedly as the size of the farm increases—this is due to more intensive land use and to the type of crops grown. For example, farms of less than 5 hectares (which occupy only 2% of the total farm land) include 6% of the total area dedicated to annual crops and 12% of the area in perennial crops. At the other extreme, farms of 500 and more hectares (with 36% of the total farm area) have only 16% of the total land in annual crops and 24% of the land area in perennial crops. The average number of man-days of work generated per hectare per year in the entire country is 24.7, while for the farms with less than 5 hectares this average reaches 74. The farms of more than 500 hectares where the proportion of land dedicated to labor-intensive perennial and annual crops decreases markedly, average 19.3. (See Table IV-1.)

Considering the same data from another perspective, the farms of less than 5 hectares, while occupying only 2% of the country's total farm area, generate 8% of the total demand for labor; this percentage is probably higher since small farms use less labor-saving machinery and fewer agricultural chemicals. At the other

TABLE IV-1
Demand for Manual Labor by Size of Farm in Costa Rica (Approximation)

Size of Farm in Hectares	Hectares in production	Man-days Work by hectare	Total Man-days work	% Demand for manual labor	% Area in farms
Less than 5 hectares	52,083.5	75.4	3,927,574.48	8	2
From 5 to 50 hectares	421,893.3	35.0	14,744,198.66	29	18
From 50 to 100 hectares	268,758.9	21.9	5,894,901.80	12	13
From 100 to 500 hectares	658,730.6	20.3	13,373,392.46	27	31
500 hectares or more	634,360.3	19.3	12,262,511.14	24	36
Total	**2,035,826.6**	**24.7**	**50,202,578.54**	**100%**	**100%**

Source: National Office of Statistics and the Census. "Avances sobre uso y distribución de la tierra" (Advances in the use and distribution of the land), 1973, and P.R.E.A.L.C. "La situación y perspectiva del empleo en Costa Rica" (The situation and perspective of employment in Costa Rica), Part II, May 1972, page 15.

Elaborated: IFAM/AITEC, 1976.

TABLE IV-2
Land Distribution by Five Size Categories in Costa Rica

Farm Size	Total Area in Hectares[1]	% of Total farm area	Number of farms	% of total no. of farms
All Farms	3,122,452	100%	77,001	100%
Less than 5 Hectares	59,007	2	35,246	46
5 to less than 50 hectares	574,727	18	30,308	39
50 to less than 100 hectares	396,530	13	5,801	8
100 to less than 500 hectares	968,931	31	4,851	6
500 or more hectares	1,123,253	36	795	1

Source: National Office of Statistics and the Census. "Advances on land use and distribution," 1973.

extreme, the farms of 500 or more hectares with 36% of the land generate only 24% of the total demand for labor.

This analysis indicates the importance of the small and medium-sized farms for the generation of employment. Apparently the large farms which often occupy the best land and could intensify their production, have not done so (some notable exceptions are the large-scale coffee and banana plantations). This is especially true of the large cattle farms. The small farmer cannot afford the luxury of extensive use of the land. He must provide for his family on a small plot, which forces him to adopt intensive land use patterns for his survival.

Agricultural Production

To demonstrate the importance of the four peripheral regions in agricultural production, the total national production for each crop has been divided into the production of the four peripheral regions and the production of the rest of the country (Peripheral Intermountain Valley, Central Intermountain Valley, and the Metropolitan Area).

More than 90% of nine of the thirteen major crops in Costa Rica are produced in the peripheral regions. The South Pacific

TABLE IV-3
Regional Percentages of Total Agricultural Production

Product	Peripheral Intermountain	North Pacific	South Pacific	Atlantic Basin	Northern Plains	5-Region Total
Cocoa	0.5%	–	2.8%	83.5%	13.2%	100.0%
Banana	0.7	0.2%	32.4	65.7	0.9	99.9
Rice	2.3	39.0	52.0	0.9	5.7	99.9
Guineo Cuadrado	4.4	20.0	33.6	5.3	34.9	98.2
Plantain	5.3	8.0	57.4	20.8	7.9	99.4
Cattle	14.3	48.3	12.1	6.0	13.4	94.1
Corn	16.4	28.0	31.2	11.7	7.8	95.1
Kidney Beans	17.2	27.0	35.0	0.7	15.7	95.6
Pineapple	22.6	1.0	30.4	2.8	26.7	83.5
Orange	30.0	21.0	16.2	3.7	14.3	85.2
Sugarcane	52.3	22.0	3.2	0.1	13.8	91.4
Coffee	41.3	1.0	14.3	1.0	2.7	60.3
Potato	70.3	0.4	0.2	–	0.1	71.0

Source: National Office of Statistics and the Census. Agricultural Census, 1973.

is the most important agricultural area, with more than 30% of the national production of seven products: bananas, rice, guineo cuadrado (a banana-like vegetable), plantain, corn, beans and pineapple.

Agricultural Production by Farm Size

Much of what Costa Rica eats daily and much of what it exports comes from the small farm units with less than 50 hectares which occupy only 20% of the country's farm area. They produce more than 50% of 22 of the 29 products for which data exists in the national agricultural census, including beans and corn of the basic grains; coffee and tobacco of the export products; all of the tubers (potato, yucca, and sweet potato); all of the fruits, vegetables and pigs. These smaller farms also produce 49% of the cocoa, 37% of the sugarcane, 22% of the rice and 22% of the cattle. They produce less than 20% of only three crops: banana, sorghum and cotton and of these only bananas are an important crop in Costa Rica.

A common criticism of small farms is that their productivity is low and that the country would produce far more if land were concentrated in larger units where "the economies of scale" could occur. To determine the validity of this position, the productivity per hectare for five farm-size categories was determined for the ten products where production was fairly well distributed between large and small farms. According to this analysis, only the largest farms (500 hectares or more) demonstrate a markedly higher level of productivity than the national average, indicating a high degree of technification. For rice, corn, yucca, and potatoes, the productivity per hectare on these large farms is between 1.4 and 1.7 times the national average, and for coffee and sugarcane it is 1.2 times the national average. On the other hand, the productivity per hectare on farms smaller than 50 hectares is nearly equal or superior to the national average for six products: beans, plantain, corn, yucca, cocoa and guineo cuadrado.

The smaller farms then are very important to the national economy. Not only do they generate at least 37% of agricultural employment on 20% of the land (an important factor in holding back an ever greater influx of population into the cities), they

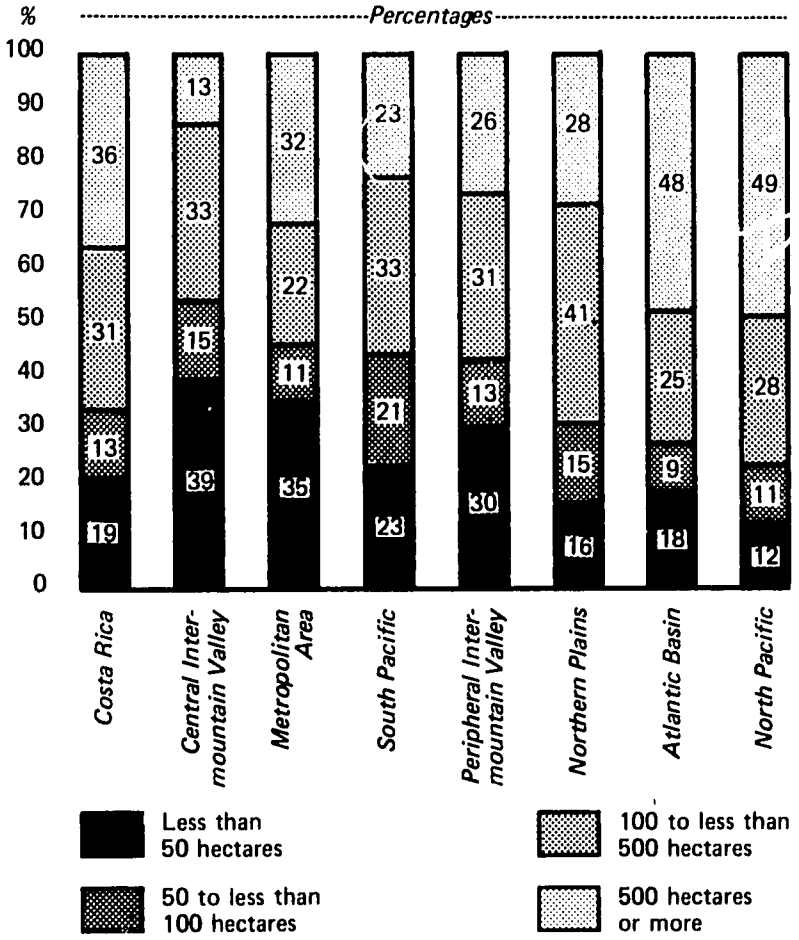
TABLE IV-4
Percentage of Total Agricultural Production by Farm Size

Product	Percentage of total national production			
	Less than 50 ha.	50 to less than 100 ha.	100 to less than 500 ha.	500 or more ha.
BASIC GRAINS				
Rice	22	9	29	39
Kidney Beans	69	19	12	1
Corn	65	15	13	7
Sorghum	5	7	23	64
TUBERS				
Potato	68	10	15	7
Yucca	82	8	8	2
Sweet Potato	78	15	6	–
EXPORT CROPS				
Coffee	61	13	16	10
Banana	4	8	56	37
Cocoa	49	10	28	13
Sugarcane	27	8	23	41
Cotton	5	–	8	87
Tobacco	88	4	7	1
FRUITS				
Plantain	65	11	19	6
Guineo Cuadrada	59	17	20	5
Papaya	67	11	13	9
Coconut	65	17	12	6
Avocado	65	15	16	4
VEGETABLES				
Garlic	61	39	–	–
Onion	96	2	1	1
Cabbage	94	5	1	–
Tomato	91	5	3	2
Lettuce	96	1	2	1
Beets	91	6	3	–
Carrots	90	3	7	–
Green Beans	98	–	–	2
Maize (Green Corn)	93	1	5	1
LIVESTOCK				
Pigs	71	13	14	3
Cattle	23	14	34	30

Source: National Office of Statistics and the Census. Agricultural Census 1973.

also are major producers of agricultural products at a level of productivity per hectare similar to the national average for most products. Clearly the preservation of the small farms should be a priority for any program of rural development.

FIGURE IV-1
Land Distribution as Percentage of the Total Area in Farms



Source: National Office of Statistics and the Census. Agricultural Census, 1973.
Elaborated: IFAM/AITEC, 1976.

TABLE IV-5
Productivity per Hectare for Selected Crops by Farm Size

Product	Percentage of the average national production per hectare (National Average = 100)				
	Less than 5 ha.	5 ha. to less than 50 ha.	50 to less than 100 ha.	100 to less than 500 ha.	500 ha. or more
BASIC GRAINS					
Rice	66	71	74	105	143
Kidney Beans	99	98	101	99	91
Corn	106	98	93	93	151
PRODUCTS FOR LOCAL CONSUMPTION					
Plantain	94	103	97	102	84
Guineo Cuadrada	106	105	94	91	105
Yucca	96	96	114	104	154
Potato	92	67	81	118	172
EXPORT PRODUCTS					
Coffee	32	97	119	113	118
Cacao (Cocoa)	106	101	111	98	92
Sugarcane	80	81	88	107	118

Source: Agricultural Census, 1973. National Office of Statistics and the Census.

V Problems of Agricultural Production

Credit

The most frequently mentioned obstacle to increased production on small and medium-sized farms was the lack of bank credit and economic resources. The major obstacle to getting credit, according to the groups interviewed in the communities of six cantones, is the lack of guarantees and guarantors or backers. This is related to the lack of land titles which farmers could use as collateral. Other problems mentioned were the long and complicated administrative procedures and the lack of money available for credit to small farmers. Only in one canton were high interest rates mentioned as a problem in getting credit.

In discussing the credit problems of their communities, the interviewees made the following illustrative comments:

§ Cáritas, Puriscal: "When the bank does finance a small farmer, the credit is only given after many long months of waiting and after he has already suffered losses in his crops and becomes a victim of the moneylenders. Furthermore, it is very difficult for small farmers to find guarantors who will back up their requests for a loan."

§ Rosario, Nicoya: "It requires about four trips to Nicoya (the cantonal capital), and this means a great expense in time and money; and very rarely do they grant a loan to small producers."

§ Barra Honda, Nicoya: "Without a guarantor or registered property, one cannot get a loan. When one asks for an extension on a loan, they never want to grant it. Also, sometimes, when one asks for a loan they say that they don't have the funds."

§ Quepos, Aguirre: "If the small farmer doesn't have registered property, they won't grant him a loan. They'll loan ¢50,000 with ease and speed to a person with sufficient economic resources; but a small farmer is lucky if they loan him as much as ¢10,000, and this only after great expense and long months of waiting for the loan to come through."

TABLE V-1
Problems Perceived by Small Farmers

Region	Frequency					
	1st	2nd	3rd	4th	5th	6th
Peripheral Intermountain Valley	lack/ high cost inputs	credit economic resources	roads transportation	land	marketing	technical assistance
North Pacific	credit economic resources	lack/ high cost inputs	land	technical assistance	roads transportation	marketing
South Pacific	credit economic resources	lack/ high cost inputs	land	technical assistance	roads transportation	marketing
Atlantic Basin	roads transportation	credit economic resources	land	technical assistance	marketing	lack/ high cost inputs
Northern Plains	lack/ high cost inputs	roads transportation	credit economic resources	technical assistance	marketing	land

Source: Interviews of the Municipal Regime Study, IFAM/AITEC, 1974-75.

§ Candelaria, Puriscal: "The bank gives preference in the granting of credit to those who have more money."

§ Vatsi (Volio), Talamanca: "The quantities that are loaned are very small, and one has to spend lots of money making trips to Limón (where the nearest bank is located)."

§ Pacuarito, Peréz Zeledón: "Guarantors required by banks are very scarce and therefore people are forced to go to moneylenders."

§ Amubri, Talamanca: "As the small farmers here don't have titles to their land, the bank won't lend them money, unless they have cattle to put up as a guarantee."

§ Ciudad Cuesada, San Carlos: "They put lots of obstacles in the path of the small farmer when he applies for a loan, and then they don't lend him enough money because he doesn't have a big farm to back up the loan."

§ Veracruz, San Carlos: "The banks charge interest in advance and they don't give enough grace time for the farmer to sell his crops."

The distance that farmers have to travel in order to get to a bank or other source of credit to apply for a loan is a serious problem. As Table V-2 indicates, institutional sources of credit (banks, cooperatives and the National Production Council) are located in few communities compared with non-institutional sources (general store owners, private moneylenders, intermediaries, etc.). If the farmer must resort to a private moneylender

TABLE V-2
Types of Credit Sources

Cantones	Number of communities studied	With institutional source	With non-institutional source	Without any credit source
Puriscal	13	1	12	–
Nicoya	31	5	27	4
Aguirre	11	1	8	3
Pérez Zeledón	62	8	52	10
Talamanca	12	–	12	–
San Carlos	34	7	33	1

Source: Municipal Regime Study, IFAM/AITEC, 1974-75.

TABLE V-3
Principal Source Used by Small Farmers to Obtain Credit

Canton	Number of Communities	Number of Answers[1]	Institutional Source		Non-Institutional Source		Didn't Respond
			Bank	Other	Moneylender	Other	
Puriscal	13	12	12	0	0	0	0
Nicoya	31	36	29	5 (3 Coop) (2 CNP)	2	0	0
Aguirre	11	11	8	1 (CNP)	0	0	2
Pérez Zeledón	62	57	46	9 (7 CNP) (2 Coop)	0	1 (general store)	1
Talamanca	12	13	4	1 (CNP)	2	6 (1 intermediary) (3 general store) (2 farm owners)	0
San Carlos	34	39	30	7 (Coop)	1	1 (farm owner)	0

Source: Municipal Regime Study, IFAM/AITEC, 1974-75.

[1]The number of answers may differ from the number of communities as each community may have more or less than one source from which to obtain credit.

(in 24% of the communities in a sample of 445 communities), he must pay up to 10% or more interest per month. In only 27% of the communities did moneylenders charge rates lower than 3% per month.

While non-institutional sources of credit are plentiful, according to our respondents, banks were the principal credit source used by farmers, followed by the National Production Council (CNP), and the cooperatives and private moneylenders.

Production Inputs

The second most frequently mentioned problem of the farmers in these rural regions was the lack of or high cost of inputs—fertilizers, machinery, equipment, weed killers, etc. This leads to lower quality products and lower productivity. These comments were typical:

§ San Cayetano, San Carlos: "The rise in prices of fertilizers and weed killers is a problem because the prices paid for the crops are so low that one ends up taking losses."

§ Candelaria, Puriscal: "Lately there has been a rise in the price of fertilizer and the land needs fertilizer because it is worn out. Tools are too expensive and the small farmer can't allow himself the luxury of buying them."

§ Caimital, Nicoya: "The small-scale cattleman faces the high costs of vaccines, medicine and equipment necessary for cattle raising. The small agriculturalist faces the high costs of tools as well as the high cost and scarcity of fertilizers and pesticides."

§ Pejibaye, Pérez Zeledón: "The coffee is lowering in quality because many farmers don't use fertilizer—it's too expensive."

§ Naranjito, Aguirre: "The fertilizers and pesticides are too expensive and many farmers don't use them for lack of economic resources; we are very poor people."

§ Amubri, Talamanca: "We lack machinery to plant and process our products."

Roads and Transportation

The third most frequently mentioned problem of farmers was the lack of or poor condition of roads and the deficient transportation system. This problem is a complicating factor in the

marketing of products. The construction of good roads is fundamental to the improvement of production in the country's rural areas. The residents are aware of this:

§ Grifo Bajo, Puriscal: "The poor condition of the roads is a problem for getting the crops out to market. One loses about 25% of his crops because of this problem."

§ Zapotal, Nicoya: "The roads are in very bad condition and lack the necessary bridges, and this makes it difficult to get the crops to market."

§ San Gerardo, Pérez Zeledón: "Because of the lack of penetration roads, the people have to take their crops out to market by beast or on their backs during the rainy season."

§ Matapalo, Aguirre: "One can't get his crops out to market easily because of the bad condition of the roads."

§ Amubri, Talamanca: "One loses his crops because of the problem of lack of roads.

§ Santa Rosa, San Carlos: "The poor condition of the roads sometimes makes it very difficult for one to get his crops out to market as well as for potential buyers to get in to the community."

Land-Related Problems

Land-related problems followed in frequency. Responding to a question as to the types of land-related problems which exist in all 860 communities studied:

§ in 48% of these communities the lack of land for cultivation is considered a problem; the land in production has expanded so rapidly in many communities that there is no land to create new farms or to expand production on existing farms.

§ In 34% of the communities the lack of land titles is considered a serious problem. Without land titles it is difficult to get credit.

§ In 27% of the communities, the takeover of most of the land by a small minority is considered a problem, reflecting the tendency for the land to be ever more concentrated in larger farms.

§ In 15% the buying of land by foreigners is considered a problem, particularly since foreigners tend to buy large tracts of land.

There are some notable variations in the ordering of these problems in the six cantones analyzed here. In Talamanca, on the Panamanian border, purchase of land by foreigners is considered a problem in 75% of the communities studied, while this is not considered a problem in any of the communities studied in Puriscal or Pérez Zeledón in the center of the country.

On the other hand, the lack of land to cultivate is seen as a problem in 100% of the communities studied in long-settled Puriscal, but in only 50% of the communities of Talamanca with its large reserves of unoccupied land.

Lack of Technical Assistance to Farmers

The farmers in these rural communities are aware of the need for technical assistance. Productivity suffers and at times crops are lost for lack of technical inputs. The following are some of their comments on this theme:

§ San Antonio, Puriscal: "Here they never give technical assistance to the small farmer."

§ Sámara, Nicoya: "Technical assistance is missing here and we are forced to cultivate according to God's will."

§ El Paso, Aguirre: "There is no advice given to small farmers by the Ministry of Agriculture (MAG). Their functionaries hardly ever come to this zone."

§ Shiroles, Talamanca: "We are greatly in need of technical and economic assistance from the Ministry of Agriculture; but they have never come here. The peasants here are ignorant of many things and this results in crop losses."

§ San Cayetano, San Carlos: "For lack of adequate assistance from MAG, the techniques used here are inadequate."

Marketing Problems

A serious obstacle farmers must overcome is the difficulty in marketing their products. The farmer has little guarantee he will find a buyer for his crops or that he will receive a fair price for what he produces. Bad roads often make it difficult or impossible to get the crops to market and transportation costs over bad roads are high. The following are typical of their comments:

§ San Antonio Abajo, Puriscal: "Companies like the National Tobacco and Republic Tobacco don't pay a fair price for tobacco."

§ Acoyapa, Nicoya: "Transportation is lacking to take crops to market, and the intermediaries take advantage of this to pay a very low price."

§ Naranjito, Aguirre: "The buyers who come to the community and those we take our products to in the county seat pay low prices for the crops."

§ San Pedrito, Pérez Zeledón: "The cooperative charges too much for the trucks they send out for the coffee. Furthermore, part of what we receive for the coffee is taken to pay dues and this is a problem for the small farmer who never has enough money."

§ Los Chiles, Pérez Zeledón: "The intermediaries pay very low prices for products but then they sell them again at high prices to the consumer."

§ Shiroles, Talamanca: "If we had a government store or an agency of the National Production Council, the prices would be stabilized and the farmer would have a better place to sell his products rather than being exploited by the intermediaries."

§ Coroma, Talamanca: "We are forced to sell to the only buyer who comes to our community. If we had a way to get our crops out to other buyers, we could make better sales."

§ Boca de Arenas, San Carlos: "The intermediaries exploit the producer who can't get his products out to market because transportation is too expensive."

Given the importance of cooperatives and the National Production Council (CNP) in assuring a fair price to producers, the interviewees were asked which of six marketing systems[1] were most used in the sale of each of the community's three most important agricultural products and cattle. In this way the frequency of the use of cooperatives and the CNP could be compared to other systems of marketing.

[1] (1) Sales to intermediaries; (2) producer transports his own product to market; (3) producer pays a commission to someone to take his product to market; (4) direct sales to sugar mills, coffee beneficios, etc.; (5) sales to cooperatives; (6) sales to the National Production Council.

The results of this study can be seen in Table V-4. Although there are some differences between the six cantones reviewed here, in all of them the system most frequently used for more products is the intermediary who arrives in the community to buy crops. The second most used system in three of the six cantones is the direct sale to coffee processors, sugar refineries, etc., and in the other three, the second most used system is the producer taking his own product to market. Sales to the CNP and cooperatives play a much less important role. In Puriscal and Talamanca they are not the most frequently used system of marketing for any product in any community and they only account for more than 10% of the total answers in Aguirre (for the CNP) and San Carlos (for cooperatives).

Considering that cooperatives and the CNP are used in few communities, it is important to consider some of the reasons for not using these marketing systems more frequently:

§ In Nicoya they complained that the prices offered by the CNP were too low, and that they have too many requirements with regard to purity, moisture, etc.

§ In Aguirre they complain that the CNP lowers its price when there is too much moisture and impurities and that they have to leave the sack in which they have transported the grain in the hands of the CNP, which represents another cost. Furthermore, since the CNP is only open during certain periods of the year, they are forced to sell to intermediaries.

§ In Pérez Zeledón they also mentioned that the CNP lowers its price for moisture and impurities and that they require that the product be in new sacks which are not returned. Another problem is the distance they must travel from some communities to get to the warehouses. As for not selling coffee to cooperatives, they complain of the obligatory savings and the red tape involved in getting loans from the cooperative. It is much easier to get loans from the coffee processors, they say.

§ In San Carlos they do not sell more to the CNP or cooperatives because they have already acquired obligations to sell their crops to intermediaries and that the prices paid by the CNP and cooperatives are too low, or that the warehouses are too far away.

TABLE V-4
Marketing Systems Most Frequently Utilized by Farmers for Three Principal Agricultural Products and Cattle in Six Cantones (according to interviewees)

Marketing System	% of Answers					
	Puriscal	Nicoya	Pérez Zeledón	Aguirre	Talamanca	San Carlos
Sale to an Intermediary	62.0	72.0	40.0	51.5	86.0	33.0
Producer takes his own product to market	14.0	16.0	18.0	21.0	14.0	24.0
Sales to National Production Council (CNP)	–	7.0	2.0	19.0	–	4.0
Sales to a cooperative	–	3.0	3.0	8.5	–	14.0
Direct sales (coffee processing plant, sugar mill, packing plant, rice processing plant, etc.)	24.0	1.0	32.0	–	–	25.0
Paying commission to someone to take the product to market	–	1.0	5.0	–	–	1.0

Source: Municipal Regime Study, IFAM/AITEC, 1974-75.

Variation in Prices Received for Agricultural Products

Although it was not possible within the scope of this study to determine whether the differences in prices were related to such factors as road conditions, availability of markets, or distance to markets, it was nevertheless found that marked differences in prices do exist within each canton. Below, the differences in average prices are indicated:

§ In Puriscal the difference in the price paid for coffee varies only 4%; for tobacco, 17%; for cattle, 21%. But the difference is 56% in the case of corn. Cattle and corn, which show the greatest variation in price, are sold principally to intermediaries.

§ In Nicoya there is a great variation in the prices paid for all crops: for beans it is 34%; for cattle, 36%; for rice, 45%; and for corn, 59%.

§ In Aguirre the variation in prices for cattle is 33% but rises to 48% for corn and 49% for rice.

§ In Talamanca the variation is very great—50% for cocoa and 70% for corn. It should be remembered that of the six cantones, Talamanca relies the most on intermediaries.

§ Finally, in San Carlos where both the cooperatives and the CNP are important, the variation is least: 14% for coffee, 17% for cattle, 20% for sugarcane and 36% for beans.

In general, there is less variation in the prices paid for coffee, tobacco and sugarcane which are principally sold to processing plants, tobacco companies and sugar refineries. The variation is much higher for basic grains which are grown in more isolated areas and are sold principally to intermediaries.

This indicates the importance of rationalizing the marketing system. If farmers had a guarantee of receiving a good price for what they produce, there would result an increase in the income of thousands of farmers and a stimulus to increased agricultural production.

Conclusions

Small farmers have a clear idea of their needs, which tend to be basic—credit, land, and marketing. But most small farmers do

not have the resources or contacts to generate sufficient income or products to maintain their families. They go deeply into debt to loansharks, and are thus maintained outside the country's basic economic, financial and marketing systems. To overcome this, and to preserve the small farmer, there must be focused and integrated action. Small farmers know exactly that this should be detailing specific local level, relatively small actions which could dramatically alter their situation. But they cannot do this by themselves. They need access to financial and technical assistance and marketing facilities.

The decline of small farmers leads to more land extensive forms of production, causing a loss of employment in the rural areas as well as a migration to urban slum areas which speeds urban decay. It is clear, therefore, that an integrated action program to deal with these immediate problems of the small farmer is essential.

VI Infrastructure, Services and Community Organization

We shall see that the region with the most socio-economic services is also the region with the most out-migration and unemployment. This is a crucial finding. Most government agencies in Costa Rica deal with the provision of social services, such as education and health and social infrastructure, yet it would seem that this activity, however important for improving the standard of living, is not effective in holding back migration to the city. The government must be equally committed to a specific strategy to develop employment in the rural areas.

Likewise, our analysis of the municipal government and community organizations shows that neither is primarily concerned with employment and income generation or migration. Community organizations appear with similar frequency in all rural regions and seem to be involved with very localized social improvements, rather than integrated development.

Access Roads, Transportation and Communication

Good roads, transportation and communications are indispensable for the development of the agricultural sector as well as for improving access to other services. For the 860 communities included in this study, the following situations exist:

§ Of the communities that have some type of road access, 20% are served by paved roads, 60% by gravel roads, 17% by dirt roads and 2% by marginally passable dirt tracks. In the communities with dirt access roads or dirt tracks and in many of the communities with gravel roads that are poorly maintained, access is a serious problem in the rainy season. Indeed, the insufficiency of roads was the most frequently mentioned community problem.

§ The condition of the paved and gravel roads was significantly better in the Peripheral Intermountain Valley (where 52% of the cantones have favorable road conditions) than in other

TABLE VI-1
Means of Access, Public Transportation and Telephone Service (According to Interviewees, by Region)

Region	No. of communities studied	MEANS OF ACCESS[1]							FREQUENCY OF PUBLIC TRANSPORTATION[4]				TELEPHON SERVICE
		ROADS[2]				OTHER[3]							
		paved	gravel	dirt	trail	train	boat	plane	high	Inter-mediate	low	none	
		Percentages							Percentages				
Total Area Studied	860	20	61	17	2	7	2	2	19	25	24	31	23
Peripheral Intermountain Valley	354	29	58	12	1	4	0	0	27	18	18	37	26
North Pacific	182	13	55	31	1	3	4	4	14	20	38	29	29
South Pacific	141	12	70	18	0	4	1	2	16	42	16	26	18
Atlantic Basin	110	9	84	3	4	38	5	3	6	45.5	37	11	12
Northern Plains	73	0	21	46	33	0	5.5	19	0	8	14	85	8

Source: Municipal Regime Study, IFAM/AITEC, 1974-75.

[1]Means of Access: leading to the town where the people do most of their buying. The percentages are based on the number of communities with some type of access.

[2]Roads: Main road leading into the community.

[3]Other: Generally in addition to the road access.

[4]Frequency: *High*—five or more departures daily; *Intermediate*—three or four departures daily; *Low*—Less than two departures daily; *None*—the service does not exist.

areas (the South Pacific where 25% of the cantones have favorable road conditions; the North Pacific, 14%; and the Atlantic Basin and Northern Plains, 0%). The Northern Plains has the fewest and the most poorly maintained gravel roads.

§ In only 19% of these communities are there five or more scheduled trips of some form of public transportation each day to the towns where the residents most frequently buy or sell their produce. In 31% of the communities there is no scheduled transportation. There are three or more departures daily in 58% of the communities studied in the South Pacific, in 52% in the Atlantic Basin, in 45% in the Peripheral Intermountain Valley, in 34% in the North Pacific and in 8% of the communities studied in the Northern Plains.

§ Only 23% of the communities studied have telephone service. Again, the North Pacific and the Peripheral Intermountain Valley have a higher than average percentage of communities with telephone service.

The importance of good road, transportation and communication systems cannot be overemphasized. Without good roads, other basic services which may exist become much less accessible; produce cannot reach its market; agricultural productivity is

TABLE VI-2
State of the Paved and Gravel Roads
(by Canton)

Region	Cantones Studied	Favorable	Intermediate	Unfavorable
Areas Studied	56	16	20	20
Peripheral Intermountain Valley	23	12	9	2
North Pacific	14	2	6	6
South Pacific	8	2	2	4
Atlantic Basin	7	–	2	5
Northern Plains	4	–	1	3

Source: Municipal Regime Study, "Inventory of Paved and Gravel Roads," IFAM/AITEC, 1975.

TABLE VI-3
Percentage of Houses which Lack Water, Electricity and Sanitary Service (by Region)

Region	Total occupied houses	% without piped-in water or wells	% without piped-in water	% without electricity	% without sanitary service
Costa Rica	330,775	13	22	33	11
Metropolitan Area	97,498	2	2	5	1.5
Central Inter-mountain Valley	58,843	3	5	13.5	4.4
Peripheral Inter-mountain Valley	57,467	13	17	42	11
North Pacific	44,643	22	45.5	61	24
South Pacific	35,256	35	45	68	27
Atlantic Basin	24,182	23	42	61	14
Northern Plains	12,886	33	60.5	66	21

Source: National Office of Statistics and the Census, Housing Census, 1973.

greatly diminished; educational, health and community services are unattainable by the rural dweller.

Basic Services: water, electricity and sanitary services

The most indispensable basic services for these rural communities are water, electricity and sanitation. Compared to other developing countries, the situation in Costa Rica is relatively favorable; but when it is considered that the houses which lack these services are often the majority of all dwellings in the peripheral regions, one sees that the provision of these services in the rural areas is a major problem.

The following data are illustrative:

§ Houses in which the inhabitants must use rivers, streams or rain as their only water source represent 13% of the houses in the country, but this percentage reaches 35% in the South Pacific and 33% in the Northern Plains.

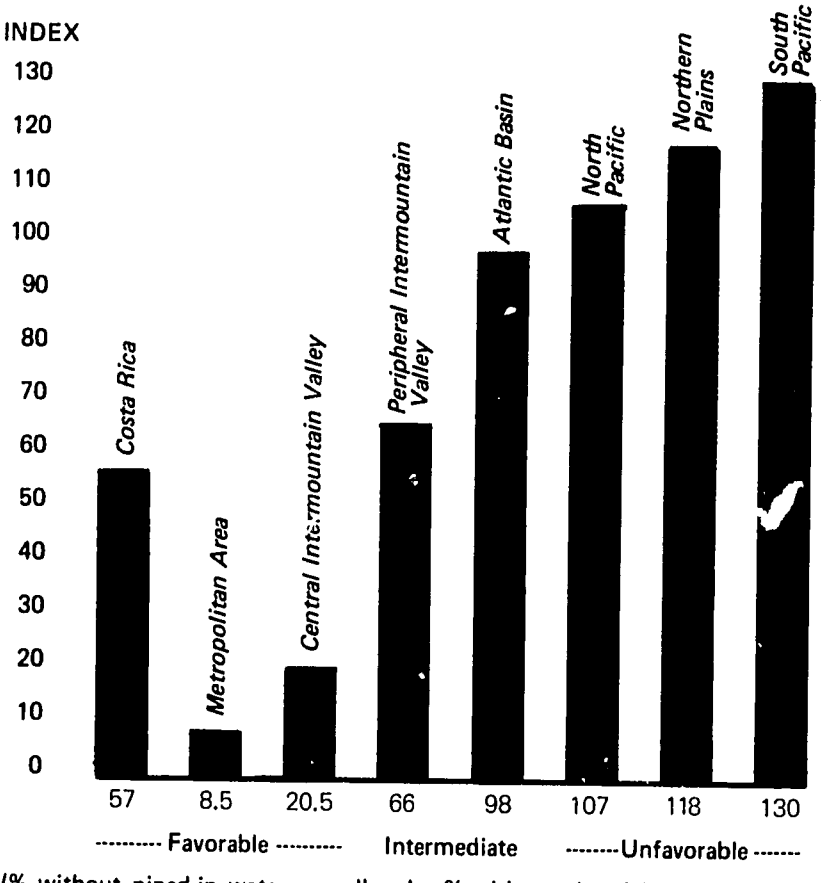
§ Houses without piped-in water represent 22% of the houses in the country, but these include 60.5% of the houses in the Northern Plains, 45.5% in the North Pacific, 45% in the South Pacific and 42% in the Atlantic Basin.

§ Houses without electricity represent 33% of the houses in the country, but include 68% of the houses in the South Pacific and 66% in the Northern Plains.

§ Houses without any sanitary service represent 11% of the houses in the country, but 27% of the houses in the South Pacific and 24% of the houses in the North Pacific.

Adding the percentage of houses that use rivers and the rain for their water supply to the percentage of houses without electricity or any type of sanitary services, a "basic service index" was created, in which a low number indicates a favorable situation and a high number an unfavorable situation. This index for Costa Rica as a whole is 57, but only 8.5 for the Metropolitan Area and 20.5 for the Central Intermountain Valley—much more favorable than the national average. Within the area studied this index is 66 for the Peripheral Intermountain Valley, 98 for the North Pacific, 120 for the Northern Plains and 130 for the South Pacific.

FIGURE VI-1
Basic Services Index
(by Region)



(% without piped-in water or wells, plus % without electricity, plus % with sanitary service.)

Source: National Office of Statistics and the Census, Housing Census, 1973. Elaborated: IFAM/AITEC, 1976.

Housing

In 1973 Costa Rica had 332,212 occupied private dwellings. Of these:

§ There were 44,622 houses, or 14% of the total, which were considered "very deteriorated," in such poor condition that they needed to be replaced.

§ Another 108,338, or 33%, needed significant repair.

§ 15,614, or 5%, were classified as shacks or huts.

§ 46,716, or 14%, had dirt floors.

§ 13,526, or 4%, had roofs in the "other" category, generally of thatch.

§ 10,886, or 3%, had walls in the "other" category, generally of sticks or poles, and

§ 73,725 houses, or 22%, had more than two inhabitants per room and were probably overcrowded.

The numbers and percentages of houses in each region with these problems of repair, marginality, inadequate materials and overcrowding are presented in Table VI-4. As expected, the housing situation is more favorable in the Metropolitan Area and the Central Intermountain Valley than in the five rural regions studied, and is generally better in the Peripheral Intermountain Valley than in the other four peripheral regions.

By adding the percentages for the seven indicators of housing conditions including state of repair, marginality, construction materials (dirt floors, straw roofs, stick walls) and overcrowding (more than two inhabitants per room), a housing index was created. A low number for this index indicates a favorable situation and a high number, an unfavorable situation.

According to this index, the two central regions, the Metropolitan Area (59) and the Central Intermountain Valley (76.5) have more favorable housing conditions than the national average, 95. In the rural regions, according to this index, the best housing is found in the Peripheral Intermountain Valley (93.5) and the Atlantic Basin (106). In the other three regions the situation is much less favorable, with indices of 135.5 for the Northern Plains, 139 for the North Pacific and 148 for the South Pacific.

TABLE VI-4
Housing Problem Variables
(By Region)

Problem	Costa Rica	Metropolitan Area	Central Inter-mountain Valley	Peripheral Inter-mountain Valley	North Pacific	South Pacific	Atlantic Basin	Northern Plains
No. of Occupied Houses	100%	29%	18%	17%	13.5%	11%	7.5%	4%
State of Repair								
Very deteriorated	14	10	11	15	16	18	16	20
Need repair	33	26	29	34	39	40	40	43
Type of Construction								
Hut or marginal	5	2	1	2	10	12	7	9.5
Materials of Construction								
Dirt floors	14	3	14.5	16	30	25	7	14
Roof "other" (generally of straw)	4	1.5	1	1.5	9	11	6	20
Walls "other" (generally of sticks)	3	1	1	2	4	13	6	6
Overcrowding								
More than 2 occupants per room	22	16	19	23	31	29	24	33
Housing Index	95	59.5	76.5	93.5	139	148	106.5	135.5

Source: National Office of Statistics and the Census, Housing Census, 1973.

Education Levels

In all of Costa Rica in 1973 there were 1,554,437 people six years of age and older. Of these:

§ 211,264, or 14%, had no formal education
§ 1,073,015, or 69%, had some primary education
§ 213,255, or 14%, had some secondary education
§ 56,903, or 4%, had some university education
§ Additionally, 135,395, or 9%, of the population ten years of age or older were classified as illiterate.

There is considerable difference in educational levels among the five regions studied. In general, the Peripheral Intermountain Valley and the North Pacific had the highest level of university and secondary students, the lowest level of illiteracy and the lowest level of people with no education. On the other hand, the Northern Plains had the highest level of illiterates and people with no education, as well as the lowest percentage of secondary and university students.

Health Services

The analysis of health facilities was limited to one very important factor—the time required to travel from the community to the nearest facility which could provide assistance in a serious medical emergency. As indicated in Table VI-6, the residents of only 26.5% of the communities studied in the four outermost regions can get to a medical facility in less than 30 minutes in the rainy season when the roads are most likely to be in poor condition (assuming that transportation is available). Residents of another 19% of these communities require between 30 minutes and an hour to arrive at a medical facility and in another 25%, they require between one and two hours to arrive.

The situation in the remaining communities is much less favorable: in 20% of these communities residents require two to four hours to get to assistance in the case of medical emergency and in another 10%, more than four hours is required.

The communities studied are only the larger communities within each canton; it often requires even longer to reach this type of medical facility from the smaller, more isolated communities.

TABLE VI-5
Education Levels of Population Six Years or Older and Illiterates in Population Ten Years or Older (by Region)

Region	Population 6 years or older	None		Primary[a]		Secondary[b]		University[c]		Illiterates as % of population 10 years and older	
	No.	No.	%	No.	%	No.	%	No.	%	No.	%
Costa Rica	1,554,437	211,264	14	1,073,015	68	213,255	14	56,903	4	135,395	9
Metropolitan Area	446,536	32,891	7	277,007	62	105,125	24	31,513	7	16,142	4
Central Inter-mountain Valley	287,158	29,170	9	202,644	70	43,092	15	12,252	6	18,314	7
Peripheral Inter-mountain Valley	278,700	42,278	15	208,248	75	23,218	8	4,956	2	29,044	12
North Pacific	214,223	39,710	18	151,571	71	18,901	9	4,041	2	26,458	15
South Pacific	159,659	32,963	22	115,028	71	9,754	6	1,914	1	22,699	17
Atlantic Basin	103,175	19,224	19	73,105	71	9,525	9	1,321	1	12,402	14
Northern Plains	64,986	15,028	23	45,412	70	3,640	6	906	1	10,336	19

Source: National Office of Statistics and the Census, Population Census, 1973.

[a]Primary: attained some grade of primary education.

[b]Secondary: attained some grade of secondary education.

[c]University: attained some grade of university education.

Recreation Services

One important aspect of the development of any community, no matter how small or isolated, is the availability of recreational facilities for its residents. In the 860 communities, information was collected as to the existence of recreational facilities of various types.

Community-Owned Facilities

§ 75% of the communities studied have plazas, which generally also serve as soccer fields.
§ 37% have libraries, which usually serve as the school library.
§ 31% have community meeting halls.
§ 9% have sports installations (other than the plaza), usually basketball courts.
§ 5.5% have parks.

Privately-Owned Facilities

§ 65% of the communities studied have bars.
§ 52% have dance halls.
§ 49% have pool halls.
§ 9% have movie theaters.

Governmental Services

Governmental services are also important to the development of these rural communities. To determine to what extent these services are actually reaching the peripheral regions, the interviewees of the IFAM/AITEC study were asked which of six government agencies (MAG, INFOCOOP, IMAS, ITCO, DINADECO and MOPT) were working in their communities.[1]

When this study was carried out in 1974-1975, nearly one-third of the communities were serviced by MAG (agriculture), DINADECO (community development) and MOPT (public works, including roads). The other three agencies were perceived

[1] MAG – Ministry of Agriculture
INFOCOOP – Institute for the Promotion of Cooperatives
IMAS – Institute for Social Aid
DINADECO – National Bureau for Community Development
ITCO – Institute of Land Titling and Colonization
MOPT – Ministry of Public Works and Transportation

TABLE VI-6
Time Needed to Arrive at a Health Facility During the Rainy Season (according to interviewees)

Region	less than ½ hour	from ½ to 1 hour	from 1 to 2 hours	from 2 to 4 hours	more than 4 hours	Total
	Percentage of Communities					
North Pacific	19	16	31	23	11	100
South Pacific	41	23	21	12	3	100
Atlantic Basin	23	20	24	21	12	100
Northern Plains	22	14	23	23	18	100

Source: Municipal Regime Study, IFAM/AITEC, 1974-75.

as working in fewer communities: ITCO (land titling and agricultural colonization) in 14%, IMAS (social assistance, housing, etc.) in 13% and INFOCOOP (organization and development of cooperatives) in only 9%. The breakdown of results can be seen in Table VI-8.

It is clear that many more communities in the Peripheral Intermountain Valley receive governmental services than in the four more peripheral regions. Within the four peripheral regions, the North Pacific and the Northern Plains receive more governmental services than the South Pacific and the Atlantic Basin.

Municipal Government

The municipal government also has an important role in solving these community problems and takes a major role in the maintenance of roads and the provision of other basic services. The majority of municipal projects originate with requests from groups or individuals within the communities. Very few projects are initiated by the municipality without a formal request.

The projects requested by the communities are almost exclusively of three types: infrastructure (mainly roads), basic services (mainly water), and recreational facilities. Requests for roads in early 1975 made up well over half of the total. As can be seen in Table VI-9, about half of the municipal projects are in road building and maintenance followed by services and recreational facilities. Municipalities rarely have employment stimulating activities as goals.

Community Organizations

Without a doubt, the two most severe community problems were perceived to be the lack of adequate roads and water, followed by electricity, health, education and recreational facilities. In Table VI-10, the 26 types of community problems mentioned by the groups interviewed are presented for the entire area studied.

In the four peripheral regions, a school committee exists in 96% of the communities and a Parent-Teacher Association exists in 49%, a sports committee in 46% and an association for community development in 38%.

TABLE VI-7
Recreation Services—According to Interviewees
(Percentage of communities that have each facility—by region)

Type of Service	Total Area Studied	Peripheral Intermountain Valley	North Pacific	South Pacific	Atlantic Basin	Northern Plains
PUBLIC						
Plaza[a]	75%	65%	85%	80%	75%	81%
Park	5.5	5	9	6	4	1
Other Sport Installations[b]	9	10	8	11	5	10
Library[c]	37	29	43	52	30	37
Community hall	31	26	43	23	32	38
PRIVATE						
Bar/Cantina	65	39	88	35	75	77
Dance Hall	52	44	64	60	53	45
Movie theater	8	6	7	11	17	4
Pool halls	49	45	46	66	44	53

Source: Municipal Regime Study, IFAM/AITEC, 1974-75.
[a]Plazas: generally serve as soccer fields.
[b]Other installations: i.e., other than the plaza, usually basketball courts.
[c]Usually the basic school library.

It was not within the scope of this study to determine the comparative levels of activity of the various types of organization. Nevertheless, when the question was asked as to which organization would give most support to a community development project, the most mentioned was the Parent-Teacher Association (mentioned in 36% of the communities). That was followed by the community development association (28%), the school committee (23%) and the church building committee (15%). It is interesting to note that although associations for community development exist in only 38% of the communities, they are considered as the organization which would give most aid to a community development project (28%). This type of organization is generally very active.[1]

Table VI-11 presents data for each of the four peripheral regions as to the existence of the seven most frequently mentioned types of organizations. There is not much difference between the regions with regard to types of community organizations, with the exception of the Atlantic Basin which in general has fewer community organizations (except for labor unions) than the other regions. This table shows that the variable of community organization does not appear to be directly correlated to regional migration patterns or employment situations. Also, community organizations tend to be involved in smaller or localized basic services, and not with economic facets of rural life. They rarely have employment and income generation as goals.

Conclusions

The data demonstrates that decisions to migrate from one region to another are not significantly related to levels of services, infrastructure, and community organization. Dramatic evidence of this comes from the Atlantic Basin which, with one of the lowest levels of services and infrastructure, has been the most attractive region for immigrants in recent years. Although the

[1] For a more complete analysis of community participation and organization, see the DINADECO/AITEC three-volume study: *Documentos Prácticos de una Investigación Social, Estudio para una Tipología de Comunidades,* and *Seis Comunidades Costarricenses,* San José, 1973.

TABLE VI-8
Interviewees' Perception as to Whether Their Community is Receiving Services of Six Governmental Agencies (by Region)

Region	Number of communities studied	Percent of Communities Receiving Government Agency Services					
		MAG	INFOCOOP	IMAS	ITCO	DINADECO	MOPT
Area Studied	860	33%	9%	13%	14%	31%	31%
Peripheral Inter-mountain Valley	354	48	11	24	9	49	40
North Pacific	182	31	10	12	20	28	35
South Pacific	141	16	8.5	3	15	15	11
Atlantic Basin	110	20	2	4	15	15	31
Northern Plains	73	32	6	6	34	33	27

Source: Municipal Regime Study, IFAM/AITEC, 1974-75.

provision of basic services and an adequate road network are indispensable to the development of rural areas, these services will not *in themselves* convince people to stay or to migrate into these regions. Rather, the employment situation is the key factor in determining migratory movements.

TABLE VI-9
Types of Projects in which the Municipalities Have Worked

Region	Infrastructure		Services		Recreation		Others		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%
Atlantic Basin	30	46	15	23	6	9	14	22	65	100
North Pacific	66	46	39	27	13	9	26	18	144	100
South Pacific	58	41	46	32	11	7	28	20	143	100

Source: Municipal Regime Study, IFAM/AITEC, 1974-75.

TABLE VI-10
Perception of the Two Most Important Community Projects[a]
(by Area Studied)

Project	Communities No.	%
Roads	354	24
Water System	291	20
Electricity	145	10
Health	113	8
Education	92	6
Recreation	57	4
Community Hall	51	3
Public Streets	50	3
Bridges	44	3
Communication	39	3
Housing[b]	36	2
Transportation	32	2
Agricultural Problems[b]	31	2
Rural Police	20	1
Sanitary Sewers	21	1
Marketing[b]	20	1
Religious Buildings	19	1
Latrines	14	1
Social Problems	14	1
School Dining Hall	11	1
Industry[b]	10	1
Rain (drainage) sewers	9	1
Cemetery	8	1
Jail	5	0
Land Tenure[b]	3	0
Others	12	1

Source: Municipal Regime Study, IFAM/AITEC, 1974-75.

[a] In response to the question: "If you were a local government official, what are the two most important projects you would push for this community?"

[b] Housing, agricultural problems, marketing, land tenure, industry, are not generally considered as community problems, but rather as problems of agriculture or of the individual.

TABLE VI-11
Most Mentioned Types of Community Organizations

	Number of Communities Studied*	Board of Education		Educational Council		Church Building Committee		Sports Committee		Community Development Association		Social Betterment Committee		Labor Unions	
		E[1]	S[2]	E	S	E	S	E	S	E	S	E	S	E	S
Total Peripheral Area	457	96%	23%	87%	36%	49%	15%	46%	8%	38%	28%	30%	12%	17%	3%
North Pacific	154	94	16	97	31	56	20	44	3	56	36	32	12	1	0
South Pacific	129	100	32	76	41	53	16	64	16	26	22	40	18	29	4
Atlantic Basin	110	82	24	81	28	26	5	36	5	29	25	19	7	33	6
Northern Plains	64	98	17	95	62	52	16	22	5	30	23	20	5	0	0

Source: Municipal Regime Study, IFAM/AITEC, 1974-75.

*This topic was not discussed in 49 communities.

[1]E = Exists in % of communities.

[2]S indicates the percentage of times each group would be most supportive of a community project, as perceived by the interviewees.

VII Recommendations for the Development of the Rural Regions

With rapidly increasing population there is an ever-increasing demand for jobs. The population of the area studied in 1973 was 1,010,908 and by the year 2000 the estimated population of this rural area will be 1,961,325—an increase of 94%. Also, by the year 2000, the economically active population of these regions will have increased from 297,114 to 678,618, an increase of 128%.[1] If, in the year 2000, 60% of the economically active population are still employed in the primary sector (agriculture and mining), it will be necessary to create 230,952 more jobs in the next 25 years, an increase also of 128%.[2]

Thus, between 1973 and 2000, it will be necessary to generate an average of approximately 8,500 new jobs per year in the agricultural sector. This is four times the average number of jobs created per year in the agricultural sector between 1963 and 1973.

The importance of the increase of employment in the region's agricultural sector cannot be overemphasized since agricultural employment is closely linked to the generation of employment in the industrial and service sectors. More agricultural production would require more people working in transportation, processing and commercialization of the increased production. In 1973, for every 60 jobs in the agricultural sector, there were 40 jobs in the industrial and service sectors.

Unless new jobs continue to be generated in agriculture and the other sectors in these peripheral rural regions, many people

[1] Here it is assumed that the percentage of the population which is economically active will rise from 28.2% in 1973 to 32.5% in 1980, to 34.3% in 1990 and to 34.6% in 2000. The percentage will rise as the population ages.

[2] These projections indicate what would happen if the same percentage of the total population live in each rural region and work in the primary sector as in 1973. It is beyond the scope of this report to recommend "optimum" percentages of the total population that should live in each region, or the number of people that should work in the primary sector in the future.

TABLE VII-1
Projections of the Total Population, Economically Active Population and Population Working in the Primary Sector[a,b]

Region	Total Population			Economically Active Population			Population Working in Primary Sector		
	1973	1980	2000	1973	1980	2000	1973	1980	2000
Costa Rica	1,871,780	2,246,738	3,631,556	585,313	730,190	1,256,518	214,783	270,170	464,912
Metropolitan Area	520.069	624,250	1,009,018	179,584	202,881	349,120	9,052	10,144	17,456
Central Intermountain Valley	340,803	409,073	661,213	108,615	132,949	228,780	26,521	31,908	54,907
Area Studied	1,010,908	1,213,415	1,951,325	297,114	394,360	678,618	179,210	238,354	410,162
Peripheral Intermountain Valley	337,927	405,621	655,633	97,332	131,827	226,849	56,665	76,460	131,572
North Pacific	263,327	316,077	510,897	75,946	102,725	176,770	40,574	54,444	93,688
South Pacific	200,661	240,858	399,315	57,635	78,279	134,703	40,641	56,361	96,986
Atlantic Basin	127,761	153,354	247,877	42,096	49,840	85,765	24,550	28,907	49,744
Northern Plains	81,232	97,505	157,603	24,105	31,689	54,531	16,780	22,182	38,172

Source: Economic-Demographic Projections for Costa Rica. Agency for International Development, Costa Rica. February 1974. Mimeo. P. 6. Based on sub-projection B.

[a]The primary sector includes: agriculture, hunting, forestry, fishing, and exploitation of mines and quarries. This percentage will probably go down as urbanization increases.

[b]Projections for 1980 and 2000 utilize same percentages of the economically active population and population working in the primary sector which existed in 1973.

will be forced to emigrate to the city. Table VII-1 indicates the projections for population and the economically active population in each region for the years 1980 and 2000.

Colonization of Unexploited Land

One way to generate more jobs is to colonize unexploited land but unexploited land reserves are disappearing rapidly. As demonstrated in Chapter III, the area in production has increased at an average rate of 0.8% of the total surface area per year and in 1973 included 40% of the total land area. According to a study[3] on land use potential, 37% of the total area of the country is suitable only as a forest reserve and exploitable forests. If to this 37% an additional 5% is added for cities, towns and roads, a total of 42% of the country's area should not be used for agricultural activities. Since 40% of the total is already in production, only 18% remains for expansion of the area in production. If the rate of expansion between 1955 and 1973 were continued, in only 23 years all remaining areas would be in production.

Therefore, although the expansion of the area in production is important, the intensification of agricultural activities in lands already in production is the highest priority.

The Intensification of Agricultural Production

The importance of intensifying agricultural production is made evident by the following data. In order to generate the 8,449 new jobs needed annually in the agricultural sector:

a) 12,998 hectares more of perennial crops (which generate an average of 130 man-days work per hectare per year[4]) would have to be put into production; or
b) 35,204 hectares of annual crops (which generate an average of 48 man-days work per hectare per year); or

[3] Plath, C. V. and Vander, Sluis: "Uso Potencial de la Tierra de Costa Rica Basada en Recursos Físicos" (Land Use Potential of Costa Rica Based on Physical Resources), FAO Pub. 2234 Rome, 1967. Cited in "Guanacaste: Estudio de Desarrollo Regional" (Study of Regional Development), IFAM, vol. 1, p. 26, 1974.

[4] Assuming that 200 man-days work is equal to one job in the agricultural sector, then 8,449 (the number of jobs per year) × 200 = 1,689,800 man-days work divided by 130 (the number of man-days per hectare for perennial crops) = 12,998 hectares.

TABLE VII-2
Actual and Potential Land Use

Potential Use[a]

Type		Area in Km²	%
I	Intensive production of annual crops	7,737.3	15.2%
II	Extensive production of annual crops	12,654.2	25.0
II	Intensive production of perennial crops	3,810.0	7.5
	Extensive production of annual crops	2,502.8	4.9
III	Very extensive use	5,281.7	10.4
IV	Hardwood forests	18,254.2	35.9
V	Mangrove forests	559.8	1.1
	Total	**50,800.0**	**100.0%**

Actual Use[b]

Type		Area in Km²	%
I	Annual Crops	2,833.0	5.6%
II	Perennial crops	2,071.5	4.1
III	Pastures	15,580.5	30.3
IV	Forest Reserves, Woods and Mountains	26,840.1 7,165.2	53.0
V	Other types of land	3,574.0	7.0
		31,224.2	**100.0%**

Source: [a]Plath, C. V. and Vander Sluis, Arjen. Potential Use of the Land in Costa Rica. Evaluation Based on Natural Resources. F.A.O., p. 61, No. 2234, Roma, 1967, cited in "Guanacaste: Estudio de Desarrollo Regional," IFAM, 1974, p. 26.
[b]National Office of Statistics and the Census. Agricultural Census, 1973.

c) 256,030 hectares of pasture per year (which generate an average of only 6.6 man-days work per hectare per year).[5]

In other words, twenty times more land is necessary to create this number of jobs in a year in land-extensive cattle raising than would be needed for land in perennial crops.

This shows dramatically the need to stimulate the expansion of perennial crops and annual crops to better utilize diminishing land reserves, to slow deforestation and to avoid the necessity to infrastructure and services in dispersed settled zones.

It is important to emphasize that these projections are based on the assumption of creating jobs in modern and efficient agriculture. We are not suggesting the employment of people on subsistence farms or with marginal jobs. Today many farmers work with inefficient techniques and there is a great deal of underemployment. With more efficient production, the personal income of people working in this sector should increase markedly.

Generation of Employment in the Agricultural Sector

Although the goal of generating more than 8,000 new agricultural jobs per year is an ambitious one, the previously cited study of the FAO on land use potential indicates that the country has enough good land available to do this. The data in this study indicates that 22.7% of the total area is adaptable to the intensive production of annual and perennial crops, while another 29.9% is usable for extensive production. (See Table VII-2.) It is estimated that if all the area adaptable to the intensive production of crops were in production, as many as 433,345 new jobs could be generated in the agricultural sector, which would far surpass the number of projected jobs needed in this sector. (See Table VII-3.)

Potential Land Use in Guanacaste: An Example

The most complete data on the possibility of creating jobs with a more intensive use of the land is found in the study done

[5] Assuming that the pasture is dedicated to fattening cattle for beef in an extensive manner. The demand for labor in dairies (milk farms) is much higher but because of lack of data this could not be estimated. With a more intensive production of beef cattle, the demand for labor would be higher.

TABLE VII-3
Projected Employment in the Agricultural Sector with an Intensive Use of the Land

Type of Use	Area in hectares[a]	Man-days work per hectare per year[b]	Total man-days	Jobs[c]
Intensive production of annual crops	773,730	48	37,139,040	185,695
Intensive production of perennial crops	381,000	130	49,530,000	247,650
Total			**86,669,040**	**433,345**

Source: [a]Plath, C. V. and Vander Sluis, Arjen. Potential Use of the Land of Costa Rica. Evaluation based on Natural Resources, F.A.O. Publication No. 2234, Roma, 1967. Cited in "Guanacaste: Estudio de Desarrollo Regional," Vol. I, p. 141.

[b]Based on estimations of P.R.E.A.L.C. "La situación y perspective del empleo en Costa Rica" (The situation and perspective for employment in Costa Rica), Vol. II, May 1972, p. 15. Cited in "Guanacaste: Estudio de Desarrollo Regional," Vol. I, p. 141.

[c]Estimation as determined by IFAM/AITEC, based on data from Agricultural Census, 1973.

by IFAM on the province of Guanacaste.[6] According to the census of 1973, 29,562 people worked in the agricultural sector in this province. If the population of Guanacaste grows at the same rate as the national average and the same percentage work in the agricultural sector in the year 2000 as now (59%) then 70,775 people would be employed in the agricultural sector.

According to the IFAM study, with "optimum" use of the land (implying a considerable number of new irrigation projects and appropriate decisions as to what to produce on the land), up to 85,370 people could find jobs in the agricultural sector, surpassing the number of jobs needed in the year 2000. With more rational land use, Guanacaste, which lost a number equivalent to about 10% of its population in the five-year period between 1968 and 1973 due to emigration, could even attract new immigrants looking for work in the agricultural sector and related activities. The number of jobs created with this more intensive land use is detailed in Table VII-3.

The Basic Grains Campaigns of 1974-1975; Experience in Generating Employment in the Agricultural Sector

The possibility of creating a large number of new jobs is not purely speculative. During the campaign of 1974-1975 to increase the production of basic grains, a number of man-days of work equivalent to an estimated 10,457 new agricultural jobs was created only in increased grain production. With 49,390 new hectares in grain production, 5,302 new jobs were created in the production of rice, 2,477 in the production of corn, 1,503 in the production of beans, and 1,205 in the production of sorghum.[7]

If we assume that 2.3 people are dependent on each agricultural worker, this program has improved the possibilities for a better life for more than 24,000 people. Furthermore, if one includes the jobs generated in the other sectors of the economy

[6] "Guanacaste: Estudio de Desarrollo Regional" (Study of Regional Development), vols. I and II, IFAM, 1974.

[7] Here it is estimated that an agricultural worker or farm owner works 200 days per year and that this work is spread over the greater part of the year. Probably the number of new jobs created is smaller, because much of the new work went to workers who were previously underemployed.

(assuming the relationship of 40 jobs generated in the secondary and tertiary sectors for every 60 jobs in the agricultural sector), it is probable that the program has benefitted as many as 40,000 people in the rural areas, close to one person for each new hectare in production.

According to the data presented by the CNP[8] in 1975, with the number of hectares scheduled to be put into basic grains production in the near future, another 5,725 jobs would be created between 1975 and 1980, and another 6,228 jobs between 1980 and 1985.

The Importance of Small Farms in Generating Employment

The results of this study emphasize both the vital importance of a sustained policy to intensify agricultural production and the need to maintain the viability of the small farm. Small farms produce more than 50% of 22 out of 28 crops. They also generate more demand for labor per hectare than the average large producer. For most of these products, the production per hectare of the small farmers (productivity) is almost as high or in some cases higher than that of the large producer, which refutes the popular belief that the small farmer is economically inefficient and has low productivity. A Central Bank program that consists of granting a loan of ¢20.00 more per *fanega* of coffee to small producers and cooperatives than to large producers is an excellent example of government stimulus of small production.

Although use of the land is more intensive on small farms, this does not mean that the production on large farms should not be intensified. It is in the large farms where there is the greatest potential for the generation of employment and increased production.

Farms larger than 50 hectares generate approximately 62% of the total demand for labor. Since these farms have 86% of the total uncultivated land and 82% of the pastures, it is in these larger farms that production could be intensified on a large scale.

[8] Statistical Report, Department of Planning of the CNP, 1975-76.

Rural Industry

To complement the growth of the agricultural sector in the peripheral zones, it is necessary also to create and strengthen rural small industries. In the area studied, 4,872 industries were identified, most with one or two employees. (See Table VII-5.)

Most of these are cottage industries with extremely rudimentary systems of management and administration and lack of access to technical assistance or financing. With adequate technical assistance and financing these industries could expand and create new job opportunities. Assuming that 50% of the 4,872 existing industries have the necessary conditions to receive credit and managerial assistance, and assuming that for every loan given, 1.5 new jobs could be created,[9] a program of aid to already existing small industries could create some 3,654 jobs.

Additionally, many new industries could be created. According to our study, the interviewees in the 860 communities indicated a need for 90 new grain processing facilities, principally rice hullers; 75 fruit or vegetable processing plants; 36 dairies and cheese factories and 75 installations for the processing of other food products, principally for sugarcane, coffee and cocoa. They also indicated the need for 124 additional new installations for the processing of non-food products, principally saw mills and furniture factories, textiles and gravel pits.

The list of industries mentioned by the interviewees of these communities does not in itself constitute a program for rural industry in the peripheral areas, but it does indicate which facilities are lacking to process what is now produced in the zone. Not all of the industries which the interviewees feel are needed would be feasible from a cost/benefit perspective. Since a primary objective is the generation of employment, industries intensive in the use of labor rather than capital should be encouraged.

[9]Based on the experience of the União Nordestina de Assistência a Pequenas Organizações (Union of Small Organizations), a Brazilian organization that coordinates a program of bank credit and managerial assistance to small businesses in Recife, Brazil. In the first two complete years of this experimental program, 425 loans were made to small businesses, of an average of $1,463 and 637 new jobs were created.

TABLE VII-4
GUANACASTE
Projected Employment in the Agricultural Sector with Intensive Use of the Land

Type of Production	CATEGORY OF LAND: Land with good or regular soil and good possibilities for irrigation				Land with good or regular soils without possibilities for irrigation				Land with regular or low potential				TOTAL	
	Ha.[a]	%[b]	Ha. per job[c]	No. per job[d]	Ha.	%	Ha. per job	No. per job	Ha.	%	Ha. per job	No. per job	Hectares	No. of jobs
Vegetables	12,850	5	1.5	8,567	0	0	0	0	0	0	0	0	12,850	8,567
Fruits	25,700	10	2.5	10,280	5,962	11	5.0	1,192	62,470	10	8.3	7,527	94,132	18,949
Annual Crops	51,400	20	3.5	14,686	11,282	21	7.0	1,626	0	0	0	0	62,782	16,312
Multiannual Crops	77,100	30	4.7	16,404	16,802	31	9.4	1,788	187,410	30	15.7	11,937	281,312	30,128
Cattle	89,950	35	18.8	4,785	20,054	37	37.6	533	374,820	60	62.0	6,045	484,824	11,363
Total	**257,000**	**100%**	**4.7**	**54,722**	**54,200**	**100%**	**10.6**	**5,139**	**624,700**	**100%**	**24.5**	**25,509**	**935,900**	**85,370**

Source: Based on: *Guanacaste: Estudio del Régimen Municipal,* Vol. II, IFAM, 1974.

a. Hectare: The number of hectares that could be dedicated to the type of crop under optimum use.

b. The percentage of this category of land that could be dedicated to this type of crop.

c. Hectares per job: Number of hectares in this category with this use required to create one job.

d. Number of jobs: The total number of jobs created in this type of production with optimum land use.

TABLE VII-5
Existing Micro-Industries in Peripheral Rural Areas According to Interviewees

Type	Fewer than 5 employees	More than 5 employees	Total
Food-Related			
Dairy	539	138	677
"Trapiche" (unrefined brown sugar)	624	32	657
Cheese factory	404	13	417
Fishing boat	221	–	221
Coffee "beneficio"	20	74	94
Rice processing	56	26	82
Banana packing plant	1	59	60
Sugar refinery	5	39	44
Others[a]	103	62	165
Total	1,973	444	2,417
Non-Food Related			
Charcoal	179	7	186
Wood extraction	129	32	161
Repair	140	1	141
Wood mills	56	62	124
Furniture makers	30	10	40
Cording, brooms & baskets	83	1	84
Tobacco	79	4	83
Bricks & cement blocks	37	10	47
Others[b]	146	96	242
Total	929	229	1,158
Other Activities			
Seamstress	713	66	779
Tailor	378	7	385
Shoemaker	74	4	78
Leather goods	30	6	36
Other[c]	17	2	19
Total	1,212	85	1,297
Grand Total	**4,114**	**758**	**4,872**

Source: Municipal Regime Study, IFAM/AITEC, 1974-75.

[a]Principally bakeries (44); drink factories (21); meat packers (17); and vegetable oil factories.

[b]Principally construction (30); ice factories (24); mines and quarries (23); and metal machine shops (10).

[c]Principally ceramics (10); artisans (7).

Road Network

It is important to improve the road network and the level of some basic services which are considered to be the most serious community problems in all the peripheral regions. Although the study did not show a close relationship between the level of services and migration, there is no doubt that an adequate road system is indispensable for the stimulation of agricultural production and that minimal basic services are essential to improve the quality of life of rural areas. It is possible to use labor-intensive methods of work to build these infrastructures, thus also creating employment.

Farmers believe that with an improvement in the road system there would be:

§ an increase in production and an improved market
§ more jobs and more income
§ more and better access to health services, education, technical assistance, agricultural credit, etc.
§ a partial brake on migration toward the cities with more economic opportunities available in the country.
§ less social isolation of the rural population and greater participation of this population in the country's development.

Based on various quantifiable measures and on the priorities assigned for the improvement of specific roads by selected residents in 67 cantones, we detected priority needs for 7,669 kilometers of roads in these cantones, roads that would directly serve an estimated population of 409,829 people, or 45% of the rural residents in these cantones.[9]

This 45% of the population now must take their products to market over trails, dirt roads, gravel roads that are generally impassable in the rainy season, or by train or boat. A program to

[9]The priority need for a road was determined by analyzing seven variables: (a) the number of families served per kilometer of road; (b) the number of times the road was mentioned by the interviewees and the priority they assigned to it; (c) the size of farms that predominates in the area (areas with small farms had the highest priority); (d) the degree of interest demonstrated by the residents of the area by having made a petition for the repair or construction of the road and/or having formed a pro-road organization; (e) whether agriculture or dairy farming predominates in the area (priority) or whether cattle farming predominates; (g) the priority assigned by the study's field supervisor, based on his understanding of the situation in the entire canton.

build and improve roads would greatly improve this access of the population to the national economy.

If these 7,669 kilometers of roads were built, the actual system of gravel and paved roads in these cantones would be nearly doubled. If they were built with labor-intensive technologies, they would generate much-needed jobs.

Public Services

Table VII-6 indicates that in the 860 communities studied, a total of 1,976 priority projects were detected (982 first priority and 994 second priority). To cancel the "deficit" of public services in only the most important communities of these rural areas, the state, the local governments and the community organizations will have to undertake almost 2,000 basic service projects. Many of these can be undertaken with participation of community groups and the municipalities, utilizing labor-intensive work programs. Though these basic service projects are community

TABLE VII-6
Priority Needs for Public Services in the Area Studied

Type of Community	Type of Public Service	Total Priority Projects	First Priority	Second Priority
For all of the Communities	Electricity	452	350	102
	Piped-in water	434	210	224
	Public Streets	637	190	447
	Sanitary Service	281	82	199
Only for communities larger than 750 people	Sanitary Sewers	75	66	9
	Drainage Sewers	61	48	13
	Garbage Collection	36	36	—
Total		**1,976**	**982**	**994**

Source: "Resumen de estudios previos sobre necisidades de servicios básicos y urbanización mínima de centros poblados" (Summary of previous studies on basic service needs and minimum urbanization of population centers) IFAM/AITEC April, 1976.

priorities, and the need for them is very great (especially in the smaller communities), they must necessarily be the complement of concentrated job-generating programs.

Toward a Development Plan for the Rural Regions

Technical Assistance

To increase their production, the farmer and small businesses need technical, managerial and financial assistance. To increase employment in these regions, the farmers and small businesses need to use methods and technologies that are labor-intensive. Relatively simple technical assistance at the micro-level is of first priority.

Credit and Financing

Credit and financing are indispensable. It is necessary to improve access to institutional sources of credit, such as banks, cooperatives, CNP, etc. in order to avoid the high interest charged by private moneylenders. The institutions, on their part, should open the necessary lines of credit and simplify access to credit.

Roads

An adequate road system is indispensable to increase production, assure a market and facilitate access to services.

Marketing

To assure that what the farmer and small industrialist produce can be sold at a fair price, it is necessary to create marketing systems that provide an alternative to selling to an intermediary, or at least will move the producer closer to the buyer on the production-selling chain.

There are various alternatives: the government could buy products directly from the producer through an expansion of the CNP; more production and marketing cooperatives could be organized and more wholesale markets could be built.

Titling and Registration of Land and Agrarian Reform

The farmer needs the security of a title to his land to invest his earnings in an expansion of production and to use as collateral for loans. A land distribution program should also

be considered which would tend to maintain or increase the percentage of the land held by small and medium farmers.

Natural Resources

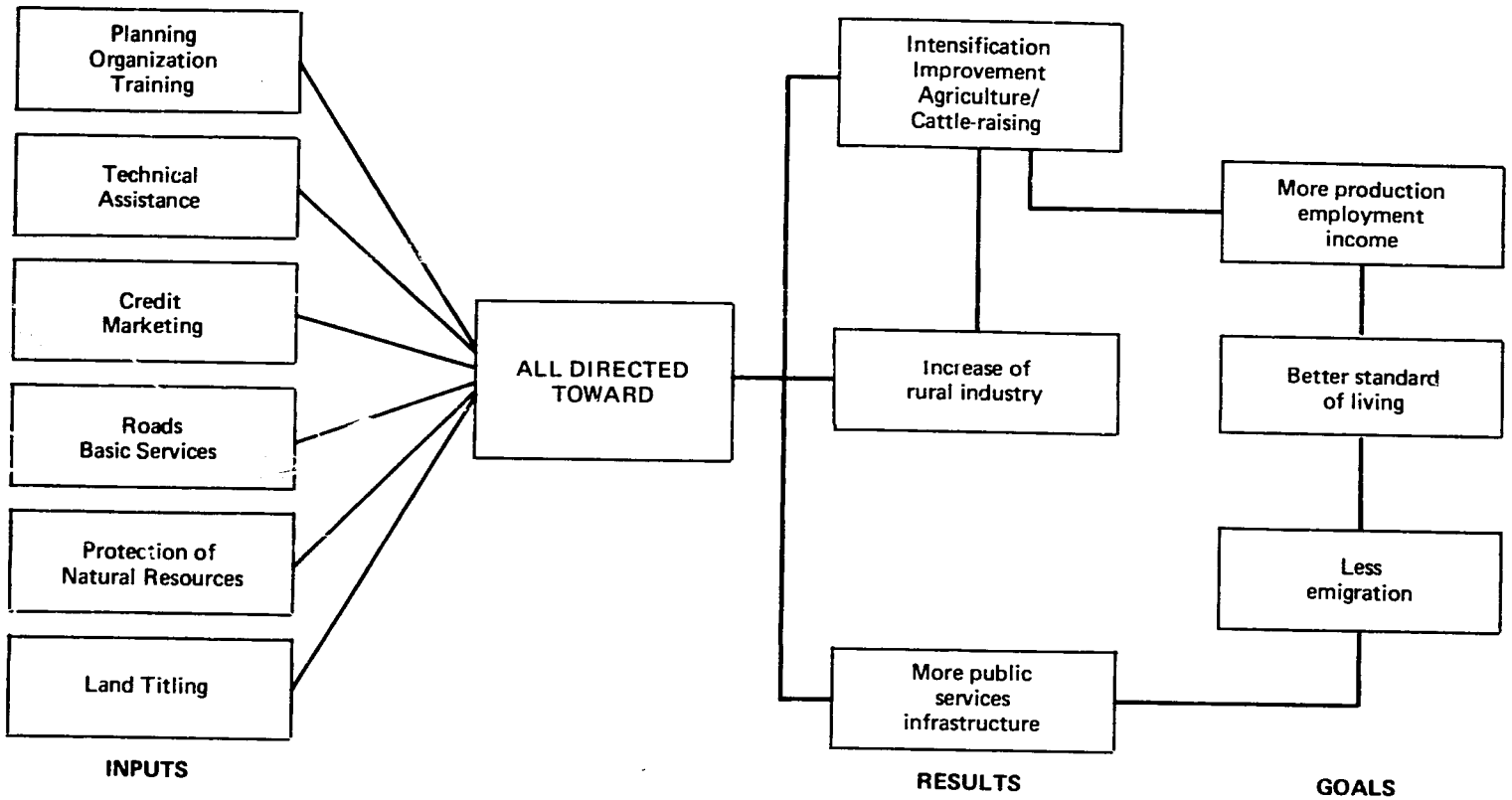
Before increasing production, the country's limited natural resources must be considered; the techniques and programs adopted must not only increase production and employment opportunities in the short run, but must also assure that natural resources are used prudently. We have analyzed the alarming rate of deforestation—if the present rate continues the country's forests could be of commercial benefit for approximately only ten more years. It is evident that reforestation is important to assure the future viability of the soils for production; but, also, other natural resources such as the rivers, minerals and oceans should be studied in order to insure their rational use.

Figure VII-1 presents in graphic form the recommendations made above. Some of the data demonstrate that with a carefully planned and integrated program one can expect the intensification and improvement of agriculture and cattle raising, the expansion of rural industry, the expansion of public services and the improvement of infrastructure. These results will have an impact on the goals of the program of rural development: an increase in production and income, as well as generation of employment, which will improve the standard of living of the rural population and slow the emigration of people from rural to urban areas.

Costa Rica has the institutional capacity to implement this integral rural development plan. Governmental agencies at the national and regional levels are participating in this process of rural change—their action is reinforced by the activities of the municipalities and community organizations.

A process of planning and coordination on the national, regional and local levels is required to implement this program. At the national level, political decisions are necessary to provide a conceptual framework for the programs. At the regional level, priorities must be determined and a balanced vision of development for the entire region should be developed. At the local

FIGURE VII-1
Diagram for Integral Rural Development



Elaborated: IFAM/AITEC, 1976.

level, action should be coordinated among institutions and community groups so that the program benefits reach a sufficient level.

The diverse national agencies should, of course, participate in the generation of inputs, but it is also very important that the municipalities and community organizations participate actively in the change process. Active community groups exist in many peripheral communities—groups that channel the residents' participation principally toward the solution of problems involving public services and infrastructure. It is important that such groups be fully incorporated and that the priorities of local residents form an integral part of the plans and projects. Most rural dwellers are astute in perceiving realistic courses of action to stimulate development. This proposed planning process—with direct participation and decision-making power of the rural dwellers—is a vital component of this approach to rural development.

The welfare and progress of Costa Rica depend to a great extent on the degree to which the development entities on every level integrate their efforts in the urban and rural areas. The recommendations presented in this text suggest a plan for future action which would strengthen the rural areas, improve the standard of living in the peripheral rural regions and assure their active and continued participation in the national economy.

APPENDIX I

Comparative Summary of Regions Studied

This appendix summarizes the most important aspects of this study by geographic region.

Peripheral Intermountain Valley

The Peripheral Intermountain Valley has the highest population density (50 inhabitants per km^2) of the regions studied. At the same time, it has the lowest index of population increase, only 60% of the national average between 1950 and 1963 and 50% of the national average between 1963 and 1973. This trend is accelerating. Between 1968 and 1973 the region lost 10% of its population as a result of emigration to other regions. None of the 23 cantones of the region had more immigration than emigration.

High emigration correlated with a poor employment situation: where there is little opportunity to earn a living, there is a strong tendency to emigrate. The Peripheral Intermountain Valley has the second lowest percentage of the population 12 years of age or older working more than 33 hours per week (41%) as well as high levels of unemployment and underemployment.

The salaries in this region are very low: 63% of salaried workers are earning less than ¢400 per month (approximately U.S. $46.00).

There was an average increase in the area-in-production between 1955 and 1973 in this region of only 0.5% of the total area per year (the region actually had 4% fewer hectares in production in 1973 than in 1963 according to the census) This probably indicates that the greater part of the area suitable for production in this mountainous region is now in use, and that further expansion of the production in the area is unlikely.

In the past ten years, the area dedicated to perennial crops has increased by 26%—the area in annual crops decreased by 37%. In

1973, 73% of the land in production in this region was dedicated to pastures, an intermediate percentage among the five regions studied.

With the exception of the South Pacific, land is better distributed in the Peripheral Intermountain Valley than in the other regions studied. Forty-three percent of the land is in farms of less than 100 hectares.

Levels of infrastructure and services in the Peripheral Intermountain Valley are generally higher than in the other regions studied. Compared with other regions it has:

§ The highest percentage of communities with paved access roads and the highest percentage of communities with 5 or more bus departures a day.

§ The lowest percentage of houses without piped-in water or wells, electricity or sanitary service, as well as the most favorable housing index.

§ The lowest level of illiteracy.

§ The highest percentages of communities which had received the services of MAG, INFOCOOP, IMAS, DINADECO and MOPT.

It is interesting to note that although the levels of services and infrastructure in this region are generally higher, the four most important community problems (lack of roads, water systems, electricity, health services and recreational facilities) are the same as those of the other regions.

North Pacific

The population density in the North Pacific is 20 inhabitants per km^2, the second highest of the five regions studied. The region has the lowest rate of population increase. Although the population increased at a rate of 0.9 times the national average between 1950 and 1963, it decreased to 0.6 times the national average between 1963 and 1973. During the years between 1968 and 1973, while a number equivalent to 14% of the 1973 population left the region, a number equivalent to only 4% entered. The migratory balance was positive in only three of the 14 cantones in this region.

The low rate of population increase in the North Pacific is related to a poor employment situation; the North Pacific has the worst employment situation of the five regions studied and the highest levels of unemployment and underemployment. Only 39% of the population 12 years and older is working more than 33 hours per week.

In 38% of the communities studied, the interviewees felt that the employment situation had worsened in the past five years—the least favorable percentage of all the regions studied. In terms of salaries, the North Pacific occupies an intermediate position; 57% of the salaried workers earn less than ¢400 (U.S. $46.00) per month.

Patterns of land use explain much of the high emigration from the region and the poor employment situation. In the North Pacific 65% of the total area is in production, the highest percentage of the five regions; there are few possibilities for expanding the area in production and creating new farms.

Although the area in production has expanded greatly since 1955, the possibilities of finding employment in the agricultural sector have not increased proportionately. The area dedicated to annual crops decreased by 37% and the area dedicated to perennial crops decreased by 34% between 1963 and 1973. Of the total area in production, 88% is dedicated to pastures, the highest percentage in the five regions studied. There is an average of only 10.5 man-days work per hectare per year generated in agricultural and cattle-raising activities in the North Pacific—the lowest demand for labor per hectare of all the regions studied.

Land is poorly distributed in the region; only 23% of the area in farms is in units of less than 100 hectares; it is the region with the greatest concentration of land in very large farms. Unless there is an intensification of agricultural activities or a change in the economy, people will continue to emigrate from the North Pacific.

Compared with the other three peripheral regions:

§ There is a high percentage of communities with access by dirt roads.

§ a relatively favorable index of public services (houses without

water, electricity, and sanitary services)

§ an unfavorable housing index;

§ an illiteracy rate of 15% (intermediate level compared to the other regions studied);

§ relatively poor access to health care facilities (after the Northern Plains), 64% of the community require an hour or more to get to a facility which can give service in case of a medical emergency;

§ the highest percentages of communities with plazas, parks, bars, dance halls and community halls and

§ the second highest percentage (after the Peripheral Intermountain Valley) of communities that receive the services of MAG, INFOCOOP, IMAS, DINADECO and MOPT.

As in the other regions, the interviewees considered the lack of roads and water the two most urgent community problems, followed by the lack of electricity and health services.

South Pacific

The South Pacific has a population density of 19 inhabitants per km^2. Between 1968 and 1973 a number equivalent to 3% of its population five years of age or older was lost through emigration to other regions. Emigration from this area is recent; the population increased 1.7 times the national average between the years 1950 and 1963 and 1.3 times the national average between 1963 and 1973.

The recent emigration is directly related to changes in the employment situation. In 30% of the communities studied the residents felt that employment possibilities had worsened in the past five years due principally to the increased mechanization of the production of rice and bananas.

For the other employment indices, the South Pacific is in an intermediate position. The percentage of the population 12 years or older working more than 33 hours per week is 43%, higher than the percentages in the North Pacific and Peripheral Intermountain Valley but lower than the Atlantic Basin and Northern Plains.

Because only 35% of the total area is actively in agricultural production, there are still possibilities in the South Pacific for establishing new farms. The increase in the area in production,

which has averaged 1% of the total area per year between 1955 and 1973, indicates that the region is still in the process of active colonization. More employment has been generated in the agricultural sector. In 1973, there were 37% more hectares in production than in 1963, and although the area in pastures increased by 66% during these years, the area in annual and perennial crops also increased by 21% and 5% respectively.

The region has a demand for agricultural labor of approximately 30 man-days per hectare per year, almost 3 times that of the North Pacific. If the proportion of land dedicated to pasture, annual and perennial crops remains constant, while the area in production continues to expand, the prospect for the future generation of employment in the agricultural sector in this region is very favorable.

Of all the regions studied, the South Pacific also has the highest percentage (45%) of the total farm area in properties smaller than 100 hectares. Compared to the other regions, the South Pacific has:

§ the lowest percentage of dirt access roads and the highest frequency of public transportation service, after the Peripheral Intermountain Valley.

§ the least favorable housing and public services indices;

a high percentage of illiterates (17%) surpassed only by the Northern Plains;

§ an intermediate number of recreational services;

§ the lowest percentages of communities receiving help from MAG, IMAS, and MOPT and shares with the Atlantic Basin the lowest percentages receiving help from ITCO and DINADECO.

As in the other regions, the most important community problems are the lack of or poor condition of roads and water systems. These represent 45% of the total problems identified. They are followed by the lack of electricity (13%) and the need for better health facilities (9%).

The Atlantic Basin

The population density of the Atlantic Basin is 11 inhabitants per km^2 and this region has the highest level of immigration over emigration (16%) of the regions studied. It is the only region

with a higher rate of population increase between 1963 and 1973 than during the previous decade. This rate which was equal to the national average between 1950 and 1963 increased to 1.7 times the national average between 1963 and 1973. According to the interviewees, in 60% of the communities studied "many" or "some" people have emigrated to the Atlantic Basin during the past five years. This is the highest percentage of the five regions studied and indicates this region has considerable attraction for immigrants.

The rapid increase in population is closely related to a favorable employment situation and comparatively high salaries. In the Atlantic Basin 46% of the population 12 years or older work 33 hours or more per week. Only 25% of the salaried workers earn less than ¢400 (U.S. $46.00) per month, by far the most favorable situation in all the regions of the country. The perception of the interviewees concerning the employment situation is also favorable—in 50% of the communities studied they believe that the employment situation has improved in the past five years.

Only 14% of the total area in the Atlantic Basin is in production; in recent years this area has expanded at an average of 0.3% of the total area per year, a much lower rate than in the other regions studied. The census data for 1963 and 1973 indicate that there were 13% less hectares in production in 1973 than in 1963. On the other hand, there is a demand for 47 man-days work per hectare per year, much higher than for any other region studied. Only 27% of the land is in farms of less than 100 hectares.

The Atlantic Basin has the following levels of infrastructure and services:

§ the lowest percentage of communities with dirt access roads (but also the highest percentage of communities with access by train only) and an intermediate frequency of public transportation service;

§ the second most favorable indices of public services and housing (less than the Peripheral Intermountain Valley);

§ an illiteracy rate of 14% (only the Peripheral Intermountain Valley has a smaller percentage);

§ generally low percentages of communities receiving governmental services, except for MOPT which serves 31% of the communities.

As in the other regions, the most urgent community problems are lack of roads and water systems. Also mentioned more frequently than in other regions was the need to improve the educational facilities and the lack of electricity.

Northern Plains

With 11 inhabitants per square kilometer, the Northern Plains and the Atlantic Basin have the lowest population density in the country. The Northern Plains is one of the two regions where more people immigrated than emigrated during the years 1968 to 1973.

The population (which increased at 1.3 times the national average between 1955 and 1963, and at 1.15 the national average between 1963 and 1973) indicates the strong process of colonization in the region. In 48.5% of the communities studied the interviewees believed that "many" or "some" people came to live in these communities during the preceding five years.

The positive migratory balance is indicative of a favorable employment situation (46% of the population 12 years or older was working full-time) and in only 12.5% of the communities studied did the interviewees feel that the employment situation had worsened in the past five years, while in 69% they felt that it had improved. The salary level is low; 61% of the salaried workers in the region earn less than ¢400 (U.S. $46.00) per month.

There are still many possibilities for agricultural expansion. Only 32% of the total area is in production. This region has the second lowest demand for labor per hectare (13 man-days of work/hectare/year). Almost one-third of the area in farms is in properties smaller than 100 hectares.

Because the Northern Plains is still in the process of colonization, the communities have the lowest levels of infrastructure and services in the country:

§ 78.5% of the communities studied have dirt or trail access

roads, and 85% of the communities studied have no form of public transportation with a regular schedule.

§ The public services and housing indices are the least favorable of the five regions.

§ The illiteracy percentage is the highest of all five regions (19% of the total population 10 years and older).

§ The region has the highest percentage of communities that require one hour or more to get to an emergency medical facility during the rainy season.

§ There is a low level of recreational facilities.

§ Despite all this, there is a relatively higher level of governmental services in this region, surpassed only by the Peripheral Intermountain Valley.

APPENDIX II

Publications

A. The following publications in Spanish, for each of the cantones studied, are available from AITEC, Apartado 10.187, San José, Costa Rica.

1. "Perfil Comunal," detailing for each community levels of basic services and the perception of community problems.
2. "Estado y Condición de la Vivienda," housing.
3. "Industria Rural," existing industries and the need for new industries.
4. "Organizaciones y Líderes Comunales." Community organizations and leaders.
5. "Producción Agropecuaria, rama de actividad, empleo, salarios, migración estacional e inmigración," employment and migration.
6. "Resumen Cantonal." Presenting comprehensive view of existing conditions and focusing on problems and recommendations for their resolution. This report is available for the following 30 cantones: Nicoya, Liberia, La Cruz, Santa Cruz, Bagaces, Nandayure, Carrillo, Abangares, Hojancha, Cañas, Tilarán, Esparza, Parrita, Aguirre, Peréz Zeledón, Coto Brus, Golfito, Corredores, Buenos Aires, Osa, Talamanca, Matina, Siquirres, Guácimo, Sarapiquí, Upala, Los Chiles, Guatuso, San Carlos y Pococí.

B. In addition, the following reports were published dealing with specific problem areas:

1. "Inventario de caminos pavimentados y lastrados en 52 cantones," existing roads and their maintenance.
2. "Caminos vecinales en 25 cantones," "Caminos vecinales en 27 cantones," "Caminos vecinales en 15 cantones." Specific needs for farm-to-market roads by canton.
3. "Estudio de servicios básicos en 30 cantones." Needs for water, electricity, sanitary facilities, public streets, gutters, sewers and the collection of garbage in each community studied.

4. "Informe Regional: Producción agropecuaria, empleo, ingreso y migración." Reports on employment and migration for each of 4 regions: Pacífico Norte, Pacífico Sur, Vertiente Atlántica and Llanuras del Norte.
5. "Análisis comparativo de tres regiones periféricas, sobre empleo, producción agropecuaria, ingreso y migración." (Pacífico Norte, Pacífico Sur, y la Vertiente Atlántica). Comparative analysis of employment and migration.
6. "Servicios de Salud en 30 cantones." Health care facilities.
7. "Algunos aspectos sobre la educación y necesidades de construcciones escolares." Some aspects of education and the necessity for school construction.
8. "Credito en tres regiones periféricas" (Pacífico Norte, Pacífico Sur y la Vertiente Atlántica). Credit in three peripheral regions: North Pacific, South Pacific and the Atlantic Basin.