

URBAN DIMENSIONS OF RURAL DEVELOPMENT IN ECUADOR

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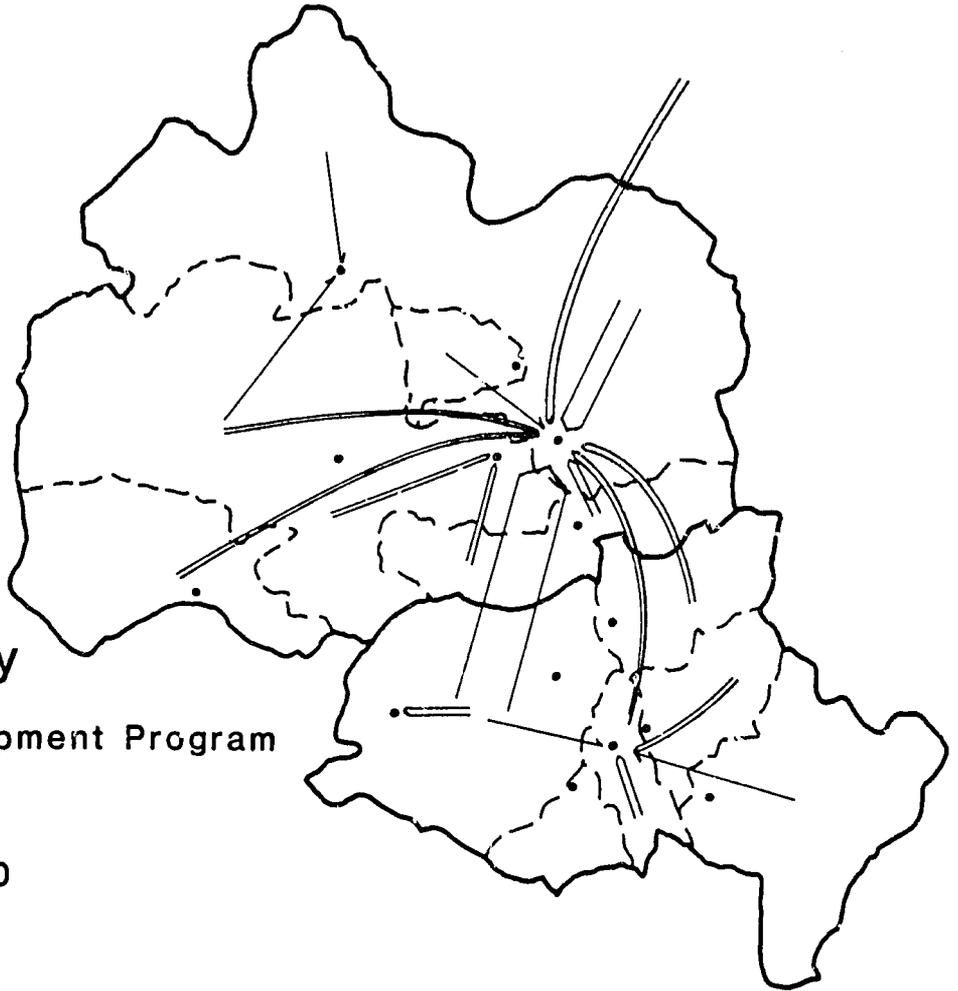
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PROGRESS REPORT FOR THE
ECUADOR PROJECT ON URBAN-RURAL LINKAGES

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PREFACE

This document is a progress report on the first year's activity in Ecuador. As such, it articulates, first, our goals and aspirations from the outset of the project; secondly, it presents results and recommendations from our research and collaboration; and, thirdly, it points the way to the next phase in research, assistance, and collaboration.

This is not a final report because the first year's activity was conceived as an ongoing project, which means that the subject matter of this report requires more analysis and field work. More importantly, this Ecuadorian project was always envisioned as a collaboration with the Ecuadorian planning agency, Fondo Nacional de Preinversion (FONAPRE), in which we would, together, derive conclusions, make planning recommendations, and decide the next questions for study.

While this report presents the results of several studies in a regional development context, we emphasize that these studies were only one focus of the Clark University team. In the beginning, the chief goal was to develop a collaborative relationship with colleagues in FONAPRE so that the studies themselves and the ensuing planning process would have a distinctly local institutional base. This goal was never intended as a training or pedagogic relationship, for FONAPRE already employed qualified and astute practitioners and the agency possessed a clearly defined planning strategy. Rather, the intent was to experiment with a technical assistance mode which emphasized collaboration and joint research.

As part of that initial phase, an enormously successful, congenial, and compatible research team evolved. The Clark University-FONAPRE team

established a research nucleus in the FONAPRE office complex which collected relevant information and data from governmental and international organizations, publications from universities and private consultants, a wide assortment of maps, and a series of both published and unpublished government reports on projects and plans. In addition, numerous hours were spent in discussion (at all levels of management within FONAPRE) on economic development issues, planning strategies, and historical, cultural, and political contexts in Ecuador and its regions. Further, a "discussion paper" series was produced, reporting some of the major items of discussion.

The next phase of the collaboration involved meetings with a large number of governmental and private agencies, including extensive contacts with USAID/Quito. Visits were also made to many municipal governments, especially in the provinces of Tungurahua, Cotopaxi, and Pinchincha. These meetings not only helped to formulate appropriate and expedient strategies for the subsequent research studies, but especially helped the Clark University and FONAPRE participants (including those local officials) to gain better insights into development problems. Finally, these invaluable contacts uncovered a wealth of published and unpublished reports, data, and maps.

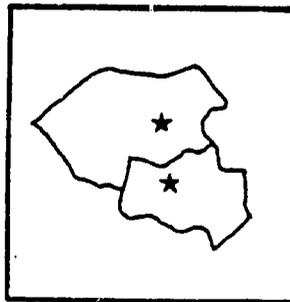
Thus, the first phase of the Rural-Urban Linkages Project was devoted to fomenting a sound institutional base and establishing credibility and understanding among the principal participants. Coincident with this goal, the project team elicited a sincere commitment to future collaboration with other Ecuadorean agencies, viz., PRONAREG/MAG (National Program for the Regionalization of Agriculture/Ministry of Agriculture); CONADE (National Development Agency); SUDENE (the regional planning agency in the south central highlands); BEDE (national development bank); and SEDRI (Secretariat of Integrated Rural

Chapter 2



NATIONAL OVERVIEW

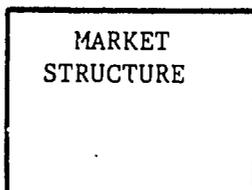
Chapter 3



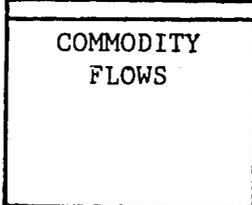
REGIONAL OVERVIEW

MARKETS

Chapter 4



Chapter 5



COMMERCE & INDUSTRY

SERVICES

?

?

GROWTH & DEVELOPMENT

POPULATION
EMPLOYMENT
INSTITUTIONS

Development). In fact, PRONAREG conducted primary data surveys in the Ambato Region for the Rural-Urban Linkages Project, funded by Clark University and FONAPRE.

The scope of this report begins with an overview of demographic dynamics of Ecuador (Chapter II), emphasizing regional differences and comparisons. Next, the report highlights the physical and commercial setting for the Ambato study region, which is the main focus of the Ecuador project (Chapter III). After an overview of important characteristics of the study region, the report concentrates on the principal subject of our work, the marketing structure and marketing processes (Chapter IV) of the Ambato Region. Finally, we present some preliminary recommendations for future study and possible actionable programs (Chapter V).

It is important to recognize that while we report here mainly on marketing dynamics of the Ambato Region, this is but one part of the regional development context. We are dedicated to the premise that regional growth and development is the result of the dynamic interrelationships of population and employment in an institutional context. We seek implementation strategies and actionable programs, thus our research focuses upon those issues and processes which can lead to sound investment strategies. Of the many such issues, our emphasis is upon those which have spatial connotations because we feel that the spatial or regional perspective is often overlooked in planning for development. In this year's activities, thus, we have also studied industrial and commercial activities, but they are not reported here in great detail; we plan to deal with those important sectors in the next phase of the project.

Further, this interim report is rather heavily devoted to more descriptive aspects of the rural-urban linkages in the Ambato Region. This is because we feel it is essential to have a clear picture of the structure and form of the

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regional system, and because the behavioral dynamics are more complex, requiring more study and analysis. Our first year's activities did collect some data and information of those dynamics. For example, we funded a study in June, by PRONAREG in which a team surveyed each plaza in the study region. They counted the number of vendors and activities and interviewed a large number of merchants and farmers, obtaining information on price structures, marketing channels, origins of farmers, vendor cycles, etc. We are presently analyzing this information to gain, first, a conceptual understanding of the marketing processes (marketing chains), then, we intend to add this to the detailed information available from R. Bromley's excellent data base (1972). Next, we hope to conduct another brief survey of the same system so as to acquire additional, critical data.

A Clark University/FONAPRE team surveyed the villages and towns in the region in June and July, focusing upon urban functions and fixed economic enterprises, especially in the service sectors. They also interviewed municipal officials, mayors, and town leaders to assess problems and establish priorities for future investments. These data and information will permit us to articulate the urban hierarchy in a traditional "central place" format, and allow us to recommend essential changes, through investment programs, in that hierarchy.

A second Clark University/FONAPRE team revisited the area in September to extend the urban survey, filling in gaps of important enterprises but also interviewing entrepreneurs to gain better insight as to their behavior and their needs. The Clark University-FONAPRE research team is currently processing that information and preparing to analyze it in reference to future investment strategies.

This year's activities involved the efforts of many people. We thank all of them for their extremely cordial assistance; we list here only the principals:

FONAPRE

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CHAPTER I

INTRODUCTION

Formed from a fragment of Simon Bolivar's dream of a "Gran Colombia" in 1830, Ecuador always has been a tense amalgam of coast and sierra to which was attached a largely unsettled Amazonian rainforest. With its cultural hearth in the Sierra but economic engine on the coast, Ecuador has been a study in contrasts. For a country of 100,000 square miles, it probably has one of the most diverse environments in the world. Given its rich and variegated land, Ecuadorians should be among the most prosperous people on earth.

Yet, Ecuadorians earn only \$1,000 per capita annually. More revealing, perhaps is her history of boom and bust, optimism followed by pessimism, and one short-lived government followed by another. The booms have always been given impetus by a leading export crop (until the last cycle). Examples are cacao, coffee, sugar, and bananas. More recently, shrimp and anchovies provided a source of hard currencies. These booms were always followed by busts. It is unnecessary to go into a detailed economic history because Ecuador's pattern of dependent development is truly classic. Rather, we wish to focus attention upon the last cycle which began for Ecuador in 1973-1974.

The Era of Petroleum, Ecuador's latest cycle, really began in earnest with two singular events -- the Yom Kippur War and the completion of the oil pipeline between the Amazon Basin and Pacific Coast. This era is now closing because of a worldwide decline in demand for imported oil and its consequent effects on oil revenues of the OPEC states. During the past decade, Guayaquil and Quito prospered mightily and grew exorbitantly. Throughout the decade, money flowed in as if by magic. Great constructions took place as whole

residential neighborhoods appeared, office buildings sprang up, and boulevards and parks were constructed. Quito's urban districts sprawled up the slopes of Pinchincha, and Guayaquil spread up the banks of the Guayas River. A national road network was built, and a national elective guide finally emerged. The number of children in school doubled and then doubled again. A nationwide network of hospitals and clinics was built, and the number of health care providers expanded much more rapidly than population. The number of cars, buses, and trucks grew so rapidly that Ecuador left the era of animal transport only to the back hills and highest slopes. Great waste also occurred as many reveled in luxurious homes, autos, and travel.

During the very same decade, the countryside emptied of its best and brightest, the market towns stagnated, the regional sierra capitals of north and south (i.e., Ibarra and Cuenca) struggled for economic survival, and an already dependent economy became even more dependent. Ecologically rich, Ecuador began to import more and more food; but differences between rich and poor widened, and most of those years witnessed continuous military rule. Due to the high value of artificially inflated prices, imported goods were cheap but export prices expensive. Naturally, domestic industry languished everywhere, except in Quito and Guayaquil where plants sprang up to assemble the goods demanded by a burgeoning middle class. The urban poor multiplied even more rapidly than the urban middle class, and these contrasts led to chronic tension and a social pathology.

Spatial Dimensions in the Era of Petroleum

These events also effected changes in the national system of urban places. Nearly all major secondary cities in the Pacific lowlands grew at higher rates than Guayaquil's 46 percent increase. Foremost among these is

Santo Domingo de los Colorado which grew an extraordinary 119 percent, followed by a group of six other cities: Pontoviejo at 71 percent, and Manta Quevedo, Machala, Babahoyo, and Esperanza, which all grew between 50 and 56 percent. In the highlands, most secondary city growth was less than the 44 percent growth experienced in both greater Quito and Cuenca and the 50 percent growth in Loja. Ambato and Latacunga (each with a 31 percent growth) were the fastest growing among other regional centers, with Tulcan, Riobamba, and Guaranda experiencing increases between 20 and 27 percent. Ibarra, the capital of Imbabura, was the only major city to lose population (2 percent) between 1974 and 1982. (For a full history of population change in the urban centers of Ecuador for this time period, see Appendix A.)

These changes in urban size and subsequent relationships reflected the growing importance of the national economic and political capitals as sources of wealth due to petroleum exports and the diminishing importance of urban centers of agricultural regions. The other gainers were cities which lay at critical points in the transport network between Quito and Guayaquil.

At another scale, regional centers increased their domination of market towns and rural populations. The causes of increased dominance are clear enough even though there exists a rich variety of local detail. As roads reached virtually every settlement with more than 1,000 people and bus transportation proliferated, accessibility costs fell dramatically, and the time-space convergence of local market towns with regional centers accelerated. As a result, the protection afforded smaller town merchants from their competitors in regional capitals fell (the cost of overcoming distance), and many merchants ended up working in regional cities or going out of business. Further, the number of farmers stagnated or even fell in most of the highlands (and in the coffee and banana lands on the coast), as their incomes grew very slowly, if at

all. Many farmers took temporary jobs in the cities and purchased durable goods there; thus, many market towns commercially declined, with the weekly or bi-weekly markets, the only activity keeping the towns alive.

It is the periodic fair that provides both insight into the past and a preview of the possibilities for the future of market towns. Fortunately for rural Ecuador, these periodic markets adapted well to the advent of motor transport. As in previous generations, rural folk come down the mountain to a weekly fair on a central plaza where merchants make a stop on their weekly round of five or six markets. There, they bargain, trade, and gossip. One day a week (two infrequently, or three rarely) the market town comes alive and much business is done. For the rest of the week, most of the smaller towns appear to be perpetually sleeping bedroom communities. These periodic markets, therefore, are the most visible link between town and country.

Towns between 1,500 and 10,000 people, located peripherally to the national growth axis, grew much more slowly and declined in relative importance. Those small urban places having direct connection to the countryside grew by only 15 percent, less than its national rate of population growth (18 percent), and showed virtually no sign of economic vitality. Overall, villages under 2000 population and the countryside of dispersed population were the great losers of people and wealth. The net result was a transfer of a large proportion of the population from the countryside to the twin economic and political capitals. Metropolitan boom, thus, was accompanied by rural stagnation.

It is the joint thesis of FONAPRE and Clark University that the growth of secondary and intermediate size cities is healthy and that our task is to search for ways to promote an authentic regional development of Ecuador's countrysides through the improvement of rural-urban linkages with a focus upon market towns.

An Economic and Spatial Strategy for the Future

The word strategy implies the choice of a course of action which, employed at an advantageous moment in time and point in space, maximizes the ratio of induced change to initial effort. Thirty years of research concerning development planning provides a basis for asserting the thesis that a strategic choice of propulsive forces and locations in geographic space is the key to successful regional development. We outline here our strategy for selecting economic sectors and geographic locations with a focus upon the twin problems of selectivity and leverage.

The previous era of economic development in Ecuador produced a situation in which rural development faltered, and the small market towns which link rural to urban worlds suffered grievously. The task is then to find ways to revitalize the towns and so promote development of the rural countryside. To accomplish that, we must first examine the ways in which the small towns earn their living in order to determine how to improve them.

The primary purposes or raisons d'etre of small towns are to provide goods and services to their surrounding areas and to bulk, market, and ship agricultural products to the urban world. In fact, speaking about economic rural-urban linkages inevitably involves a discussion of the role of small towns in commerce. There are, of course, other functions in small towns such as government services and small, light industry. However, Ecuador is a small country; distances are short; the roads are good; and there is a strong, persistent cultural bias toward an urban life style. Light industry remains a distinct possibility as a source of significant employment for some of the towns. At present, however, the towns conduct commerce and are the sites of public administration.

Because our goal is to leverage government investment by inducing people to make their own subsequent investment of money, time, and effort, we need to focus on the main chance for strengthening rural-urban linkages: commerce.

To focus does not mean to exclude. We shall certainly consider other sources of economic growth. Chapter III of this preliminary report describes the salient demographic, service and infrastructure elements of the urban system of two provinces at the very center of Ecuador. The evidence presented there is not inconsistent with the above conclusions.

In summary, our economic strategy performance must rest upon a strengthening of the commercial function of the larger places, with serious consideration given to the promotion of light industry where the circumstances permit. If the Government of Ecuador wishes to change and strengthen the role of small towns in rural life, it must work closely with private entrepreneurs.

Clearly, what is needed clearly is an identification of the functional characteristics of the system of urban places. Next, we need to identify places which are critical to the functioning of the system. By critical, we mean "central" in a pattern of flows and other relationships, or dominating but not itself dominated. Our "methodology" explains how we identify official places. Having identified what German strategists have called Schwerpunkten or "hard points," which have substantial tributary regions and demonstrate a high degree of commercial vitality, we proceed to examine these places as systems within the system of places. We look for inefficiencies in a search for opportunity and seek to find ways to improve a system so that local people can become more productive. We seek to design an intervention such that those who become more efficient gain the lion's share of the fruit of their labor. Only then will they be motivated to undertake the path of changing to more modern and productive modes of behavior.

in many previous studies); (c) to identify regions and urban places which have shown exceptional dynamism and to ask what is special about their location in national space; (d) to identify particular cities which are unusual either because of their growth or because of their decline relative to the "average" national experience; (e) finally, we draw conclusions concerning the most general aspects of urban dynamics and proceed to identify places which typify these national trends. These steps are reported in Chapter 2 of this preliminary report.

Our next problem was to select from among those places which typify national trends one or two which can serve as examples. Given a very small staff, budget, and limited time, it was necessary to concentrate our attention upon one sub-system within the network of urban places. Because of its physical geography, Ecuador presents the observer with a series of clearly articulated urban regions. One of those regions, whose urban capital showed unusual dynamism, lies in the central valley of Ecuador south of the national capital, Quito. It is composed basically of the provinces of Tungurahua and Cotopaxi, although bits and pieces of neighboring provinces could be agreeably attached. Its dominating urban center is Ambato, the fourth largest city of Ecuador. Its surrounding countryside is thickly settled, and the physical infrastructure is well developed. While there were large urban places which grew more quickly (Santo Domingo, for example) and regional capitals which were larger (Cuenca), Ambato combined dynamism, large size, and proximity to our headquarters in Quito. It has proven to be a very useful region as a case study.

We then proceeded to map, describe, and analyze the local urban network in the tributary region of Ambato in some detail. As in Ecuador as a whole, we found a three-step regional hierarchy (village, simple urban, and complex urban) of population clusters. The term "complex urban" essentially applies to

In summary, our strategy is to make a determined search for the greatest opportunities in the most critical places. We shall test and then propose methods to create alternative organizations which will be economically feasible and which will fundamentally change the organization of economic behavior in the tributary regions of these critical places, in ways which will raise productivity and generate local wealth.

A Methodology

Given a strategic decision to focus attention upon the commercial functions of small towns with a secondary emphasis upon the promotion of light industry, we need to implement a methodology which will serve both as a check on the validity of our initial strategy and permit us to examine specific details. We can then begin a plan for action. What follows is a very brief outline of the procedure which we have followed over the past year as well as a preview of the remaining analysis to be undertaken over the next year based on the data collected in 1984.

The first order of business was to conduct a general search for existing materials related to our subject. We discovered previous research available as government documents with very limited circulation. Within a matter of four weeks of search, we had located twenty to thirty major studies and dozens of minor ones. We were also fortunate in receiving preliminary reports of the 1982 census.

After evaluating the gist of this mass of data and information, we set out to describe and analyze the major features of the urban system of Ecuador. The purposes of the exercise were: (a) to identify the hierarchic levels of urban places existing in Ecuador; (b) to trace how each of these levels have fared over the past twenty years in terms of population growth and other characteristics (these have been shown to be sensitive indicators of economic vitality

Ambato itself, with 100,000 people and the full range of urban functions, including a good deal of light industry and major wholesaling facilities. To a much lesser degree, Latacunga (capital of Cotopaxi Province) also is "complex."

Most of the small market towns can be described as "simple urban" in that they possess basic marketing and the lowest level of urban services such as health and education. We also collected functional data for the two provinces so as to produce a description of the urban functions hierarchy in the region.

Having classified and described the basic urban functions (Chapter 3), we then identified places which either: (a) were clearly important hierarchically in the local system; or (b) were typical of a whole class of places in the urban system. These places become the subject of the next level of analysis. We were ready, then, to conduct a study of the functional relationships between the villages, towns, and cities of our two province regions, between these regions, and their relationship to the rest of Ecuador.

The central purpose of the functional analysis was the development of a clear idea of the system of bulking, trading, and transport of local produce for the national market. This particular relationship is central because the basic goal of the study was to raise per capita incomes by raising productivity. Since bulking, trading, and transport of local produce for national markets are the basic economic activities of these towns (i.e., "basic" in the sense of bringing money into town as opposed to non-basic, which is circulating that money), a spatial study of the commodity flow relationships between towns should permit us to identify places which are central nodes in the chain of commercial relationships. These places are likely to be the best candidates for government investment, because it is from them that maximum indirect benefits will result. The methods by which the commodity flow study was

conducted is reported in Chapter 4 (as well as the preliminary results of that study).

Regional science is very young. Our methods of analysis are imprecise, and each analytical procedure has severe limitations. The cautious approach, therefore, is to use a variety of methods and compare results. The basic methodology described in this section can be summarized as follows: (1) We start with a relatively small amount of information about a large number of places and use that information to characterize the national urban system. (2) Having described the national urban network, we select a region which appears to be both representative and interesting. Within that study area we replicate the national study in much greater detail. (3) Having defined hierarchies of urban places on a static level, we look at the functional relationships between places by identifying the spatial pattern of commodity flows. We then redefine hierarchical relationships by use of the network flow data structure. (4) Finally, we compare and contrast the places identified as hierarchically important on a static basis with those deemed important based on their dynamic flow relationships.

CHAPTER II

AN OVERVIEW OF ECUADORIAN POPULATION AND URBANIZATION

Rapid urbanization and the resulting transformation of the settlement landscapes and hierarchies of urban places are major developments affecting almost all countries of Latin America. By the 1970's, Ecuador ranked in the middle range of countries in urbanization. The six countries in this middle group included neighboring Peru and Colombia, Brazil, and Cuba and the Dominican Republic in the Caribbean. Six Latin American countries with more highly developed urban systems, characterized by metropolitan and complex urban settlement landscapes, were Argentina, Chile, and Uruguay in the far south, and Mexico, Panama, and Venezuela bordering the Caribbean. The other eight Latin American countries with urban systems less well developed than Ecuador include the five Central American republics and Haiti, Bolivia, and Paraguay.

Although individual countries tend to have somewhat unique urbanization experiences, there often occur very similar urbanization processes that cross national boundaries. This is true of Ecuador, Peru, and Colombia in the central and northern Andes, with all three having their highest proportion of population living in dispersed and isolated rural settlement landscapes, and their second highest proportion living in very large, primate type metropolitan centers of more than half a million population. Since the vast majority of inhabitants in this region live at either one end or the other of the urban hierarchy continuum, it is clear that these countries also have a less well developed range of middle and lower level urban centers and villages that serve as rural service centers. Countries such as Ecuador tend to have fewer than three out of ten inhabitants living in middle-sized communities. In contrast,

TABLE II-1

COMPARATIVE LATIN AMERICAN DATA

PERCENT OF POPULATION IN EACH OF FIVE LEVELS
IN THE SETTLEMENT HIERARCHIES OF LATIN AMERICA, 1970's

Countries Grouped Regionally (No. to Sc.)	Year of Census	0	1	2	3	4	SETTLEMENT HIERARCHY	HIERARCHY
		DISPERSED population 1 to 99	VILLAGE 100- 2000	SIMPLE URBAN -20,000	COMPLEX URBAN -500,000	METRO- POLITAN over 1m.	Classi- fication	Percent in top 2 levels
Mexico	1970	3.0	38.4	15.7	16.2	26.7	1-4	65.1
Guatemala	1973	-----60.0	----	20.1	3.1	16.8	0-2	66 to 70
El Salvador	1971	-----61.0	-----	16.5	6.6	15.9	0-2	61 to 65
Honduras	1974	67.4	6.6	3.6	22.4	-	0-3	89.8
Nicaragua	1971	-----52.0	-----	15.2	32.3	-	0-3	65 to 75
Costa Rica	1973	-----59.4	-----	11.1	29.5	-	0-3	68 to 75
Panama	1970	19.7	28.6	3.6	11.7	36.4	4-1	65.0
Cuba	1970	-----40.5	-----	16.4	22.6	20.5	0-3	60 to 65
Dominican Republic	1970	-----57.6	-----	9.4	15.6	17.4	0-4	60 to 70
Haiti	1971	-----81.0	-----	5.3	13.7	-	0-1	81.0
Venezuela	1971	-----25.0	-----	14.4	34.2	26.4	3-4	60.6
Colombia	1973	-----36.4	-----	11.8	24.2	27.6	0-4	56 to 58
Ecuador	1974	50.6	5.2	8.4	12.8	23.1	0-4	72.7
Peru	1972	-----40.0	-----	15.8	17.5	26.7	0-4	54 to 60
Bolivia	1976	-----54.7	-----	5.0	25.3	15.0	0-3	70 to 80
Brazil	1970	44.0	3.8	12.6	13.8	25.8	0-4	69.8
Paraguay	1972	-----22.9	-----	24.2	28.9	24.0	3-2	53.1
Uruguay	1975	17.0	3.3	11.5	18.1	50.1	4-3	68.2
Argentina	1970	16.7	4.7	12.2	19.2	47.2	4-3	66.4
Chile	1970	-----16.9	-----	10.7	17.1	55.3	4-3	72.4
Latin America Mean:	1970's	-----42.4	-----	13.1	17.2	27.3	0-4	56 to 64

Source: Wilkie, Richard, Latin American Population and Urbanization Analysis: Maps and Statistics, 1950 through 1982 (Los Angeles: UCLA Latin American Center Publications, University of California, Los Angeles, 1984).

other countries, such as Mexico, still have seven out of ten inhabitants living in middle-sized communities in that population range. For a complete look at the percent of population in the settlement hierarchies of twenty Latin American countries in the 1970's, see Table II-1.

While emphasis in this report focuses on a case study in the region of Tungurahua and Cotopaxi around the city of Ambato, it is important to place that region within the context of national population patterns and trends. Patterns at that level of analysis tend to give a structural view concerning urbanization and the dynamics of regional population changes. It helps to provide an understanding of what the changes are and where they occur, but they do not provide the details necessary for understanding the forces behind the patterns, and why they evolve as they do. They also help to frame the kinds of questions that need to be asked for a greater depth of understanding. These more complex forces will be examined in greater detail in the case study of the Ambato region in the central Sierras. Before doing that, however, it is important to examine some background dimensions of population in Ecuador.

The Ecuadorian Population in 1982

With an annual growth rate of more than 3 percent since the mid-1950's, Ecuador is one of the most rapidly growing countries in Latin America. The census of November 28, 1982, counted 8,072,702 inhabitants, up 18.2 percent in the eight years between 1974 and 1982. At the same time, the nation as a whole increased from twenty-four persons per km² to twenty-nine per km², the highest population density in South America. Table II-2 presents population figures for both 1974 and 1982 for each province, including population density figures and the percent of population change between 1974 and 1982. Of the twenty provinces of Ecuador, seventeen have maintained their 1974 size ranks.

Only the province of El Oro moved up two places in rank from ninth to seventh by 1982, moving ahead of Chimborazo and Tungurahua, which each dropped one place in order. Areas with the highest percentages of growth include the provinces of Pichincha and Guayas, and the four provinces of the eastern lowlands--Napo, Pastaza, Morona, and Zamora. Three provinces in the highlands declined in population--Bolivar, Chimborazo, and Loja--and three others had only modest gains between 1 and 8 percent--Carchi and Imbabura in the northern highlands, and Manabi on the Pacific coast. For a graphic representation of the proportion of population in each province including the six largest urban centers, see Map II-1, a population cartogram for 1974.

Regionalization of Population by Core, Core Fringe, and Periphery

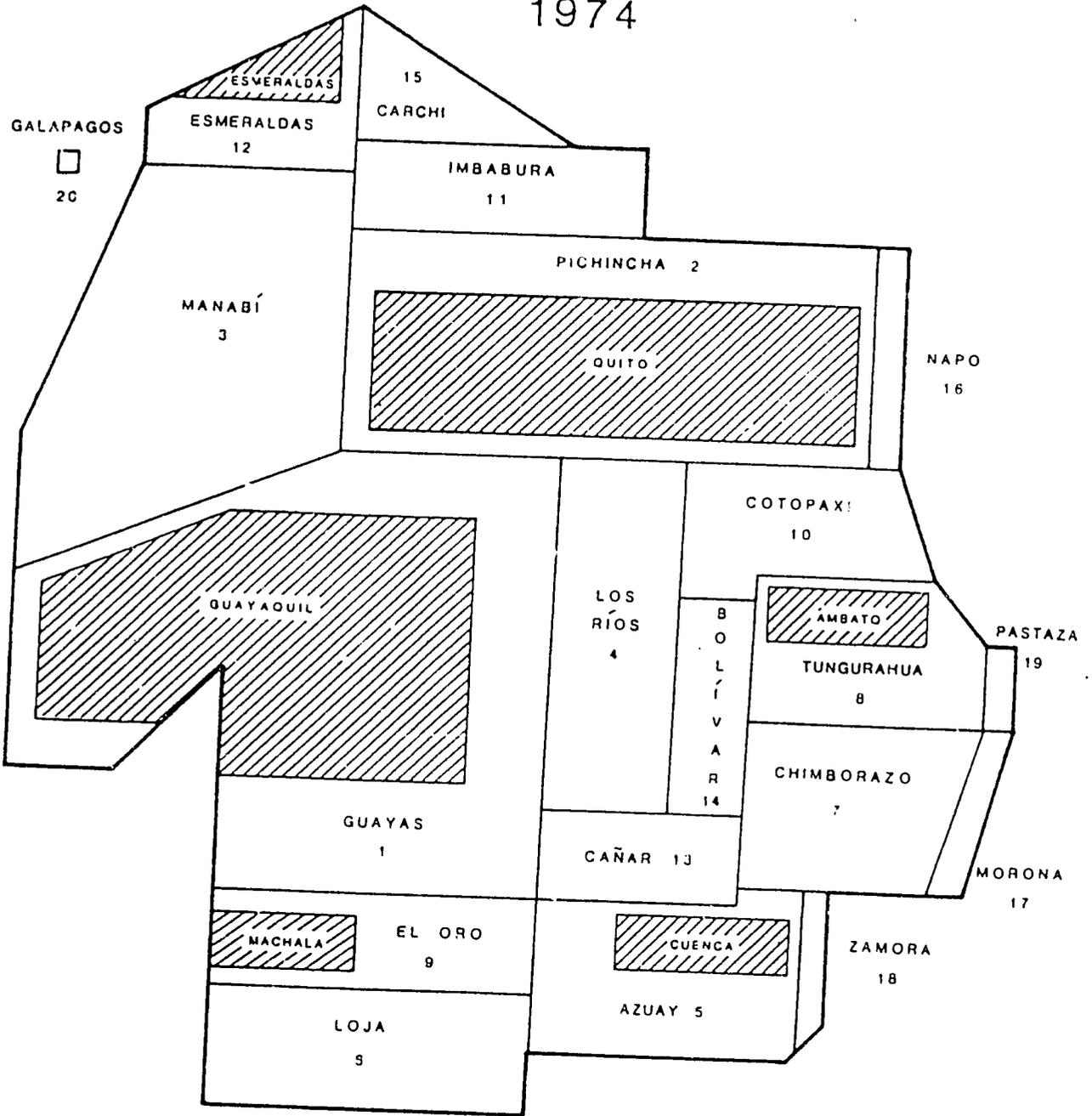
In order to more fully understand Ecuadorian population growth, the 20 political units have been grouped into three regions--core, core fringe, and periphery (frontier). The core region is made up of only 15.1 percent of the land area of Ecuador, but it accounts for 48 percent of the population. The core region also experienced the most rapid growth of population, with a 26.7 percent increase between 1974 and 1982; and Figure II-1 (on the same page; also see Map II-2 and Map II-3). Within the core region Guayaquil is the center for import-export trade, wholesaling, and banking, while Quito is the center of government, higher education, and tourism.

The core fringe region includes nine provinces that surround the core region and is an area of substantial settlement and historical importance. This area has nearly one-fourth of the land area of Ecuador (23.6 percent), two-fifths of the population (39.5 percent), but only an 8.6 percent growth rate of population. Clearly a certain amount of stagnation has occurred in this region

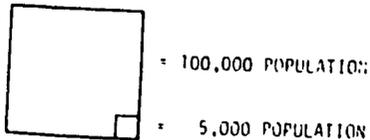
POPULATION CARTOGRAM OF ECUADOR, 1974

ECUADOR

1974



CITIES SHOWN ARE OVER 60,000 POPULATION



Source: Wilkie, R., Latin American Population and Urbanization Analysis (Los Angeles: UCLA Latin American Center Publications, 1984).

MAP II-2: Location of Core, Core Fringe, and Periphery (Frontier) Regions of Ecuador

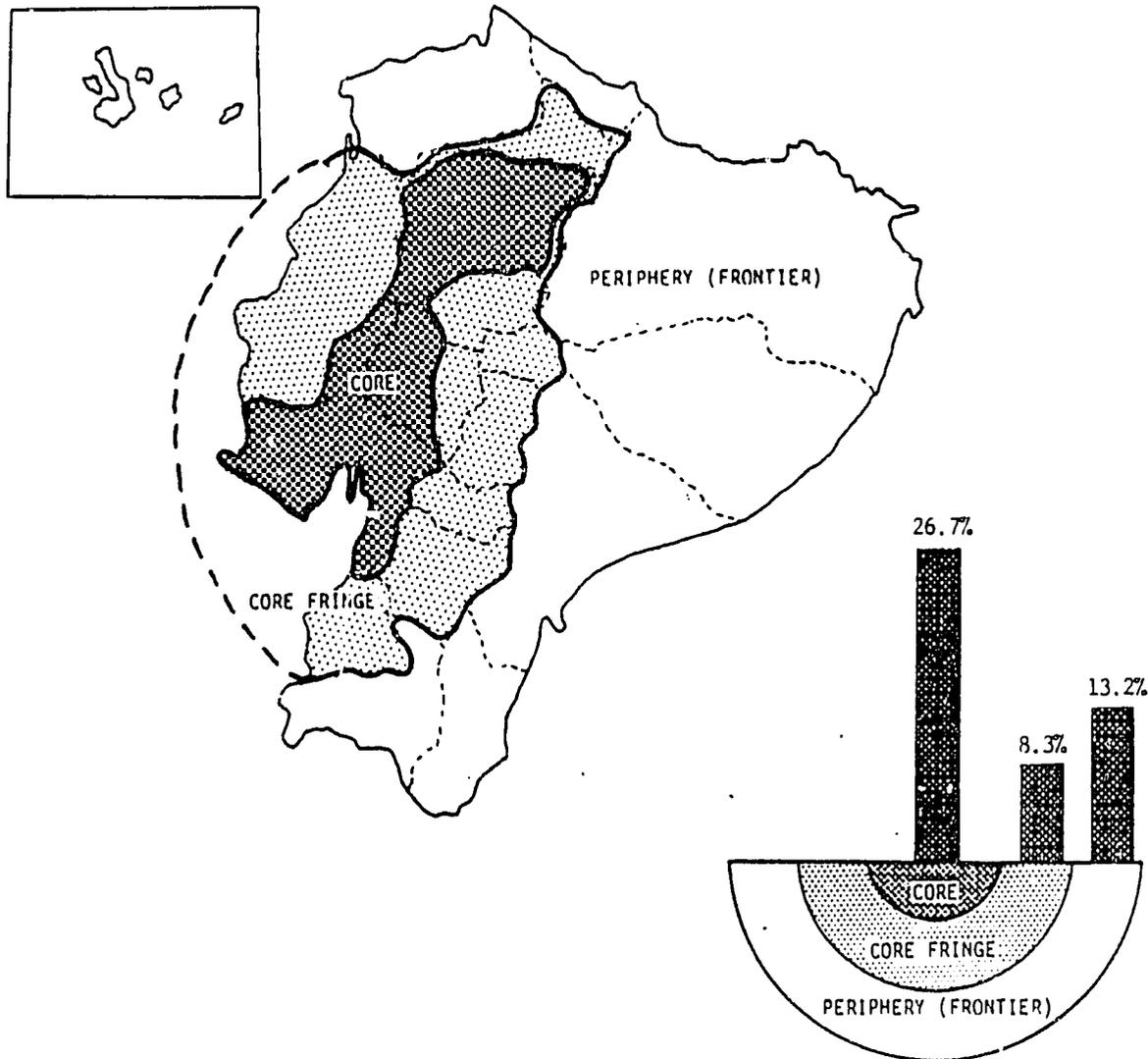


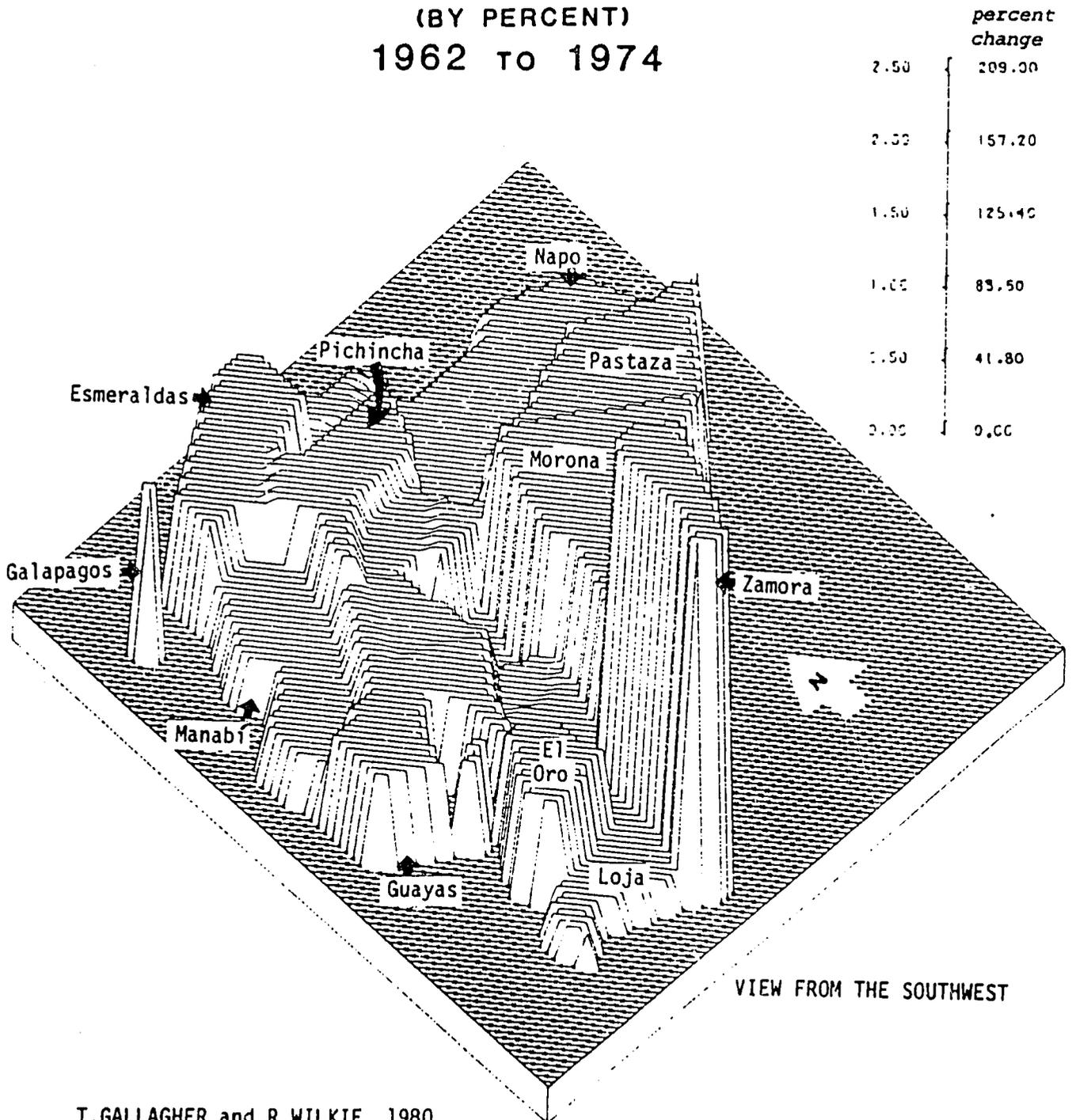
FIGURE II-1: Ecuador Population Increase by Region, 1974-1982. (18.2% Increase Overall)

- CORE:** Guayas, Los Ríos, and Pichincha
- CORE FRINGE:** Cachaquí, Imbabura, Cotopaxi, Tungurahua, Bolívar, Chimborazo, Cañar, Azuay and El Oro.
- PERIPHERY (Frontier):** Esmeraldas, Carchi, Napo, Pastaza, Morona Santiago, Zamora Chinchipe, Loja and Galápagos.

MAP II-3

THREE DIMENSIONAL CHOROPLETH MAP OF
POPULATION CHANGE IN ECUADOR,
1962 TO 1974

ECUADOR
POPULATION CHANGE
(BY PERCENT)
1962 TO 1974



VIEW FROM THE SOUTHWEST

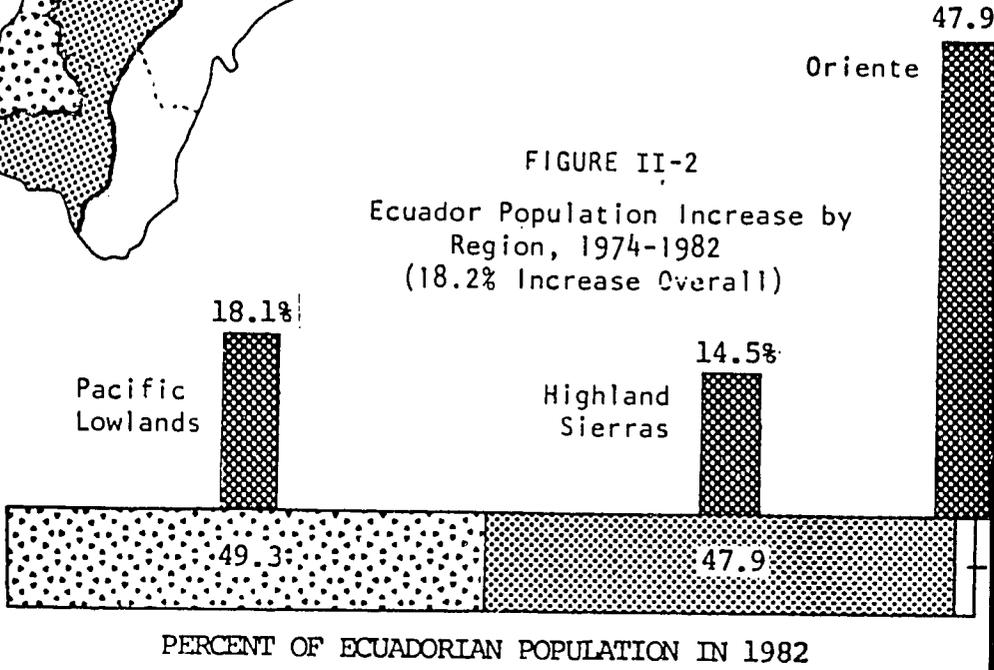
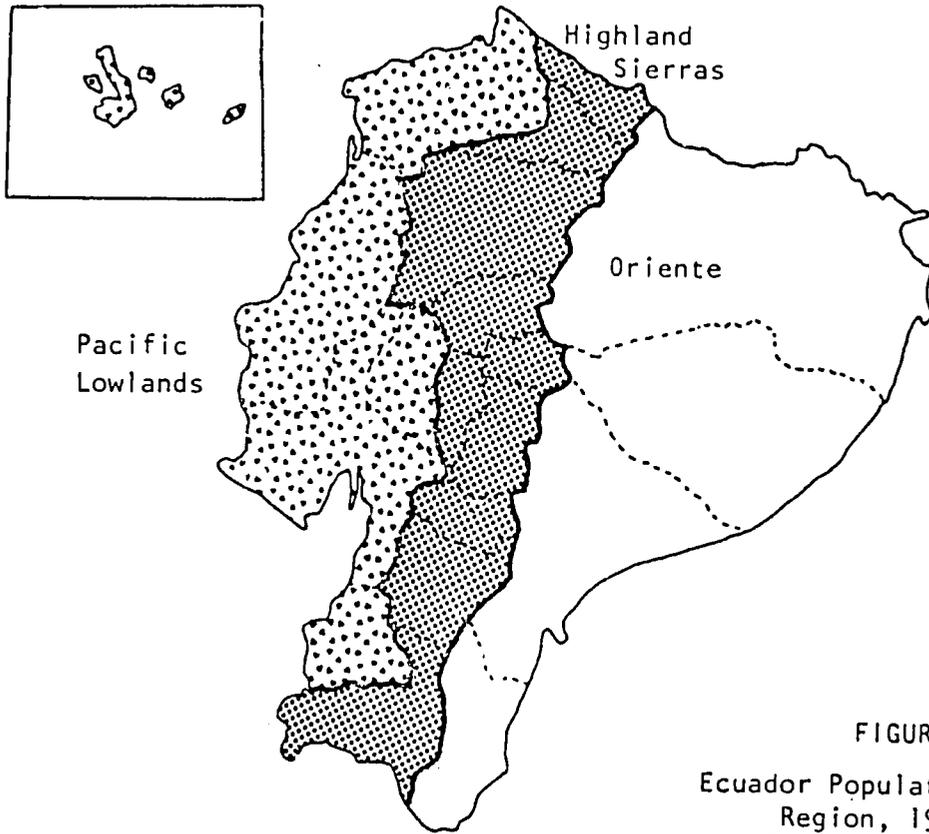
T.GALLAGHER and R.WILKIE, 1980
Geography Cartographic Laboratory, University of Massachusetts, Amherst
using the SYMVU program from the Harvard Univ. Center for Computer Graphics

and a closer look at decentralization and urban and rural development is in order. The study area of Tungurahua and Cotopaxi falls within this core fringe region. Finally, the periphery (frontier) region includes the eight provinces that have been the most remote from the settlement and political core of the nation. This frontier region has more than three-fifths of the land area (61.3 percent), one-eighth of the population (12.5 percent), and a 13.2 percent rate of growth over the last eight years. Thus, the core region has double the percentage of growth of the frontier region and more than triple the growth rate of the core fringe region. Since much of the growth took place in urban areas in a relatively confined part of the nation, regional imbalances will continue to grow unless these trends are reversed. Future research on regional growth patterns should focus more fully on these problems. Table II-3 present these data by region.

Regionalization of Population by Coast, Highlands, and the Oriente

A more common way of regionalizing the data is to contrast the 10 provinces of the Highland Sierras with the six provinces of the Pacific Lowlands (including Galapagos) and the four provinces of the eastern Lowland Oriente; see Map II-4 and Figure II-2 (on the same page). From this perspective, the Pacific Lowlands and the Highland Sierra regions continue to be nearly equally balanced in population in 1982, with 49.3 and 47.4 percent of the population, respectively. Growth rates are slightly higher in the coastal region (18.1 percent) than in the highlands (14.5 percent), but both regions lag far behind the 47.9 percent growth in the Oriente lowlands that drain toward the Amazon River. This region of high growth, however, has only recently begun to develop rapidly, and in 1982 only had 3.3 percent of the nation's population.

Location of Pacific Lowlands, Highland Sierras, and Oriente Provinces of Ecuador



- 
PACIFIC LOWLANDS: Guayas, Los Ríos, Manabí, Esmeraldas, El Oro, Galapagos
- 
HIGHLAND SIERRAS: Carchi, Imbabura, Pichincha, Cotopaxi, Tungurahua, Bolivar, Chimborazo, Cañar, Azuay, Loja
- 
ORIENTE: Napo, Pastaza, Morona Santiago, Zamora Chinchipe

TABLE II-4

CHANGING POPULATION GROWTH AND DENSITY IN ECUADOR
1974 and 1982

<u>Rank in Growth of Population Density between 1974-1982</u>	<u>Growth in Persons per Km²</u>	<u>Popul. Density 1982*</u>	<u>Rank in Density 1982</u>	<u>Percent Growth in Population 1974-1982</u>	<u>Rank in Percent Growth</u>	
1	Guayas (1)	+23	108	1	+26.9	7
2	Pichincha (2)	+20	80	3	+32.4	5
3	Tungurahua (8)	+11	94	2	+12.7	12
4	El Oro (9)	+10	52	6	+22.9	8
5	Los Ríos (4)	+ 7	68	4	+11.4	13
6	Azuay (5)	+ 6	47	8	+13.7	10
7	Cañar (13)	+ 5	39	11	+13.2	11
8	Cotopaxi (10)	+ 4	47	7	+10.5	14
9	Imbabura (11)	+ 4	44	9	+ 8.3	15
10	Esmeraldas (12)	+ 2	14	15	+15.6	9
11	Manabí (3)	+ 2	43	10	+ 3.9	16
12	Morona (17)	+ 1	3	16	+29.1	6
13	Napo (16)	+ 1	2	18	+81.5	1
14	Chimborazo (7)	0	52	5	- 0.3	18
15	Carchi (15)	0	29	14	+ 1.1	17
16	Zamora (18)	0	2	17	+32.7	4
17	Pastaza (19)	0	1	19	+32.8	3
18	Galápagos (20)	0	1	20	+43.1	2
19	Loja (6)	- 1	29	13	- 1.4	19
20	Bolívar (14)	- 1	38	12	- 3.1	20
<hr/>						
National average:	+ 5	29		+18.2		

*persons per Km²

Population Density in 1982

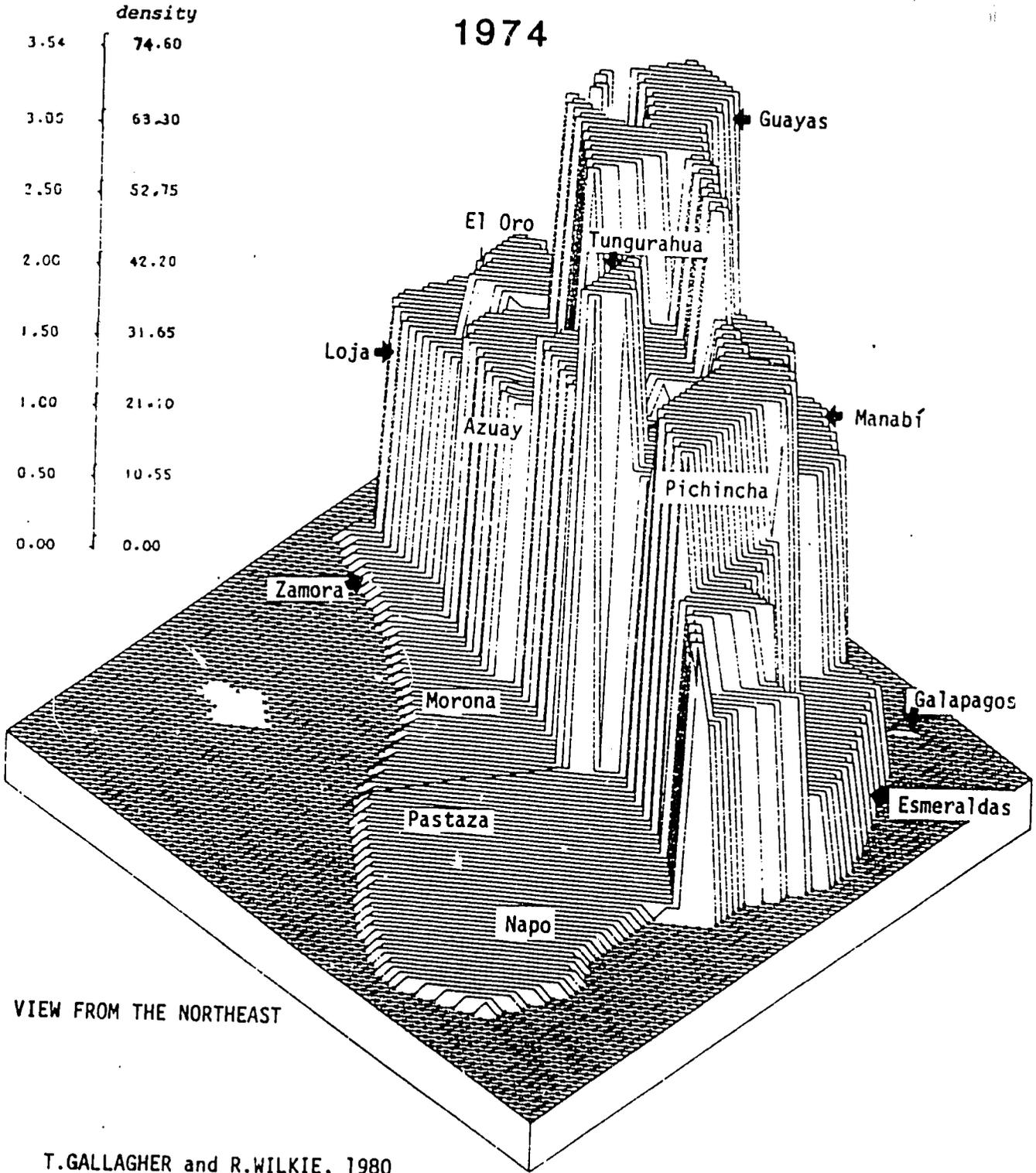
An analysis of population density provides a third view of population change in Ecuador between 1974 and 1982. Of the seven Ecuadorian provinces with the highest population density, four are in the north-central highlands (Tungurahua 2nd, Pichincha 3rd, Chimborazo 5th, and Cotopaxi 7th), and three are in the Pacific lowlands (Guayas 1st, Los Ríos 4th, and El Oro 6th). Higher growth in population density in the last 8 years also occurred in five of the most densely settled provinces (Guayas +23 persons per km², Pichincha +20, Tungurahua +11, El Oro +10, and Los Ríos +7). Data on population density related to population growth are provided in Table II-4 and illustrated visually on a three-dimensional/chonopleth map (Map II-5).

When population density in 1982 is compared to population growth between 1974 and 1982, the twenty provinces fall into seven types of density/growth regions (see Table II-5). Among the seven high population density provinces, two are high density/high growth (Pichincha and Guayas), four are high density/medium growth, and only Chimborazo is high density/low or negative growth. At the other end of the scale, among the six lowest population density provinces, the four provinces of the Lowland Oriente Region and the Galápagos are low density/high growth. Only the province of Esmeraldas is low density/medium growth. Five of the seven remaining provinces fall into the category of medium density/low or negative growth (Imbabura, Carchi, Bolívar, and Loja in the highlands, and Manabi on the Pacific lowlands). The bordering provinces of Azuay and Canar in the southcentral highlands both are medium in population density and population growth.

THREE DIMENSIONAL CHOROPLETH MAP OF
POPULATION DENSITY IN ECUADOR, 1974

ECUADOR POPULATION DENSITY (PERSONS PER KM²)

1974



VIEW FROM THE NORTHEAST

T.GALLAGHER and R.WILKIE, 1980
Geography Cartographic Laboratory, University of Massachusetts, Amherst
using the SYMVU program from the Harvard Univ. Center for Computer Graphics

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TABLE II-5

POPULATION DENSITY RANK IN 1982 COMPARED TO POPULATION GROWTH RANK 1974 TO 1982, FOR ECUADORIAN PROVINCES

HIGH DENSITY	Chimborazo	Tungurahua Cotopaxi Los Ríos El Oro	Pichincha Guayas
MEDIUM DENSITY	Imbabura Carchi Bolívar Loja Manabí	Azuay Cañar	
LOW DENSITY		Esmeraldas	Napo Pastaza Zamora Morona Galápagos
	LOW or NEGATIVE GROWTH	MEDIUM GROWTH	HIGH GROWTH

The Urban Settlement Hierarchy

While a shift from a rural agricultural base to an urban industrial economy is considered positive by most Ecuadorians, population resettlement has not been spread evenly throughout the urban hierarchy. The predominant shift has been a sharp decline in the rural dispersed population and a rise in Guayaquil and Quito in the metropolitan category, with an underdevelopment of intermediate-sized cities and towns. This section analyzes how the urban and rural settlement hierarchy of Ecuador developed since 1950 using a typology of five settlement levels:

- 0 = DISPERSED SETTLEMENT: less than 100 inhabitants or isolated households,
- 1 = VILLAGE: rural centers between 100 and 2000 inhabitants,
- 2 = SIMPLE URBAN: centers between 2000 and 20,000 inhabitants,
- 3 = COMPLEX URBAN: centers between 20,000 and 500,000 inhabitants,
- 4 = METROPOLITAN: centers over 500,000 inhabitants.

These five categories provide a more sensitive measure of the complex urbanization process than the simple urban-rural dichotomy. By characterizing a region by the two categories holding the highest proportion of population, the evolution of the settlement landscape over time can be traced. Together, the two predominant levels generally account for between three-fifths and four-fifths of the population in the province or region, and thus quite accurately reflect the level of urbanization for the area at different points in time. Figure II-3 graphically illustrates this matrix involving the two most populated levels in the settlement hierarchy.

The logic behind these five settlement levels and the theories of what the best balance is between all five levels is not analyzed here. While a number of balanced situations are possible, it is essential that in a healthy urban system individual levels are not grossly under or overpopulated if the urban system is to function as an integrated unit. It is likely that an understanding of these provincial and regional patterns will help to isolate national subregions of urbanization where similar problems are likely to exist.

The most notable trend in the development of the urban hierarchy in Ecuador since 1950 involves the rapid rise of population at the metropolitan level. Figure II-4 graphically illustrates the changing proportion of population within the five settlement-size levels. While the dispersed population declined from 65 to 41 percent between 1950 and 1982, the complex urban, and village levels have remained fairly constant throughout the last thirty-two years. Without further development in the smaller to intermediate sized cities, economic, social, and political services will remain, for the most part, functionally cut off or reduced for the large rural population of the country. While the proportion of rural population has been reduced by one-third since 1950, in absolute terms the rural population has grown 60 percent, from two and one-third million to three and two-thirds million people.

Urban Growth by Urban Center and Settlement-Size Level

In which urban centers has growth occurred, and in which of the five settlement-size levels has the most dramatic change taken place? Data on individual urban centers is too detailed to present in the body of this study, so it is located in Appendix Table A-I at the end of the study. Aggregate data on the five settlement-size classifications is presented on Table II-6.

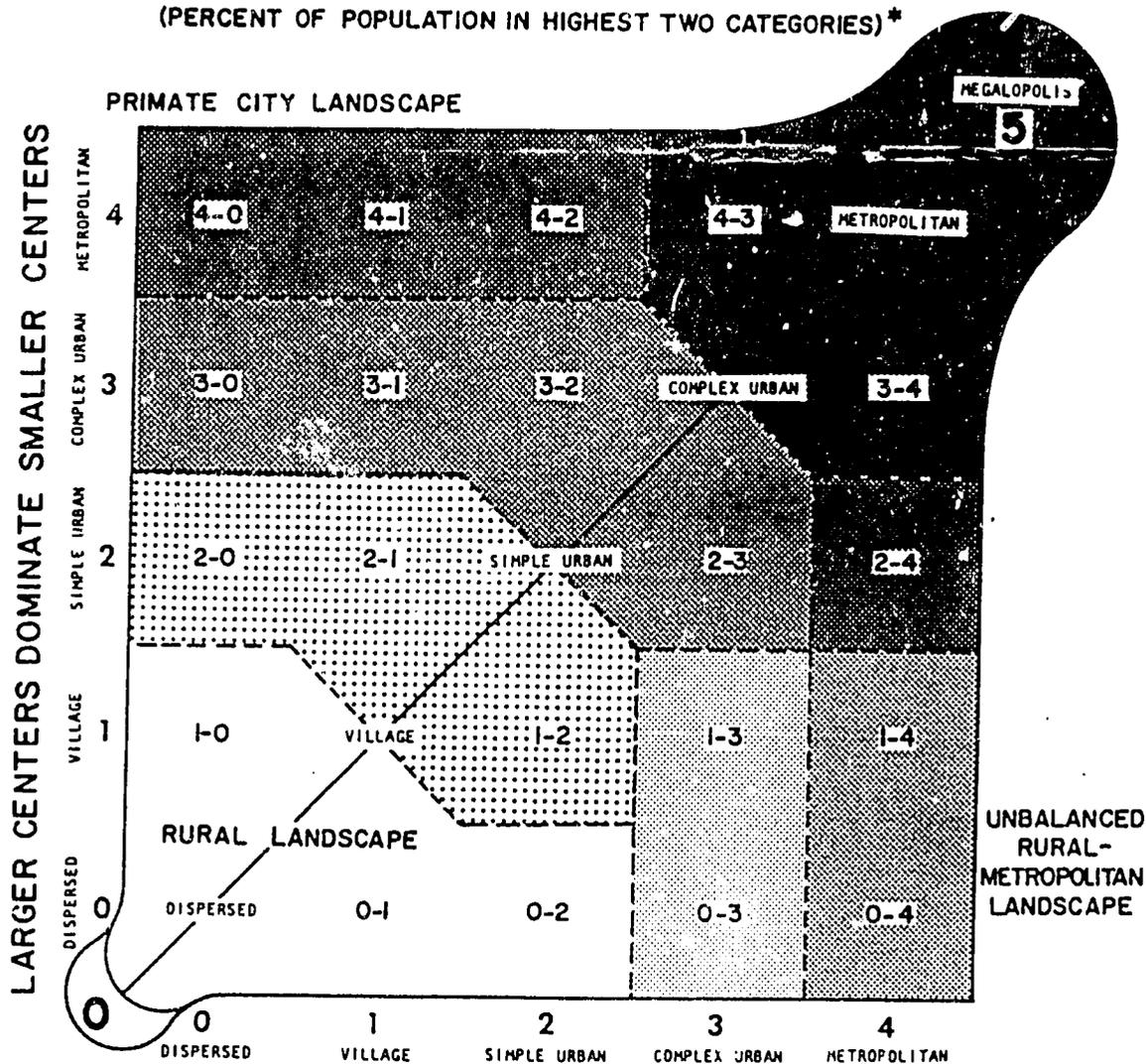
In spite of the large numbers of inhabitants currently living in metropolitan areas, and a sizeable increase in population (+45 percent), the highest growth in percentage took place in the complex urban level (+54 percent) and in simple urban centers between 10,000 and 20,000 population (+73 percent). While category creep* is a potential problem in this type of analysis, it should be noted that the growth of the number of cities in each level has increased

*The shifting of urban places from one category to another.

FIGURE II-3

A MATRIX TYPOLOGY OF URBAN-RURAL HIERARCHIES

(PERCENT OF POPULATION IN HIGHEST TWO CATEGORIES)*



SMALLER CENTERS DOMINATE LARGER CENTERS

*The two urban-rural levels with the largest percentages usually have between 55 and 80 percent of the total population of the region.

	CODE	SETTLEMENT TYPE	POPULATION SIZE
RURAL	0	Dispersed Settlement	under 200 ^a
	1	Village	200 to 2,000 ^b

URBAN	2	Simple Urban	2,001 to 20,000 ^c
	3	Complex Urban	20,001 to 500,000
	4	Metropolitan	over 500,000
	5	Megalopolis	over 10 million

^avaries between countries (range 50 to 250 upper limit)

^bvaries between countries (range 1500 to 2500)

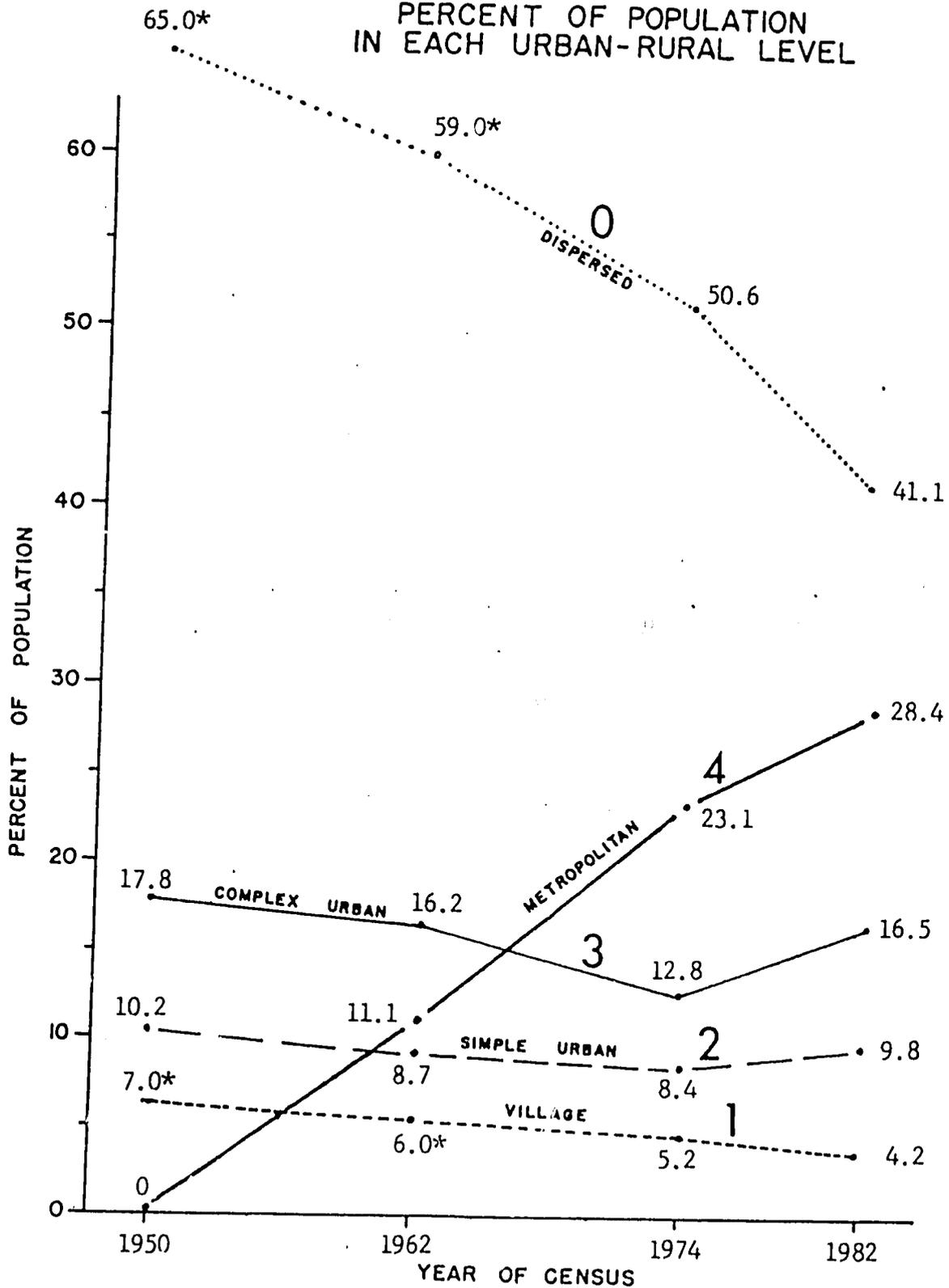
^cvaries between countries (range 20,000 to 35,000)

see also: Wilkie, Richard W., Latin American Population and Urbanization Analysis (Los Angeles: UCLA Latin American Center, 420 page volume, forthcoming in early 1984).

FIGURE II-4

ECUADOR

PERCENT OF POPULATION
IN EACH URBAN-RURAL LEVEL



* = estimated

TABLE II-6

CHANGES IN ECUADORIAN POPULATION BY FIVE URBAN-RURAL LEVELS,
1974 and 1982

	1974			1982			Percent Change 1974-1982
	Population	Percent	Number of Centers	Population	Percent	Number of Centers	
<u>METROPOLITAN LEVEL</u> (cities over 500,000)	<u>1,576,651</u>	<u>23.1</u>	<u>2</u>	<u>2,291,220</u>	<u>28.4</u>	<u>2</u>	<u>+ 45</u>
<u>COMPLEX URBAN LEVEL</u> (20,000--500,000)	<u>864,337</u>	<u>12.8</u>	<u>18</u>	<u>1,330,679</u>	<u>16.5</u>	<u>21</u>	<u>+ 54</u>
250,000--499,999	0	0	0	0	0	0	0
100,000--249,999	104,667	1.5	1	458,561	5.7	4	+ 338
50,000-- 99,999	494,389	7.2	8	594,269	7.4	8	+ 20
20,000-- 49,999	265,281	3.9	9	277,849	3.4	9	+ 5
<u>SIMPLE URBAN LEVEL</u> (2,000 to 20,000)	<u>574,331</u>	<u>8.4</u>	<u>103</u>	<u>794,519</u>	<u>9.8</u>	<u>143</u>	<u>+ 38</u>
10,000-- 19,999	164,690	2.4	12	285,606	3.5	21	+ 73
5,000-- 9,999	196,359	2.9	26	228,361	2.8	32	+ 16
2,000-- 4,999	213,282	3.1	69	280,552	3.5	90	+ 32
<u>VILLAGE LEVEL</u> (100 to 2,000)	<u>355,060</u>	<u>5.2</u>	<u>659</u>	<u>535,812</u>	<u>4.2</u>	<u>574</u>	<u>- 5</u>
1500--1999	81,783	1.2	47	57,506	.7	33	- 30
1000--1499	69,109	1.0	58	75,239	.9	63	+ 9
750-- 999	46,689	.7	54	49,374	.6	60	+ 6
500-- 749	64,276	.9	105	63,398	.8	106	- 1
250-- 499	61,181	.9	173	61,839	.8	173	+ 1
100-- 249	27,952	.4	157	24,684	.3	139	- 12
under 100 (nucleated)	4,070	-	65	3,772	-	62	- 9
<u>DISPERSED POPULATION</u> (not clustered)	<u>3,459,588</u>	<u>50.6</u>	<u>0</u>	<u>3,320,472</u>	<u>41.1</u>	<u>0</u>	<u>- 4</u>
<u>TOTAL POPULATION</u>	<u>6,829,967</u>	<u>100.0</u>	<u>782</u>	<u>8,072,702</u>	<u>100.0</u>	<u>740</u>	<u>+ 18.2</u>

considerably in all levels except the village category and the number of metropolitan centers (two). Complex urban centers increased from 18 in 1974 to 21 in 1982, simple urban centers increased from 103 to 143, and rural villages with populations ranging between 1000 and 2000 population remained virtually the same, with 159 and 156 for the two time periods. Stagnation and decline clearly exists at the village level, however, and village populations have declined 5 percent overall. The implications of these patterns will be discussed in greater length in later sections of this report.

Rural Settlement Systems

The percentage of rural population in Ecuador has gradually declined from 72 percent in 1950, to 60 percent in 1974, and to 50 percent in 1982. In absolute terms, however, the rural population has leveled off at just over four million people in both 1974 and 1982, after increasing considerably from two and one-third million in 1950.

In terms of rural population density, the number of persons per square kilometer rose from eight in 1950 to just under fifteen in 1974. By 1982 the rural population stabilized, and with a 1 percent decrease overall, the rural population density was fourteen persons per square kilometer. Data on the rural population, population density, and rural change between 1974 and 1982 is presented on Table II-7.

Rural population density is highest in the central highlands and the Pacific lowlands. The seven most rural densely settled provinces are all contiguous and include the following:

	<u>persons</u> <u>per km²</u> (1982)	<u>change in number of</u> <u>persons per km²</u> (1974-1982)
1. Tungurahua	59	same
2. Los Rios	45	-2
3. Cotopaxi	41	+3
4. Chimborazo	37	-2
5. Guayas	34	+1
6. Canar	34	+4
7. Bolívar	31	-4

Seven provinces in the middle range of population are also contiguous both north and south of the rural core region:

8. Azuay	29	+1
9. Imbabura	27	same
10. Manabi	26	-4
11. Pichincha	24	+3
12. Loja	20	-4
13. El Oro	19	-3
14. Carchi	18	-3

Finally, the six provinces with the lowest rural density are:

15. Esmeraldas	7	-1
16. Morona Santiago	2	same
17. Napo	2	+1
18. Zamora Chinchipe	2	same
19. Pastaza	1	same
20. Galapagos	0.3	-0.4

The case study region of Tungurahua and Cotopaxi around the city of Ambato represents a region with high rural population density with a stable or growing rural population (see Tale II-8). Similar rural regions in this respect are the Guayas region around the City of Guayaquil, Canar and Azuay provinces around Cuenca, and Pichincha and Imbabura around Quito. Regions losing rural population in large numbers include Bolívar and Chimborazo around the city of Riobamba, Loja and El Oro in the far south, Manabi, Los Ríos, and Esmeraldas in the northcentral Pacific lowlands, and Carchi in the far northern Sierras.

TABLE II-7

RURAL POPULATION, POPULATION DENSITY, AND POPULATION CHANGE
IN ECUADOR, 1974 and 1982

Province	1974 (Rank)	Square Kilometers	Rural Popul. 1974	Rural Popul. Density 1974	Rural Popul. 1982	Rural Popul. Density 1982	Change in Persons per Km ²	Rank in Rural Popul. Density 1982	Perce Chang Rural Densi 74-82
HIGHLANDS:									
Carchí	(15)	4,411	90,613	21	79,882	18	-3	14	-12
Imbabura	(11)	5,669	156,662	28	151,697	27	-1	9	Same
Pichincha	(2)	17,090	353,616	21	406,675	24	+3	11	+15
Cotopaxi	(10)	5,834	220,798	38	236,921	41	+3	3	+7
Tungurahua	(8)	3,493	204,385	59	207,228	59	Same	1	Same
Bolívar	(14)	3,983	139,205	35	125,365	31	-4	7	-10
Chimborazo	(7)	6,414	248,691	39	238,723	37	-2	4	-4
Cañar	(13)	4,514	136,894	30	151,983	34	+4	6	+11
Azuay	(5)	9,323	270,884	29	272,915	29	Same	8	+1
Loja	(6)	12,192	296,621	24	240,402	20	-4	12	-19
COASTAL:									
Esmeraldas	(12)	17,807	146,284	8	129,685	7	-1	15	-12
Manabí	(3)	20,669	633,157	30	546,272	26	-4	10	-14
Los Ríos	(4)	6,668	310,420	47	302,643	45	-2	2	-3
Guayas	(1)	18,711	609,647	33	644,025	34	+1	5	+6
El Oro	(9)	6,522	142,869	22	120,859	19	-3	13	-15
Galapagos	(20)	6,006	4,277	0.7	1,626	0.3	-0.4	20	-62
ORIENTE:									
Napo	(16)	51,798	58,905	1	93,613	2	+1	17	+59
Pastaza	(19)	32,008	18,251	0.6	22,185	0.7	+0.1 (Same) ¹	19	+22
Morona	(17)	25,423	44,298	2	50,522	2	Same	16	+14
Zamora	(18)	20,799	31,111	2	34,176	2	Same	18	+10
		281,334	4,113,311	15	4,057,397	14	-1	n.a.	-1
			% of Total Population 60.2%		% of Total Population 50.3%				

TABLE II-8

RURAL POPULATION DENSITY RELATED TO RURAL POPULATION GROWTH OR DECLINE
BY PROVINCE IN ECUADOR, BY 1982

HIGH RURAL DENSITY	Los Ríos -2 Chimbo azo -2 Bolívar -4	Tungurahua	Cotopaxi +3 Guayas +1 Cañar +4
MEDIUM RURAL DENSITY	Manabí -4 Loja -4 El Oro -3 Carchi -3	Imbabura	Azuay +1 Pichincha +3
LOW RURAL DENSITY	Esmeraldas -1 Galápagos -0.4		Napo +1 Morona Zamora Pastaza
	<u>LOSING</u> RURAL POPULATION	<u>STABLE</u> RURAL POPULATION	<u>GAINING</u> RURAL POPULATION

Migration Trends in Ecuador

Rural populations that lack employment opportunities, access to the land, or health and education services are likely to move out of those areas for places where these and other kinds of economic and social benefits exist. The surrounding villages and regional marketing centers also lack those services, thus, migrants will not settle in those towns for any length of time. Data on migration, especially studies by Carlos Luzuriaga¹ show that by 1974, more than three-fourths (76.5 percent) of the internal migrants to the major urban centers in Ecuador went to either Quito or Guayaquil, the two metropolitan centers (see Maps II-6 and II-7).

Luzuriaga² nicely describes some general characteristics of the migration patterns in Ecuador:

We see in Table 5.14 that net migration out of rural areas between 1962 and 1974 amounted to 9.6 percent of the average rural population in 1962 and 1974. The rate of rural outmigration was greater in the Sierra (14.1 percent) than on the Coast (8.9 percent). The Oriente, meanwhile, experienced a high rate of rural immigration (54.3 percent), though its share of the total rural population in 1974 was still only 4.0 percent, compared with 2.2 percent in 1962.

In the Sierra, by far the highest rate of outmigration (40.8 percent) was in Bolivar, which ranks relatively low (though not lowest) according to most level-of-living indicators. The second highest rate of outmigration (23.1 percent) was in Chimborazo, which ranks lowest according to several indicators. These were the only Sierra provinces in which there was an absolute decline in the rural population, though all of the others also experienced net outmigration. The lowest rate of outmigration was in Pichincha (0.1 percent) not surprisingly, since the country's second largest urban

¹Luzuriaga, Carlos. "Problemas de los asentamientos humanos en el Ecuador," Revista Geografica, 1983, pp. 7-29.

²Luzuriaga, Carlos. Income Distribution and Poverty in Rural Ecuador, 1950-1979. Tempe, Arizona: Arizona State University, 1983, p. 84.

TABLE 5.14
INTERNAL MIGRATION, 1962-1974

Region and Province	Rural Population		Growth Rates, 1962-74		Number of Migrants, 1962-74	Rate of Migration, ^b 1962-74
	1962	1974	Actual	Natural ^a		
Sierra	1,698,334	1,943,769	1.1	2.2	-256,278	-14.1
Carchi	70,554	82,763	1.3	2.4	-11,019	-14.4
Imbabura	132,422	146,423	0.8	1.9	-19,555	-14.0
Pichincha	228,701	329,515	3.1	3.1	-377	-0.1
Cotopaxi	178,100	203,935	1.1	1.6	-11,535	-6.0
Tungurahua	160,339	186,252	1.3	2.2	-21,933	-12.7
Bolívar	128,961	125,549	-0.2	2.7	-51,932	-40.8
Chimborazo	234,662	226,145	-0.3	1.6	-53,285	-23.1
Cañar	101,321	126,749	1.8	2.5	-10,861	-9.5
Azuay	214,457	249,831	1.3	2.3	-31,908	-13.7
Loja	247,710	266,607	0.6	1.9	-43,873	-17.1
Coast	1,305,074	1,708,855	2.3	2.9	-134,323	-8.9
Esmeraldas	87,523	131,005	3.4	3.6	-2,789	-2.6
Manabí	501,170	599,963	1.5	2.9	-106,304	-19.3
Los Ríos	204,272	285,998	2.9	2.2	+20,770	+8.5
Guayas	416,338	555,732	2.4	3.2	-51,846	-10.7
El Oro	95,771	136,157	3.0	2.6	+5,839	+5.0
Oriente	68,327	150,490	6.8	2.4	+59,401	+54.3
Napo	23,783	57,926	7.7	2.3	+26,681	+65.3
Pastaza	12,080	18,104	3.4	2.4	+2,046	+13.6
Morona Santiago	22,312	43,805	5.8	2.2	+14,835	+44.9
Zamora Chinchipe	10,152	30,655	9.6	3.2	+15,839	+77.6
Galápagos	x	x	x	x	x	x
National	3,071,735	3,803,114	1.0	2.5	-331,200	-9.6

(continued)

Sources: Population censuses of 1962 and 1974; INEC, *Anuario de Estadísticas Vitales*, various years, 1960-77; JUNAPLA, *Proyección de la población 1960-80* [n.d.].

^aBased on average birth and death rates in 1960-62 and 1966-67.

^bNumber of migrants, 1972-74, as a percent of the average population in 1962 and 1974.

x = Not reported.

market is located there and the province ranks relatively high according to most rural level-of-living indicators. Relatively low rates were also reported for Cotopaxi (6.0 percent) and Canar (9.5 percent). The figure for Cotopaxi is puzzling in view of that province's relatively low per capita rural income and per capita GDP and its relatively low ranking according to the other level-of-living indicators reported earlier in this chapter.

On the Coast, rates of rural outmigration were highest in Manabi (19.3 percent) and, surprisingly, in Guayas (10.7 percent), which had the highest per capita rural income of any province in 1974 (see Table 3.21) and which had average-to-high rankings according to other development indicators. Possible explanations for the outmigration rate in Guayas include mechanization of agriculture and the greater relative attractiveness of urban life in Guayaquil. These are only conjectures, however, and more research would be necessary to identify the reasons for relatively high outmigration. Outmigration from Esmeraldas was relatively low (2.6 percent), while net immigration is reported for El Oro (5.0 percent) and Los Rios (8.5 percent). The figure for El Oro is not unexpected in view of that province's generally high ranking according to most level-of-living indicators. On the other hand one would have expected relatively high rates of outmigration from Esmeraldas and Los Rios given their relatively low level-of-living rankings....

Rural-urban migration in Ecuador appears to be characterized by the kind of stepwise pattern found in other Latin American countries. That is, migrants do not tend to go directly from rural areas to the large cities (Quito and Guayaquil) but tend to move first to small towns and to secondary urban centers. A recent study (Middleton 1979) shows that 71 percent of the migrants to urban areas come from other urban areas; for Quito the figure was 76 percent.

In addition to rural-urban migration, there is also a significant amount of permanent rural-rural migration, particularly to the Oriente and to the Santo Domingo de los Colorados area in the Coastal part of Pichincha province. Most of these migrants are from the Sierra, though some also come from the Coast, especially from Manabi. Seasonal rural-rural migration, particularly to the Guayas River Basin, is also common.

MAP II-6: MIGRATION FLOWS IN ECUADOR
1962 through 1974

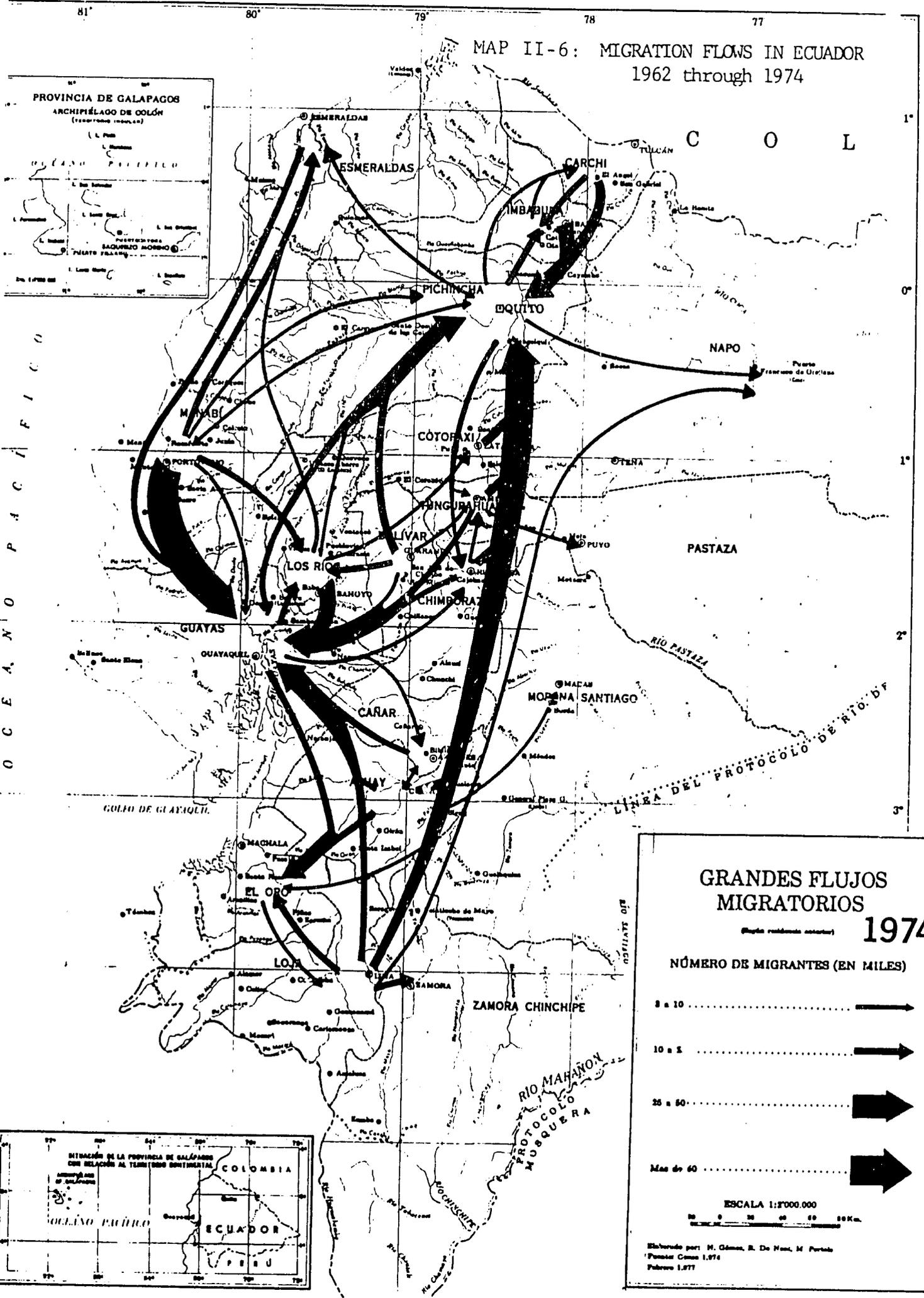
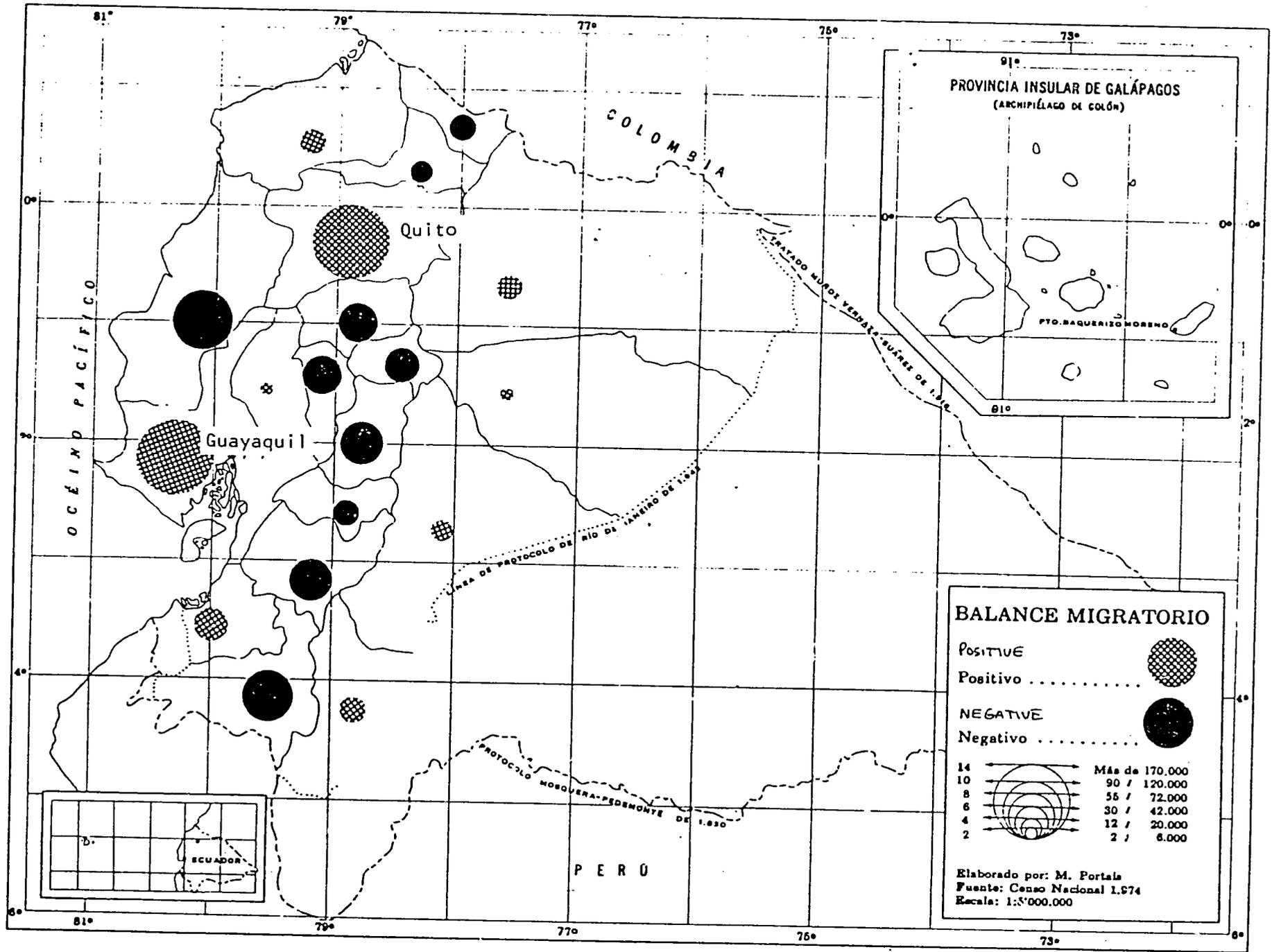


TABLE II-7
 MIGRATION BALANCE IN ECUADOR, 1964-1972



BALANCE MIGRATORIO

POSITIVE
 Positivo [Grid Symbol]

NEGATIVE
 Negativo [Solid Circle Symbol]

14	[Symbol]	Más de 170.000
10	[Symbol]	90 / 120.000
8	[Symbol]	55 / 72.000
6	[Symbol]	30 / 42.000
4	[Symbol]	12 / 20.000
2	[Symbol]	2 / 6.000

Elaborado por: M. Portals
 Fuente: Censo Nacional 1.974
 Escala: 1:5'000.000

CHAPTER III
THE ORGANIZATION OF CENTRAL PLACES
IN TUNGURAHUA AND COTOPAXI

Now that we have established the national context regarding population density and change, the urban settlement hierarchy, rural settlement systems, and migration patterns, it is important to look at some of the same dimensions within the study area of Tungurahua and Cotopaxi provinces. Throughout this study we will refer to these two provinces as the Ambato Region. Included in this regional analysis are the following topics: the physical setting; settlement sub-regions; the transportation linkage system; the administrative and political structure of the Ambato Region; the urban hierarchy of the Ambato Region; population density in 1982; population change by parroquia, 1974 through 1982; and a model of population growth for the Ambato Region.

The Physical Setting and Settlement Sub-regions

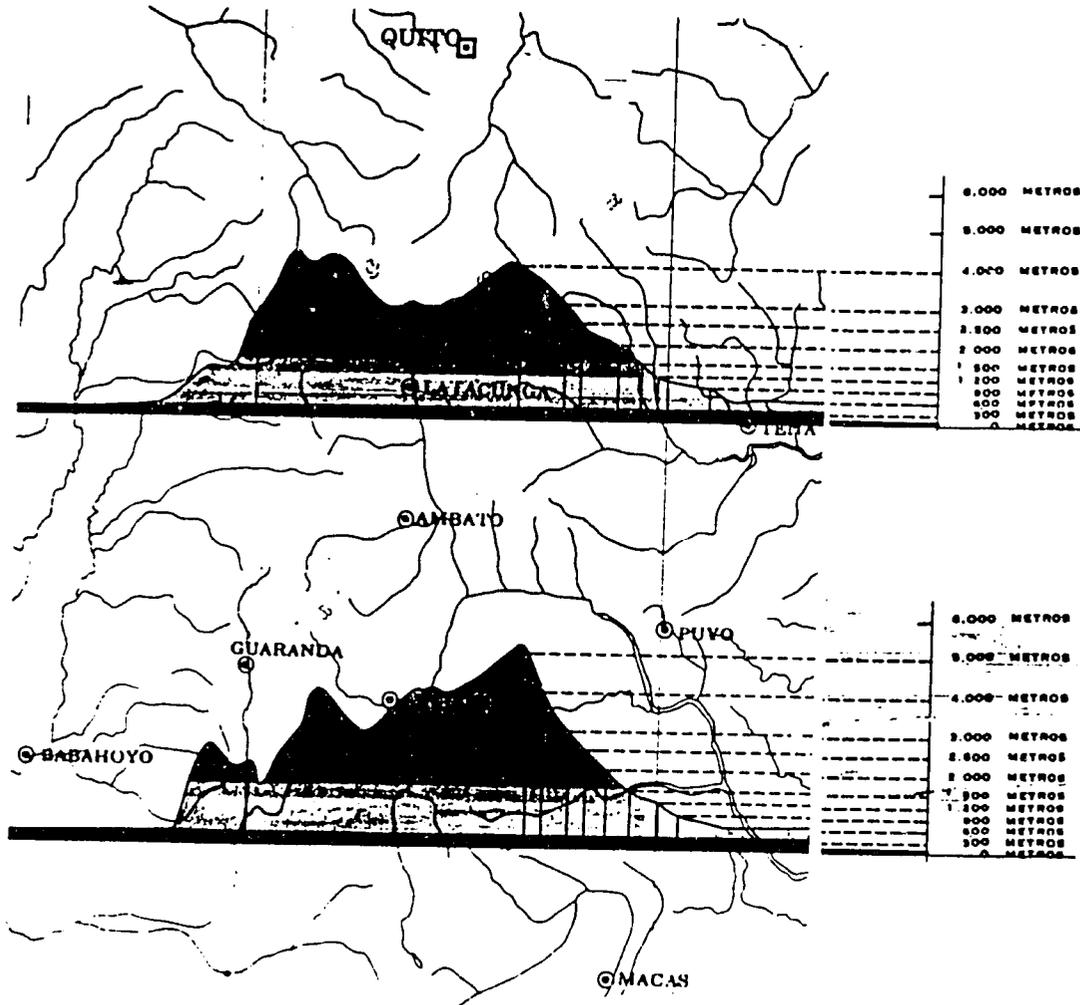
Approximately two-thirds of the Ambato Region study area falls within the headwaters of the Pastaza River system, with Río Cutuchi draining the eastern half of Cotopaxi and Río Ambato draining most of the province of Tungurahua. Much of the fertile valley of eastern Cotopaxi around the provincial capital of Latacunga is between 2,800 and 3,200 meters in altitude. At the northeastern end of the valley stands the volcano Cotopaxi at 5,897 meters, while on the northwestern end are the twin volcanoes of Iliniza Norte and Sur, the highest at 5,248 meters. As the Río Cutuchi flows south, it cuts through a narrow connection between the eastern and western cordilleras on the border between Cotopaxi and Tungurahua provinces. This area is much drier and relatively

MAP III-1

MAPA DE CORTES DEL RELIEVE

(CROSS-SECTIONAL RELIEF MAP)

AMBATO REGION



ESCALA 1:2'000.000

20 0 20 40 60 80 Km.

Atlas Geográfico Del Ecuador, 1977

TABLE III-1

TOTAL ECONOMIC ACTIVITIES IN SIX SETTLEMENT SUB-REGIONS OF TUNGURAHUA AND COTAPAXI IN 1980

Six Settlement Sub-Regions	1982 Total Population		1982 Urban Population		-----TOTAL ECONOMIC-----				MANUFACTURING				COMMERCE (Retail Sales)				SERVICES				HOTELS/RESTAURANTS				MINING				
	Population	%	Population	%	Num. Estab.	%	Number of Employees	%	Num. Estab.	%	Num. Employees	%	Num. Estab.	%	Num. Employ.	%	Num. Estab.	%	Num. Employ.	%	Num. Estab.	%	Num. Employ.	%	Num. Estab.	%	Num. Employ.	%	
COTAPAXI PROVINCE:																													
2. CENTRAL VALLEY OF COTAPAXI -Including Latacunga, Pujilí, Salcedo, Sequilí, etc.	190,232	31.6	51,953	24.2	2,576	22.5	5,493	22.1	730	18.8	2,461	21.1	1,100	22.6	1,569	20.1	289	24.8	507	23.1	450	30.5	957	29.7	7	63.6	41	61.2	
3. WESTERN HIGHLAND SIERRAS OF COTAPAXI: Includes Sigchos, Lumbazo, Angamarca, etc.	47,627	7.9	4,173	2.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
4. WESTERN LOWLANDS OF COTAPAXI -Including La Maná, Moraspunga, El Corazón, etc.	36,419	6.0	6,118	2.8	301	2.6	464	1.9	55	1.4	113	1.0	156	3.2	189	2.4	40	3.4	73	3.3	49	3.3	74	2.3	1	9.1	15	22.4	
TUNGURAHUA PROVINCE:																													
1. AMBATO URBANIZED REGION -Including Urban Ambato and the Greater Ambato Satellite Cities	188,073	31.2	114,422	53.2	6,872	60.2	16,053	64.7	2,563	65.8	7,803	67.0	2,920	60.0	5,142	65.9	596	51.1	1,219	55.4	788	53.5	1,878	58.3	3	27.3	11	16.4	
3. SOUTHWESTERN TUNGURAHUA -Including the remainder of Cantón Ambato and Cantón Quero	47,288	7.9	9,699	4.5	266	2.4	440	1.9	133	3.4	384	3.3	94	1.9	119	1.5	11	1.0	14	.6	27	1.8	39	1.2	0	0	0	0	
4. EASTERN & SOUTHEASTERN TUNGURAHUA -Including Píllaro, Patate, Pallao, Baños, etc.	92,699	15.4	28,577	13.3	1,403	12.3	2,344	9.4	411	10.6	892	7.6	601	12.3	790	10.1	230	19.7	387	17.6	160	10.9	275	8.5	0	0	0	0	
TOTALS:	602,348	100.0	214,942	100.0	11,418	100.0	24,814	100.0	3,892	100.0	11,653	100.0	4,871	100.0	7,809	100.0	1,166	100.0	2,200	100.0	1,474	100.0	3,223	100.0	11	100.0	67	100.0	

poor, deeply dissected by the river flowing to the south. High on the terraced hillsides on the eastern side of the canyon are the Píllaro and Patate potato and onion growing areas with considerably more rainfall. Near here the Río Ambato joins with the Río Cutuchi to become the Río Patate. This canyon, several thousand feet deep, is a tremendous barrier to transportation and communications between the two sides of the valley. The settlement plain that focuses on the major regional city of Ambato on the western side is at nearly the same elevation as the Latacunga area farther north (2,800 to 3,200 meters); it is an area of nearly the widest intermountain basin in the entire sierras of Ecuador. This gives Ambato a crucially strategic location within the nation. At the southwestern corner of the Ambato Basin stands Chimborazo, the 6,310 meters volcanic peak that is the highest mountain in Ecuador. At the opposite southeastern corner of the Ambato Basin, the Río Patate continues to cut even more deeply into the landscape as it turns to the east and drains sharply down 2,200 meters to the jungles of the "Oriente," and continues on into the Amazon River Basin as the Río Pastaza. Near Baños, where this river meets the Río Chambe coming from the Riobamba Basin in Chimborazo province, is the volcano of Tungurahua (5016 meters). In all, approximately nine volcanic peaks surround the valley of Tungurahua and eastern Cotopaxi on virtually all sides. Map III-1 provides two cross-sectional views of the eastern and western cordilleras near Latacunga and south of Ambato in the Riobamba region of Chimborazo.

Settlement Sub-regions in Tungurahua and Cotopaxi

Four distinct settlement regions can be classified within the Río Pastaza drainage system in these two provinces, and two others make up the

western half of Cotopaxi province. In order of settlement density and complexity are the following six sub-regions which are illustrated on Map III-2 and presented in detail on Tables III-1 and III-2.

1. The Ambato Urbanized Region (188,000 population): A highly urban oriented zone of smaller satellite urban centers and rural villages closely tied to Ambato, the fifth largest city in Ecuador with a population of 101,000 in 1982.

2. The Central Valley of Cotopaxi (190,000 population): Five times the size of the Ambato urbanized region and with virtually the same population, this agricultural zone focuses on a moderately well-developed hierarchy of lower-order urban centers and villages. Latacunga (29,000 population) is the major central place, with Salcedo (5,844), Pujilf (3,941) and Saquisilf (2,914) also playing important central place roles, especially on market days.

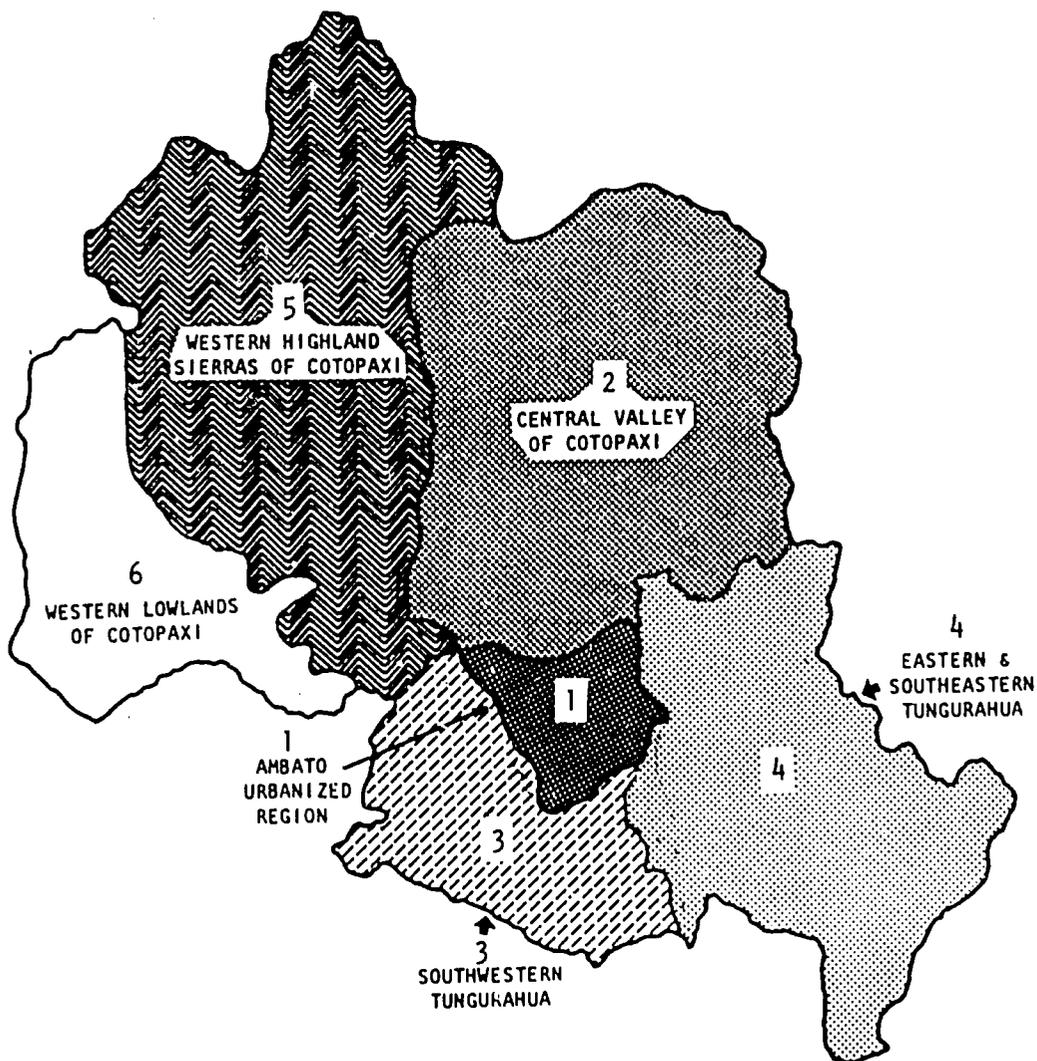
3. Eastern and Southwestern Tungurahua (93,000 population): An area slightly smaller in size than the Central Valley of Cotopaxi, but with only half as much population, this region is almost exclusively involved in agriculture. Elevations of these agricultural zones vary greatly, ranging from 3,600 meters near Píllaro (4,290 population), to Pelileo (4,500 population) at 3,000 meters, and down to Banos (8,548 population) in the citrus fruit area at 750 meters.

4. Southwestern Tungurahua (47,000 population): This is an important agricultural zone to the south and west of the city of Ambato. Since it is in the shadow of the region's largest city, it has few important urban centers and very limited services.

5. Western Highland Sierras of Cotopaxi (48,000 population): Two other settlement zones are included in this study, and both are in the western half of Cotopaxi province, outside the Pastaza/Patate river system that drains most

MAP III-2

SIX SETTLEMENT SUB-REGIONS OF TUNGURAHUA AND COTOPAXI



of the region. The first of these regions is a rugged area of mountains, isolated villages, poor roads, and very limited urban services. Marketing from this area is channeled primarily through the periodic markets at Saquisilí, Pujilí, and Latacunga.

6. Western Lowlands of Cotopaxi (36,000 population): Statistically this region is included in the study as part of Cotopaxi, but in reality it is functionally connected with the provinces of Los Ríos and western Pichincha in the Pacific lowlands. The agriculture, physical environment, ethnic heritage, and life styles are vastly different from the major part of the Ambato study region.

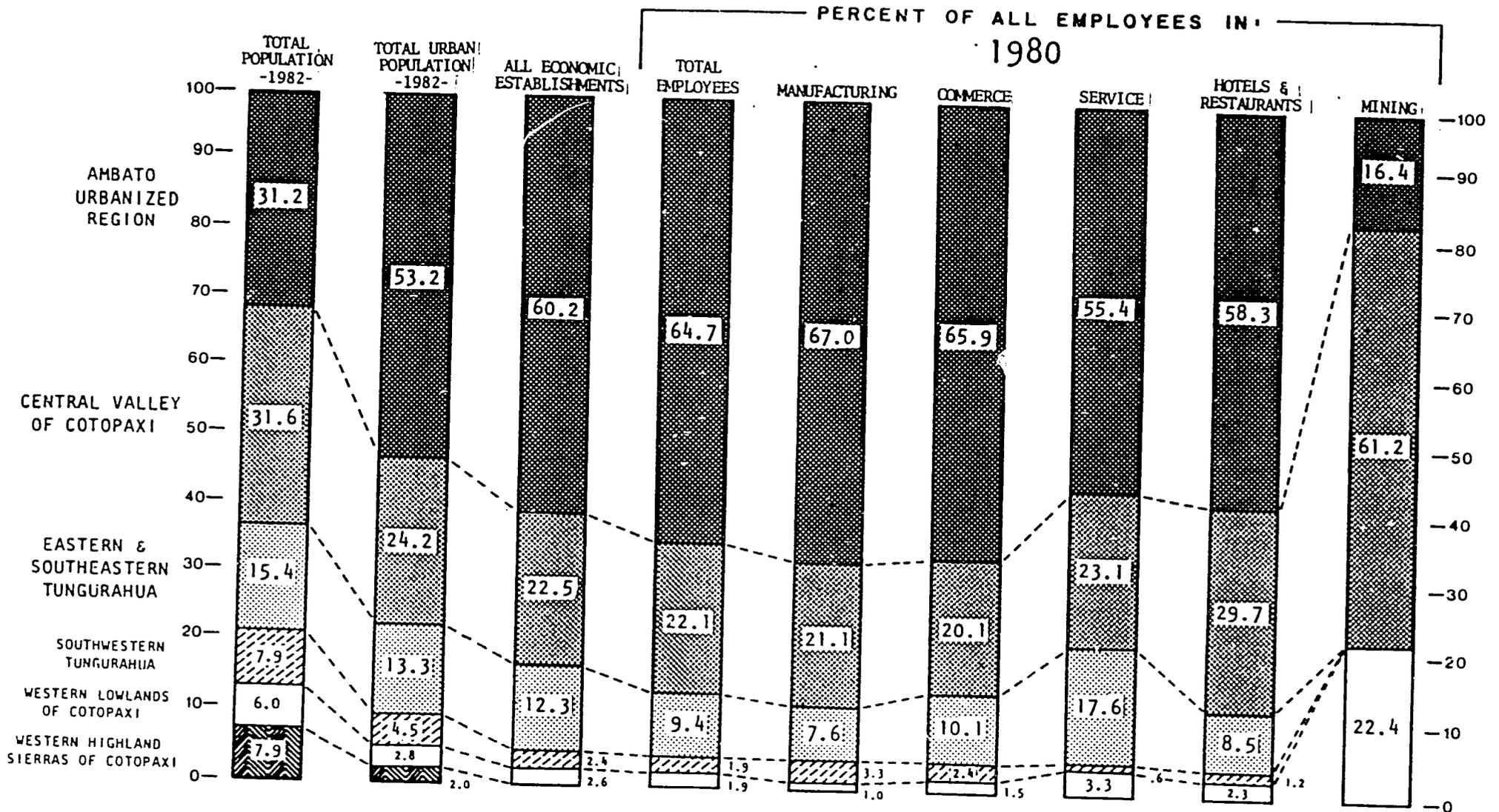
These six settlement regions provide a framework for the analysis of existing urban services and employment. According to the 1980 economic census of Ecuador, the Ambato urbanized region has a majority of the urban population (53 percent) and economic activities (60 percent), even though it has only one-third of the total population (31 percent). With regard to the percent of all employees, the Ambato urbanized region has nearly two-thirds of all employees (65 percent). Employees in services and hotels/restaurants are more evenly divided among the proportions of the percentages of urban population, except that the two regions in the western half of Cotopaxi are almost totally underrepresented. The western highland sierras of Cotopaxi, with 8 percent of the population, have virtually none of the economic, commercial, or service activities (see Tables III-1, III-2 and Map III-3).

The Transportation Linkage System in the Ambato Region

The system of roads and railways is closely developed along the terrain patterns established by the Río Patate, Río Ambato, and Río Pastaza drainage systems (see Map III-4). The Pan-American Highway from Quito runs

FIGURE III-3

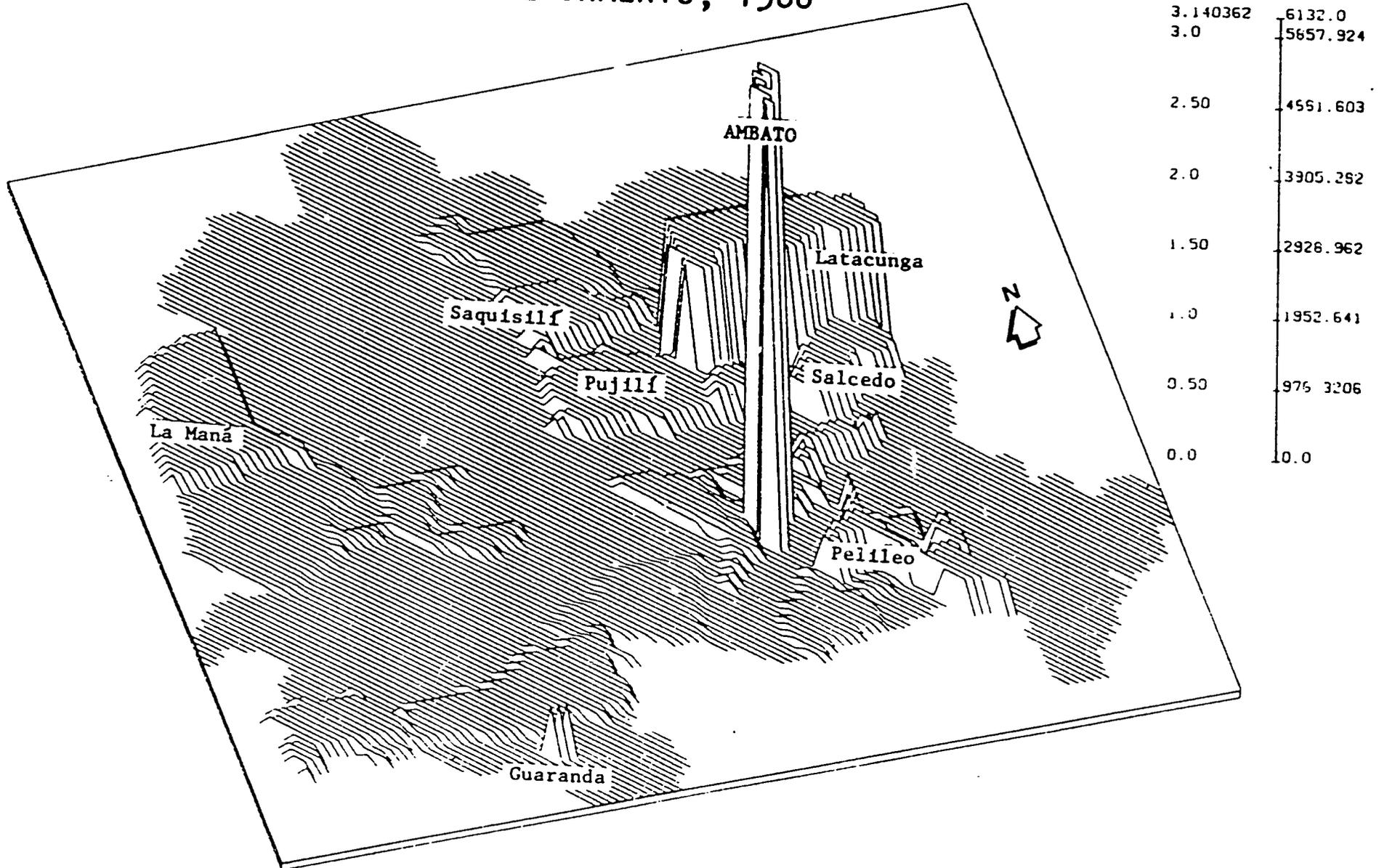
PERCENT OF TOTAL POPULATION IN SIX SUB-REGIONS OF TUNGURAHUA AND COTOPAXI
EARLY 1980's



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MAP III-3

AMBATO REGION TOTAL ECONOMIC ESTABLISHMENTS, 1980



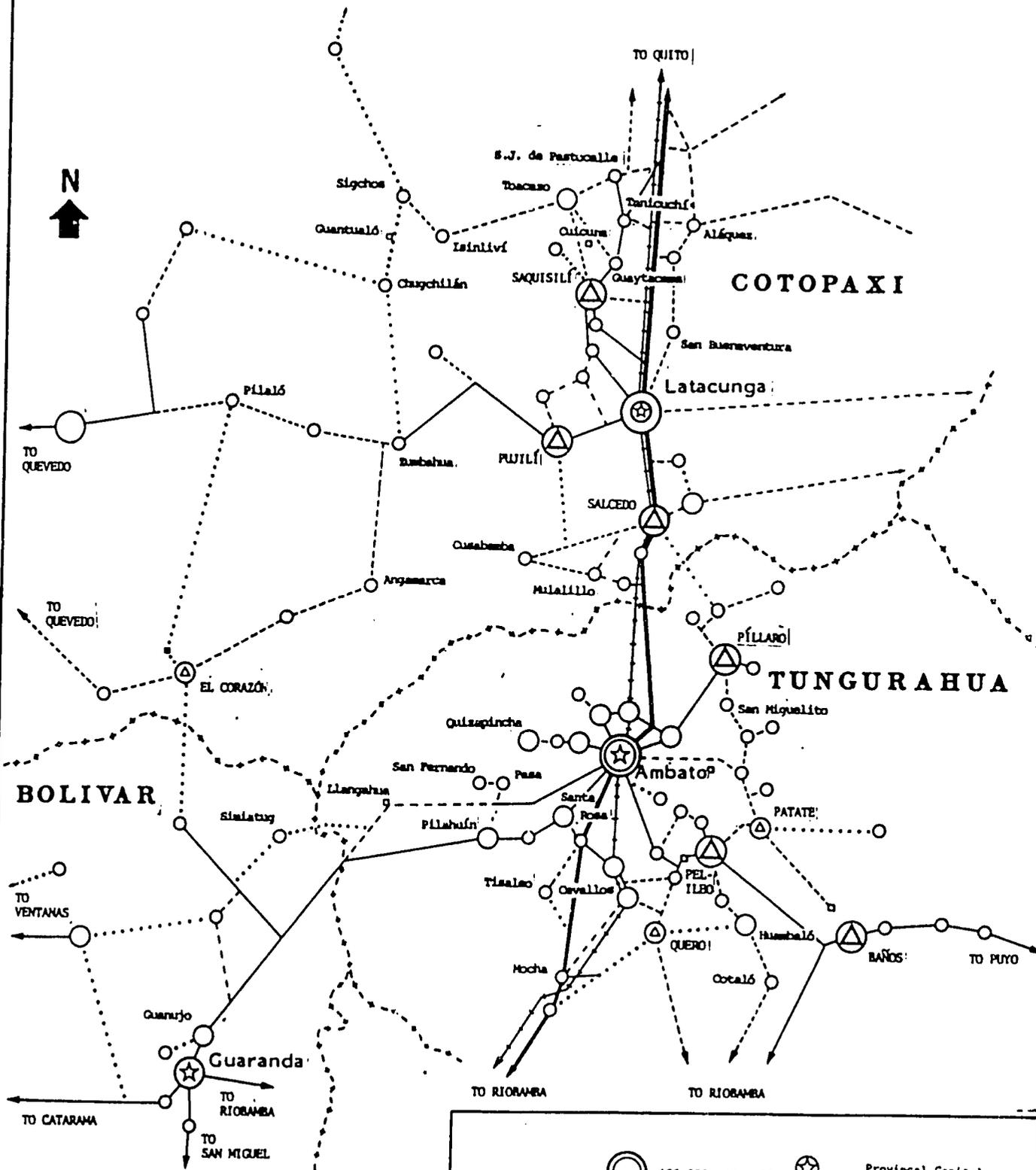
south through the central valley of Cotopaxi to Latacunga, Salcedo, and on to Ambato near the center of the Tungurahua settlement valley. From Ambato, major paved roads run northeast to Pillaro, southeast to Pelileo, Banos, and the lowland "oriente," and to the southwest past Chimborazo volcano to Bolívar province on a newly paved road. In addition, the Pan-American highway continues directly south from Ambato to Riobamba, the capital of Chimborazo province. A system of secondary roads interconnects much of the Ambato Region, while some areas, such as western Cotopaxi, remain quite isolated. A paved road from Pujilí to Zumbahua is being extended to El Corazón, thus connecting Cotopaxi to Los Ríos province, but in general the area greatly needs improved road linkages.

The Administrative and Political Structure of the Ambato Region

Each province is subdivided into cantón regions with sub-provincial centers called cabeceras as well as parroquia administrative centers serving small rural regions. There are 11 cantones in the region: six in Tungurahua and five in Cotopaxi. A breakdown of the population hinterlands of provincial and cantonal administrative units for the region is provided on Table III-3. The total population in cantones other than Ambato and Latacunga range from 9,619 in Patate to 75,570 in Pujilí. Banos in the approaches to the Oriente lowland (8,548 population) is the only cantón center with a majority of the cantón population living in the urban center (58 percent). All other cantón centers range between a low of 5 percent in the major urban center in Pujilí to a high of 20 percent in Saquisilí.

A total of eighty-six parroquia centers exist in the two provinces. Ecuador has tried to make each urban center or village a parroquia administrative center, and while that is true in Tungurahua and Cotopaxi, it appears not

TRANSPORTATION LINKAGES AMBATO REGION



COMPLEX URBAN		100,000--300,000		Provincial Capital
		20,000--99,999		Canton Capital
SIMPLE URBAN		2,500--19,999		Pan American Highway
		1,000--2499		Paved Road
VILLAGE		100--999		Unimproved Road
		100--999		Seasonal Road
		UNDER 100		Railroad
				Provincial Boundary

to be the case in the more populous provinces. The political boundaries of both parroquias and cantons are illustrated on the maps of the Tungurahua (Map III-5) and Cotopaxi (Map III-6). In addition, two graphs show the administrative hierarchies of both provinces (Figures III-2 and III-3) by canton and size of the urban centers within each unit. Outlining these administrative hierarchies is a first step in working out the nested functional hierarchies in the region.

The Urban Hierarchy of the Ambato Region

More than 602,000 people live in the two provinces of Tungurahua and Cotopaxi and are a part of the total hinterland population of the city of Ambato (population 101,000). In addition, Ambato has a provincial hinterland population of 328,070 (54 percent of the region's inhabitants), and a cantonal hinterland population of 221,392 (37 percent of the total region). The regional population distribution is best illustrated on Map III-7, a population cartogram of the region, and on two three-dimensional views of the total population of Tungurahua, Cotopaxi, and the northern half of Bolívar by parroquia (Map III-9) and by urban population in that area (Map III-8). The detailed data are presented in Table III-3, with the ninety central places in the region ranked by size. Data on population density and urban and rural population changes between 1974 and 1982 are also presented.

In the national overview chapter, the population for the nation was broken down into six urban-rural levels in the settlement hierarchy. Figures III-3 and III-4 do exactly the same for the Ambato study region of Tungurahua and Cotopaxi.

Figure III-3 contrasts the percentages in each level in the urban-rural hierarchy with national percentages. As the graphic part of the figure demonstrates, the national distribution pattern is very similar, only Ambato is

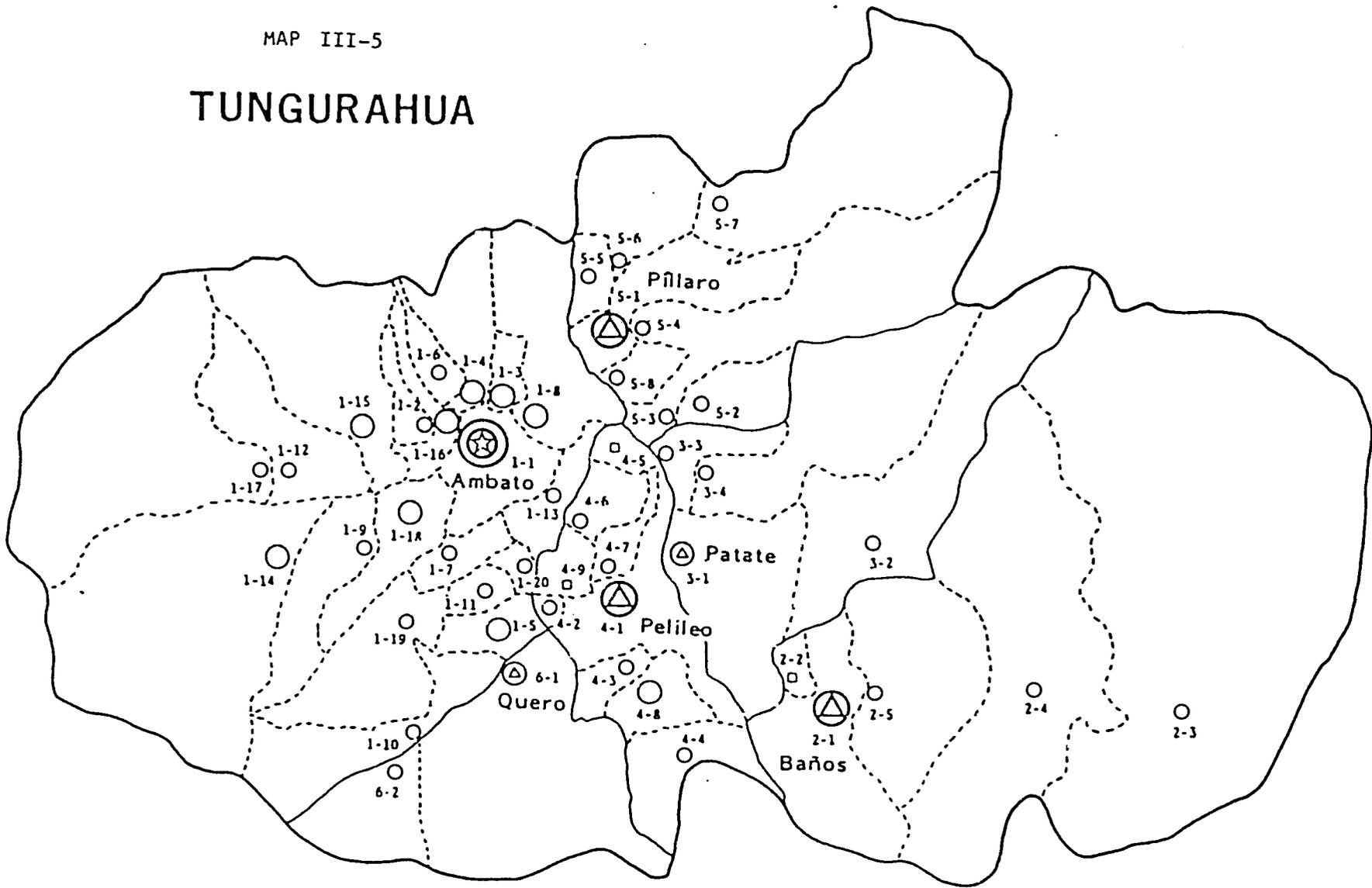
TABLE III-3

POPULATION HINTERLANDS OF PROVINCIAL AND CANTONAL ADMINISTRATIVE UNITS
AMBATO REGION OF TUNGURAHUA AND COTOPAXI

	<u>GREATER REGIONAL HINTERLAND (TUNG.+COT.)</u>	<u>% OF POPULATION IN REGION</u>	<u>PROVINCIAL HINTERLAND</u>	<u>PERCENT</u>	<u>CANTONAL HINTERLAND</u>	<u>PERCENT</u>	<u>ACTUAL POPULATION OF URBAN CENTER</u>	<u>PERCENT OF POPULATION IN REGION</u>	<u>PERCENT OF CANTONAL POPULATION IN URBAN CENTER</u>
.. Ambato	602,348	100 %	328,070	54.5	221,392	36.8	100,605	16.7	45 %
.. Latacunga (B1)	-		274,278	45.5	123,788	20.6	28,857	4.8	23 %
.. Pujilí (B3)	-		-		75,570	12.5	3,841	.6	5 %
.. Salcedo (B4)	-		-		41,837	7.0	5,844	1.0	14 %
.. Pelileo (A4)	-		-		37,032	6.1	4,523	.8	12 %
.. Píllaro (A5)	-		-		31,411	5.2	4,290	.7	14 %
.. El Corazón (B2)	-		-		18,552	3.1	1,245	.2	7 %
.. Baños (A2)	-		-		14,637	2.4	8,548	1.4	58 %
.. Saquisilí (B5)	-		-		14,531	2.4	2,914	.5	20 %
.. Quero (A6)	-		-		13,989	2.3	1,267	.2	9 %
.. Patate (A3)	-		-		9,619	1.6	1,604	.3	17 %
	<u>602,348</u>	<u>100.0</u>	<u>602,348</u>	<u>100.0</u>	<u>602,348</u>	<u>100.0</u>	<u>163,538</u>	<u>27.2</u>	<u>27 %</u>

MAP III-5

TUNGURAHUA



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MAP III-6

COTOPAXI 1982

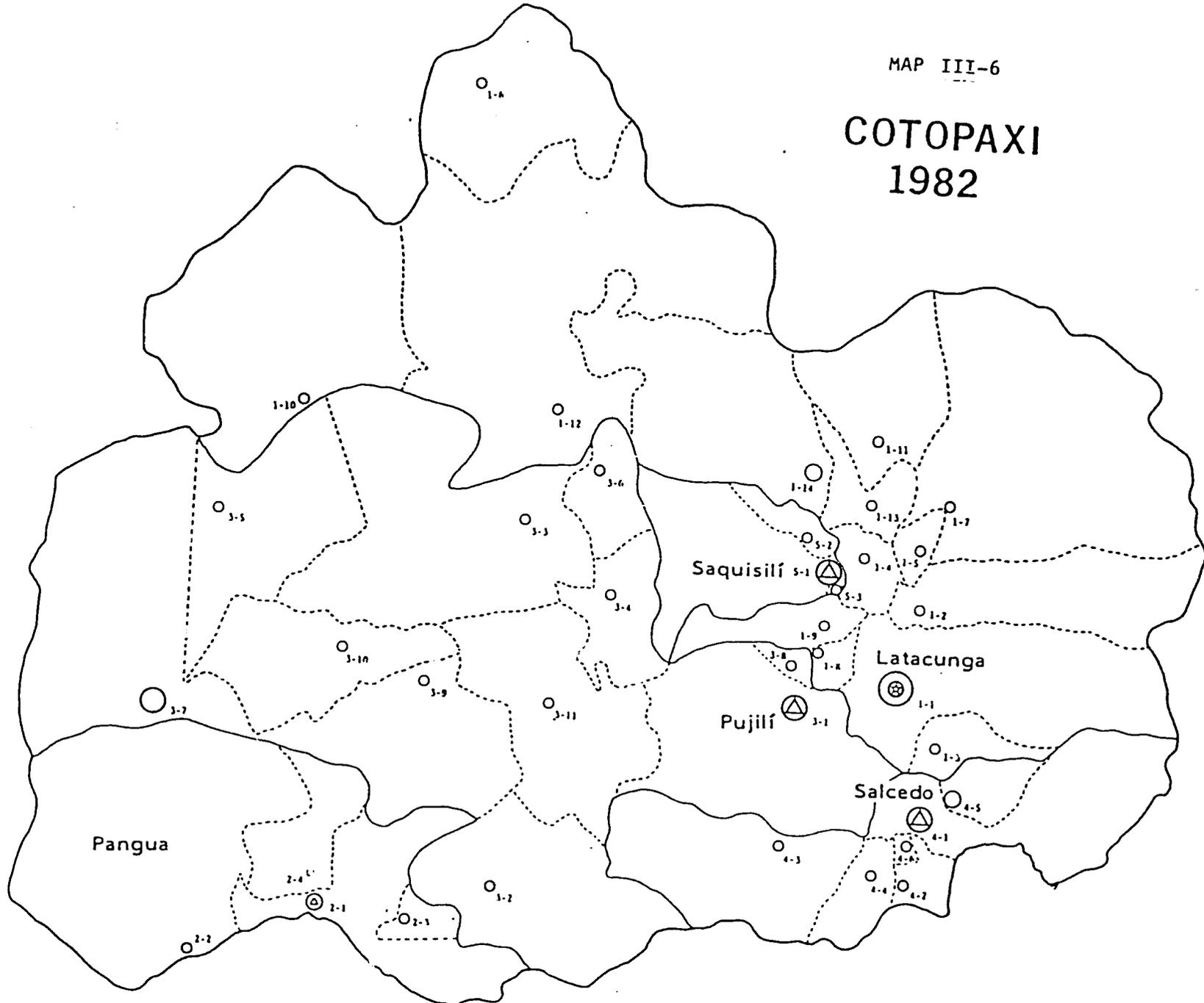
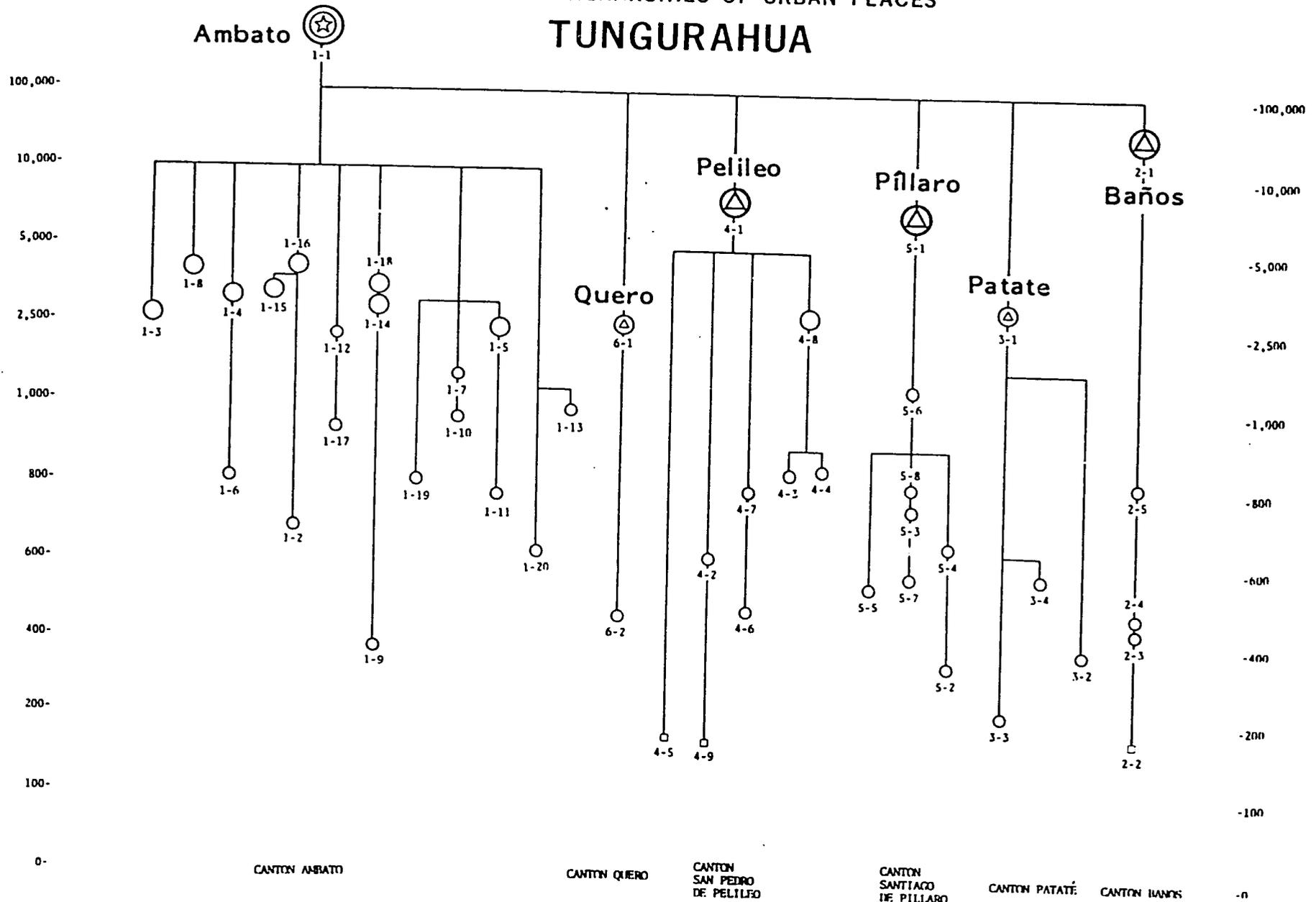


FIGURE III-2

ADMINISTRATIVE HIERARCHIES OF URBAN PLACES
TUNGURAHUA



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FIGURE III-3

POPULATION CHANGE IN ECUADOR AND THE AMBATO REGION
BY URBAN-RURAL LEVEL IN 1974 AND 1982

----- ECUADOR -----			TOTAL POPULATION BY LEVEL	----- AMBATO REGION -----		
1974 Population	1982 Population	Percent Change		1974 Population	1982 Population	Percent Change
6,829,967	8,053,280	+17.9	TOTAL POPULATION	539,299	607,692	+12.7
1,576,651 23.1%	2,291,220 28.4%	+45 %	METROPOLITAN over 500,000	0	0	
864,337 12.8%	1,330,679 16.1%	+54 %	COMPLEX URBAN 20,000--500,000	99,158 18.4%	129,462 21.3%	+31 %
574,331 8.4%	794,519 9.8%	+38%*	SIMPLE URBAN 2,000--20,000	23,729 4.4%	38,469 6.3%	+62 %
355,060 5.2%	335,812 4.2%	- 5%	VILLAGE LEVEL 100--2000	50,180 9.3%	47,308 7.8%	- 5 %
3,459,588 50.6%	3,320,472 41.1%	- 4%	DISPERSED POPULATION under 100	366,232 67.9%	392,453 64.6%	+ 7 %
<u>0 - 4</u> 73.7%	<u>0 - 4</u> 69.5%		CLASSIFICATION Percent in Top 2 Categories	<u>0 - 3</u> 86.3%	<u>0 - 3</u> 85.9%	
Dispersed--Metropolitan Settlement Landscape				Dispersed--Complex Urban Settlement Landscape		

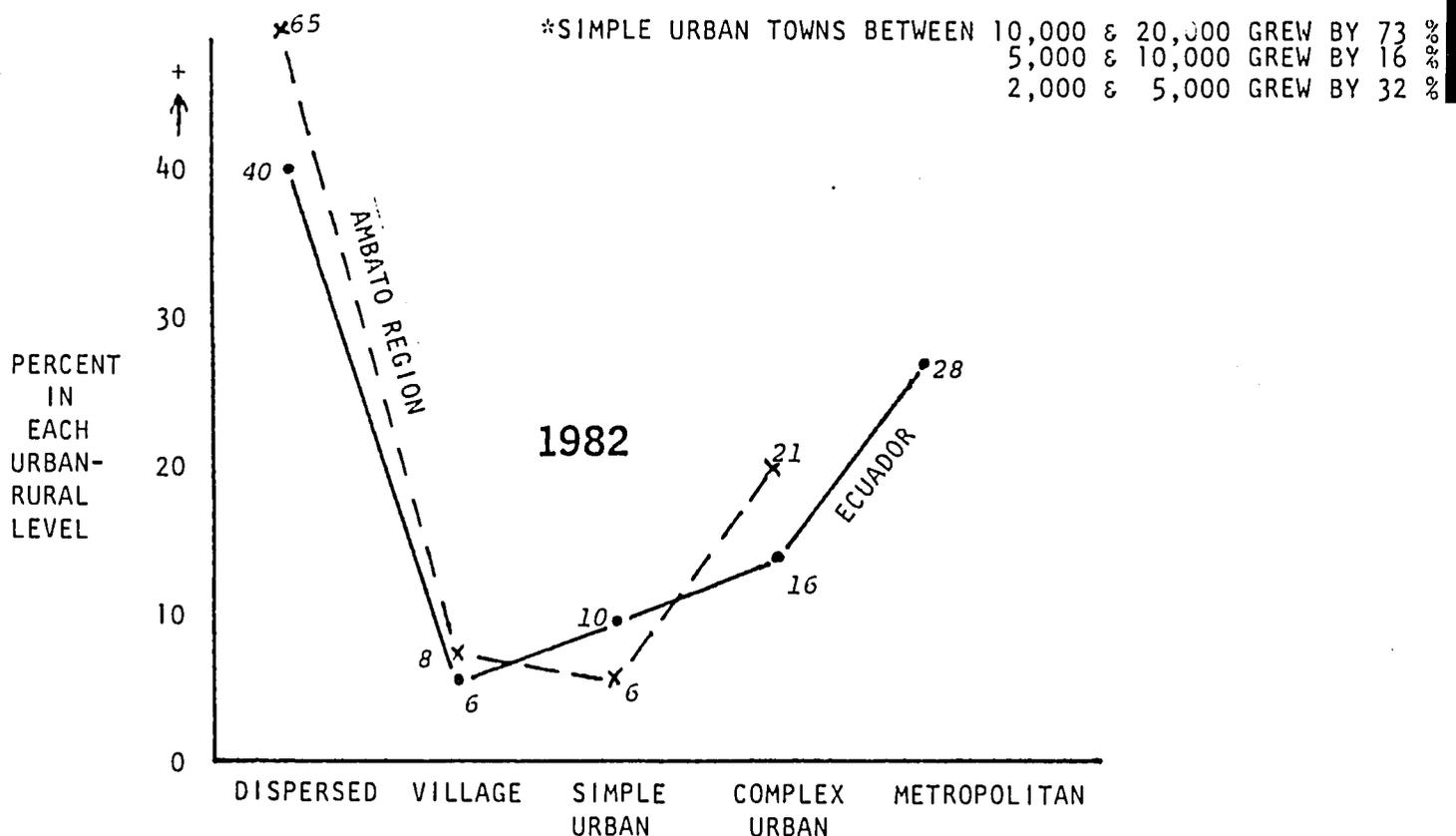
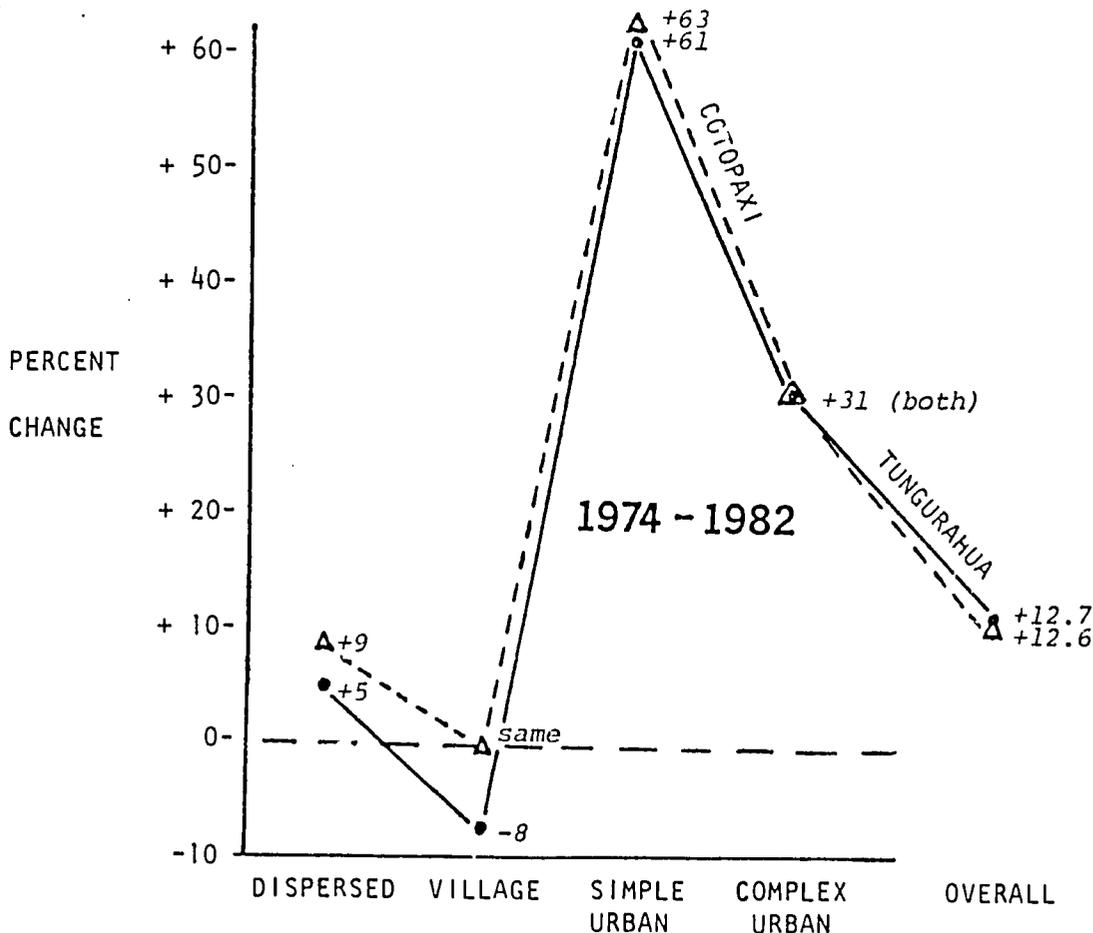


FIGURE III-4

POPULATION CHANGE IN TUNGURAHUA AND COTOPAXI
BY URBAN-RURAL LEVEL IN 1974 and 1982

TUNGURAHUA			COTOPAXI			
1974 Population	1982 Population	Percent Change	TOTAL POPULATION BY LEVEL	1974 Population	1982 Population	Percent Change
290,990	328,070	+12.7	TOTAL POPULATION	248,309	279,622	+12.6
77,052 26.5%	100,605 30.7%	+31 %	COMPLEX URBAN 20,000--500,000	22,106 8.9%	28,857 10.3%	+31 %
13,559 4.7%	21,887 6.7%	+61 %	SIMPLE URBAN 2,000--20,000	10,170 4.1%	16,582 5.9%	+63 %
33,237 11.4%	30,452 9.3%	- 8 %	VILLAGE LEVEL 100--2000	16,943 6.8%	16,856 6.0%	Same (-0.1%)
167,142 57.4%	175,126 53.4%	+ 5 %	DISPERSED POPULATION under 100	199,090 80.2%	217,327 77.8%	+ 9 %
<u>0 - 3</u> 83.9%	<u>0 - 3</u> 84.1%		CLASSIFICATION Percent in Top 2 Categories	<u>0 - 3</u> 89.1%	<u>0 - 3</u> 88.1%	
Dispersed--Complex Urban Settlement Landscape				Dispersed--Complex Urban Settlement Landscape		



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a miniaturized version of the national pattern. Guayaquil and Quito have 28 percent of the nation's population; Ambato has 21 percent of the region's population. Contrasting national and regional percentages in 1982, in complex urban centers (20,000 to 500,000 population) it is 16 percent to 21 percent, for simple urban centers (2,000 to 20,000) it is 10 percent and 6 percent, and for villages (100 to 2,000) it is 6 and 8 percent, respectively. The rural dispersed population, however, is greater in the Ambato Region with 65 percent to 40 percent nationally.

Figure III-4 contrasts the same data for each province for 1974 and 1982 and graphs out the percent change in each of the few existing levels in the urban-rural hierarchy. In both Tungurahua and Cotopaxi, overall population growth was about 12.6 percent. Complex urban centers in both provinces grew by 31 percent; simple urban centers and nearly identical, 61 and 63 percent; and in the dispersed population both were up 5 and 9 percent, respectively. At the village level, however, Cotopaxi remained the same and Tungurahua lost 8 percent. Clearly similar patterns of urban growth and/or decline occurred in both provinces.

Population Density in 1982

As was noted in the national level overview in Chapter II, Tungurahua and Cotopaxi are regions of high population density, ranking second and seventh respectively among the twenty provinces with ninety-four and forty-seven persons per km². Tungurahua increased its population density by eleven persons per km² and Cotopaxi increased by four persons per km² between 1974 and 1982.

With regard to rural population density in Ecuador in 1982, Tungurahua ranked first (fifty-nine persons per km²) and Cotopaxi ranked third

nationally (forty-one persons per km²). All of the population density growth in Tungurahua occurred in urban areas, as the rural density remained the same. In Cotopaxi, however, the rural area grew by three persons per km², tying the province nationally for second with Pichincha in rural population growth behind Canar province.

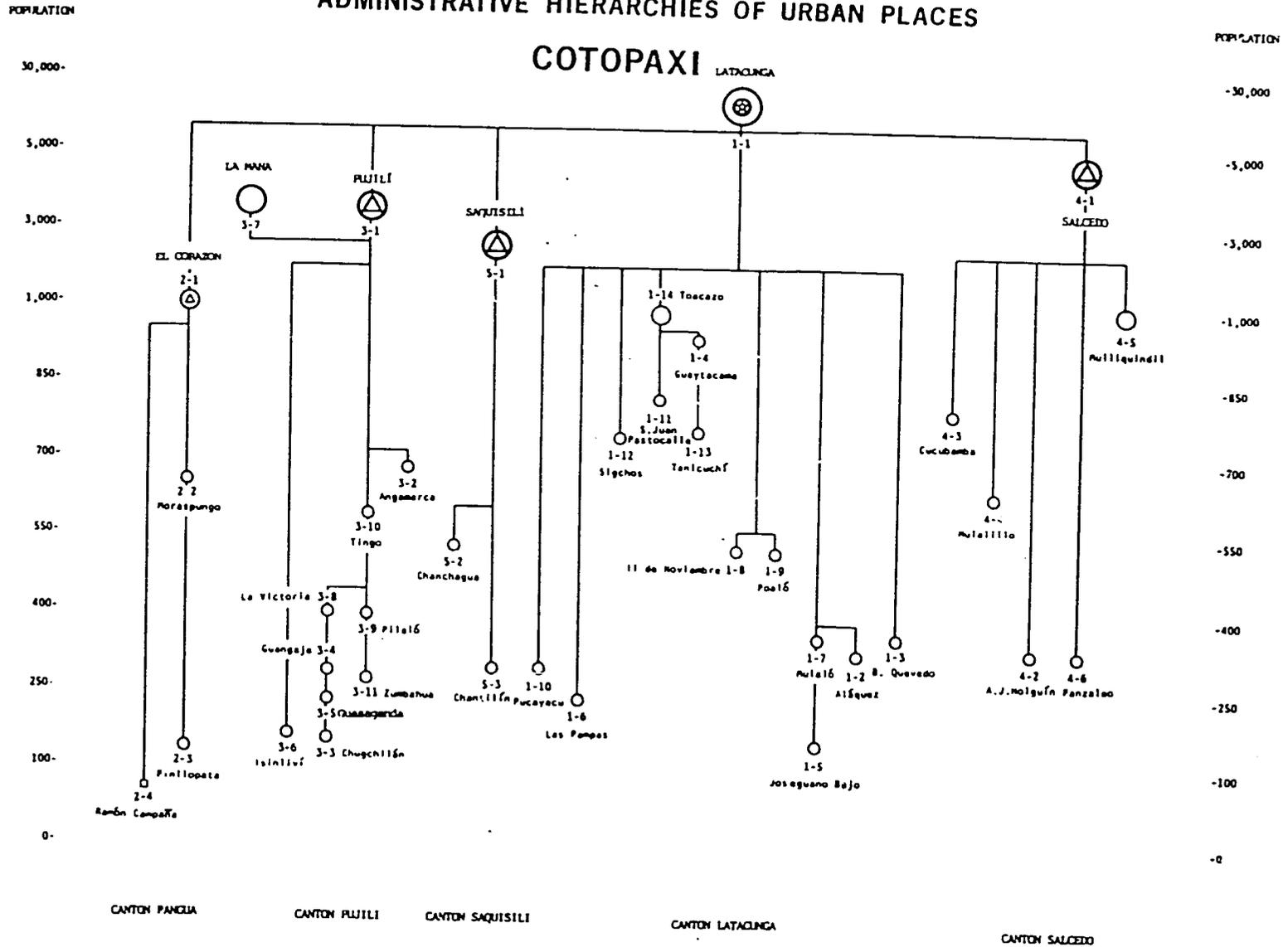
Actual population densities in the region (see Maps III-10 and III-11 and Table III-4) generally range between 100 and 200 persons per km² in the central valley of Cotopaxi, dropping to between 30 and 80 in the surrounding mountain areas. Farther west in the more remote western cordillera, population density is generally between 10 and 20 persons per km², and it increases again to 20 to 60 after dropping to the western lowlands bordering Los Ríos and Pichincha provinces. In the area surrounding the Ambato City, which has a density of 3,886 persons per square kilometer, other population densities range between 200 and 500. On the eastern side of Río Patate near Píllaro and Patate, population densities can be as high as 250 to 350 per km², dropping to 10 to 20 in the more remote mountains to the east. The rest of the province of Tungurahua is generally between 20 and 90 persons per km².

Population Change by Parroquia, 1974 through 1982

Total population change listed in Table III-4 shows that 20 of the 87 parroquias (23 percent) had growth rates of more than 25 percent, 21 parroquias (25 percent) had medium growth rates between 14 and 24 percent, 27 parroquias (32 percent) had low growth rates between 1 and 13 percent, and 17 parroquias (20 percent) experienced a population loss. Map III-12 locates these four population change regions, and Maps III-13 and III-14 present three-dimensional views of population change in the entire region and in each province.

FIGURE III-3

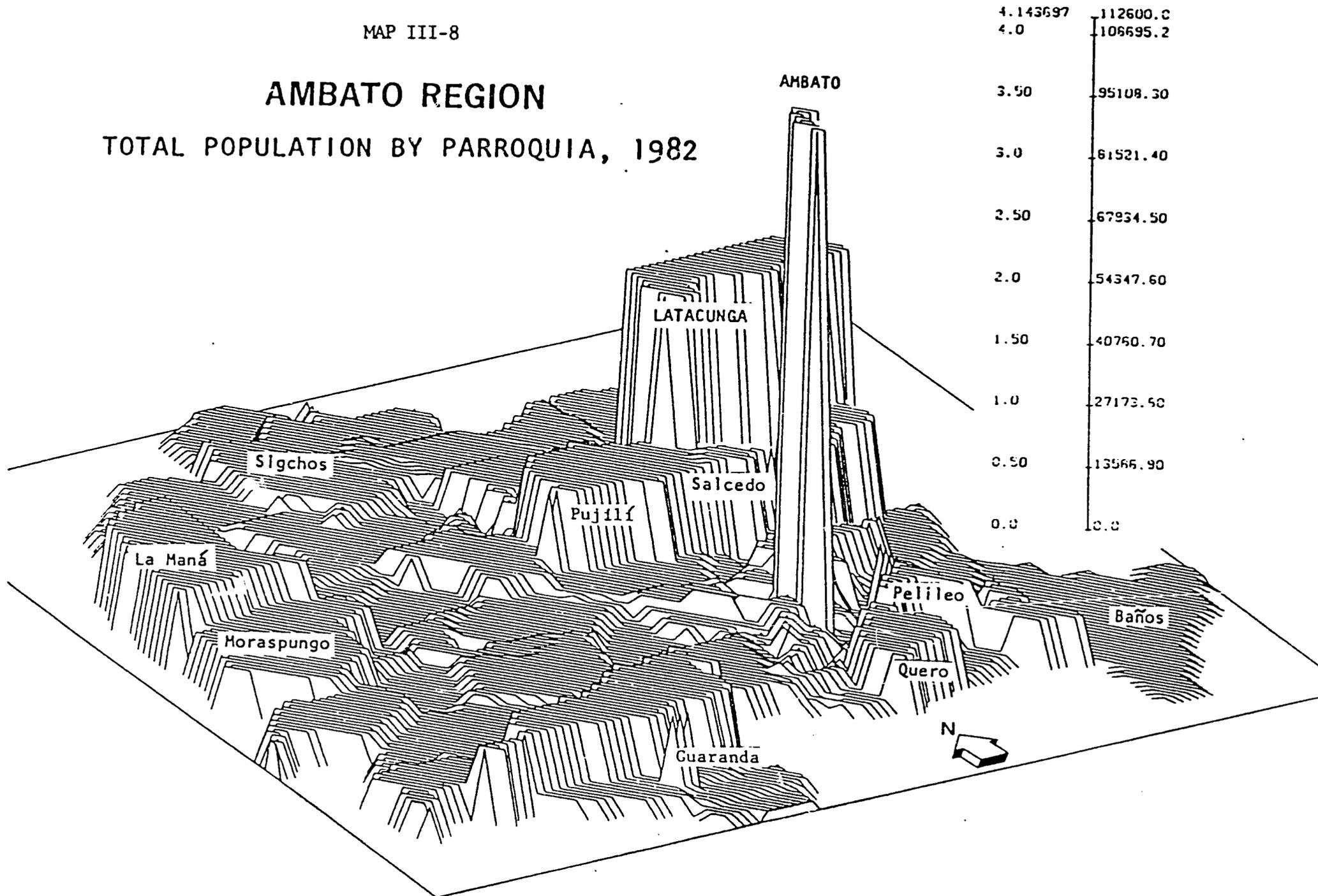
ADMINISTRATIVE HIERARCHIES OF URBAN PLACES



MAP III-8

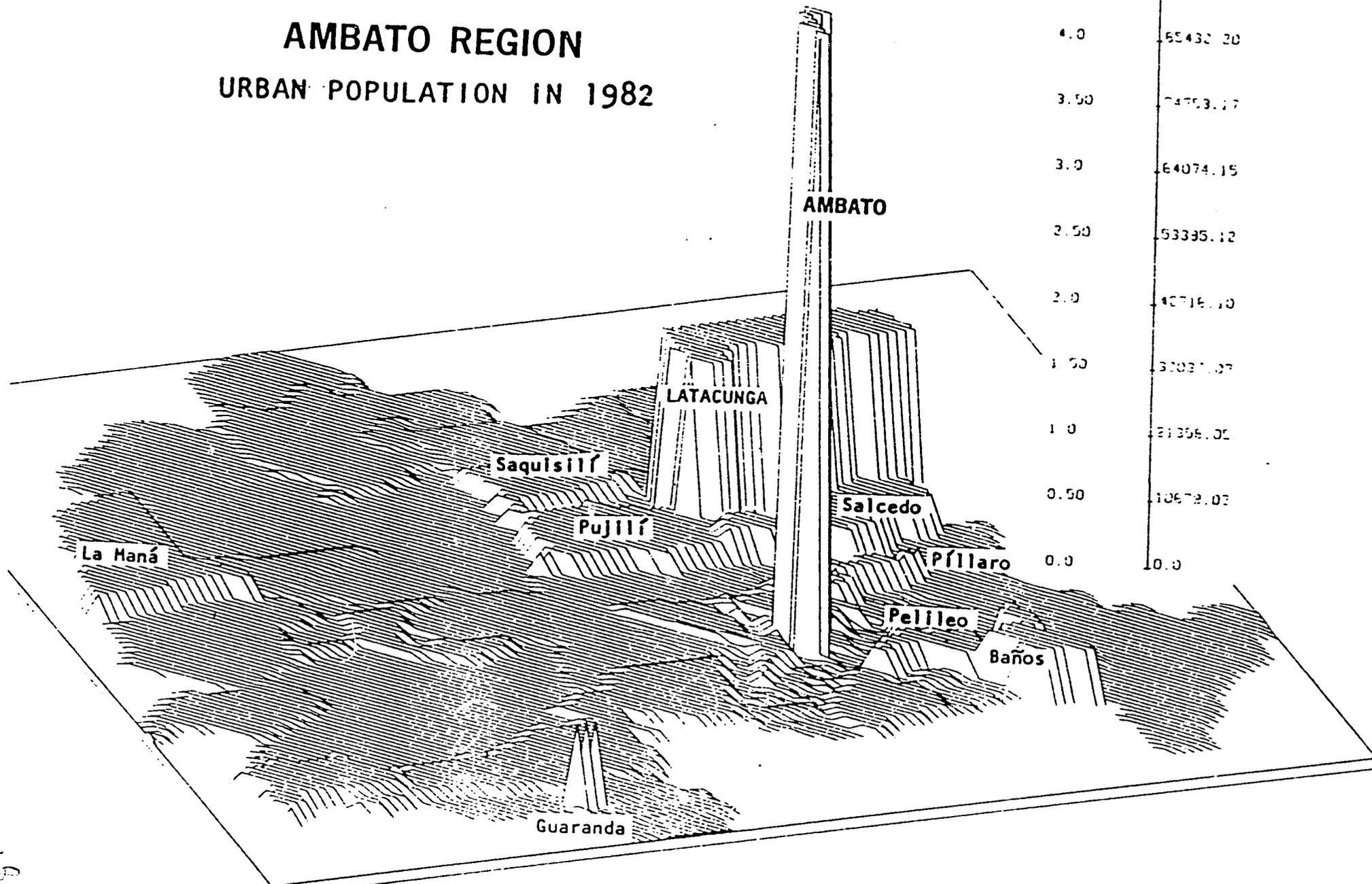
AMBATO REGION

TOTAL POPULATION BY PARROQUIA, 1982



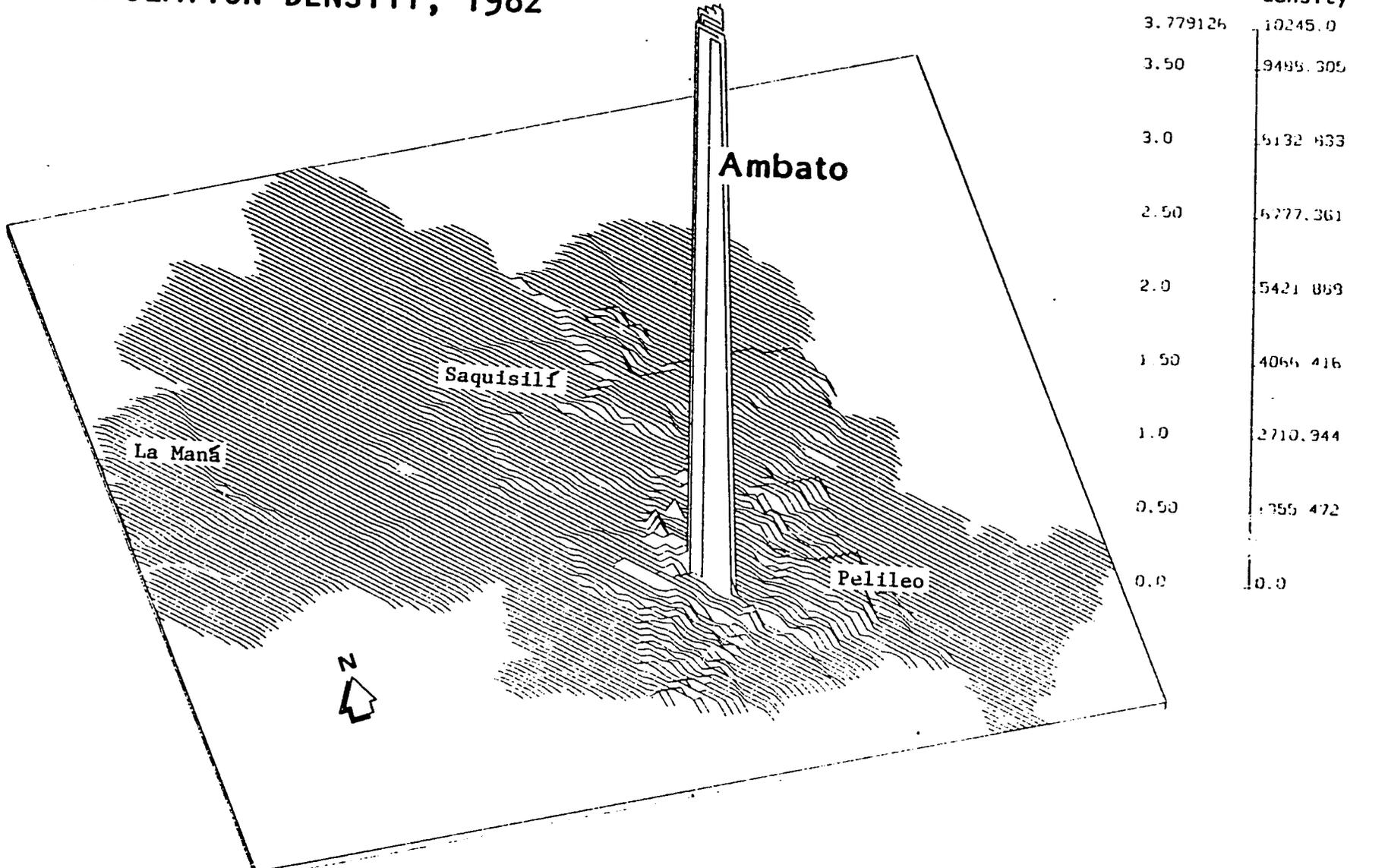
MAP III-9

AMBATO REGION URBAN POPULATION IN 1982



MAP III-10

AMBATO REGION POPULATION DENSITY, 1982



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TABLE III-4
URBAN HIERARCHY OF THE AMBATO REGION OF TUNGURAHUA AND COTOPAXI

	1982 URBAN POPULATION	% URBAN CHANGE 1974-82	% URBAN 1982	1982 RURAL PARRAQUIA POPULATION	% RURAL CHANGE 74-82	T. POP. '82 PARROQUIA HINTERLAND	% OVERALL CHANGE 74-82	1982 POPUL. DENSITY Km ²	CANTON
1. AMBATO	100,605	+31	89	12,095	+81	112,600	+32	3886	AI
2. LATACUNGA	28,857	+31	63	17,122	-30	55,979	-1	186	BI
3. Baños	8,548	+53	82	1,923	-9	10,471	+36	114	A2
4. Salcedo	5,844	+41	25	17,913	+48	23,757	+46	106	B4
5. Pelileo	4,523	+19	29	11,215	+13	15,738	+15	281	A9
6. Píllaro	4,290	+3	37	7,354	+24	10,644	+17	228	A6
7. La Maná	3,983	+192	22	13,784	+105	17,767	+114	63	B3
8. Pujilí	3,841	+14	17	19,087	0	22,928	+6	85	B3
9. Saquisilí	2,914	+10	24	9,061	+52	11,975	+38	77	B9
10. San Bartolomé	2,305	+36	42	3,220	+19	5,525	+24	425	AI
11. Izamba	2,221	+59	20	8,862	+19	11,083	+26	182	AI
12. Santa Rosa	1,940	+11	19	8,479	+20	10,419	+18	274	AI
13. Montalvo	1,732	+184	75	587	-57	2,319	+17	232	AI
14. Quizapincha	1,694	+34	23	5,588	+72	7,282	+61	73	AI
15. A.M. Martínez	1,683	-9	23	5,704	+11	7,387	+12	176	AI
16. Patate	1,609	+16	26	4,670	+2	6,279	+5	348	A3
17. Pilahuín	1,544	-8	24	4,861	-6	6,405	-7	27	AI
18. Huambaló	1,438	+33	26	4,108	+16	5,546	+20	252	A9
19. Atahualpa	1,313	+78	31	2,918	-38	4,231	-22	302	AI
20. Quero	1,267	+38	10	11,383	+9	12,650	+11	94	A4
21. El Corazón	1,245	+21	21	4,648	+17	5,793	+15	37	B2
22. Mulliquindil	1,225	+19	19	5,251	+30	6,476	+28	132	B4
23. Cevallos	1,150	+6	18	5,354	+20	6,504	+17	342	AI
24. Tracazo	1,089	+5	13	6,978	+24	8,067	+15	30	BI
25. Guaytacama	948	+1	17	4,738	0	5,686	+1	196	BI
26. Pasa	933	+3	16	4,848	+57	5,781	+45	85	AI
27. Huachi Grande	883	+21	20	3,494	+53	4,377	+45	486	AI
28. San Andrés	866	+18	12	6,281	+22	7,147	+21	135	A6
29. S. Juan de Pastocalle	827	+36	11	6,791	+13	7,618	+15	58	BI
30. Picaigua	802	+2	15	4,711	-46	5,513	-41	172	AI
31. Cusubamba	794	-1	13	5,160	+17	5,954	+14	31	B4
32. Mocha	781	-2	13	5,345	+7	6,136	+6	78	AI
33. Tanicuchí	767	+31	9	7,526	-2	8,293	+1	156	BI
34. Sigchos	751	+5	10	6,667	+23	7,418	+18	12	BI
35. San Fernando	744	+1	28	1,913	+43	2,657	+28	14	AI
36. Angamarca	691	-8	14	4,323	-12	5,014	-12	19	B3
37. Moraspungo	668	-14	7	9,537	+35	10,205	+36	23	B2
38. Cotaló	658	+14	32	1,411	+2	2,069	+6	43	A5
39. Bolívar	644	-4	34	1,235	+13	1,879	+6	171	A5
40. Mulalillo	637	+5	14	4,010	+7	4,647	+7	111	B4
41. Ulba	630	+85	33	1,289	-20	1,919	-2	21	A2
42. Tisaleo	624	-12	8	7,656	+15	8,280	+12	125	AI
43. Consta. Fernández	624	+29	27	1,698	new	2,322	+17	211	AI
44. San Miguelito	620	+9	13	4,251	+17	4,871	+16	271	A6
45. García Moreno	604	+10	15	3,399	+1	4,003	+3	250	A5
46. Tingo	603	+8	18	2,722	+2	3,325	+3	17	B3
47. E.M. Terán	575	+44	46	671	+4	1,246	+2	23	A6
48. Canchagua	544	+32	29	1,336	+7	1,880	+12	78	B5
49. Il de Noviembre	536	-16	24	1,694	+9	2,229	+2	223	BI
50. Poaló	536	+75	11	4,442	+8	4,978	+13	86	BI
51. Ambatillo	495	-52	15	2,850	+256	3,345	+83	257	AI

*A = TUNGURAHUA
B = COTOPAXI

TABLE III-4 | continued

page 2: URBAN HIERARCHY OF THE AMBATO REGION OF TUNGURAHUA AND COTOPAXI

	1982 URBAN POPULATION	% URBAN CHANGE 1974-82	% URBAN 1982	1982 RURAL PARRAQUIA POPULATION	% RURAL CHANGE 74-82	T. POP. '82 PARROQUIA HINTERLAND	% OVERALL CHANGE 74-82	1982 POPUL. DENSITY Km ²	CANTON HIERARCHY #
52. Marcos Espinel	471	0	19	1,948	0	2,419	+ 2	23	A6
53. Totoras (Transito)	443	-60	12	3,124	+67	3,567	+20	446	A1
54. Benitez (Pachanlica)	437	+18	25	1,300	+21	1,737	+21	248	A5
55. Pilaló (Macuchi)	407	-21	20	1,614	+81	2,021	+25	10	B3
56. La Victoria	406	+28	16	2,137	- 8	2,543	- 4	150	B3
57. S. Jose de Poaló	397	- 3	17	2,002	+18	2,399	+13	20	A6
58. Sucre Patate-Urco	388	-22	28	980	+23	1,368	+49	10	A3
59. Presidente Urbina	365	-12	16	1,934	+17	2,299	+11	164	A6
60. Belisario Quevedo	362	-12	9	3,885	+16	4,247	+32	82	B1
61. Mulaló	360	-15	5	6,444	- 5	6,804	- 6	15	B1
62. Panzaleo	335	+ 4	14	1,999	0	2,334	+ 2	137	B4
63. Aláquez	334	+36	8	3,798	-37	4,132	-34	29	B1
Ant. Jose Holquín	334	+40	14	2,104	+ 6	2,438	+ 9	304	B4
65. Chantilín	302	+44	45	374	-51	676	-31	169	B5
66. Pacayacu	299	+33	9	3,175	+12	3,474	+14	10	B1
El Rosario (Rumich.)	299	+ 1	17	1,453	+25	1,752	+20	125	A5
68. Guangaje	297	+11	4	6,671	+21	6,968	+21	61	B3
69. Río Verde	291	- 6	31	655	-24	946	-20	4	A2
70. Río Negro	286	-19	35	534	-48	820	-40	2	A2
71. Zumbahua	284	+173	3	8,295	+47	8,579	+32	39	B3
72. Yanayacu (Mochapata)	283	+ 6	21	1,056	- 8	1,339	+ 5	30	A4
73. Las Pampas	247	+253	9	2,581	+20	2,828	+24	14	B1
74. El Triunfo	202	+23	28	518	+29	720	+27	8	A3
75. Juan Benigno Vela	198	+ 4	4	5,461	+ 4	5,659	+ 4	141	A1
76. Isinliví	184	-40	6	2,805	+ 3	2,989	- 1	36	B3
77. Baquerizo Moreno	178	+ 2	46	208	-24	386	-15	14	A6
78. Chügchilán	164	-16	3	4,607	-10	4,771	-10	9	B3
79. Joseguano Bajo	161	-37	8	1,874	+114	2,035	+30	135	B1
80. Pinllopata	146	-46	21	542	+53	688	+10	24	B2
81. Los Andes (Poapug)	118	-27	9	1,134	+12	1,252	+ 7	60	A3
82. Lligua	83	+ 2	17	398	-31	481	-27	69	A2
83. Chiquicha	82	+41	5	1,546	+31	1,628	+31	125	A5
84. Salasaca	78	-90	3	2,592	-12	2,670	-43	191	A5
85. Ramón Campaña	76	- 6	4	1,790	+ 6	1,866	+ 5	21	B2
86. Guasaganda	0	0	0	240	new area	240		new area	B3
87. Llangahua	0	rural market		0	?	0	?	?	A1
88. Guantaló	0	rural market		0	?	0	?	?	B3
89. Cuicuna	0	rural market		0	?	0	?	?	B5
90. San Buenaventura	0	rural market		0	?	0	?	?	B1

214,942

*A = TUNGURAHUA
B = COTOPAXI

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High Growth Regions

Six subregions in the two provinces experienced high growth rates:

- (1) seven parroquias near the city of Ambato and its immediate commuting zone, especially on the northern side of Tungurahua province;
- (2) three parroquias in eastern Tungurahua;
- (3) three parroquias around Salcedo in Cotopaxi province;
- (4) Saquisilí and one other nearby parroquias
- (5) two isolated highland parroquias in Cotopaxi at Zumbahu and Pillaro;
- (6) the two most western lowland parroquias in Cotopaxi (La Mana and Moraspungo).

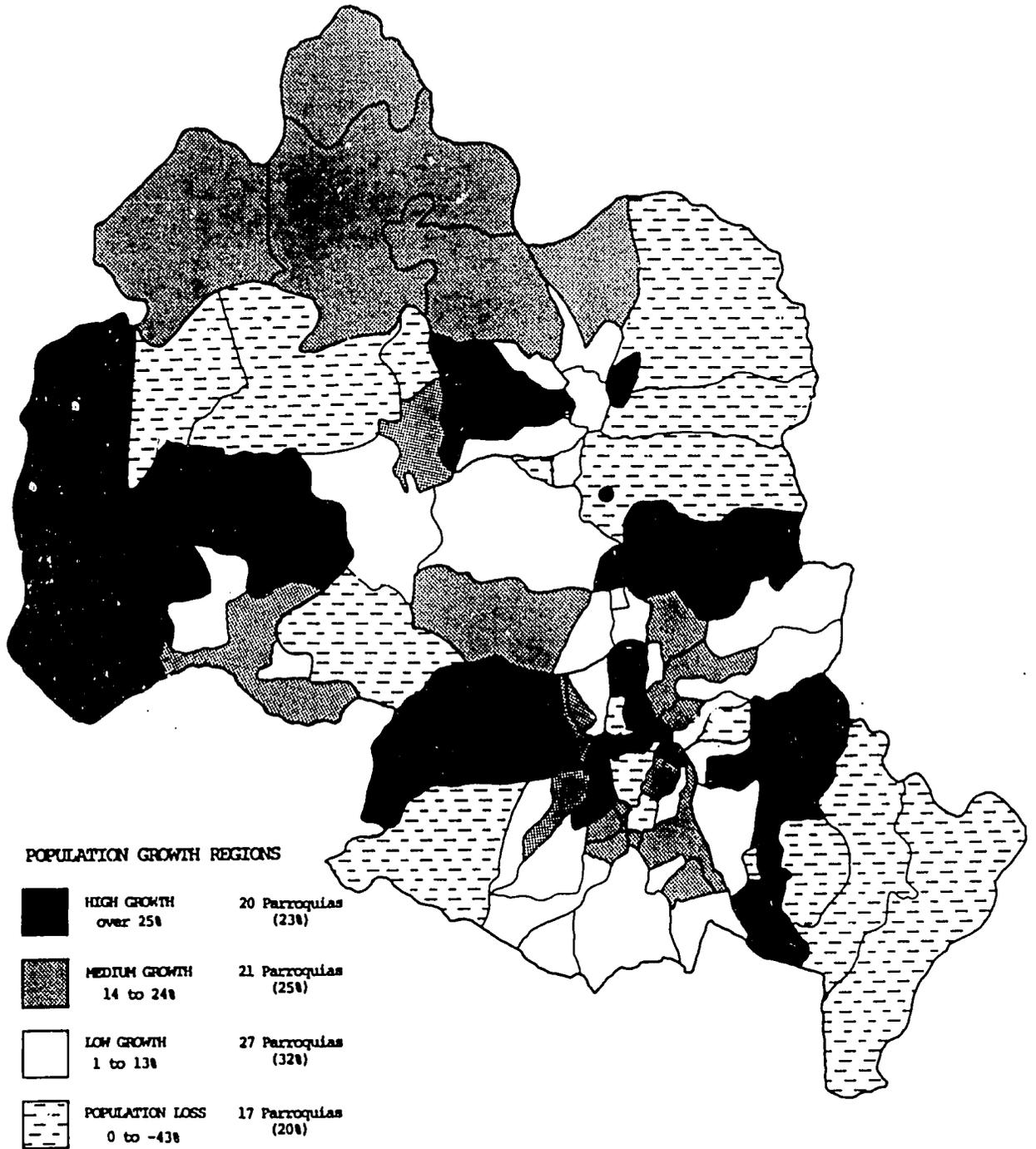
Medium Growth Regions

For the most part, parroquias with medium growth were in more isolated mountain agricultural or animal grazing regions (twelve out of twenty-one). These parroquias lacked services and most of the alternative economic possibilities, yet they were too isolated to have many people out-migrate. The other nine parroquias were in a circle around the city of Ambato near the outer limit of the commuting zone.

Low Growth Regions

Population growth continues to fall as one moves out from Ambato. Eighteen of the twenty-seven parriquias in the low growth category are in a circular zone surrounding Ambato but near the outer limits of the commuting zone. The other seven are in Cotopaxi province, six of which are the most northern and are extremely isolated away from services and other urban amenities.

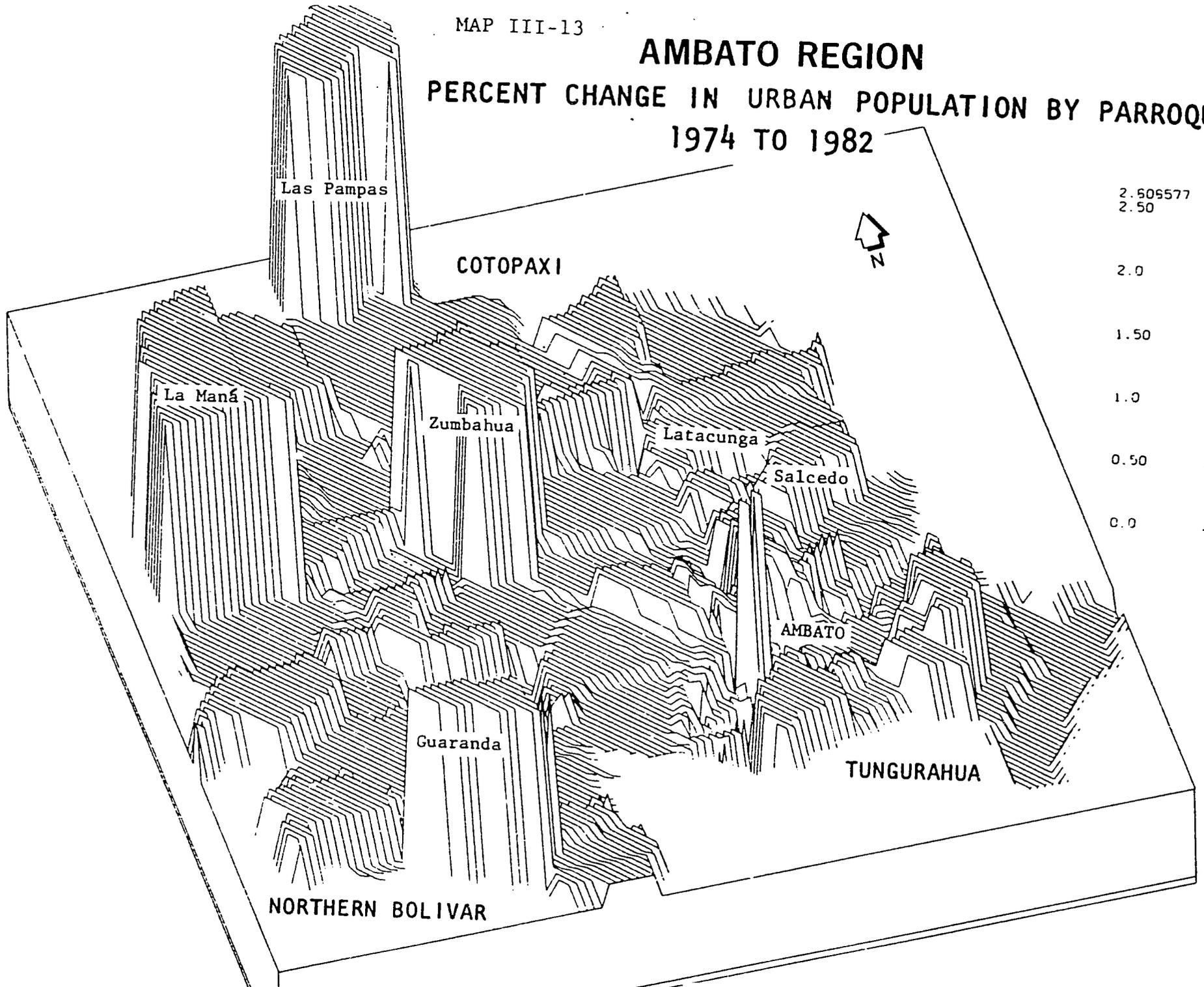
MAP III-12
 POPULATION GROWTH REGIONS IN TUNGURAHUA AND COTOPAXI



MAP III-13

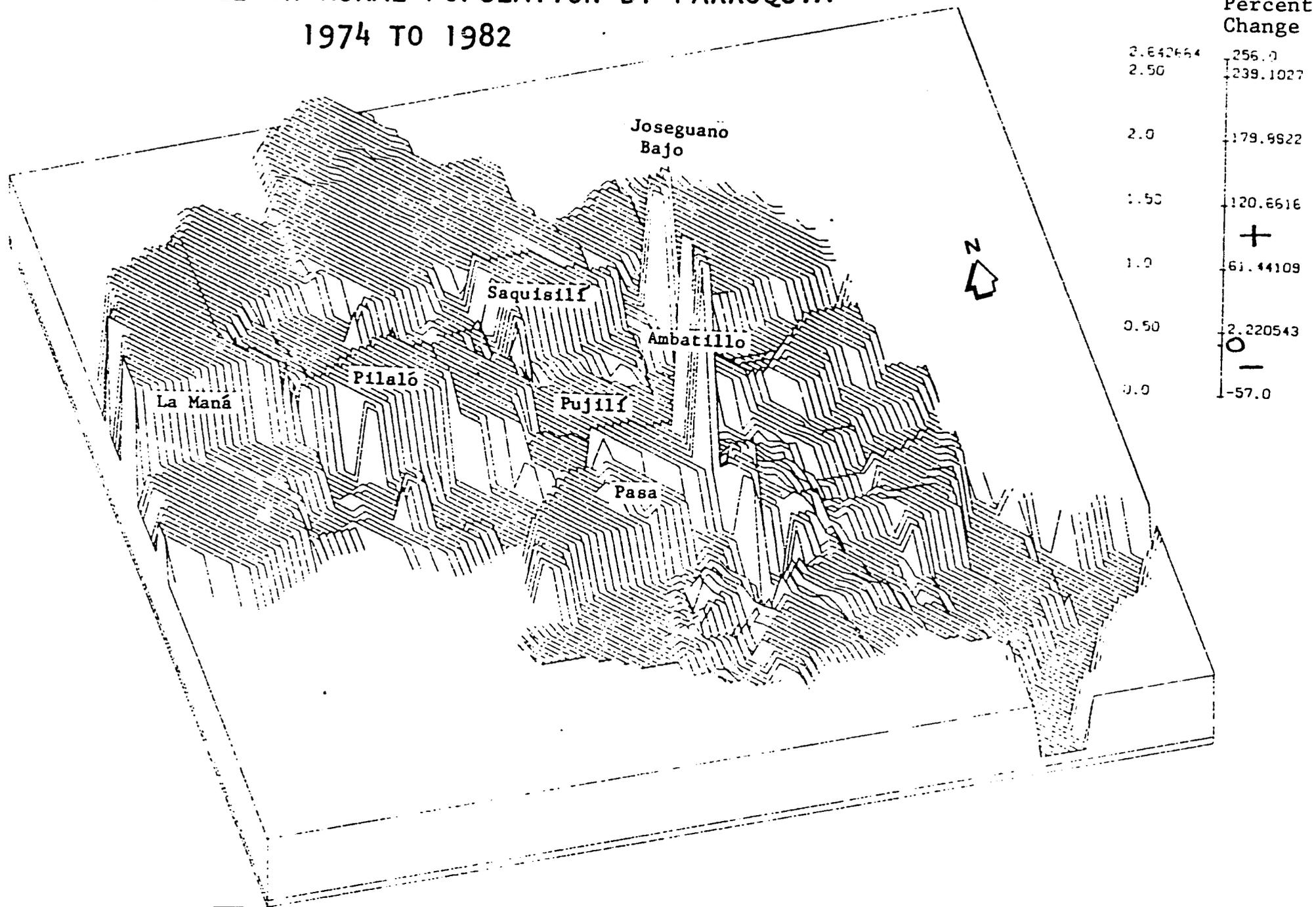
AMBATO REGION

PERCENT CHANGE IN URBAN POPULATION BY PARROQUIA 1974 TO 1982



AMBATO REGION

PERCENT CHANGE IN RURAL POPULATION BY PARROQUIA 1974 TO 1982



Regions of Population Loss

Parroquias that are losing population tend to fall into two types of regions. The first type involved eight parroquias that are very close to major urban centers. Three parroquias of this type are very near Ambato and five are very near Latacunga. The second type involves parroquias that are among the most remote and isolated parroquias in the region. Six of this type are in Tungurahua province and three are in Cotopaxi.

A Model of Population Growth for the Ambato Region

A consistency relating to distance from the regional center to the rate of population change emerges from the analysis. In each province the pattern of consistency is somewhat different. In Cotopaxi (see Figure III-5), the highest growth rate takes place in the immediate center (zone 1), rapidly moves into a zone of population loss (zone 2), then moves to a region of low population growth (zone 3), before reaching a zone of smaller regional centers like Salcedo and Saquisilí with higher rates of growth (zone 4). The more isolated zone 5 is one of medium growth in Cotopaxi. Zone 6 in the western sierras is a more complex zone, and it includes a few parroquias in each category--high, medium, and low population growth. In the western lowlands (zone 7), a high rate of growth takes place.

In the Tungurahua model (see Figure III-6), the pattern of population growth matches the Cotopaxi model in zones 1, 3, and 4. Most parroquias in zone 2 in Tungurahua had medium growth rates. However, several parroquias with very easy access to Ambato in that zone also had population losses, as did zone 2 in Cotopaxi. It appears that the immediate hinterland around Ambato is much richer in options and opportunities than the region immediately around Latacunga. Finally, in the more remote zone 5, Tungurahua had population

losses while Cotopaxi had patterns of medium growth. The similarities and dissimilarities between the two models are summed up in Figure III-7.

A final statement can be made that summarizes the data somewhat differently with regard to the existence or lack of existence of services in five different ecological settlement zones (see Map III-15). The urbanized core around Ambato, Latacunga, and several smaller centers have virtually all services. The urban settlement satellite zone immediately adjacent to the urban core has most services. An agricultural hinterland zone that takes up the rest of the valley has some services available, but the isolated mountainous settlement zones that virtually circle the study area have no services. Finally, the lowland to the east and west of the sierras have most to some services for the majority of the population. Data has been collected on existing services and urban functions for this region, but a more detailed analysis will be undertaken in phase II of the study.

FIGURE III-5

MODEL OF POPULATION GROWTH IN COTOPAXI
1974 through 1982

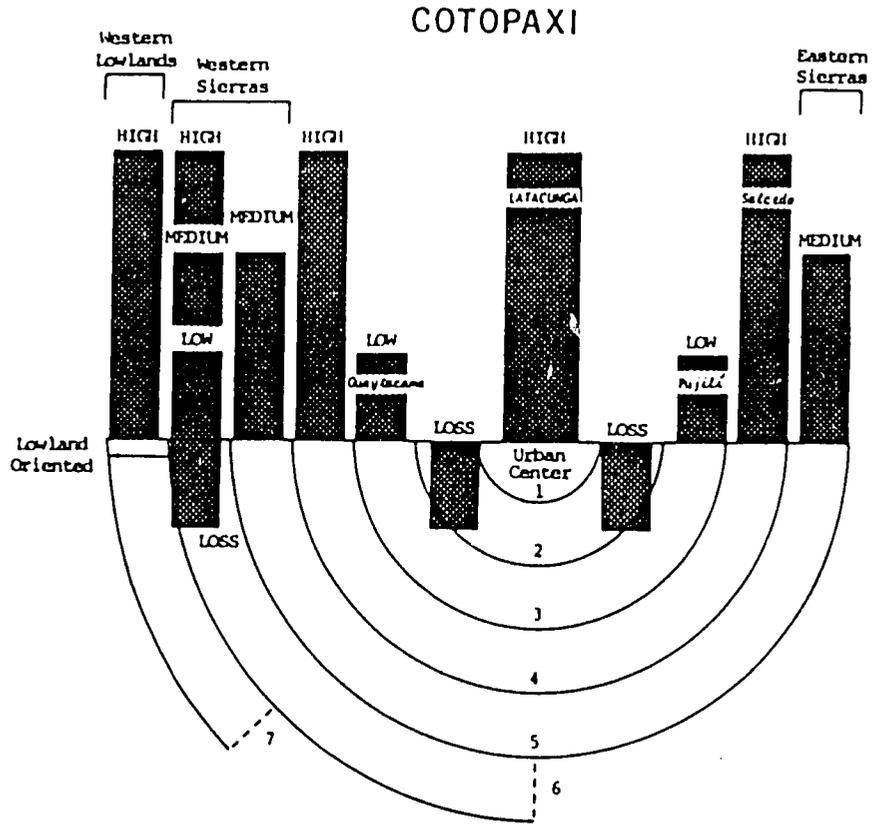


FIGURE III-6

MODEL OF POPULATION GROWTH IN TUNGURAHUA
1974 through 1982

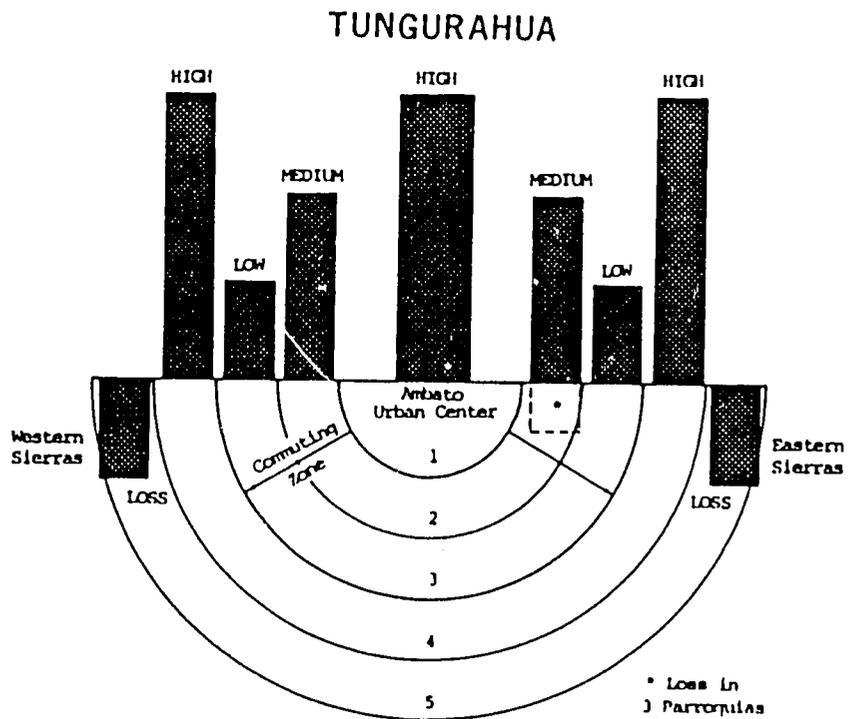
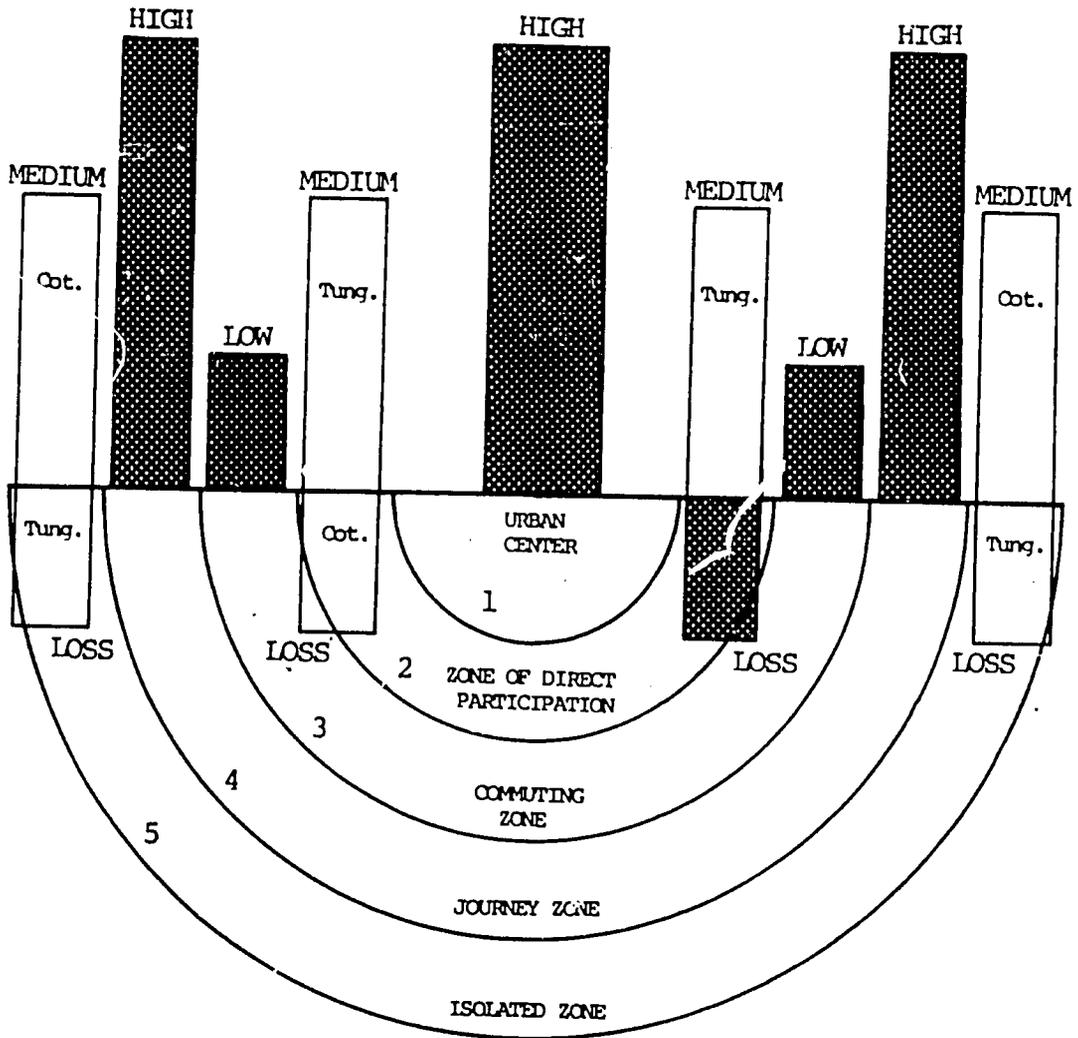


FIGURE III-7

A POPULATION GROWTH MODEL BASED ON TWO PROVINCES
 Tungurahua and Cotopaxi: 1974 through 1982



R. WILKIE



AGREEMENT BETWEEN THE TWO PROVINCES

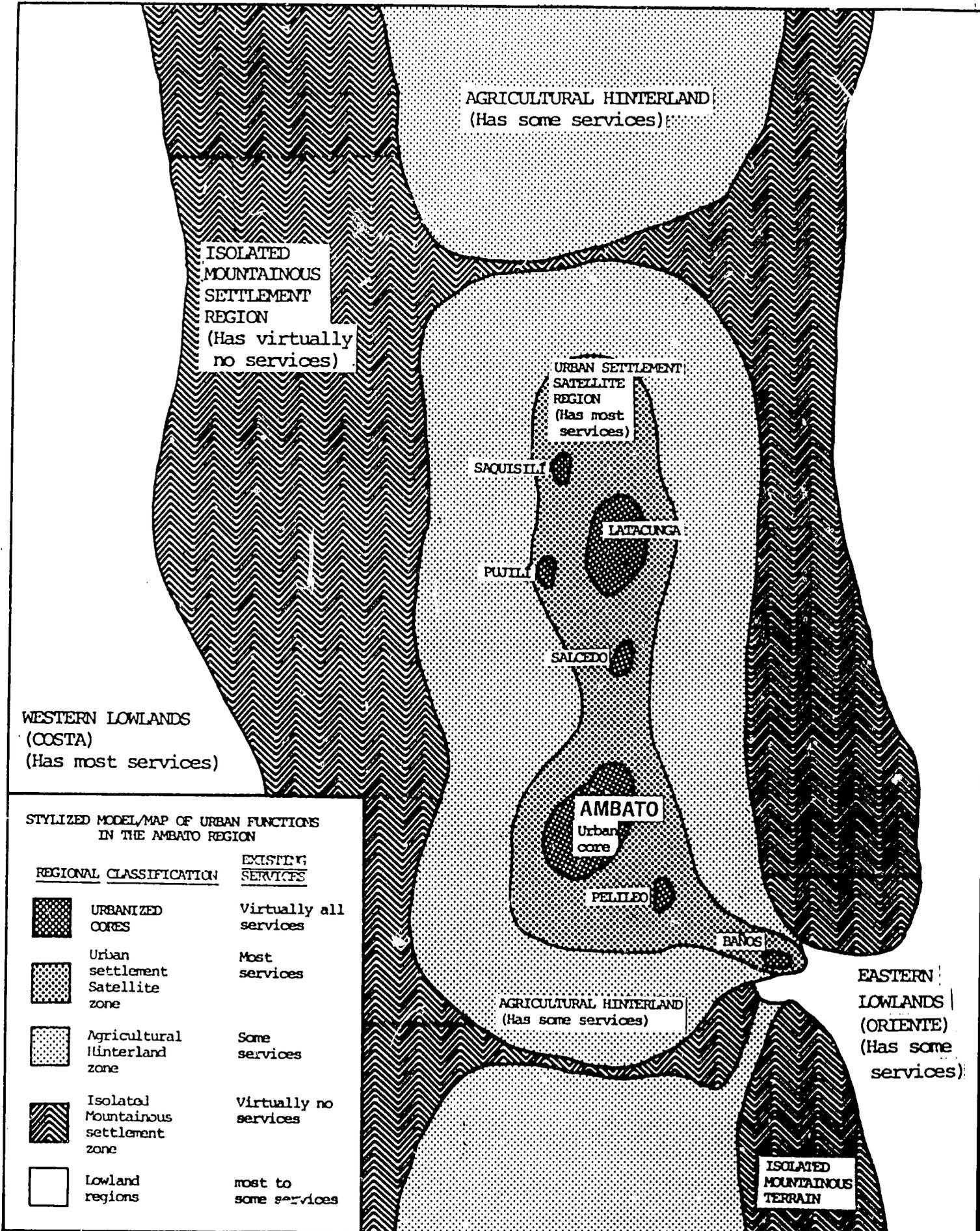


DIFFERENT PATTERNS FOR EACH PROVINCE

COT. = COTOPAXI

TUNG. = TUNGURAHUA

STYLIZED MAP OF REGIONAL SETTLEMENT TYPES RELATED TO THE EXISTENCE OF URBAN FUNCTIONS



CHAPTER IV

THE AGRICULTURAL PRODUCE MARKETING FUNCTION IN THE AMBATO REGION

The principal economic purpose of the smaller towns in the Ambato region is commerce. More specifically, the primary form of commerce is the buying and selling of agricultural produce. Incomes in the region are derived mainly from the exchange of agricultural produce for money in the marketing system. Indeed, as much as 50 to 60 percent of those living in the urban centers of this largely rural region derive a portion of their income from agriculture. In terms of economic and rural development, therefore, the marketing of agricultural produce constitutes the major rural-urban linkage in the Ambato region and warrants careful examination.

A study of the marketing function in the region for the purposes of urban-rural development planning requires at least the following: (1) defining the structure of the marketing system; (2) determining the factors influencing the behavior of actors in the system; (3) measuring price margins at each stage in the marketing process; and (4) measuring the geographic accessibility of specific people to specific marketing opportunities. Defining the structure of the marketing systems involves determining how the marketing function is organized into a hierarchy of markets distributed among settlements in the region and the degree of connectivity (the volume of flow) among and between the nodes in the marketing network. Defining and mapping the hierarchy of markets provides insights into which central places are the most important and active in the rural development process by commodity. Measuring and mapping the flows of produce to and from markets provides the data necessary to determine the areas of influence of market towns within the region and, hence, their hinterlands.

Due to the limited time and budget under which this project was conducted, the project team was only able to define the structure of the market system. While this enabled the team to describe the spatial form of the marketing system in a quick and cost-effective manner and to reach tentative conclusions as to the relative importance and economic reach of market towns in the region, the team was unable to determine the factors influencing the behavior of actors in the system, to measure price margins, or to measure geographic and economic accessibility of people to markets. The utility of such information for urban-rural development planning, while not generated by the project in its first stage, should be noted. Behavioral information are necessary to determine the dynamics behind the system. Pricing data are necessary to determine where, how much, and by whom value is added. Data on the geographic access of specific people to market opportunities for specific products are necessary to determine which interventions in the system will result in improved access to markets for a given target. Without this information, the project team could not develop an impact simulation model of the marketing system in the Ambato region or gain a full appreciation of the potential for intervention in the system. The need for and the desirability of constructing such a model for the entire region will be addressed in the next stage of the project.

The Hierarchy of Market Towns

Two kinds of marketing systems operate in the Ambato region. One consists of permanent stores and outlets that are fixed in place. A second type of market activity, which is more significant in the marketing of produce in rural areas, is a more traditional pattern that operates from the bottom up and results in a series of periodic markets. Ray Bromley has described periodic markets as follows:

TABLE IV-1

(8) TUNGURAHUA

Rank in 1974		Popul. 1974	Popul. 1982	% Change 1974-82	% in Agricult. 1974	Periodic Market Levels Produce - Animals		1-Sunday thru Principal Day	7-Saturday Secondary Day	Market size in the Sierra(1972)
4.	Ambato	77,052	100,605	+ 31						
58.	Baños	5,596	8,548	+ 53	4	4	4	2	-	2.
72.	Píllaro	4,163	4,290	+ 3	38	3	2	1	4	20.
80.	Pelileo	3,800	4,523	+ 19	58	3	3	5	1	15.
144.	Salasaca	1,853	78	- 90	12	3	3	7	3	14.
147.	A.M.Martínez	1,836	1,683	- 9	26	-	-	-	-	-
154.	Santa Rosa	1,750	1,940	+ 11	31	-	-	-	-	-
161.	San Bartolomé	1,695	2,305	+ 36	12	1	0	-	-	141.
166.	Pilahuín	1,669	1,544	- 8	76	-	-	-	-	-
192.	Izamba	1,320	2,221	+ 59	25	1	0	1	-	135.
194.	Ambatillo	1,031	495	- 52	79	-	-	-	-	-
195.	Patate	1,385	1,609	+ 16	81	-	-	-	-	-
208.	Quizapincha	1,268	1,694	+ 34	34	2	0	1	1/5	5
222.	Totoras (Tránsito)	1,108	443	- 60	35	1	0	1	-	64.
225.	Cevallos	1,086	1,150	+ 6	31	-	-	-	-	119.
227.	Huambaló	1,081	1,438	+ 33	74	2	0	5	-	-
264.	Quero	919	1,267	+ 38	90	1	1	6	-	25.
267.	Pasa	905	933	+ 3	36	3	3	1	-	75.
294.	Huachi Chico	798	(Now part of Ambato)		23	2	2	5	1	22.
295.	Mocha	798	781	- 2	74	-	-	-	-	69.
298.	Picaigua	783	802	+ 2	24	1	0	1	-	-
311.	Atahualpa (Chipza.)	738	1,313	+ 78	13	-	-	-	-	151.
314.	San Fernando	735	744	+ 1	51	-	-	-	-	-
316.	San Andrés	732	866	+ 18	78	1	1	5	1	70.
319.	Huachi Grande	729	883	+ 21	71	-	-	-	-	-
326.	Tisaleo	709	624	- 12	42	-	-	-	-	-
334.	Bolívar	671	644	- 4	74	1	0	1	-	-
354.	Montalvo	609	1,732	+ 184	73	-	-	-	-	102.
369.	Cotaló	578	658	+ 14	76	-	-	-	-	-
375.	San Miguelito	568	620	+ 9	57	1	0	1	-	-
389.	García Moreno (Ch)	548	604	+ 10	60	1	0	7	-	135.
412.	Sucre (Patate Urco)	499	388	- 22	88	-	-	-	-	116.
421.	Constantino Fernández	485	624	+ 29	89	-	-	-	-	-
431.	Marcos Espinel	471	471	0	82	-	-	-	-	-
452.	Presidente Urbina	416	365	- 12	80	-	-	-	-	-
458.	S. José de Poaló	408	397	- 3	36	-	-	-	-	-
462.	E. M. Terán (Rumipamba)	400	575	+ 44	92	-	-	-	-	-
477.	Benítez (Pachanlica)	370	437	+ 18	83	-	-	-	-	-
489.	Río Negro	354	286	- 19	57	-	-	-	-	-
502.	Ulba	341	630	+ 85	66	-	-	-	-	-
528.	Río Verde	309	291	- 6	65	-	-	-	-	-
542.	El Rosario(Rumich.)	296	299	+ 1	21	-	-	-	-	-
575.	Yanayacu (Mochapata)	266	283	+ 6	81	-	-	-	-	-
648.	Juan Benigno Vela	191	198	+ 4	68	-	-	-	-	-
670.	Baquerizo Moreno	175	178	+ 2	84	-	-	-	-	-
690.	El Triunfo	164	202	+ 23	95	-	-	-	-	-
692.	Los Andes (Poapug)	161	118	- 27	60	-	-	-	-	-
776.	Lligua	81	83	+ 2	88	-	-	-	-	-
795.	Chiquicha	58	82	+ 41	67	-	-	-	-	-
-	Llangahua	-	-	-	-	1	1	5	-	-

*/ Emigration in this Parroquia is very high, mostly to this Galapagos and Esmeraldas.

(10) COTOPAXI

TABLE IV-2

National Rank in 1974	Popul. 1972	Popul. 1982	% Change 1974-82	1974 % in Agric.	Periodic Market Levels		1=Monday Principal Day	7=Sunday Secondary Day	Market Size in the Sierra (1972)	
					Produce	Animals				
20.	Latacunga	22,106	28,875	+ 31	28	3	3	7	3	5.
73.	Salcedo (San Miguel de)	4,146	5,844	+ 41	56	3	3	1	4	10.
89.	Pujilí	3,368	3,841	+ 14	66	3	2	1	4	18.
106.	Saquisilí	2,656	2,914	+ 10	57	3	3	5	-	12.
197.	La Maná	1,366	3,983	+ 192	47	-	-	-	-	-
238.	Toacazo	1,036	1,089	+ 5	52	1	0	1	-	93.
239.	El Corazón	1,033	1,245	+ 21	63	-	-	-	-	-
241.	Mulliquindil	1,027	1,225	+ 19	79	-	-	-	-	-
258.	Guaytacama	941	948	+ 1	30	1	0	1	-	157.
293.	Cusubamba	799	794	- 1	51	2	0	1	0-	56.
300.	Moraspungo	775	668	- 14	50	-	-	-	-	-
307.	Angamarca	754	691	- 8	51	2	2	6	-	50.
324.	Sigchos	713	751	+ 5	39	2	2	1	-	38.
340.	11 de Noviembre (Illinchisi)	640	536	- 16	63	-	-	-	-	-
357.	S. Juan de Pastocalle	606	827	+ 36	72	1	0	1	0	72.
358.	Mulalillo	605	637	+ 5	59	1	0	1	0	157.
363.	Tanicuchí	586	767	+ 31	16	1	0	1	0	112.
383.	El Tingo	560	603	+ 8	26	-	-	-	-	-
404.	Pilaló (Macuchi)	513	407	- 21	61	1	0	1	0	123.
449.	Mulaló	422	360	- 15	36	-	-	-	-	-
454.	Belisario Quevedo (Guanailín)	412	362	- 12	54	-	-	-	-	-
455.	Canchagua	411	544	+ 32	64	-	-	-	-	-
512.	Changaje	330	297	- 10	25	-	-	-	-	-
519.	Panzaleo	321	335	+ 4	54	-	-	-	-	-
525.	La Victoria	315	406	+ 28	31	-	-	-	-	-
530.	Isínliví	308	184	- 40	65	1	0	7	0	96.
532.	Poaló	307	536	+ 75	38	-	-	-	-	-
567.	Pínilopata	271	146	- 46	81	-	-	-	-	-
574.	Guangaje	267	297	+ 11	98	-	-	-	-	-
586.	Josequano Bajo	255	161	- 37	49	-	-	-	-	-
594.	Aláquez	246	334	+ 36	35	1	0	1	0	157.
602.	A.J. Holguín (Lucía)	239	334	+ 40	63	-	-	-	-	-
615.	Pucayacu	225	299	+ 33	42	-	-	-	-	-
632.	Chantilín	209	302	+ 45	?	-	-	-	-	-
644.	Chugchilán	196	164	- 16	73	1	1	1	0	92.
753.	Zumbahua	104	284	+ 173	61	2	2	7	0	32.
775.	Ramón Campaña	81	76	- 6	69	-	-	-	-	-
791.	Las Pampas	70	247	+ 253	52	-	-	-	-	-
-	Guantualó	-	-	-	-	2	2	2	0	61.
-	Cuicuna	-	-	-	-	1	0	6	1	82.
-	San Buenaventura	-	-	-	-	1	0	1	0	97.

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Markets are most easily classified on the basis of their periodicity. They can be divided into two main classes; 'daily markets', and 'periodic markets'. Daily markets are markets which take place on every day, or at least on every working day, of the week. Periodic markets take place less frequently than daily, occurring regularly on one or more fixed days each week. In many market centers, small daily markets are supplemented on one, two or three days each week by more substantial periodic market gatherings.

(p. 3, "Periodic and Daily Markets in Highland Ecuador," unpublished Ph.D., 1975.)

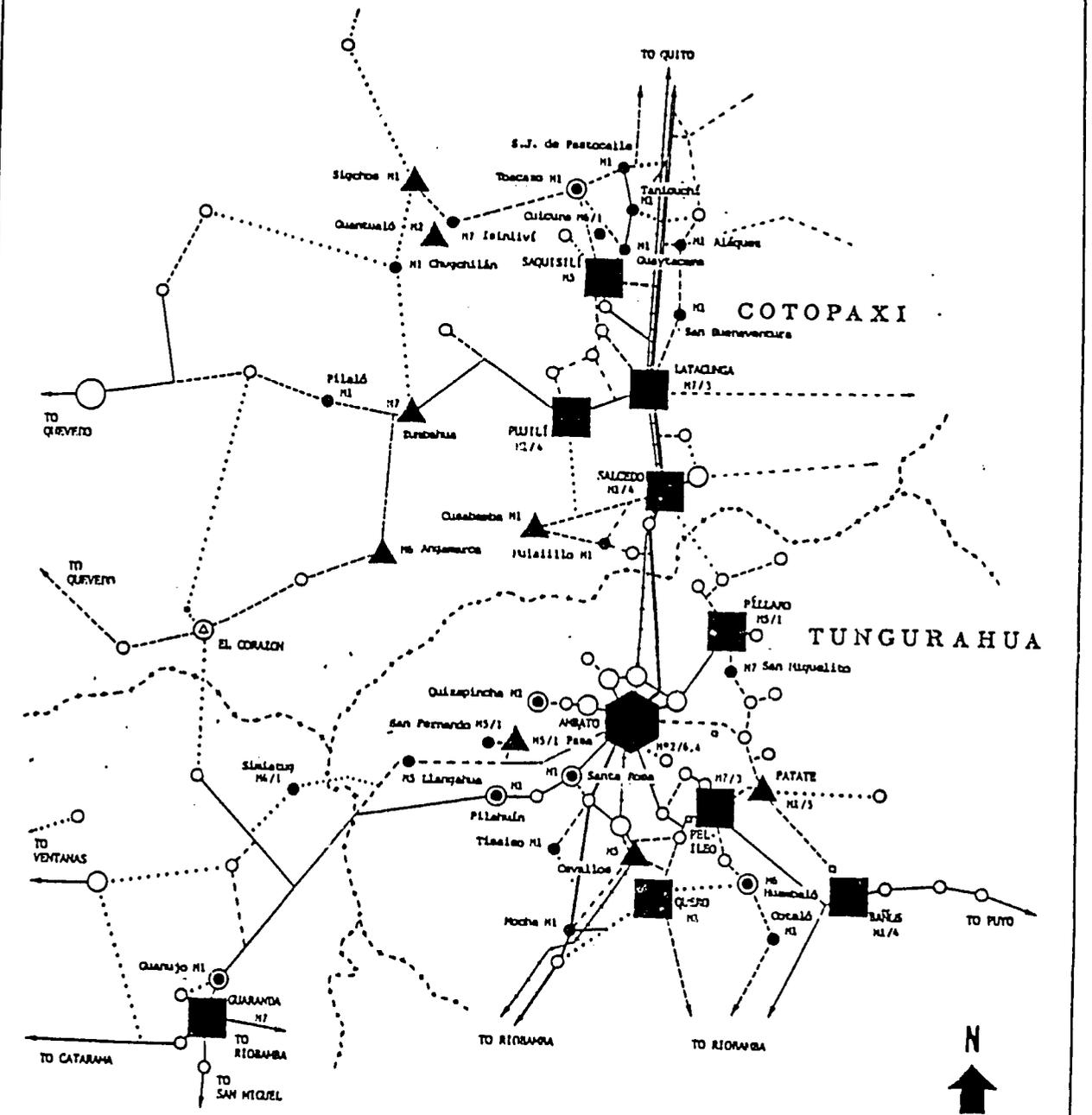
In the study region, the only town with a significant daily market for agricultural produce is Ambato. On the other hand, all periodic markets involve the marketing of produce as part of their marketing activities. Therefore, attention here is devoted exclusively to the definition, ranking, and mapping of the periodic market hierarchy in the Ambato region.

The Ambato region has one of the most developed periodic market systems in Ecuador. In 1972, Ambato ranked second in importance in the entire Sierras, Latacunga fifth, Salcedo tenth, Saquisilí twelfth, and Pelileo and Pillaro were fourteenth and fifteenth respectively (see Tables IV-1 and IV-2). The criteria used by Bromley to determine the relative importance of a periodic market is its size in terms of the number of vendor counts it contains. Two out of every five centers in the region have periodic markets (twenty in Cotopaxi and eighteen in Tungurahua).

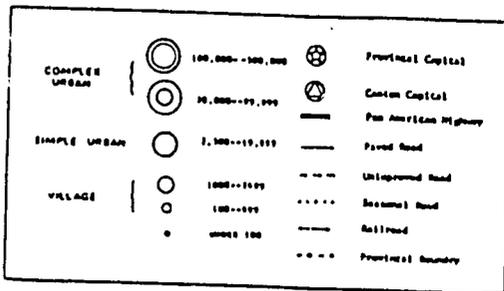
In Bromley's study of the region in 1972, he defined a periodic market hierarchy in the Ambato region based on the total vendors unit for a week in each center.

PERIODIC MARKET SYSTEM

AMBATO REGION



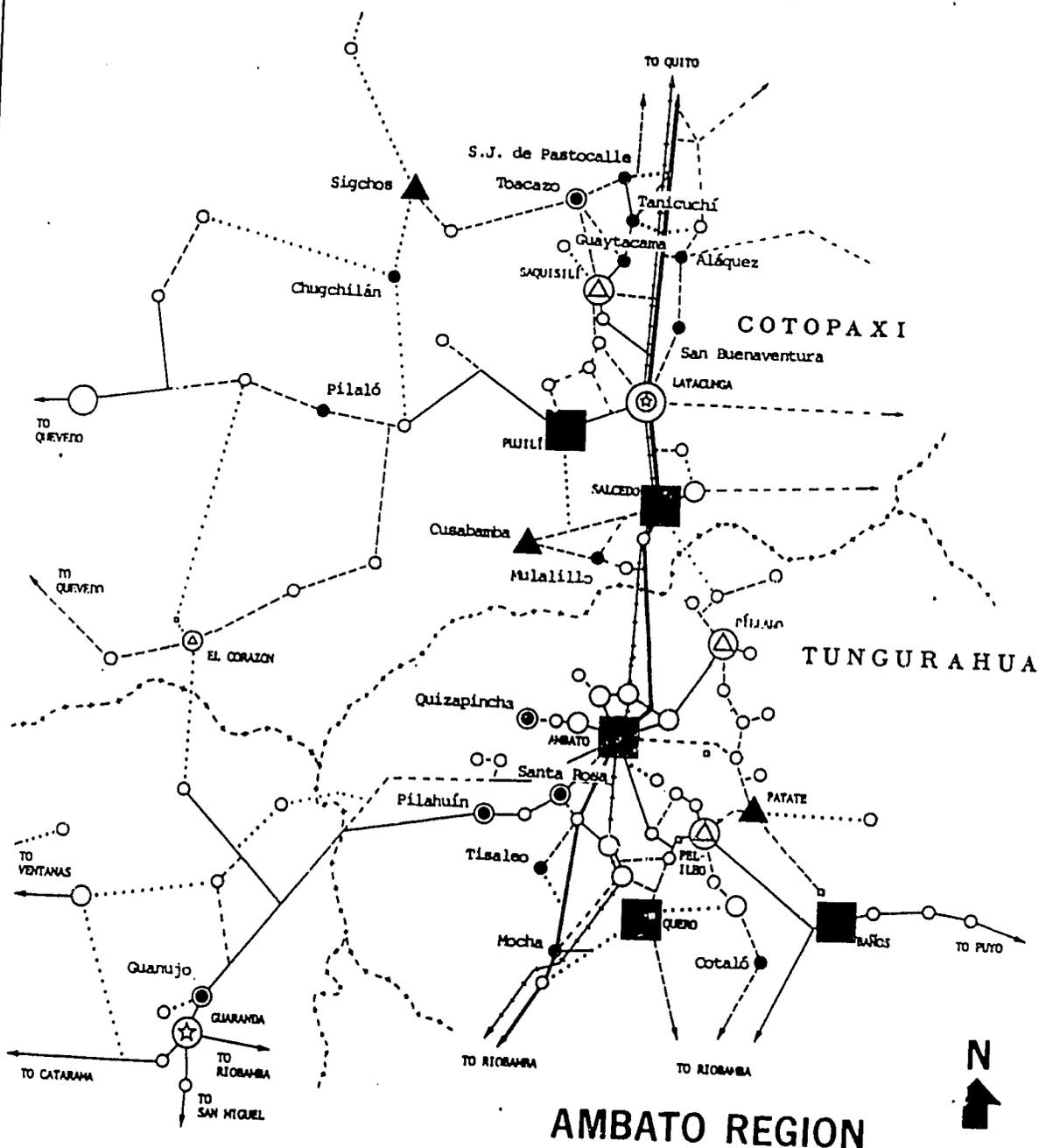
BOLIVAR



MARKETS VISITED	
Market Rankings	Market Days
<ul style="list-style-type: none"> RANK 1 Locally Isolated Markets RANK 2 Locally Interactive Markets RANK 3 Sub-Regional Market Centers RANK 4 Regional Distribution Centers 	<ul style="list-style-type: none"> N1 = Sunday / Domingo N2 = Monday / Lunes N3 = Tuesday / Martes N4 = Wednesday / Miércoles N5 = Thursday / Jueves N6 = Friday / Viernes N7 = Saturday / Sabado N8 = daily / diario N9 = daily with Monday largest / diario con Lunes mas grande N1/3 = primary day Sunday / secondary day Thursday / dia principal Domingo / dia secundario Jueves

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SUNDAY MARKETS

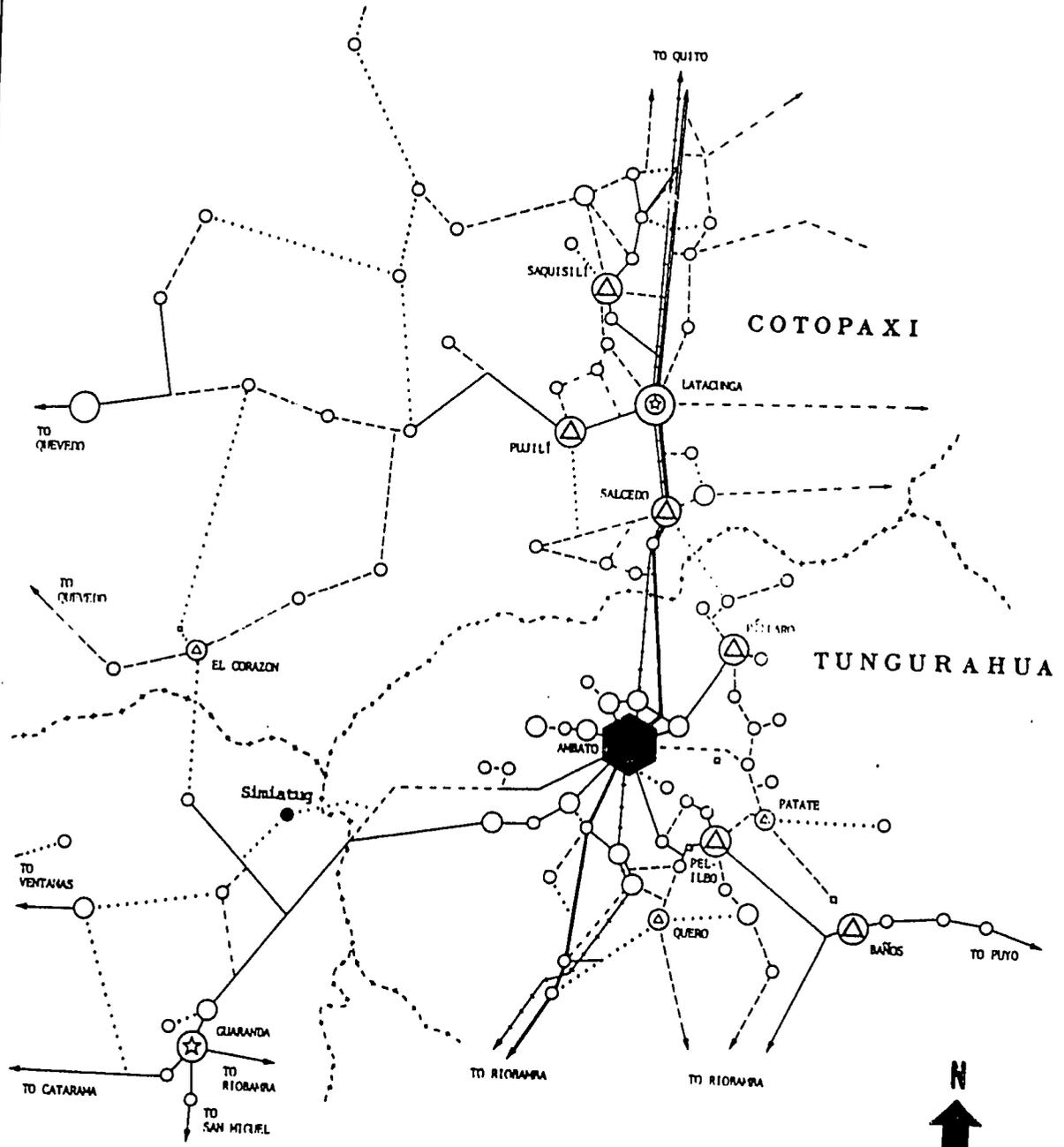


BOLIVAR

Market Rankings	
●	RANK 1 Locally Isolated Markets
▲	RANK 2 Locally Interactive Markets
■	RANK 3 Sub Regional Market Centers
⬛	RANK 4 Regional Distribution Centers

COMPLEX URBAN	⊙	100,000--500,000	⊗	Provincial Capital
	⊙	20,000--99,999	⊕	Canton Capital
SIMPLE URBAN	○	7,500--19,999	—	Pan American Highway
	○	1,000--7,499	—	Paved Road
VILLAGE	○	100--999	- - -	Unimproved Road
	○	100--999	⋯	Seasonal Road
	□	UNDER 100	—	Railroad
			- · - · -	Provincial Boundary

WEDNESDAY MARKETS



BOLIVAR

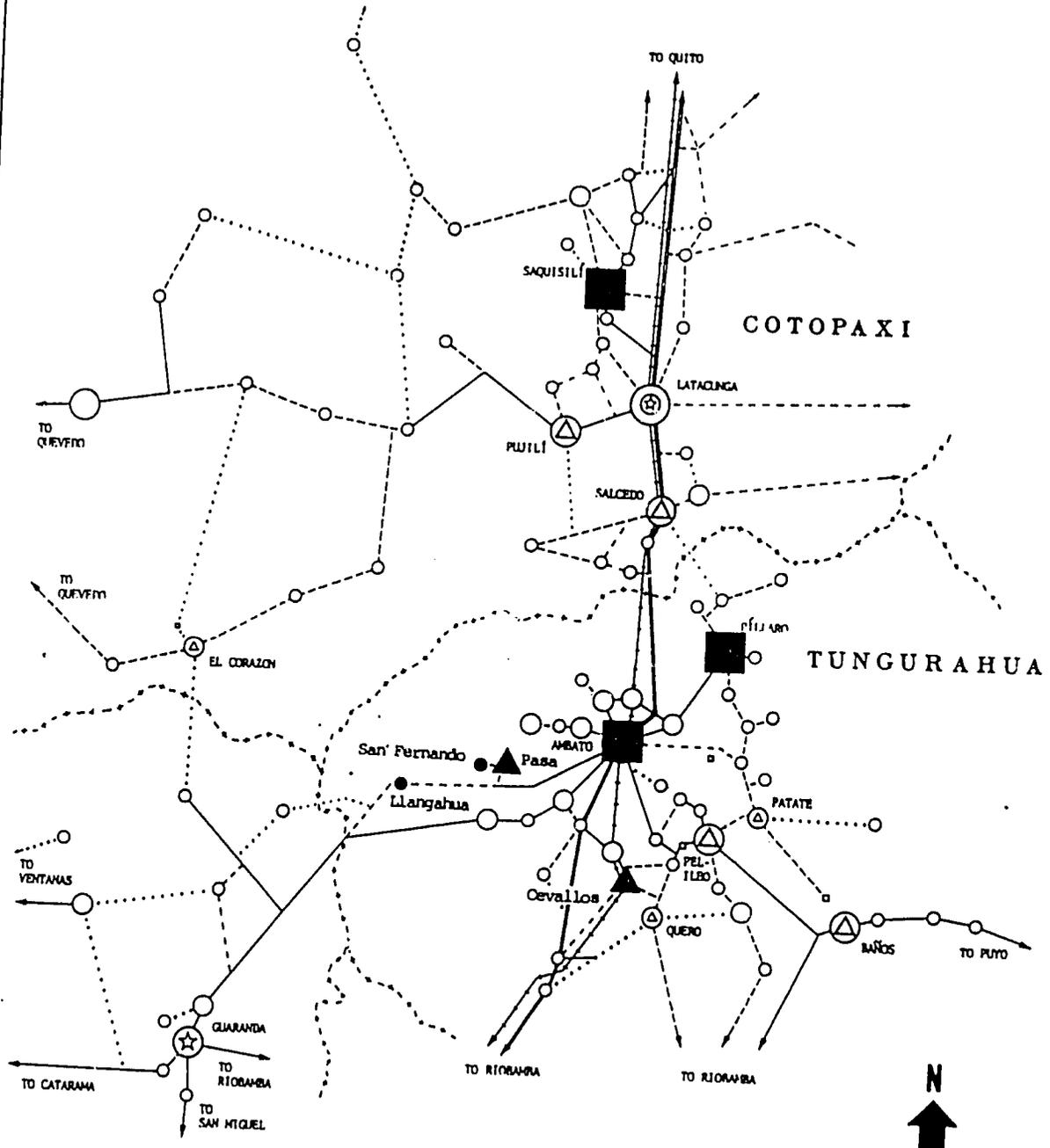
Market Rankings	
●	RANK 1 Locally Isolated Markets
▲	RANK 2 Locally Interactive Markets
■	RANK 3 Sub Regional Market Centers
⬢	RANK 4 Regional Distribution Centers

COMPLEX URBAN	⊙	100,000--500,000	☆	Provincial Capital
	⊙	10,000--99,999	⊕	Canton Capital
SIMPLE URBAN	○	2,500--9,999	—	Pan American Highway
	○	1,000--2,499	—	Paved Road
VILLAGE	○	100--999	- - -	Unimproved Road
	○	100--999	⋯	Seasonal Road
	□	UNDER 100	—	Railroad
			- - - -	Provincial Boundary



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THURSDAY MARKETS



BOLIVAR

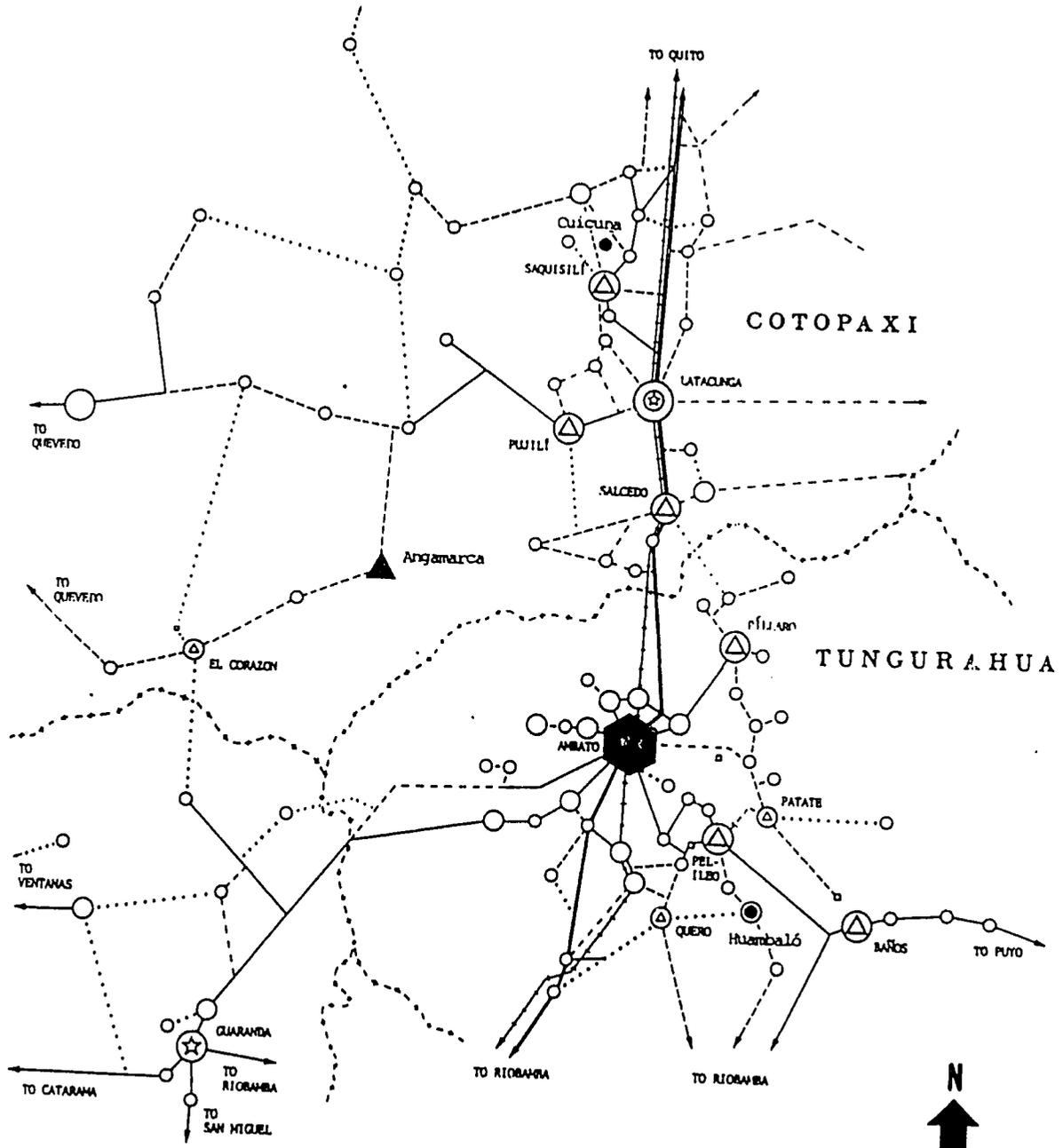
Market Rankings	
●	RANK 1 Locally Isolated Markets
▲	RANK 2 Locally Interactive Markets
■	RANK 3 Sub Regional Market Centers
⬡	RANK 4 Regional Distribution Centers

COMPLEX URBAN	⊙	100,000--300,000	☆	Provincial Capital
	⊙	20,000--99,999	⊕	Canton Capital
SIMPLE URBAN	○	2,500--19,999	—	Pan American Highway
	○	1000--2499	—	Paved Road
VILLAGE	○	100--999	- - -	Unimproved Road
	○	UNDER 100	⋯	Seasonal Road
	□		—	Railroad
			- · - · -	Provincial Boundary



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FRIDAY MARKETS

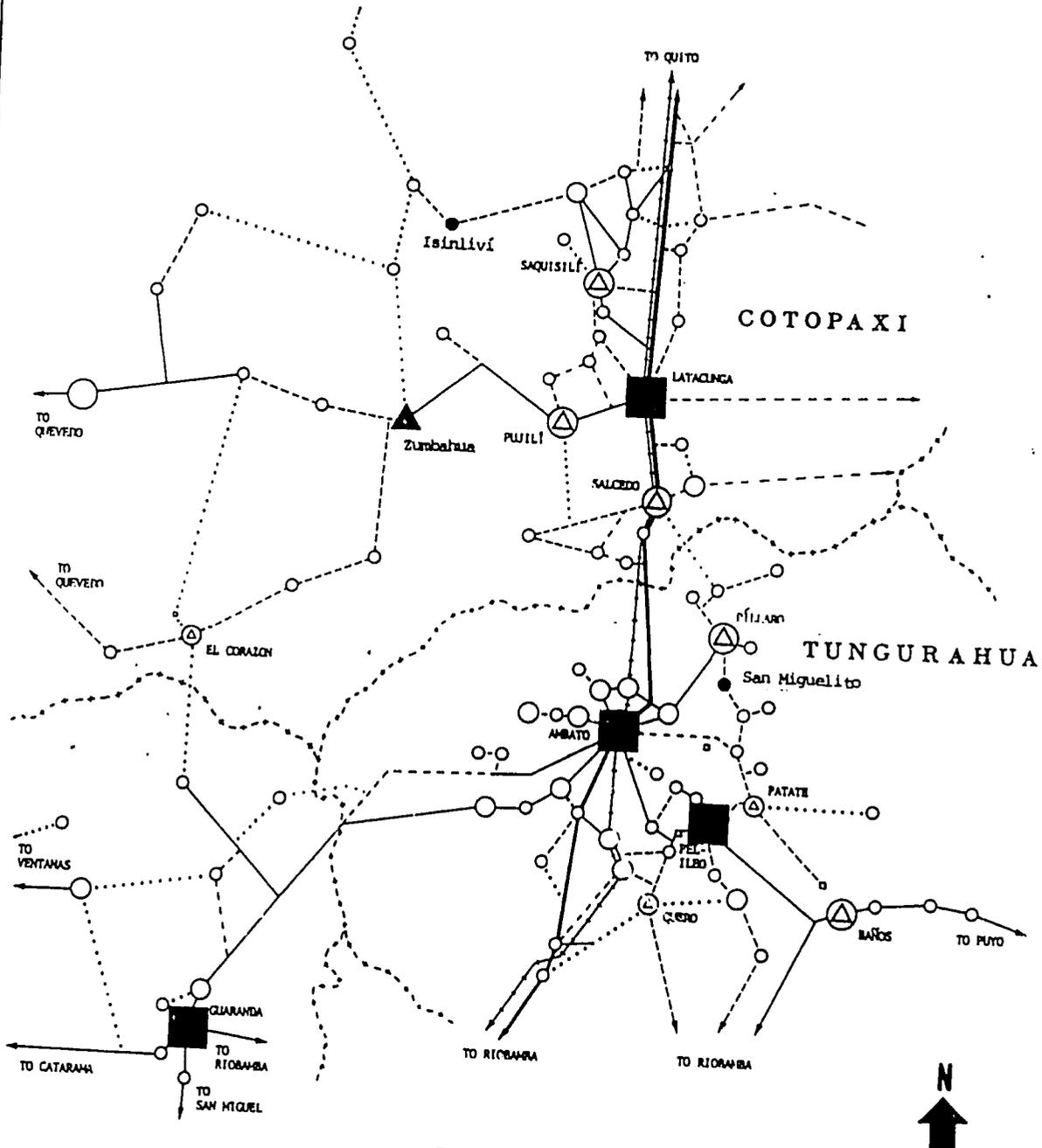


BOLIVAR

Market Rankings	
●	RANK 1 Locally Isolated Markets
▲	RANK 2 Locally Interactive Markets
■	RANK 3 Sub Regional Market Centers
⬢	RANK 4 Regional Distribution Centers

COMPLEX URBAN	⊙	100,000--500,000	☆	Provincial Capital
	⊙	20,000--99,999	⊙	Canton Capital
SIMPLE URBAN	○	2,500--19,999	—	Pan American Highway
	○	1,000--2,499	—	Paved Road
VILLAGE	○	100--999	- - -	Unimproved Road
	○	100--999	⋯	Seasonal Road
	□	UNDER 100	—	Railroad
			- - -	Provincial Boundary

SATURDAY MARKETS



BOLIVAR

Market Rankings	
●	RANK 1 Locally Isolated Markets
▲	RANK 2 Locally Interactive Markets
■	RANK 3 Sub Regional Market Centers
⬢	RANK 4 Regional Distribution Centers

COMPLEX URBAN	⊙	100,000--300,000	⊙	Provincial Capital
	⊙	20,000--99,999	⊙	Canton Capital
SIMPLE URBAN	○	1,500--19,999	—	Pan American Highway
	○	100--14,999	—	Paved Road
VILLAGE	○	1000--1499	- - -	Unimproved Road
	○	100--999	⋯	Seasonal Road
	□	UNDER 100	—	Railroad
			- - - -	Provincial Boundary

MICHAEL HALL

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markets. All of these sub-regional markets are coincident with cantonal capitals (except Lactagunga, which is a provincial capital). While two out of every five centers in the region have periodic markets, obviously three out of five do not and hence did not, in 1972, play a significant part in the marketing of agricultural produce.

The Connectivity Linkages of the Market System:

Commodity Flow Analysis

The definition of the periodic market hierarchy established by Bromley included not only the marketing of agricultural produce, but the marketing of consumer and commercial goods and services as well. A more direct measure of the hierarchically organized market system of produce collection from the countryside to the regional and national capital cities was obtained for the project through primary data collection. A study of the geographic pattern of commodity flows which were observed in nine urban places on three days in August 1983 was conducted as part of this first year's activities. This study has resulted in an up-to-date description of the agricultural produce market structure including the delineation of a specialized produce marketing central place hierarchy and the empirical establishment of the links between urban places and between the urban system and the dispersed rural population.

Commodity flow data were obtained for eleven central places using the traffic cordon method. The method is simple and very effective. One simply blocks all major access roads to a town (with cooperation of the local government and national highway police). Every truck entering and leaving a town is stopped and its driver interviewed by a staff member. The truck is tagged when

interviewed so that double counting is largely avoided. Since trucks haul produce in the late evening and early morning in order to sell fresh goods the same day in the market, interviewing can largely be completed before noon. It should be noted that the traffic cordon method has its shortcomings. The major shortcoming is the intensity with which data is collected. Data for these studies, for instance, were collected on only three days in August. These may not be representative days in terms of a seasonal fluctuation in commodity production and flow. Second, it was only possible to obtain origin-destination type of cargo, size of shipment and very little else. The method also requires a concentration on a relatively small number of places because of the costs involved. Finally, cordons work effectively only with truckload sizes of cargo. All of the local traffic that comes in on the backs of people and animals (or, for that matter, the animals who were walked in) are missed, as well as all of the transactions within the towns. All that is measured are the gross in and out flows, but these flows represented the bulk of all inter-urban shipments in modern, motorized Ecuador. There probably is no more cost effective way of obtaining basic connectivity data for a central place system.

Of the eleven sets of commodity flow data upon which this study draws, two had already been collected for FONAPRE. CONSULPLAN, a private consulting firm working under contract with the city of Ambato (with funds from FONAPRE), had completed a traffic cordon based commodity flow study two years before work on this project began. Since they were interested only in the volume of transactions within the city itself, they did not bother to tabulate the data on an origin-destination basis. After some travail, the project team managed to locate the original interviews (in the basement of City Hall) and obtain access to them. Because Ambato is a very active center and the traffic cordon

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went on for seven consecutive days in 1979, the number of interviews was numbered in cases. Unable to process the data completely with the resources at hand (a few students for a few weeks), attention was devoted to tabulating the flows to Ambato from surrounding towns in the provinces of Tungurahua and Cotopaxi and from the two regions through Ambato (i.e., "in transit") to destinations elsewhere, principally Quito and Guayaquil. The commodities covered were potatoes, onions, garlic, milk and green peas.

Commodity flow data were collected from cordons around nine other central places for this study. These cordons were conducted in conjunction with PRONERAG (National Program for the Regionalization of Agriculture). The objective in selecting towns for the cordons was to enable the project team to maximize the amount of information which could be inferred from the actual data collected. To accomplish this, it was necessary to investigate major market towns as well as places one level further down the urban hierarchy. The candidates for major market towns were selected and drawn from the set of eight centers classified as sub-regional centers by Bromley: Banos, Quero, Pelileo, Pillaro, Salcedo, Pujilf, Saquisilf, and Lactagunga. Of these, Banos and Quero were eliminated. Banos was not selected because it is basically a vacation resort with a very small agricultural hinterland (lying as it does in a very narrow valley leading down to the Amazon). Besides all of the traffic passing through Banos from Puyo (the next major Amazon town), it has to pass through Pelileo. Quero had been cordoned the previous year by CONSULPLAN, but it was not necessary to repeat the work.

Of the other sub-regional market centers in the province of Tungurahua, Pelileo and Pillaro were cordoned. Pelileo was selected because: (1) preliminary tabulations of Ambato flow data indicated that it is a substantial central place; (2) Bromley's analysis ten years previous also rated Pelileo

as

highly as a commercial center; (3) it lies astride the only highway between Ambato and the rapidly developing Amazon. Píllaro was selected because it is in the center of an important potato growing district and was the obvious center of the northeastern part of the Tungurahua Province with connections both to Ambato and to Salcedo (the dominant market town of southern Cotopaxi). In short, it was hoped that Píllaro might form a linkage between the market town systems of Cotopaxi and Tungurahua.

In summary, there are five major urban centers in Tungurahua Province: Ambato, Banos, Quero, Pelileo, and Píllaro. Of these, previous studies provided data for Ambato and Quero. Banos is a relatively unimportant agricultural marketing center. Cordons in the remaining two (Pelileo and Píllaro) were conducted for this project.

In the province of Cotopaxi, traffic cordons were conducted in the four sub-regional market centers of Latacunga, Salcedo, Pujilí, and Saquisilí. There was field time left to investigate a few centers designated by Bromley as locally interactive markets. Three centers in the western sierras were cordoned. Two of these small markets are in Cotopaxi (Sigchos and Zumbahua) and one is in Tungurahua (Llangahua).

In all, 9,100 interviews were conducted in nine places over a three-day period of time in August of 1983. These places are highly representative of the local marketing network of the Ambato Region.

A Flow Analysis of the Urban System¹

Two types of data were immediately useful from the traffic cordons. The first were city to city flows. These data were used to estimate overall connectivity. The second were intercantonal flow. A "canton" in Ecuador is equivalent to the "municipio" everywhere else in Latin America. The canton was used as the level of aggregation to measure flows of particular commodity groups.

"Total" flows are computed by adding the weight in kilograms of virtually all non-animal commodities, with the exception of pineapples and bananas, between a fixed point(s) of origin and all destinations recorded. Those flows whose destination lay outside the two province regions were indicated by the proximate major city and the general direction of the cargo (i.e., Quevedo and "points west" or Guaranda and "points southwest"). The width of the arrows is in proportion to weight up to 99,999 kilograms. A very wide arrow is used for flows of more than 100 metric tons (a one day figure). Intercantonal flows by commodity group are aggregated for all towns in a "canton" which are destined in another canton. Animals on-the-hoof, pineapples, and bananas are excluded from this preliminary analysis because they were measured in units and not weights.

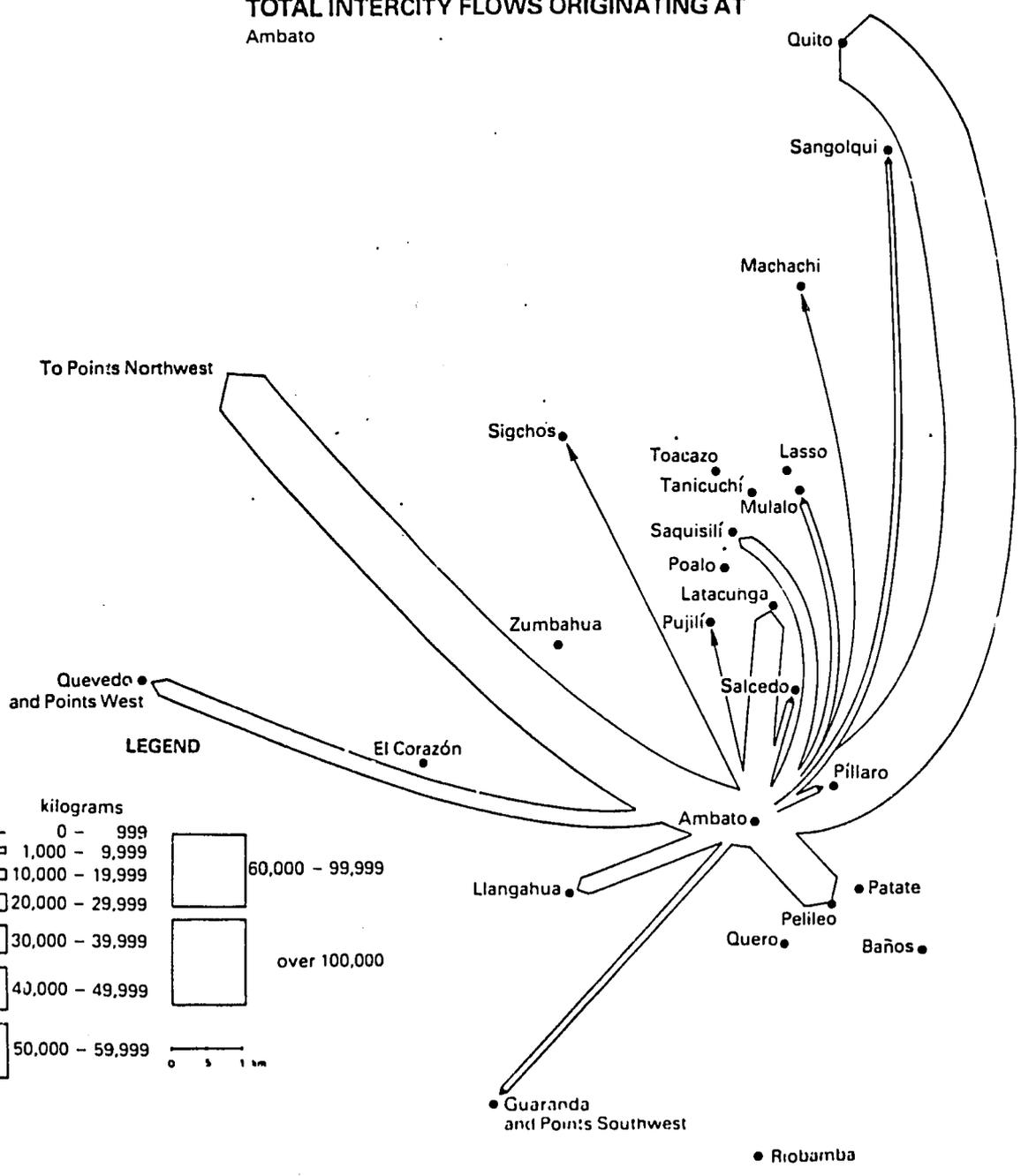
General Intercity Flows

Beginning with Map IV-8 which is "Total Intercity Flows Originating at Ambato" (the corresponding Table is found in Appendix C), we find a reasonably

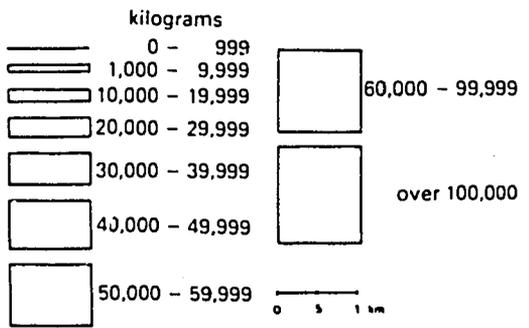
¹This section does not draw on the 1982 Quero study and depends, in only a very limited sense, upon the data collected for the 1979 Ambato survey. These data will be processed and interpreted in the next phase of the project.

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TOTAL INTERCITY FLOWS ORIGINATING AT
Ambato



LEGEND



clear spatial pattern. Quito, as expected, is the major destination for produce shipments from Ambato. Next in importance are the shipments to the northwest (the northern coastal areas). This large flow in part represents a normal complementarity in commodity exchange (potatoes, onions, oats, barley, vegetables and temperate fruits such as apples and pears). In part, it represents the nearly unique deficit of basic foodstuffs on the coast due to the flooding which occurred during 1983. Pelileo formed the third most important destination of produce exports from Ambato. This certainly was due to Pelileo's role as an entropot for the Amazon region whose products are highly complementary with the highlands. This is partial evidence for the project team's suspicion that Pelileo may have a major role to play in the future as a major linkage between the Amazonian and highland regions because it lies astride one of only three national highways connecting the two. Latacunga, capital of Cotopaxi Province and halfway to Quito on the Pan American highway, is fourth most important trading partner of Ambato, although the reader should be cautioned that this result is biased by the fact that interviews were not conducted in Riobamba which lies to the south in the province of Chimborazo. It is clear that Latacunga is bypassed by Ambato in its interprovincial trade for larger and wealthier places. The most important locally interactive market with which Ambato trade (and in which we interviewed) is Saquisilí which lies to the northwest of Latacunga. This is interesting given Saquisilí's relatively small size, the presence of a major intervening trade opportunity (Latacunga) and its sheer remoteness from the Ambato regional center relative to other towns of comparable size such as Pujilí and Pillaro. The remaining flows are relatively minor.

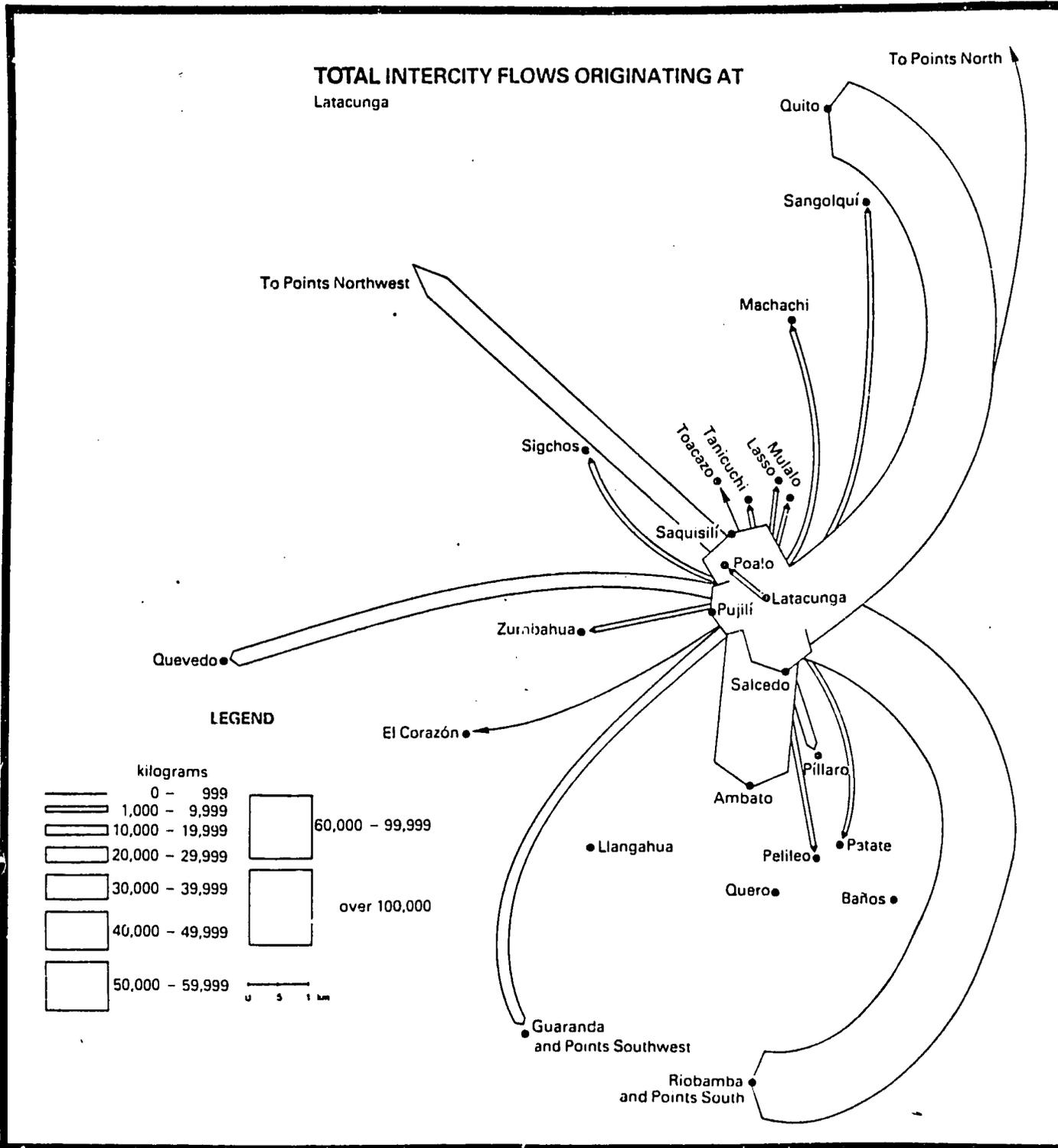
From tables drafted from the 1979 Ambato survey, it is quite clear from the data that the principal destinations for the products studied (potatoes,

onions, garlic, milk, and green peas) were Ambato itself, Quito and Guayaquil. So, it is clear that Ambato is the place which links its three province regions to the two national metropolitan regions. Also, it is clear that Ambato received a large proportion of the materials shipped to the metropoli from major towns in its immediate vicinity. These towns were the same in 1979 as those identified as major by Ray Bromley in his study of periodic markets in the early 1970's, namely: Quero, Pelileo, Pillaro, Salcedo, Pujilí, Saquisilí and Latacunga. Finally, Ambato receives some shipments of produce from virtually every settlement in the region although it is obvious from close inspection of the tables that bulking occurs in the major market towns.

The other provincial capital, Latacunga (Table 2 in Appendix IV), shows a curious pattern (Map IV-9). The primary pattern is dominated by interprovincial shipments to Quito (the national capital) and Ambato and Riobamba (provincial capitals of Tungurahua and Chimbarazo which lie respectively to Latacunga's south). The three intro-provincial trading partners (and nearest neighbors of the large town variety) are Salcedo, Pujilí and Saquisilí. Of these three, Saquisilí emerges as being of special importance. This is surprising because Saquisilí has half the population of Salcedo and lies several kilometers off the major north-south Pan American highway (and like Salcedo which is on the highway). Latacunga also trades with the other major regions of Ecuador but to a much less significant degree than Ambato. Finally, it is clear that Latacunga ships far more to Ambato than Ambato ships to Latacunga. This asymmetry in the dyadic pair relationship defines Ambato's dominance as the regional functional capital.

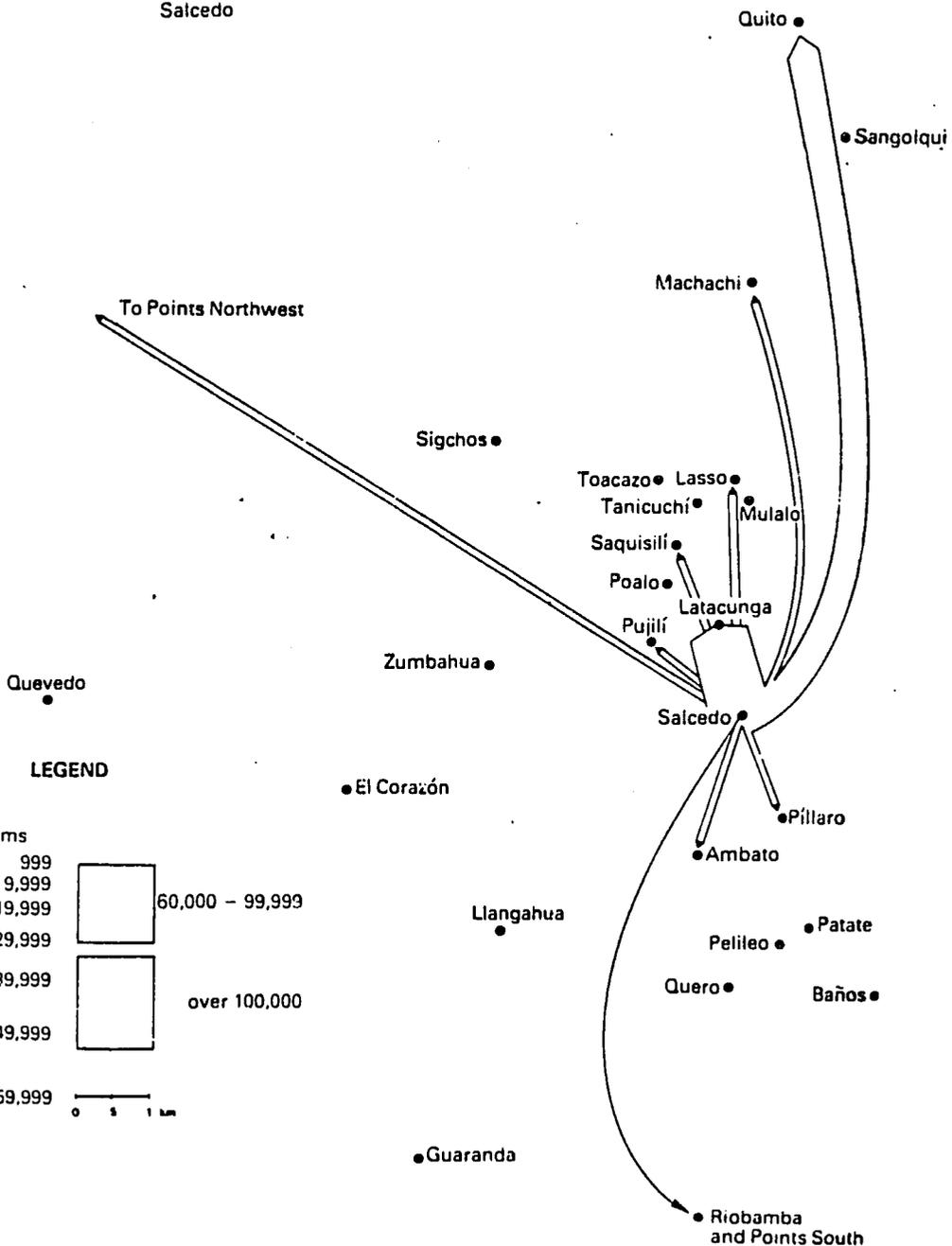
Salcedo (Map IV-10), a city of about 6,000 people situated about halfway between Latacunga (30,000 people) and Ambato (100,000 people) is clearly

MAP IV-9



MAP IV-10

TOTAL INTERCITY FLOWS ORIGINATING AT Salcedo



dependent on its provincial capital, Latacunga, since the physical volume of Salcedo's shipments to Latacunga are far greater than to any other city. Quito is next in importance and all other flows are relatively minor. Nonetheless, it is curious to note that Salcedo ships as much goods to Saquisilf (with about 3,000 people) as to Ambato (100,000) even though Ambato is considerably closer.

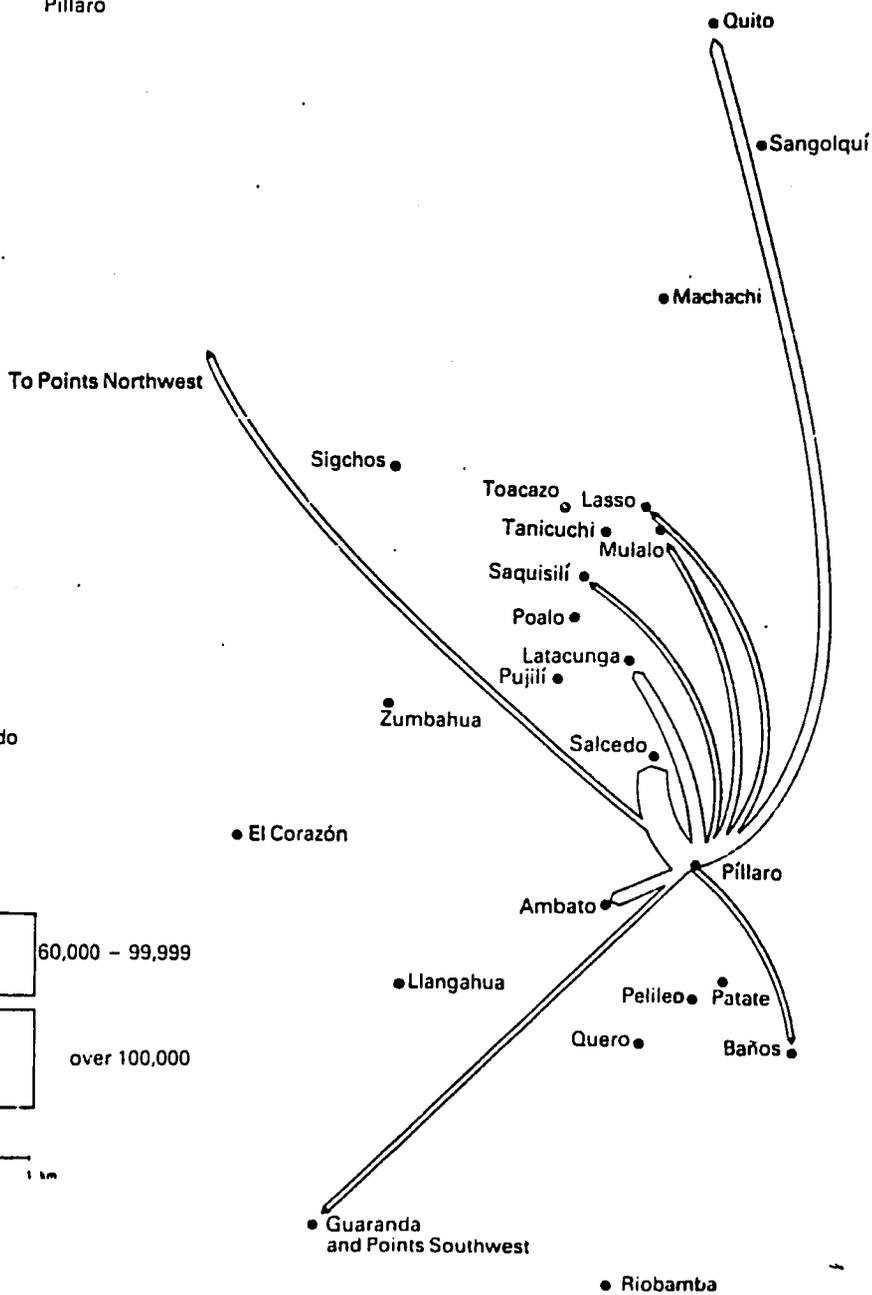
Píllaro (Map IV-11) is also a dependency of Salcedo. All other flow patterns are of about equal measure. It should be noted that Píllaro, while legally in the province of Tungurahua, actually has most of its economic ties with towns in the central valley of Cotopaxi to the north. In fact, Píllaro seems to be an outpost of the Cotopaxi network. Pelileo (Map IV-12) to the south of Píllaro is also oriented to the north. However, its prime destination is Ambato with smaller quantities going to Píllaro, Salcedo, Latacunga and Saquisilf. A very small quantity of goods (less than a metric ton) goes to the resort town of Banos on the eastern gateway.

In the province of Cotopaxi, the two major towns in the foothills of the western Andean wall of Ecuador's central valley, Pujilf and Saquisilf, are described here. Pujilf (Map IV-13) is a very old, well-established town with fine colonial architecture and an active small scale shore industry. Its principal trading partner (both purchases and sales) is Latacunga which lies only a short distance to the east by a modern, all weather road. In fact, many residents of Pujilf commute to Latacunga by bus for daily work. Other trading partners are Salcedo, Saquisilf (a modern paved highway between the two is under construction) and the two small centers of Zumbaha and Sigchos which lie in a high parallel valley to the west.

Perhaps the biggest surprise of this map set is the town of Saquisilf (Map IV-14). It ships truly astounding amounts of tonnage to Ambato and Latacunga. We have already noted that Latacunga ships major quantities of

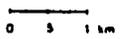
MAP IV-11

TOTAL INTERCITY FLOWS ORIGINATING AT
Píllaro

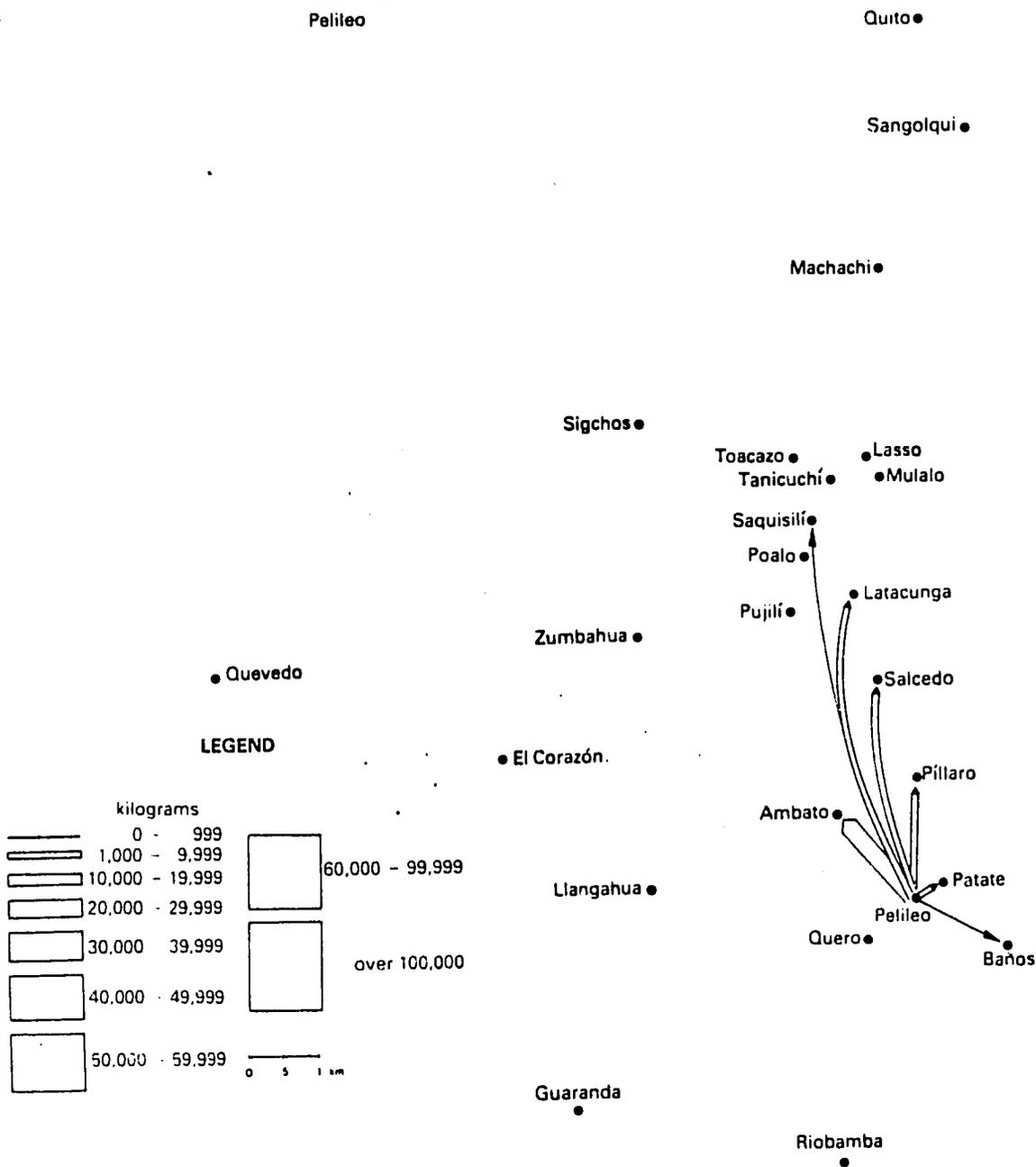


LEGEND

kilograms	
	0 - 999
	1,000 - 9,999
	10,000 - 19,999
	20,000 - 29,999
	30,000 - 39,999
	40,000 - 49,999
	50,000 - 59,999
	60,000 - 99,999
	over 100,000

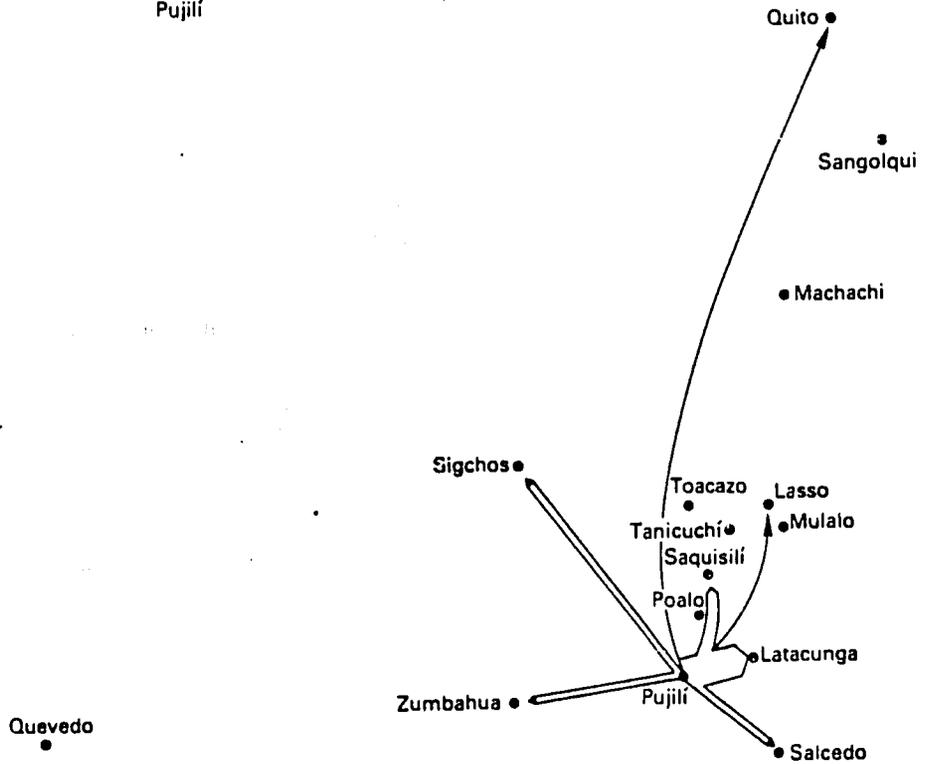


TOTAL INTERCITY FLOWS ORIGINATING AT Pelileo

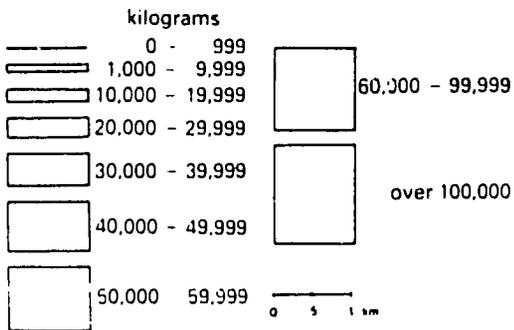


105

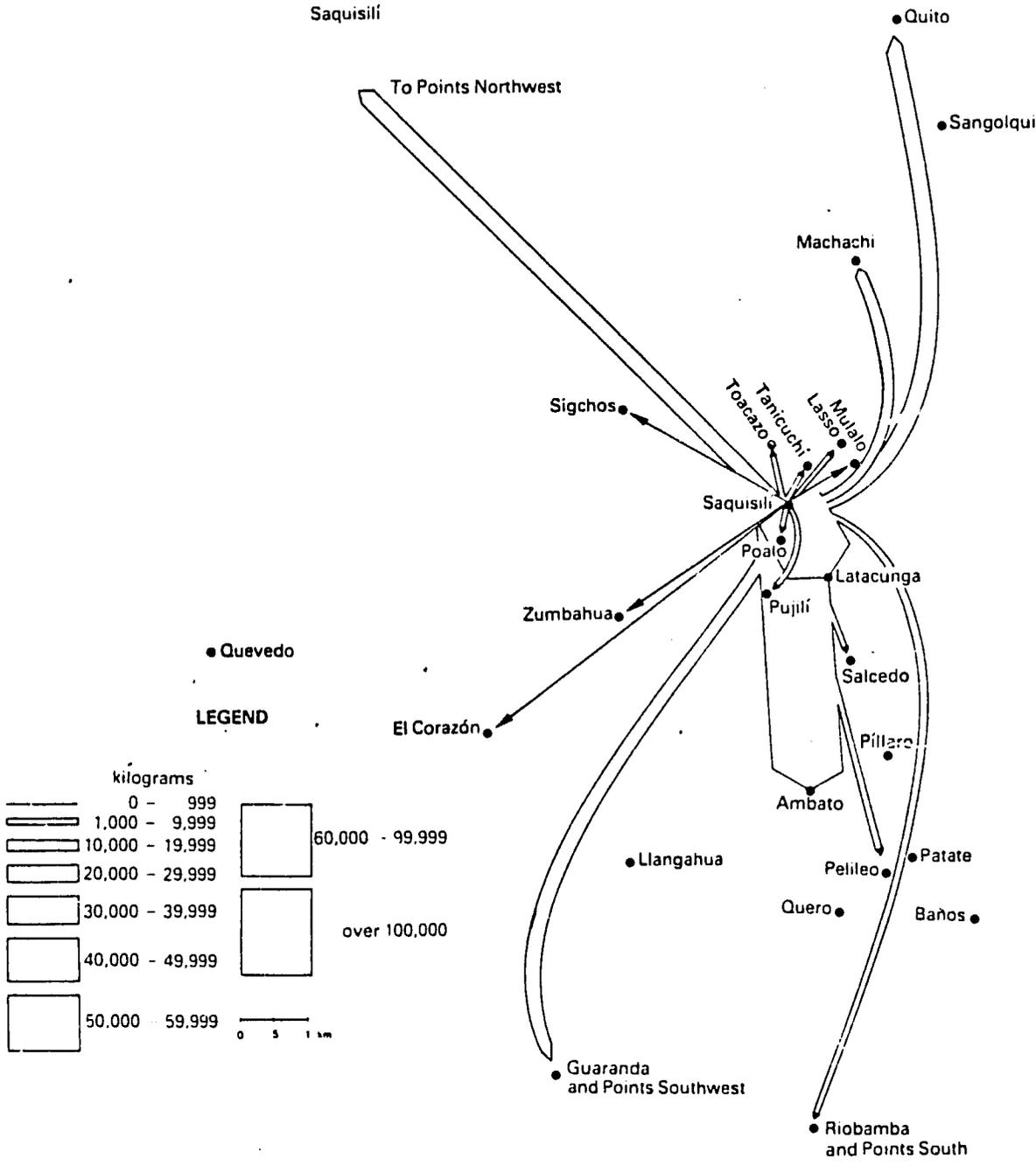
TOTAL INTERCITY FLOWS ORIGINATING AT Pujilí



LEGEND



TOTAL INTERCITY FLOWS ORIGINATING AT Saquisilí



goods to Saquisilf. For a small town of less than 3,000, Saquisilf also ships four to five tons of material on its market days to the coast and to Quito. In fact, the only center clearly dominant to Saquisilf from the viewpoint of commodity flow is Ambato itself (Ambato ships far less tonnage to Saquisilf than the reverse). The project team did visit the center with Dr. Bromley in the summer of 1983 during its fair day. The highway leading to Saquisilf from the Pan American Highway is four lanes and paved. In quality, it is as good as, if not better, than the Pan American Highway. We will return to the subject of Saquisilf at the end of the chapter.

The final map in this set (Map IV-15) shows commodity flows originating at a number of smaller places. The map serves to highlight the centrality of Pelileo for the cluster of towns in southeast Tungurahua and the importance of Latacunga and Saquisilf in the Cotopaxi sub-system.

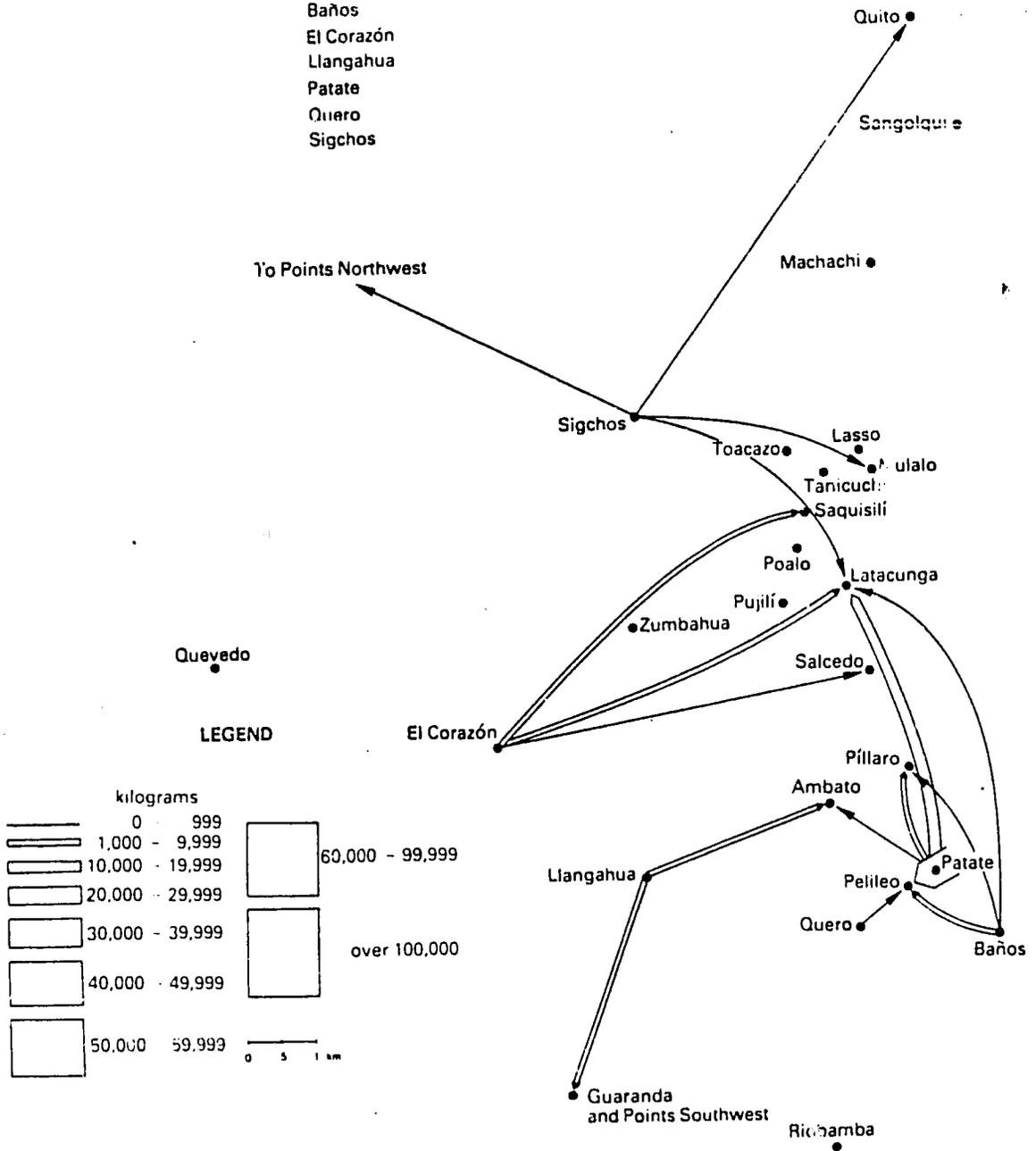
Finally, it should be noted that the eastern side of the central valley seems relatively devoid of both towns and trade. The reason is quite obvious on the ground. The eastern side of the central valley is dominated by large dairy farms with a small residential population because of mechanization. The western side of the valley is populated by small holders and teems with life and trade. The only exception is the area to the south and east of Ambato which has retained its peasant character.

Specific Intercantonal Flows

The most important basic crop in the two province region is potatoes. Maps IV-16 and IV-17 present a measure of the physical volume of flow of potatoes to eight cities from the eleven cantons of the two province region as from the rest of Ecuador. These maps clearly indicate that at the level of sub-regional markets the most important collectors of wholesale lots of

TOTAL INTERCITY FLOWS ORIGINATING AT

- Baños
- El Corazón
- Llangahua
- Patate
- Quero
- Sigchos



LEGEND

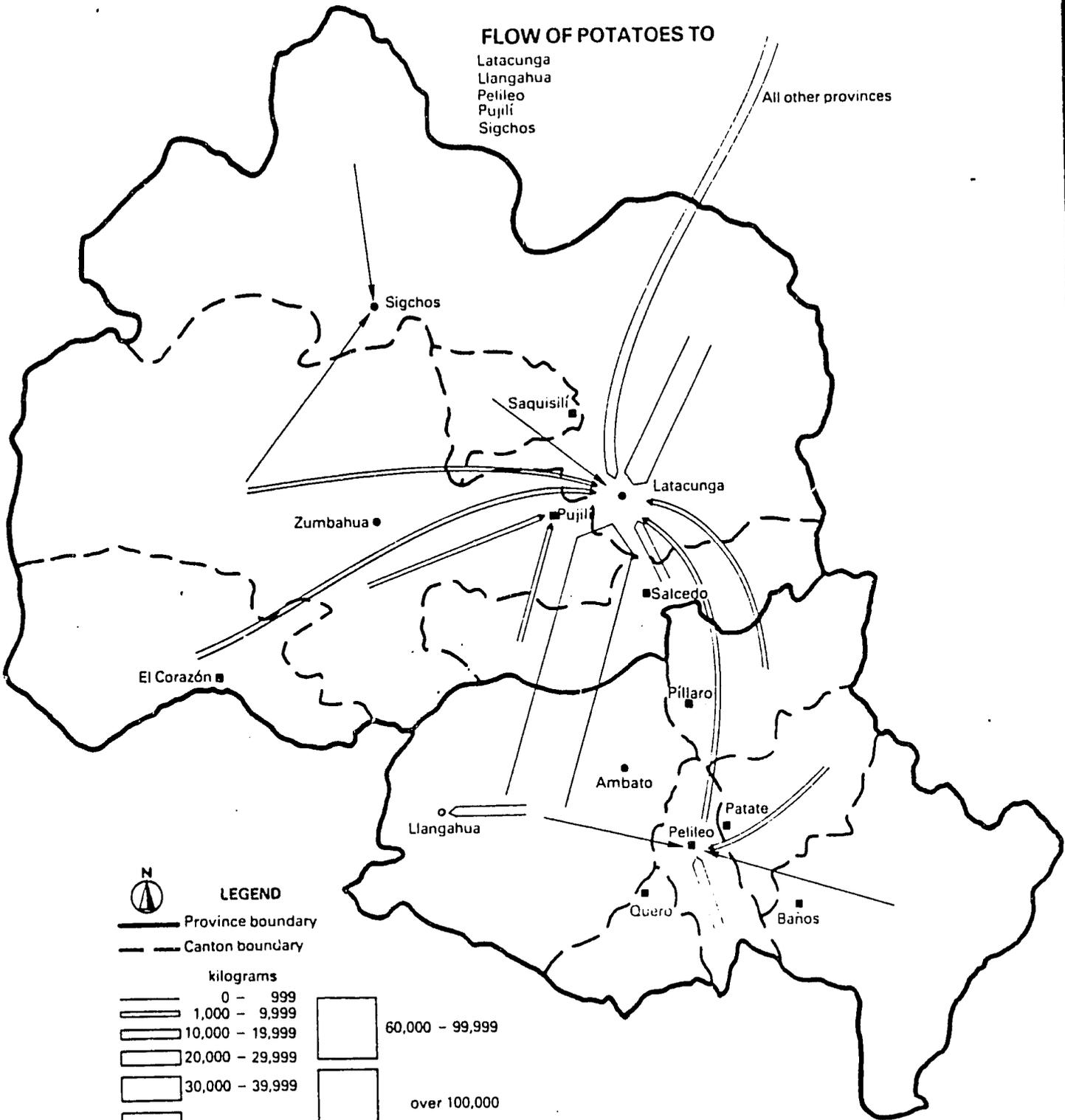
kilograms	
	0 - 999
	1,000 - 9,999
	10,000 - 19,999
	20,000 - 29,999
	30,000 - 39,999
	40,000 - 49,999
	50,000 - 59,999
	60,000 - 99,999
	over 100,000

0 5 1 km

FLOW OF POTATOES TO

Latacunga
Llangahua
Pelileo
Pujilí
Sigchos

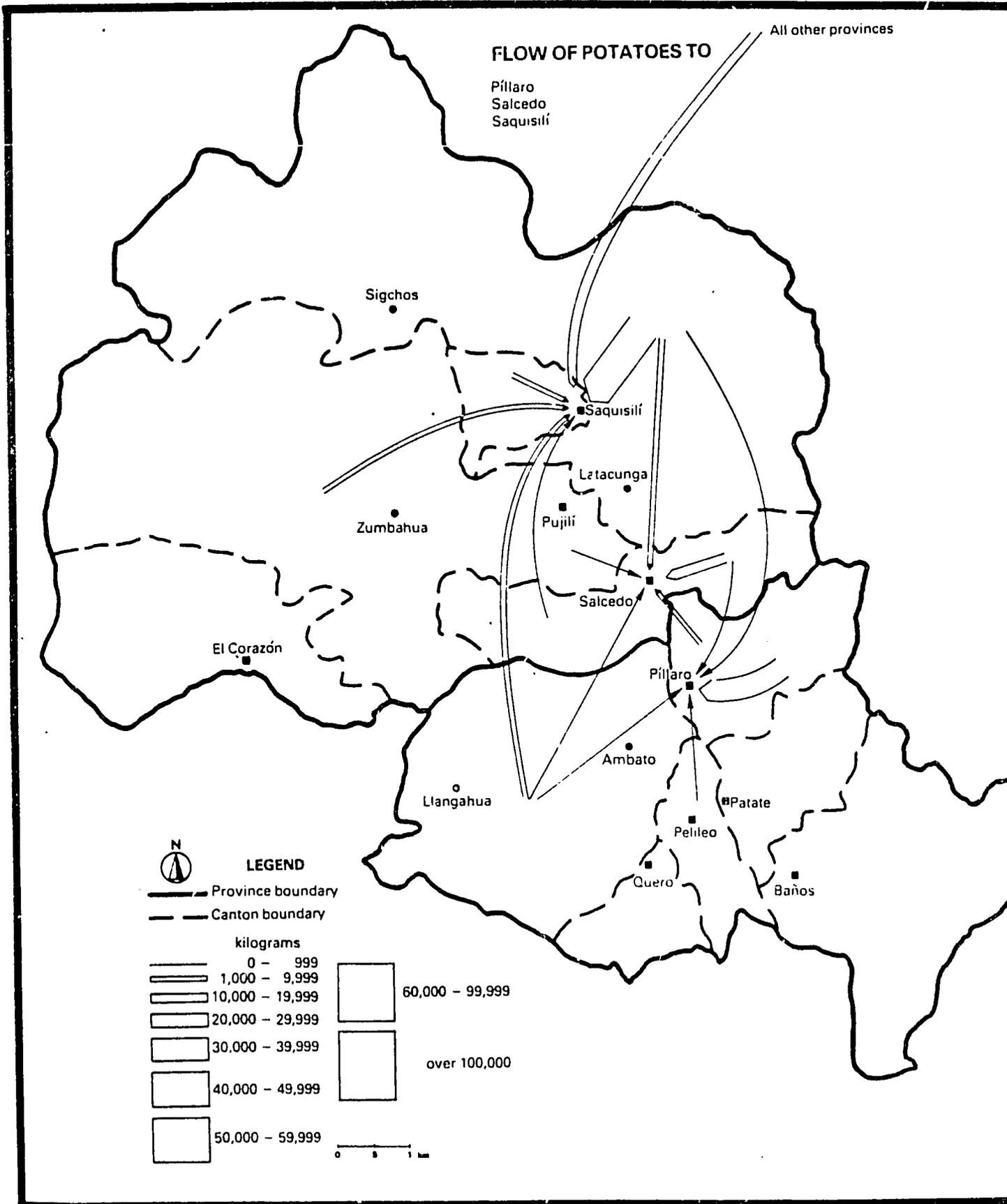
All other provinces



LEGEND
 — Province boundary
 - - - Canton boundary

kilograms	
	0 - 999
	1,000 - 9,999
	10,000 - 19,999
	20,000 - 29,999
	30,000 - 39,999
	40,000 - 49,999
	50,000 - 59,999
	60,000 - 99,999
	over 100,000

0 5 1 km



potatoes are Latacunga, Saquisilí and Píllaro in that order. Of course, the major wholesale potato market for the region are in Ambato itself with volumes which far exceed those of the other markets in the region combined. Map IV-18 shows the origins of 1979 shipments to the Ambato markets in relative order of importance (percent of total volume). The leading sources of supply are Salcedo, Píllaro, Quero, Latacunga and a town in the far south of our study area (Mocha). These data will be processed in early 1984 in order to make it compatible with the survey material generated in 1983 for this project.

Maps IV-19 and IV-20 present a measure of the intercantonal flows of onions on the same basis as our presentation of the 1983 potatoe flows. The only sub-regional centers to emerge are Latacunga and Pelileo with Saquisilí, Salcedo, Píllaro and Pujilí as much smaller collectors. Again, the bulk of the produce is shipped to the city of Ambato on the Plaza Pachano (Maps IV-19 and IV-20 present a preliminary estimate of the 1979 flows). The vast bulk of the onions come from the southern part of Tungurahua Province. An excellent study of the marketing system for the red onion in the province of Tungurahua was completed by a Norwegian anthropologist in April, 1982 (PLAZA PACHANO; Market Integration, Intermediaries and Rural Differentiation in Tungurahua, Ecuador, Jon Hanssen-Bauer, M.A. Thesis, University of Oslo). Much of our understanding of the marketing process in the study region is based on the previous work by Bromley and Hanssen-Bauer.

The final set of maps available at the time this interim report is being written are Maps IV-21, IV-22 and IV-23. These present intercity, not cantonal, flows of fruits throughout the region. The Tungurahua-Cotopaxi region is temperate due to high elevation. There are two types of flow. The intra-regional flow of apples, pears and plums, and the interregional trade from the coast of bananas, oranges, pineapples, papayas, and so on. The major flow is

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MAP IV-18

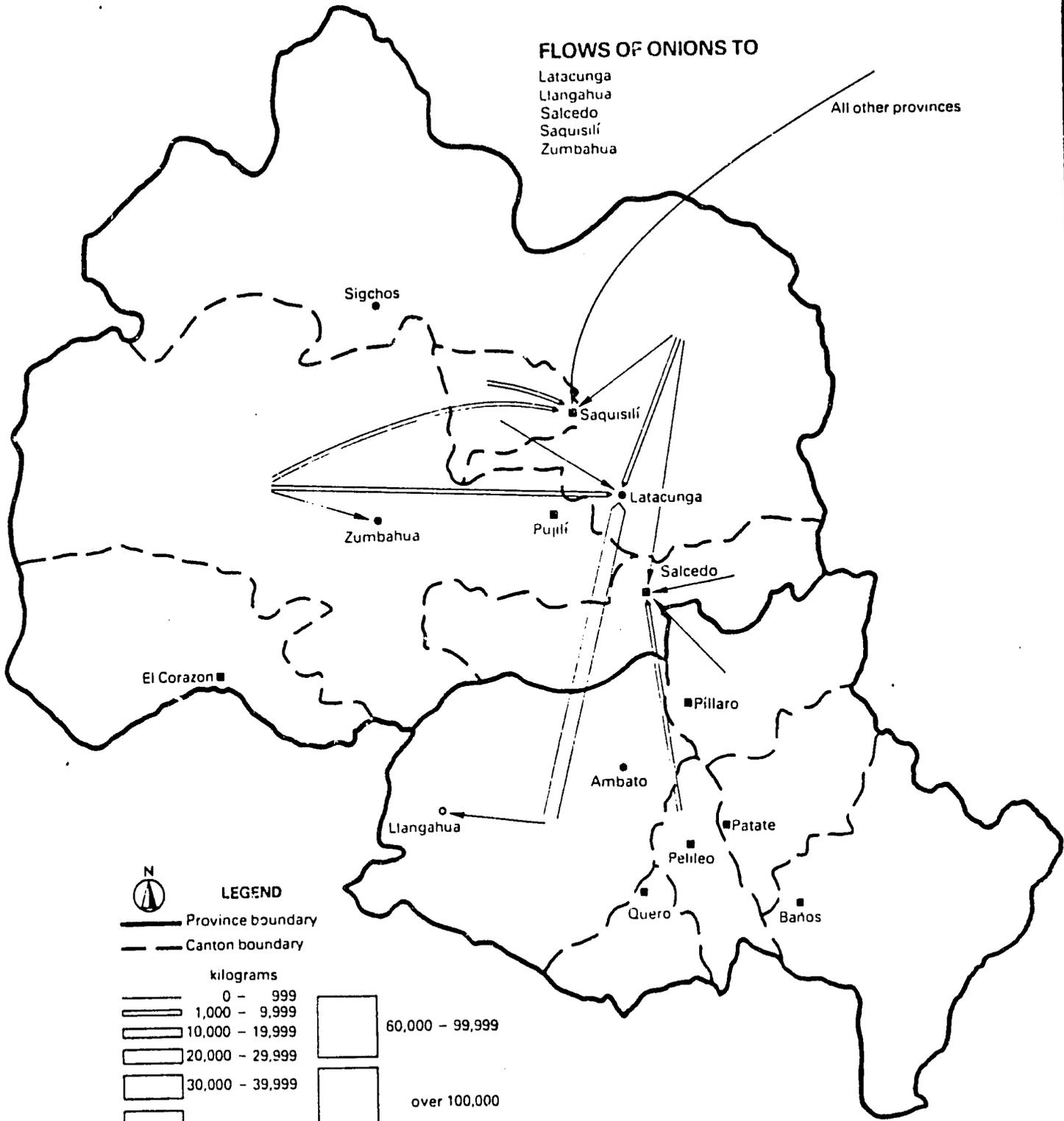
ORIGINS OF 1979 SHIPMENTS
TO AMBATO (% OF TOTAL VOLUME)

M I S S I N G .

FLows OF ONIONS TO

- Latacunga
- Llangahua
- Salcedo
- Saquisilí
- Zumbahua

All other provinces



LEGEND

N
 Province boundary
 Canton boundary

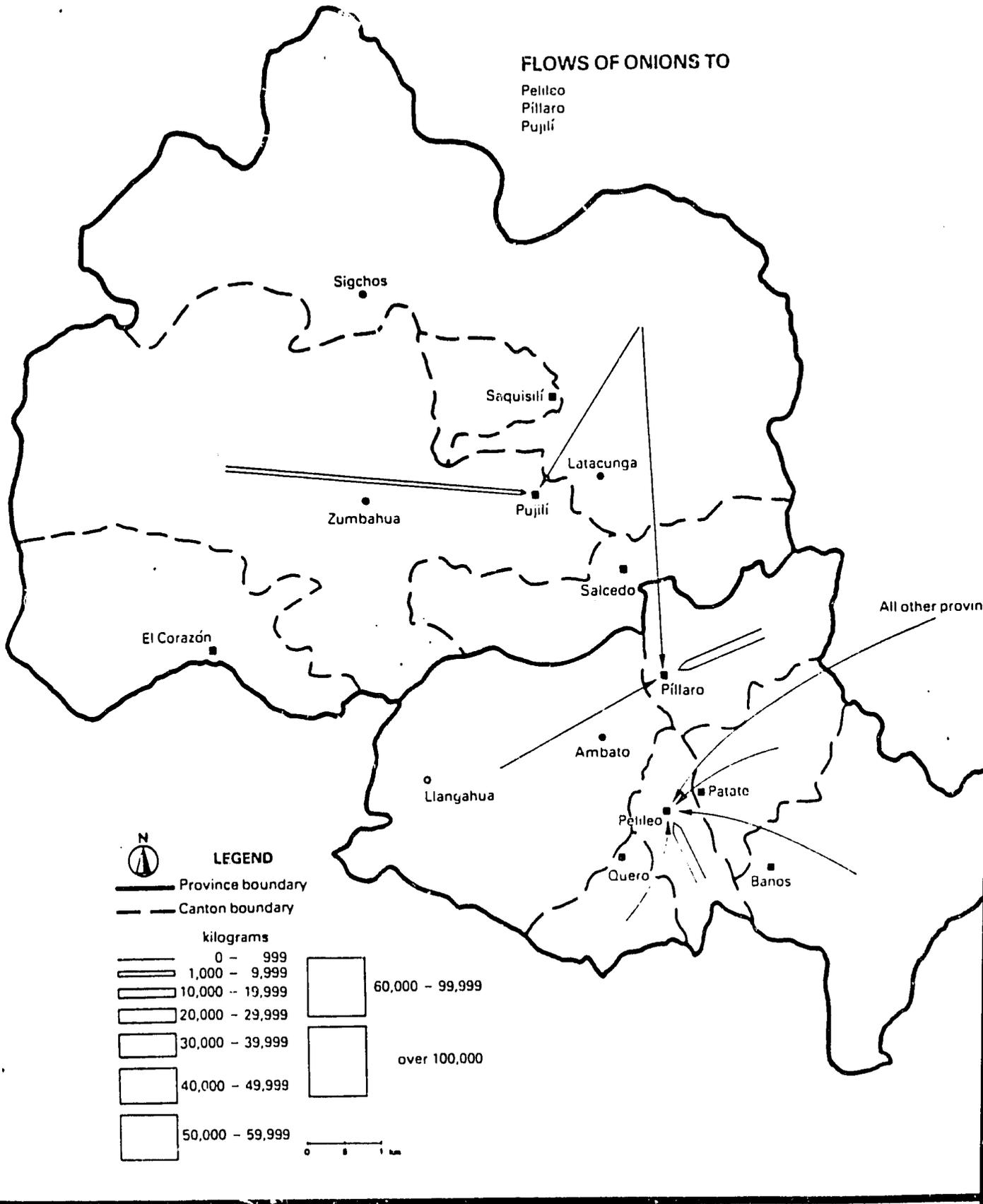
kilograms

	0 - 999		60,000 - 99,999
	1,000 - 9,999		over 100,000
	10,000 - 19,999		
	20,000 - 29,999		
	30,000 - 39,999		
	40,000 - 49,999		
	50,000 - 59,999		

0 5 1 km

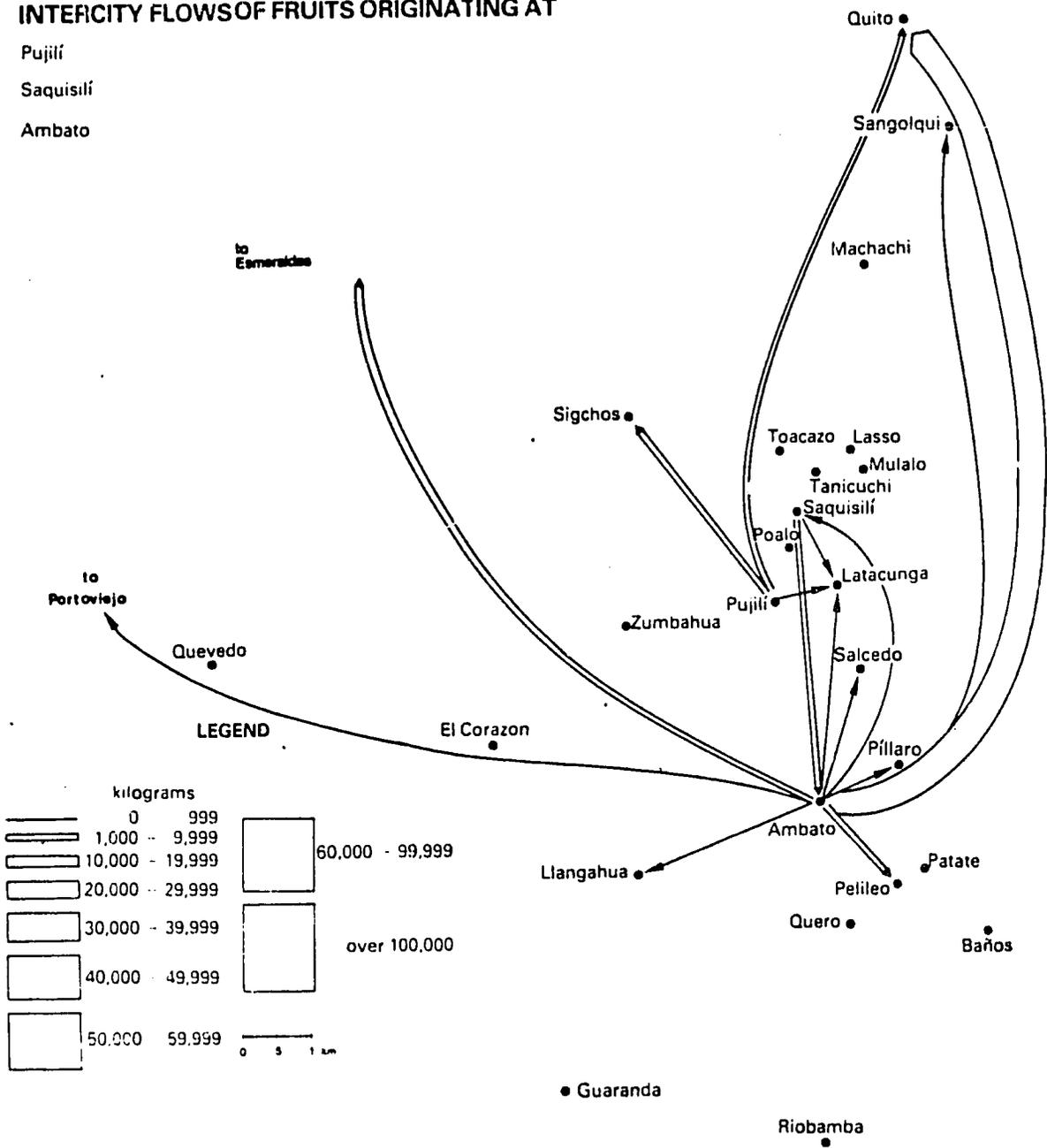
FLOWS OF ONIONS TO

Pelileo
Píllaro
Pujilí



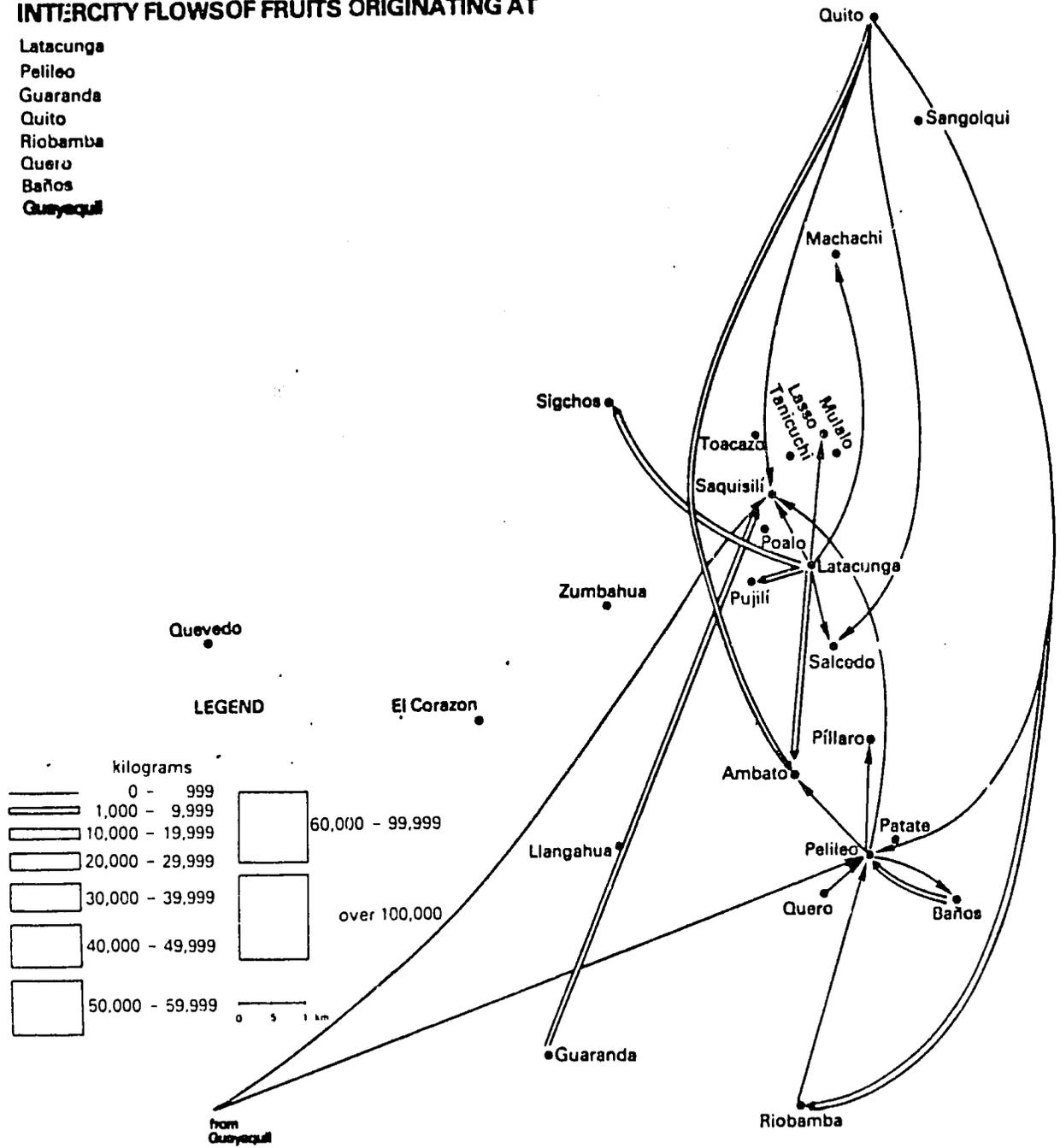
INTERCITY FLOWS OF FRUITS ORIGINATING AT

Pujilí
Saquisilí
Ambato



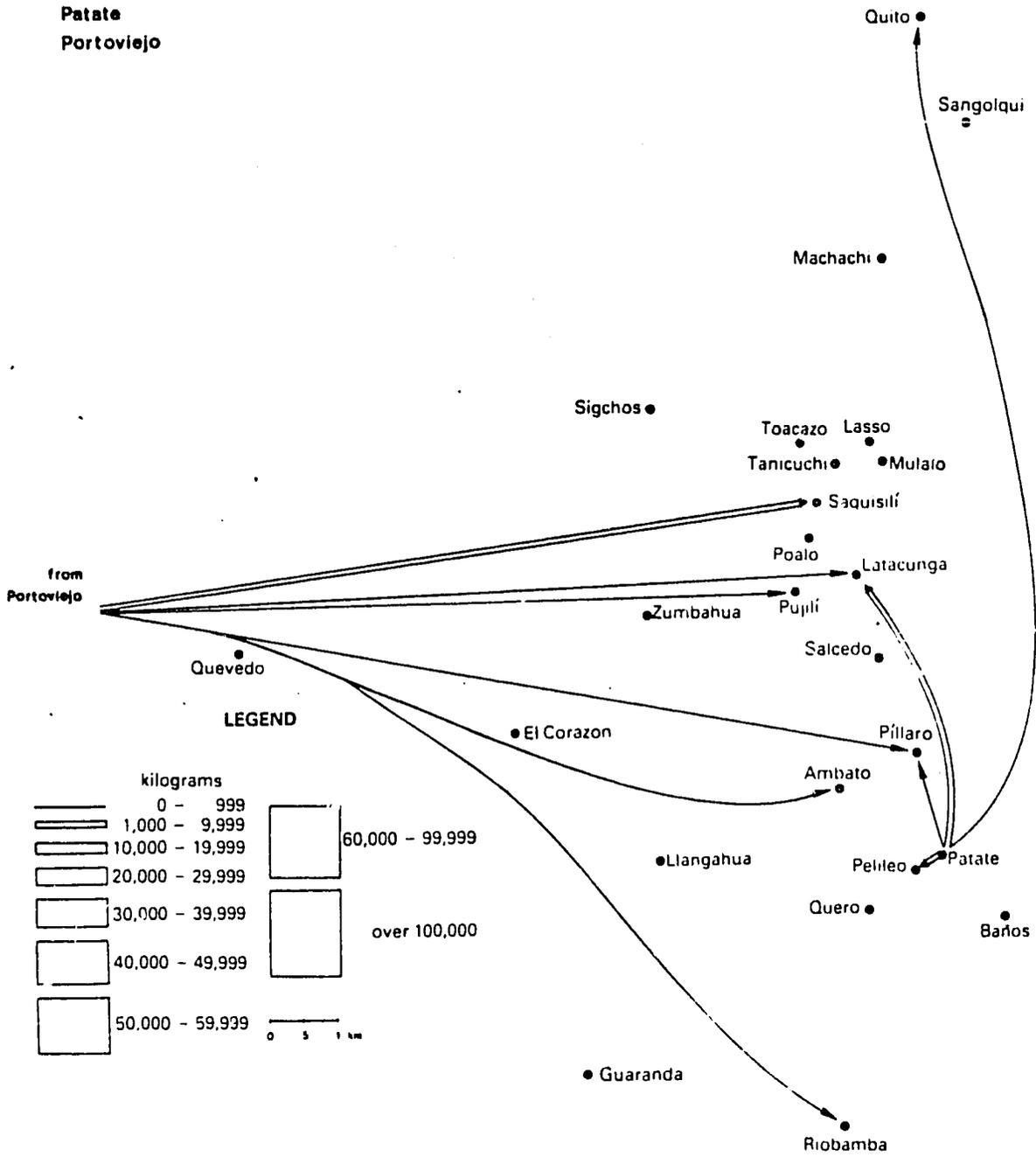
INTERCITY FLOWS OF FRUITS ORIGINATING AT

- Latacunga
- Pelileo
- Guaranda
- Quito
- Riobamba
- Quero
- Baños
- Guayaquil



INTERCITY FLOWS OF FRUITS ORIGINATING AT

Patate
Portoviejo



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from the wholesale markets of Ambato to Quito. Pelileo plays a major assembly role from all neighboring towns including Banos, which tranships tropical fruit from the Amazon. Latacunga and Saquisilí play major roles as entrepôts for fruit. Saquisilí in particular collects respectable volumes of goods from Guyuquil, Guaranda and Portoviejo (even including some shipments from Quito!). In summary, the major regional fruit markets are in Ambato, Latacunga, Pelileo and Saquisilí.

Finally, we examine the case of "general merchandise" separately because it refers to general dry cargo (such as household supplies, utensils, and electrical goods). These flows are likely to dominate down the urban hierarchy (from the metropolis to small villages) given the provenance of this type of merchandise. As can be expected, the importance of places as destinations for consumer goods bears a closer relationship to their sizes. For example, a rank ordering of some of the more important places (with the daily tonnage arriving in parenthesis) is: Ambato (47), Quito (33), Latacunga (25), Salcedo (12), Lasso (9), Pujilí (2) and Llangahua (1.7). With the exceptions of Lasa (which received a surprisingly large amount of goods) and Pujilí (whose extraordinarily low tonnage received testifies to its increasing dependence upon Latacunga), this list is easily explained by population size and proximity (Quito is much further from these towns than Ambato or Latacunga).

Appended are the origin-destination tables for all of the data collected for the reader's inspection. Due to time constraints, not all these data have been depicted in map forms. Not to put too fine a point on this preliminary analysis, the product maps in progress seem to show the same basic patterns as the one discussed. Namely, aside from the undoubted dominance of Ambato, the three most important commodity trading centers appear to be Latacunga, Saquisilí and Pelileo. This conclusion does vary a bit by

commodity type (for example, Píllaro appears to be a very important local potato market) but not enough to alter the basic conclusion.

It should also be noted that the importance of the Latacunga and Pelileo markets is underestimated in this analysis because only one-half to two-thirds of the flows were captured in these places. This shortfall in interviews actually strengthens the conclusion that these towns are vibrant, if not dominant, local produce and animal markets.

Conclusions

Preliminary conclusions drawn from the traffic cordon study confirm the value of this kind of regional analysis. The set of urban places in the two province areas do indeed form a "system" based on transport proximity and hierarchy. At the top of the local system is the city of Ambato whose true dominance of the system can only be fully demonstrated when all the interviews from the 1979 study have been tabulated and mapped. Latacunga is undoubtedly the next most important place although it is being challenged commercially by a small town of 3,000 people (ten times smaller than Latacunga's 30,000) called Saquisilí. This place deserves closer scrutiny both to see what can be done to further commercially develop the place and to learn, if possible, why this place has become so important. The lessons might be valuable in promoting urban development elsewhere. The last prospect which looks promising is Pelileo, a town on the crossroads between the rapidly developing irrigation project Tungurahua, the rapidly developing Amazon and the massively growing city of Ambato. Clearly, Pelileo is an incipient urban "winner."

Finally, we have (as always) losers as well as winners. Three of these are Pujilí, Salcedo and Píllaro, all of which had a respectable past but

have been laggard in adjusting to the new transport and economic changes sweeping the region. It is important to stress here only wholesale commercial dominance and not general economic viability. Several towns in the vicinity of Ambato show promise as centers for cottage industries and as places from which the massive new irrigation project can be effectively served. Nevertheless, we should always let facts take precedence over preconceptions. The facts of current economic life in the region point strongly toward Latacunga, Saquisilí and Pelileo as places to be examined with care during the next phase of the project.

CHAPTER V

SYNTHESIS AND INTERPRETATIONS

The Clark University/FONAPRE research on rural-urban linkages in Ecuador is exploratory, selective, and operational. It is exploratory, because severe time and budgetary limitations have permitted only a limited study, with the hope that it would lead to a more in-depth and comprehensive effort. Instead of analyzing all the spatial elements of the entire region, as is customary, the team selected a few key features as its focus, especially market relations and employment creation. The work is also highly action-oriented in attempting to identify elements in the regional system which, in the Ecuadorian context, lend themselves to practical application, either in the study area itself or elsewhere in the country.

The main lines of applicability are defined by the interests of the collaborating national institution, FONAPRE, which promotes, designs and finances pre-investment studies and by that of USAID/Ecuador. FONAPRE wishes to extend the scope of its work on intermediate cities to strengthen urban-rural linkages and to improve its capacity to offer assistance to smaller population centers, municipalities and to regional corporations. FONAPRE, as part of a national planning system on a broader level, is also interested in "decentralization," in the sense of promoting policies which aim at a more balanced and equitable spatial distribution of income and economic opportunity and which lessen the dominance of the two major metropolitan centers.

USAID's relevant interest lies in its long-standing support for both rural and urban development, in its more recent stress on strengthening municipal development, local economic capacity and small-scale private enterprise.

Regional planning in Ecuador has a long history. As elsewhere in Latin America, however, it has been used mostly as a conceptual and descriptive framework for mapping resource use, population distribution, and physical facilities such as the transport network and, with the exception of a few large-scale municipal master plans, has seldom served as a practical guide to action. Most plans are a collection of sectoral analyses. Even in the case of regional corporations, there has been very little socioeconomic planning, and practically no research on spatial flows of productive factors. The Clark/FONAPRE study has intended to make a modest beginning in the direction of inter- sectoral dynamic analysis.

Overview

The premises of the project were that decentralized, regional development must take more explicit account of urban-rural linkages, and that these linkages can be most meaningfully captured at the level of the intermediate and small scale urban hierarchy. The basic propositions of the study are that in order to strengthen the regional economy and to achieve better urban-rural integration, the development of the urban hierarchy should (a) retain and recycle a much larger share of the rural surplus, (b) become focal points of decentralized non-farm income, and (c) improve the service network in its sphere of influence.

The Ambato region, which extends over the major portion of two Central Sierra provinces, is already better articulated and more dynamic than most other comparable regions in Ecuador. This is the consequence of the following factors: (a) the strategic economic location of Ambato at a north-south and east-west crossroads; (b) the relative abundance and variety of natural resources which are being developed to satisfy both national and local demand;

(c) a relatively good transport network; and (d) the beginning of secondary and tertiary industries, centered in Ambato. While the region is still highly dependent on Quito and Guayaquil for both markets and capital, there is an incipient regional economy, which, if properly fostered, could lead to a much more balanced type of growth.

In fact, what emerges from the pilot study is that decentralized, spatially articulated development in this region is not quite as implausible or difficult in a highly centralized country such as Ecuador, as originally believed. The study team started with the impression that virtually all the ideas which elsewhere have contributed to a pattern of greater regional autonomy would prove to be "counter-cyclical" or would require reversal of observed tendencies -- a prospect which would have made this sort of planning extremely difficult, without major shifts in national policies. It appears, though, that on a number of fronts there are promising trends in the Ambato area which indicate that decentralized planning could work "with the grain," rather than against it. Some of these trends include the following:

(a) very high rates of population growth in some of the key market centers in the region, especially in towns with populations between 1,000 and 10,000.

(b) the persistence and growth in importance of the traditional periodic market system for agricultural commodities.

(c) the emergence of some decentralized industrial development, not restricted to urban locations.

(d) the little-noticed development of non-farm labor-intensive cottage industries.

(e) the expansion of education and health facilities.

(f) the diversification of earning sources by farm families, which often

includes remittances from temporary migrants to semi-skilled urban jobs, without change of residence.

(g) a willingness by some provincial and municipal officials to look beyond the town limits.

One should not read too much into these observations. In many cases these tentative occurrences are counterbalanced by opposite forces and socioeconomic trends unfavorable to decentralized, equitable development. However, they do indicate hope that proper policies and strategies could reinforce some of these current tendencies.

One central and overriding fact in the region, with both positive and potentially negative consequences is the increasing importance and dominance of the city of Ambato. In the past decade Ambato has become a truly significant secondary city, gradually filling an important role between the two metropolitan areas and the rural countryside. From the point of view of regional development, this is a healthy trend because the area has acquired a truly dynamic character. It is, however, potentially dangerous, because in the absence of spatial policies, Ambato could grow at the expense of its hinterland, assuming the exploitive role of the capital city and concentrating all the wealth, jobs and facilities in one dominant place. At the same time, it could also reproduce some of the very same metropolitan problems which plague the larger urban concentrations. Hence, that it is wise to acknowledge the crucial importance of a spatial strategy which carefully balances Ambato's growth with those of tertiary urban settlements of various sizes and which assures a harmonious and symbiotic development of the urban and rural portions of this region.

For a future urban-rural strategy, the great dispersion of the rural dwellers in the region is a crucial point to consider. The historically scattered settlement pattern in the central Sierra is still predominant. In 1982, in the

two provinces of the region, almost two-thirds of the rural population of 440,000 persons still lived in dispersed settlements, with very little change occurring in this respect since the last census of 1974. Small towns of 2,000 to 20,000 inhabitants grew by an impressive rate, 62 percent, but they represent still less than 7 percent of the total population. The implications of this situation are the following: (1) the extreme difficulty and high cost of supplying the dispersed rural households with adequate social services, and the consequent need to find sensible ways to agglomerate rural dwellers; (2) the expected additional demand for urban and semi-urban housing, water, education, and so on by that portion of the rural population which will gradually move into more nucleated settlements, rather than migrate out of the region; (3) the increased demand for productive inputs and services, especially when the agricultural intensification projects now underway are completed; (4) the key role of accessible non-farm employment opportunities, as the occupational structure and educational skills diversify.

All of these factors point to the urgent need for a new approach to the development of the region's urban hierarchy. This in turn, requires a determination of the future role of the various kinds of existing towns in the region. The team suggests that future decentralized development in Tungurahua and Cotopaxi may be planned at a minimum of three levels:

1. The basic service center or village center

There are twenty-six such small towns in the region if the cut-off point in population is five hundred, and fifty such places if the cut-off point is two hundred. The future role of these centers is to serve as sites for basic or primary rural services for the surrounding population. Very few of them have periodic markets, but all are important for schools, health, community development, water supply and

housing in the social realm and handicrafts, cottage industries, small storage, primary assembly of perishables and retail trade for basic necessities in the economic sphere.

2. The intermediate market center

There are currently 22 towns in the region with populations of 1,000 to 10,000 which potentially fall in this category. Some of these towns are close satellites of Ambato, and others such as Banos have either too small a rural hinterland or gravitate toward the western tropical lowlands. The study team has identified seven to eight towns in the core region which are currently playing a significant role as focal points for periodic markets and commercial activity. Most of them are also cantonal seats and therefore have a role in offering upgraded administrative facilities as well.

The team proposes that these intermediate centers should be the prime candidates for municipal/rural development. Two intermediate market centers -- Saquisilí and Pelileo -- are particularly dynamic and should receive high priority for development. Another center that had appeared to be a good candidate for further development is Salcedo, but after an analysis of recent trends it appears that Salcedo is caught between Ambato and Latacunga, and is losing its commercial base to Ambato, Latacunga, and Saquisilí. They offer possibilities for substantial improvements of the feria system, can offer higher order social and economic services, such as credit, extension or input supply, and could also gradually attract more private enterprise for generating employment. In these centers it would make sense to plan for packages of investments which could mutually reinforce each other so that gradually a critical mass of urban/rural development activity

can be reached to make the system self-sustaining. The market flow analysis developed in the body of the team's report serves as a useful guide to the nature and diversion of marketing facilities, storage, agro-industrial and farm service installations which are suitable to each center.

3. Diversified regional centers

These are towns of population sizes between 10,000 and 100,000. Besides Ambato which is already in this category, Latacunga is the only present candidate. It so happens that both are provincial capitals and hence have the advantage of gradually building up their regional administrative capacity as well as their socioeconomic capacity to serve their regions. The study team envisages a more "centrifugal" role for these regional centers than past history represents. In addition to their role as sites for complex market functions, the building up of their industrial and entrepreneurial potential to benefit the region deserves the highest priority.

Marketing Reform

The study confirmed the notion based on previous studies that the marketing system is both inefficient and inequitable. However, it was found that price margins between producers and intermediaries were not as great as anticipated. This may be a result of a period of low supply and high demand at the time of the study. Margins tend to be much higher when supplies are plentiful. Based on different sources, the margins for key cash crops in the region show the following ranges:

	<u>Potatoes</u>	<u>Tomatoes</u>	<u>Onions</u>
Farmer's price	38-50	35-40	35-48
Marketing costs	17-25	25-40	20-30
Marketing margins	28-45	20-35	25-42

The higher margins, which seem to greatly exceed costs are, in a large measure, a function of too many levels of intermediaries, most of whom provide little value/added, and the lack of credit and storage, which forces the producers to sell quickly to those who can offer cash. In fact, many of the local revendones (resellers in the same market) provide essentially a source of ready cash, which recirculates at the market in form of farmer's purchases, for farmer inputs and household necessities.

The most important point is that while the large margins and extreme seasonal fluctuations in prices offer a great deal of scope for marketing reform, the issue is not simply the reduction of monopoly/monopsony or the provision of physical facilities but to put in place a set of public services (including finance) which make the existing private system function better.

The spatial analysis of the marketing process indicates that (a) the producer's share of the retail value can be substantially increased, and (b) the market towns in the region can greatly augment their retention of the value added in the system.

The team sees little contradiction between marketing efficiency and market decentralization criteria -- the main issue is who benefits from marketing reform. The large producers can perform bulking, storage, and quality improvement (sorting) and can take advantage of the economies of scale in transport. Some of them sell directly to wholesalers in the metropolitan areas. The small farmers have to sell either to other farmers or at the feria. There are virtually no cooperatives or smaller associations, which can give small farmers scale advantages and could enable them to "forward integrate" their marketing

operations so as to participate in the value added beyond the farm gate. The survival and indeed selective expansions of the feria system depend upon the periodic markets with all their imperfections, as they provide valuable services to both sellers and buyers. It is, therefore, the improvement of periodic market systems which in the short-medium run offers the best opportunity for spatially-oriented marketing reform.

The following points summarize the possibilities for feria improvement:

1. Selection of those market centers for upgrading which have the best possibility of serving as (a) assembly and trans-shipment points, (b) storage and processing for perishables, (c) a growing farm demand for consumer items.
2. Provision of public and up-to-date price information on main commodities by standard units.
3. Control of weights and measures.
4. Milling and temporary storage service at reasonable cost for local farmers.
5. Increased access to market stalls for local farmers.
6. Low-cost improvements of physical conditions of the plazas (roofing, floors, sanitation, water).
7. Permanent storage and warehousing facilities, combined with credit -- with some elements of cooperative or farmer participant ownership.
8. Upgraded municipal parking lots with appropriate security features.
9. Facilities for acquisition of basic food and consumer items at a reasonable cost.
10. Availability of health, legal and technical services during market days - if necessary on a mobile basis.

11. Municipally-sponsored buildings (casas de campesinos) to provide low-cost sleeping, bathing, and short term storage facilities to campesino families who come to the market.

With the exception of providing physical space and collecting fees, it is remarkable how little attention municipalities have paid to the periodic market system, which in the case of most of the small towns is the lifeblood of their economic existence. There ought to be an institutional formula by which improved markets could be administered by a board, on which the municipality, the ministry of agriculture, the traders, and the farmer organizations could be represented. Most probably, such an operation should be run by a paid professional manager, selected by and responsible to the board.

Employment Creation

After marketing reform, the second most important area of improving rural-urban linkages is non-agricultural employment creation, centered around the small and intermediate population centers. Employment, in the study area, is becoming more diversified, especially in and around the city of Ambato, but also in other, smaller centers. However, there is a virtual absence of policies and programs which aim at a spatial decentralization of enterprises and for the creation of small-town employment.

Non-farm employment may take a number of forms including:

- small manufacturing, including agro-industry
- construction
- service enterprise
- handicrafts
- home-based cottage industry.

It is notable that over one-sixth of the industrial establishments in the region are outside the City of Ambato. In interviews with industrial entrepreneurs, the reasons for rural location were associated with low cost of land and labor, clean and abundant water supply, and access to raw materials. Transportation, power access, and service facilities, which often condition industrial locations, do not seem to impede decentralization to most of the area's market towns which are within a two-hour bus or truck distance from Ambato.

Small industry programs have not, so far, used spatial criteria for site selection. Some large municipalities have established industrial parks (not always well located or equipped) but municipal planning has given scant attention to attracting private enterprise to their areas. This is a largely unexplored field, which should be tackled from both the national industrial sectoral level and in future market town development programs. Relevant successful examples exist from other countries. Opportunities for more aggressive private enterprise abound:

(a) Because of the heavily traveled Pan-American Highway, municipal initiative could help to establish more outlets for locally produced goods at the wholesale/retail level in such products as leather goods, shoes, textile articles, native handicrafts, or food products:

(b) The development of agro-industry in and around market towns offers many possibilities, especially once the major horticultural programs based on irrigation are well on the way. The demand for processed and semi-processed fruits, juices, and vegetables as well as dairy and poultry products is growing rapidly;

(c) Considerable skills for handicraft production (weaving, pottery, wood carving, furniture) exist in the area, with virtually no concerted effort

at market development, quality upgrading, financial organization, or training.

(d) The tourist and recreational industry in the region has an excellent potential and could be very important. There is excellent climate, exceptional scenery, thermal waters, and park sporting resources. A number of second (summer) homes for Guayaquil families have already been built.

(e) There is remarkable and almost unnoticed spread of home or cottage industry in a number of towns, especially in the smaller rural centers for the manufacture of shoes, skirts, blue jeans, and other low-cost textile articles.

This process has provided additional income for hundreds of rural families, especially among local women. A more systematic promotional effort, combined with measures to upgrade quality, provide financing, and even attempt cooperative organization among producers could multiply these jobs, where they are needed most.

(f) The building and construction sector is completely underdeveloped. Most contracts go to large to middle-sized firms located in the metropolitan areas, which then sub-contract to smaller firms as needed. Often raw materials and skilled workers are imported into the region from elsewhere.

In general, a small enterprise program must pay increased attention to supplying the growing regional market in the Central Sierra. It appears that virtually everything which is sold at the ferias in the way of consumer products comes from elsewhere.

While most of the more modern industrial plants generate very little direct employment, the multiplier effect in such areas as beverages, leather,

milling, metal mechanical firms seem to be very high, especially in Ambato and Latacunga. Therefore, while the stress should be initially on semi-skilled enterprises, the region lends itself to small to medium sized, technologically modern establishments which could provide opportunities to more highly skilled workers in the core industries.

The Issue of Service Delivery

Based on the available data (see Tables V-1 to V-4) it appears that while the sectoral distribution of services is not spatially planned, the service coverage of the region in the social fields, especially health and education but also potable water supply and communication, is either adequate or rapidly improving. Exceptions are the more remote communities and the areas with strong indigenous populations which are poorly served. In the smaller communities, sewage facilities are completely lacking. This does not mean that the actual delivery of services and their quality are uniformly good but that a physical network of schools and health facilities will soon be in place, especially when the various internationally financed programs are completed. This is not so in the field of economically more relevant services, especially agricultural extension, farm credit, input supply, and, of course, marketing.

The sectoral criteria for locating social facilities developed by CONADE and the relevant ministries seem sensible, although their application is rather mechanistic and in most cases does not involve local participation. Participation is restricted to frequent petitions to obtain services and occasionally contributions of construction labor and building materials.

The major immediate improvement in the effectiveness of rural services should be realized through a link with the periodic market system, with which service availability and development should be synchronized.

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TABLE V-4

COTOPAXI			HEALTH SERVICES					EDUCATION (schools)					
1982 Rank	Urban Centers	1982 population	percent change 74-82	general hospitals	health centers	total beds	total Doctors	total nurses & orderlies	-----PUBLIC-----			-----PRIVATE-----	
									pre- school	pri- mary	second- ary	pre- school	pri- mary
1.	LATACUNGA	28,875	+31	3	2	265	40	85	6	49	7	2	3
2.	Salcedo (S.Mig.de)	5,844	+41	-	1	15	10	17	2	22	1	1	-
3.	La Maná	3,983	+192	-	1	-	5	1	1	29	1	-	1
4.	Pujilí	3,841	+14	-	1	15	7	5	2	43	4	1	1
5.	Saquisilí	2,914	+10	-	1	-	5	9	1	16	1	-	1
6.	El Corazón	1,245	+21	-	1	15	8	16	2	25	-	-	1
7.	Mulliquindí	1,225	+19	-	1	-	2	1	-	9	-	-	-
8.	Toacazo	1,089	+5	-	1	-	1	1	1	20	1	-	-
9.	Guaytacama	948	+1	-	1	-	1	1	1	6	1	-	-
10.	S.Juan Pastocalle	827	+36	-	1	-	1	1	1	8	1	-	-
11.	Cusubamba	754	-1	-	1	-	1	1	4	15	-	-	-
12.	Tanicuchí	767	+31	-	1	-	1	1	2	11	1	-	-
13.	Sigchos	751	+5	-	1	-	2	1	1	30	1	-	-
14.	Angamarca	691	-8	-	1	-	1	1	-	17	1	-	-
15.	Moraspungo	668	-14	-	1	-	2	1	1	36	1	-	1
16.	Mulalillo	637	+5	-	1	-	2	1	-	9	1	-	-
17.	Tingo (El Tingo)	603	+8	-	-	-	3	1	1	10	1	-	-
18.	Chanchagua	544	+32	-	?	-	-	-	-	11	-	-	-
19.	11 de Noviembre (Ill.)	536	-16	-	1	-	2	?	-	3	-	-	-
	Poaló	536	+75	-	1	-	1	1	1	8	1	-	-
21.	Pilaló (Macuchi)	407	-21	-	1	-	1	1	-	4	-	-	-
22.	La Victoria	406	+28	-	1	-	2	1	-	2	1	-	-
23.	B. Quevedo (Guanailín)	362	-12	-	1	-	?	1	-	11	1	-	-
24.	Mulaló	360	-15	-	1	-	1	1	2	15	1	-	-
25.	Panzaleo	335	+4	-	1	-	1	1	-	4	-	-	-
26.	Aláquez	334	+36	-	1	-	1	1	-	11	1	-	-
	A.J.Holguín (Lucía)	334	+40	-	1	-	1	1	1	2	-	-	-
28.	Chantilín	302	+45	-	?	-	?	?	?	?	?	?	?
29.	Pucayacu	299	+33	-	1	-	1	1	-	2	1	-	-
30.	Guangaje	297	+11	-	1	-	?	1	-	11	-	-	-
31.	Zumbahua	284	+173	-	1	-	2	2	-	12	1	-	-
32.	Las Pampas	247	+253	-	1	-	1	1	-	16	1	-	-
33.	Isinlivi	184	-40	-	1	-	1	1	-	8	-	-	-
34.	Chugchilán	164	-16	-	1	-	2	-	-	9	-	-	-
35.	Joseguano Bajo	161	-37	-	1	-	1	1	-	4	-	-	-
36.	Pinllopata	146	-46	-	1	-	-	1	-	3	-	-	-
37.	Ramón Campaña	76	-6	-	1	-	1	1	-	10	-	-	-
38.	Guantualó	0	0	-	-	-	-	-	-	-	-	-	-
39.	Cuicuna	0	0	-	-	-	-	-	-	?	-	-	-
40.	San Buenaventura	0	0	-	?	-	?	?	?	?	?	?	?

TABLE V-3

TUNGURAHUA			HEALTH SERVICES					EDUCATION (schools)							
1982 Rank	Urban Centers	1982 population	percent change '74-82	general hospitals	health centers	total beds	total Doctors	total nurses & orderlies	PUBLIC			PRIVATE			Univ
									pre-school	pri- mary	second- ary	pre-school	pri- mary	second- ary	
1.	AMBATO	100,605	+31	8	3	386	57	186	5	34	14	16	21	17	
2.	Baños	8,548	+53	1	1	15	9	16	1	12	5	-	1	-	
3.	Pelileo	4,523	+19	1	1	18	7	11	2	21	3	-	1	-	
4.	Píllaro	4,290	+3	1	1	20	6	9	1	11	3	-	1	-	
5.	San Bartolomé	2,305	+36	?	?	?	?	?	1	3	-	-	-	-	
6.	Izamba	2,221	+59	-	1	-	1	1	1	8	1	-	-	-	
7.	Santa Rosa	1,940	+11	-	1	-	1	1	-	10	1	-	-	-	
8.	Montalvo	1,732	+184	-	1	-	?	?	-	5	-	-	-	-	
9.	Quizapincha	1,694	+34	-	1	-	3	1	-	12	1	-	-	-	
10.	A.M.Martínez (Mundug.)	1,683	-9	-	1	-	1	1	1	9	-	-	-	-	
11.	Patate	1,609	+16	-	1	-	3	1	1	17	1	-	-	-	
12.	Pitahuín	1,544	-8	-	1	-	2	1	-	16	1	-	-	-	
13.	Huambaló	1,438	+33	-	1	-	2	1	-	6	1	-	-	-	
14.	Atahualpa (Chisalata)	1,313	+78	-	1	-	1	1	1	3	1	-	-	-	
15.	Quero	1,267	+38	-	1	-	1	1	1	25	1	-	-	-	
16.	Cevallos	1,150	+6	-	1	-	3	1	1	12	1	-	-	-	
17.	Pasa	933	+3	-	1	-	1	1	-	9	-	-	-	-	
18.	Huachi Grande	883	+21	-	1	-	1	1	-	4	-	-	-	-	
19.	San Andrés	866	+18	-	1	-	3	1	-	10	1	-	-	-	
20.	Piculigua	802	+2	-	1	-	2	1	-	11	1	-	-	-	
21.	Mocha	781	-2	-	1	-	1	2	1	9	-	-	-	-	
22.	San Fernando	744	+1	-	1	-	?	?	-	4	-	-	-	-	
23.	Cocaló	658	+14	-	1	-	2	1	-	4	1	-	-	-	
24.	Bolívar	644	-4	-	1	-	?	?	-	3	-	-	-	-	
25.	Ulta	630	+85	-	1	-	?	?	-	5	-	-	-	-	
26.	Tisaleo	624	-12	-	1	-	3	?	1	9	1	-	-	-	
	Constantino Fernández	624	+29	-	1	-	1	2	-	3	-	-	-	-	
28.	San Miguelito	620	+9	-	1	-	2	1	1	6	1	-	-	-	
29.	García Moreno (Chumaquí)	604	+10	-	1	-	?	?	1	4	-	-	-	-	
30.	Emilio H.Terán (Rumipa.)	575	+44	-	1	-	?	?	-	1	-	-	-	-	
31.	Ambatillo	495	-52	-	1	-	2	1	-	3	-	-	-	-	
32.	Marcos Espinel	471	0	-	?	-	?	?	-	2	-	-	-	-	
33.	Totoras (Tránsito)	443	-60	-	1	-	-	1	-	5	-	-	-	-	
34.	Benítez (Pachanlica)	437	+18	-	1	-	1	1	-	1	1	-	-	-	
35.	San José de Poaló	397	-3	-	1	-	1	1	-	4	1	-	-	-	
36.	Sucre Patate-Urco	388	-22	-	1	-	1	1	-	2	-	-	-	-	
37.	Presidente Urbina	365	-12	-	?	-	?	?	-	6	-	-	-	-	
38.	El Rosario (Rumichaca)	299	+1	-	?	-	?	?	-	3	-	-	-	-	
39.	Río Verón	291	-6	-	1	-	2	1	-	6	-	-	-	-	
40.	Río Negro	286	-19	-	1	-	2	1	-	4	-	-	-	-	
41.	Yanayacu (Mochapata)	283	+6	-	1	-	-	1	-	2	-	-	-	-	
42.	El Triunfo	202	+23	-	?	-	?	?	-	2	-	-	-	-	
43.	Juan Benigno Vela	198	+4	-	1	-	1	1	-	6	-	-	-	-	
44.	Baquerizo Moreno	178	+2	-	?	-	?	?	-	2	-	-	-	-	
45.	Los Andes (Poapug)	118	-27	-	?	-	?	?	-	3	-	-	-	-	
46.	Lligua	83	+2	-	?	-	?	?	-	3	-	-	-	-	
47.	Chiquicha	82	+41	-	1	-	1	1	-	2	-	-	-	-	
48.	Salasaca	78	-90	-	1	-	-	1	1	4	1	-	-	-	
49.	Llangahua	0	0	-	-	-	-	-	-	-	-	-	-	-	

Institutional Issues

The prevailing institutional situation is generally unfavorable to decentralized regional development and the strengthening of urban-rural linkages.

In the Central Sierra no regional development corporation or other similar sub-national organization exists. The scope of activity of the two provincial councils covering the region is very limited, and mostly involves infrastructure construction, in supplement to the role of national agencies. There is an absolute divorce between rural development and municipal efforts. In fact, SEDRI appears to view the market towns as adversaries rather than potential allies in its program to help campesinos. Most municipalities, on the other hand have little interest in helping or servicing the rural portions of their constituencies. Farmer representation on municipal councils is rare and on provincial councils non-existent.

The fiscal and managerial incapacity of the smaller and medium sized municipalities is well documented. What is less perceived is that the vast majority of municipal concerns remain in the field of traditional urban infrastructure, such as housing, water transport, and electricity and do not extend into the economically productive and employment-creative activities.

The national sectoral agencies are highly centralized and their work at the regional level is uncoordinated among each other and unintegrated into the local government structure. The one exception is SEDRI, which represents an interesting institutional innovation.

However, SEDRI's activities are organized around specific ad hoc projects financed by international agencies. While potentially serving as possible model for an area coordinating body, SEDRI is often considered just as another of the many national agencies operating in the area. Moreover, as mentioned earlier, SEDRI completely bypasses the urban hierarchy. This view of town-farm

antagonism is based on well documented historic mistreatment and exploitation of Sierra peasants by urban-based merchants, landlords and bureaucrats. There is no question that SEDRI's basic strategy for strengthening campesinos organization and collective power is a correct approach. However, it may be an error to focus this emergent organization on the national scene away from the market towns or local governments. For example, SEDRI's idea for marketing improvement was to sell directly at the Quito and Guayaquil level, bypassing the periodic market centers.

The hypothesis developed by the study team is that there is now a considerable overlap and coincidence of interests between small farmer families and the dwellers of small towns, and that it is advantageous for both to work toward alliances, especially in economic matters. This would imply stronger participation by the emergent campesino organizations in municipal affairs in recognition of the crucial role the towns can play in upgrading levels of land in the countryside.