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CONSULTORES Y ASESORES AGROINDUSTRIALES, S. A.

ASSESSMENT OF POVERTY IN GUATEMALA'S CENTRAL AND WESTERN HIGHLANDS

FINAL REPORT

Presented to:

USAID/GUATEMALA

Lic. Danilo A. Palma, Socioanthropologic Analysis
Dr. Ileana Pinto Paiz, Economic Analysis
Dr. Jorge Pelaez, Survey Design and Execution
Dr. Edgar Nesman, Survey Data Analysis

CONSULTORES Y ASESORES AGROINDUSTRIALES, S. A.

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PRESENTATION

This document contains the Final Report of the Assessment of Poverty in Guatemala's Central and Western Highlands, undertaken by **Consultores y Asesores Agroindustriales S. A.** under contract IQC 520-0000-I-07-8698-00 with USAID/Guatemala.

EXECUTIVE SUMMARY

Assessment of Poverty in Guatemala's Central and Western Highlands

1. Objective: To contribute in satisfying the need for better and more consistent information concerning poverty in Guatemala:
   - Where is it?
   - What levels has it reached?
   - What conditions are contributive factors of it?
   - What can be done about it?

2. Purposes:
   - Redefine "poverty," in broader terms, operationally linking the concept to USAID programs in Guatemala

   - Test sector-related key indicators as tentative measures of factors contributing to "poverty" as it has been defined: lack of choice of the individual to improve his (her) "wellbeing."

   - Explore a method somewhere in the middle of (a) a method analytically precise, but costly; and (b) a less costly and precise one, but which still

produces usable and acceptable results under time and budget restrictions.

- Define indicators and collect useful information for the new Program Assessment System.

3. Methodology:

In accordance with the scope of work and specific instructions of USAID/Guatemala's Technical Representative, the Consulting Team performed the following tasks:

- Selection of representative indicators for each of the following sectors: agriculture, education, health, economics and infrastructure.

- Obtention of indicator values through a survey of 2,000 families living in 30 areas (municipios[1]) of 9 departments in the central and western highlands; in addition, interviews with 80 municipal, health and education authorities were undertaken. For each sector, a group of municipios is receiving or has recently received USAID/Guatemala sponsored assistance; the other group has not received such assistance.

1/ "Municipio:" The smallest administrative-geographical unit in Guatemala; includes a variable number of hamlets, villages and a head town.

- Indicator values by municipio were converted to indices. This was done by establishing a well-being or development target value for each indicator (reference standard), and the indicator value was divided by its reference standard. This way, the varying status of all 30 municipios for each indicator were made comparable to each other under the same scale.

- Consistency tests for the resulting indices, combining each sector's individual indices to achieve sector-related composite indices and the five sector-related composite indices into an overall index for each municipio; assigning varying patterns of weights to the composite indices, and comparing results. (See methodology limitations below).

- Recommendations of alternatives for future programs.

4. Limitations of the Study

- Scale problems when complying with the requirement of combining individual indices to a sector-related index; or sector-related indices to an overall index.

- Reduced number of indicators for each sector. Those used were submitted for the consideration and approval of

USAID/Guatemala's Technical Representative.

- Non-random selection of survey municipios (although units surveyed for each municipio were selected at random). Selection could not be aleatory in view of AID's requirement to compare areas receiving USAID assistance and those not receiving such assistance.

- Area samples were not proportional to that area's population. Because municipios were not selected at random, a decision was made that sample error would not measured and likewise, data would not be expanded.

- Reference standards and patters of weights were selected for illustrative purposes only.

- Because AID's scope of work did not request so, no information directly related with social and cultural aspects of poverty was obtained.

5. Examples of Indicators utilized

- Agriculture: Average yields of corn per family

  Percentage of farms less than 5 manzanas failing to grow at

		least 2 non-traditional products in the last 3 years.
-	Economics:	Percentage of families who spent less than Q1,400 last year (utilized as a proxy of expenditure).
		Percentage of people over 10 years old who worked 80% of total working days last year.
-	Education:	Percentage of men and women over 12 years old who cannot read.
		Percentage of men and women over 12 years old who did not finish 3 years of primary education
-	Health:	Percentage of children under 5 years old who have been sick this year.
		Percentage of children less than 3 years old with no immunization coverage

- Infrastructure: Percentage of homes with no sanitation services for excrement disposal

  Percentage of homes lacking electric power supply.

  Percentage of families lacking access to clean water (domestic or public "chorro," well or tanks ("pilas").

6. Some Main Findings:

   - The overall poverty index only provides a crude profile for comparing communities; however, it is not valid in terms of its scale.

   - Sector-related composite indices allow crude estimations of each sector's relative contribution to poverty; however, it still presents the scale problem.

   - Comparisons between municipios are possible using individual indices, in which case there are no scale problems; they also allow a comparison between

eachmunicipio and the development target (reference standard) selected for each indicator.

- The same is true for indicators; however, they constitute measures at a stage prior to incorporating the target/reference standard and therefore, fails to express a comparison between eachmunicipio and the development target.

- Comparisons between groups of municipios having one or more USAID/Guatemala sponsored assistance projects and those lacking such assistance provide evidence that the Mission's efforts in agriculture are making an impact upon agriculture sector indicators utilized as contributing factors to poverty--as we understand it; indicators of other sectors show very little impact.

- The resulting order in which communities were ranked is consistent with information from other sources relating to poverty conditions.

7. Conclusions and Recommendations

- Because of the fact that this was a pilot study, a follow up is advisable, probably focused exclusively in the Highlands.

- Each USAID/Guatemala technical division must select appropriate sector and program indicators for future incorporation into the Mission's Program Assessment System.

- The study utilized household expenditure indicators as indirect indicators of "income" and "consumption." This information, though crude, can be the starting point of a survey on malnutrition prevalence, providing the basis of USAID/Guatemala's nascent nutrition strategy.

- More sophisticated forms of analysis, such as Cluster Analysis, Q or R Factor Analysis or Multiple Correlation, which avoid scale problems; and information on more qualitative issues such as activities and motivations, can be utilized by the Consulting Group, with the support of Guatemalan or foreign professionals, if the Scope of Work or USAID/Guatemala's Technical Representative so requests.

PREFACE

The Final Report of "Assessment of Poverty in Guatemala's Central and Western Highlands" provides answers to such questions as "Why study poverty?", "What is poverty?", "How can poverty be studied?", "Where is poverty in Guatemala?", "What forms of poverty are there, what are its intensities and contributing factors?", "What can USAID/Guatemala do about it?"

Contents are presented in two sections. The First Section (narrative), consisting of two chapters, refers to those questions set forth above, and was prepared for readers not directly interested in methodology technicalities, but in the actual answers to these questions. However, concerning the last question, the reader must go to the conclusions and recommendations section, skipping, if he wishes to do so, the Second Section.

The Second Section is a technical description of the construction of indices, indicators, reference standards and patterns of weights. Readers will also find an explanation concerning technical methodology of the design and execution of the baseline survey in Annex 1.

Other annexes include copies of instruments used, a

listing of poverty-related books and documents reviewed, and community data tables.

Maps and charts have been inserted throughout the report in places where they are more useful to the reader. And, in addition to the general Table of Contents, which provides the reader with the report's principal contents, a Table of Contents for Graphs, one for Charts, and one for Annexes were also included.

The Consulting Group's opinion is that the methodology survey carried out in this study throws some light on the type of indicators, reference standards and indices that USAID/Guatemala should use to monitor poverty and poverty-related conditions. In addition, this methodology will allow the undertaking of baseline studies, progress evaluations and final impact measurements of assistance programs, as well as for report preparation.

Guatemala, August 1990

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I. PART ONE: NARRATIVE SECTION

A. Pilot Study of Poverty in the Central and Western Highlands

1. WHY STUDY POVERTY?

1.1 Poverty in Guatemala

Human life conditions frequently summarized under the term "poverty," have been endemic, even during periods of economic growth and prosperity. In the last few years, these conditions have undergone an accelerated process of deterioration, severely affecting most of the country's population, independently of the technical or popular definition given to the term "poverty" and of actual living conditions consequently considered.

In 1990, Guatemala's population is estimated at 9,197,345 (FET 2.11.4: 20), in a territory of 108,889 square kilometers (68,055.63 square miles). The population growth rate is 2.92% per annum, and life expectancy is 62.4 years for men and 67.3 years for women (1990-95).

In terms of traditional definitions of poverty, the situation is as follows:

Twenty-eight point five percent (28.5%) of the population

is economically active (1988), but the unemployment rate stands at 43.5% (open, 10%; underemployed, 33.6%). Monthly average salaries in 1988 stood at Q127.17 in agriculture, Q365.19 in industry Q434.84 in commerce and Q283.51 in services. In mid 1988, the exchange rate between the US Dollar and the Quetzal was US$1.00 = Q2.75; in August 1990, it is of Q5.25 per dollar. The inflation rate officially accepted in 1989 was of 19.3%. In 1988, the value of the food basket for basic food items was estimated at Q250.00 and the food basket for basic goods and services was Q465 per month (Secaira: 1). Therefore, the Overall Level of Poverty was of 83.4% and the Level of Extreme Poverty, of 64.5% (only 16.6% of the population is not poor).

The birth rate is of 39.4 per one thousand and the mortality rate is of 8.1 per one thousand. Child mortality rate if of 51.3 per one thousand. Only 71.4% of the population are serviced water for human consumption and use whether at home or at their communities, but 85% of urban population and 99% of rural population are serviced with non-potable water. Only the inhabitants of the capital city, 25 out of the country's 329 municipalities and 14% of cities besides the capital receive drinking water (ASIES: 6-7).

Concerning the nutrition status of children between the ages of 6 and 9 in 1986, 37.4% of them suffered from moderate malnutrition. However, a high risk level of malnutrition (36% - 50.99%) is found in the Departments of San Marcos, Quetzaltenango, Sololá, Totonicapán, Quiché, Chimaltenango, Huehuetenango, Sacatepéquez, Suchitepéquez, Jalapa, Alta and Baja Verapaz. Besides, there is only one doctor and one hospital bed per one thousand of the country's inhabitants.

Thirty-six point five percent (36.5%) of families in the country lack a house, and the deficit exceeds 700,000 units.

The rate of total illiteracy stands at 46%, increasing to 77% in rural areas. The kindergarten education deficit is of 73%, for primary education, 39.4%, and for secondary, 85.3%.

In the country's highlands, densely indigenous populated areas, farms have been steadily diminishing in size throughout the years, as a consequence of the high population growth rate, indian society rules on inheritance, and the lack of policies on development of new farming areas in non-forest regions. In some sectors

of Totonicapán, Sololá and San Marcos, average farm sizes are between one-half and one hectare. Farming, at this scale, requires irrigation, soil conservation practices and diversification into commercially valuable crops, if it is to support households (which average 6 members) profitably enough to insure food, health, education and other goods and services. In the absence of such resources, living conditions in the highlands have severely deteriorated.

1.2 Justification of this study

Guatemala is a multi-cultural and multi-ethnic country. More than half of its population is comprised of descendants of the country's original indian inhabitants conquered by the Spanish in the Sixteenth Century. Today, some of these groups occupy nine departments in the areas known as the central and western highlands, retaining traditions, customs, and beliefs, as well as work, food, and health practices which vary among groups and also from the country's non-indian cultures. During the past thirty years, they have become the priority focus of technical and food aid assistance programs of the Government of Guatemala, the USAID Mission and other donors.

USAID/Guatemala programs have concentrated upon improving

small-farmer commercial agriculture, strengthening health and education services and augmenting rural roads and electric power networks. Recent studies--including a major evaluation of USAID activities undertaken in 1989--have detected tangible impacts, at least in areas supported by AID projects. Important household groups have a relatively higher income, more people have access to health services, more primary school age children are remaining in rural schools, farm-to-market commercial flows have diversified and increased.

The programs, however, rather than being targets themselves, are means to abolish poverty and its causes, and to improve living conditions of the country's inhabitants.

However, as stated above, available information reveals strong and persistent levels of poverty which threaten to worsen with the country's economic crises and population growth. It is precisely for this reason that AID/Guatemala needs a validated methodology to monitor living conditions and the changes they go through in different regions of the country. The information provided by this system will allow the identification of areas in greater need of assistance, a more effective use of resources, impact measurement of assistance programs,

making better-informed decisions and advising the design of realistic, viable and adequately-oriented policies.

1.3 USAID/Guatemala's initiative to design and test the methodology

In March of this year, USAID/G's Contract Office sent **Consultores y Asesores Agroindustriales, S. A.** the Scope of Work for the "Assessment of Poverty in Guatemala's Central and Western Highlands" for its undertaking. Consequently, a consulting team was formed in accordance to the qualifications set forth by USAID/Guatemala:

- Team Coordinator: Danilo A. Palma, Sociologist/ Anthropologist
- Economist: Ileana Pinto Paiz
- Statistical Specialist: Jorge Pelaez
- Sociologist and Agronomist: Edgar Nesman

The team analyzed the scope of work and held several work sessions with Dr. Gary H. Smith, technical representative of USAID/Guatemala, who communicated the concepts, constructs and precise forms of analysis required by the study. Work began the first week of April. The Final Report was written in July, and was revised by USAID/Guatemala in August.

1.4 Objectives

According to the Scope of Work, they include the following:

- Assess relative levels of poverty--in terms of lack of choice--among USAID project areas in agriculture, health, education and infrastructure compared with areas not receiving such assistance.

- Test selected sector-related indicators for accuracy and consistency as useful measures of factors contributing to overall poverty levels.

- Develop recommendations for improvement in USAID's program impact information system, in areas regarding poverty and well-being of target groups.

2. WHAT IS POVERTY?

The first step towards the execution of the study was the review of bibliography and poverty-related documentation mainly in third world regions and Guatemala. Some results are set forth below:

2.1 Traditional Meanings

Popularly speaking, poverty is a term which indicates lack of material means of life (Diccionario General: 248; Websters: 485). The technical terms, do not change this, but make it more precise. Relative and absolute poverty

have been traditionally distinguished, depending on the degree of lack or scarcity of resources. The usual procedure has been to measure the scarcity or lack of resources utilizing household income as an indicator, and less frequently, nutritional status. Concerning relative poverty, per capita income has been determined by intervals, and then a percentage of a population is determined in each interval. In search of absolute reference points, a differentiation has been made between poverty and extreme poverty.

To measure extreme poverty, an amount equivalent to a necessary level of consumption is established (basic basket of food items) and a percentage of the population or families whose household income is insufficient to cover such value is determined (Kazen: 8 - 9). Therefore, the latter can be defined as "the minimum cost of a nutritional diet" and poverty in general as the "minimum cost of a basket containing goods to satisfy basic needs" (PNUD: 13). These measurements often present difficulties in estimating income, and methodology problems like determining the analysis unit (family or individual) and the components of a "basket of basic food items" (amount, quality and price).

Documents reviewed show that this was the criteria used

during the 1960s in President Johnson's program to eradicate poverty; this have also proven to be the one applied internationally.

Another basket could be used to measure poverty. It would include: health, home, basic education, access to information services, recreation and culture, clothes and shoes, public transportation and communications ("basket of basic goods and services"). However, it is not used because, the argument goes, this measurement could be "unnecessarily complicated and expensive."

2.2 Traditional inadequate and incomplete concepts of poverty

These traditional concepts of poverty are inadequate and incomplete, as they only consider consumption and income indirectly and when establishing absolute lines, they do not respect the relativity of poverty levels.

It has been traditionally believed and accepted that as household real income rises, more will be spent on food, health services and education, providing for better living conditions for the family. This belief presumes a high integration among socio-economic sectors, something that must be determined empirically. However, all available evidence indicates that such integration does not take place, nor do the expected ways of spending

income when it increases.

Knowledge on how to earn higher incomes, and even having the material conditions to accomplish it, does not imply knowledge about how to use that income to improve the family's living conditions (well-being), nor the attitude (inclination or tendency) needed to improve it. Poor education can lead to a continuation of precarious nutritional and health status of the family, in spite of increases in earning power. Unavailability of public services, social discrimination or inappropriate cultural attitudes (culturally determined) may limit the poor families' capacity to create or take advantage of opportunities to improve their standard of living, especially in a country like Guatemala, a mosaic of non-western cultures where the economic rationality is not necessarily a dominant cultural value.

2.3 New definition for poverty and a methodology for its study

It is essential, therefore, to define what is meant by "poverty" surpassing the deficiencies and limitations of the ones set forth above and more appropriate to the country's characteristics and to AID sponsored assistance programs. Rather than defining it as merely a lack or scarcity of resources, and/or malnutrition, "poverty" has

been defined here as lack of choice: attainable, sensible ways to improve the family's well-being. This requires the inclusion of poverty's dimensions in its definition.

In countries like Guatemala, poverty obviously includes agricultural, economic, education, health, infrastructure (highways, electricity, water), social and cultural factors.

As a result, to measure real poverty, some indicators informing on these sectors are necessary. Economic (agricultural and others), educational, health, infrastructure, social and cultural indicators are necessary.

In addition, it is necessary to include a certain number of indicators for each sector linking the concept of poverty with the characteristics of USAID/Guatemala assistance programs. Then, each indicator can be converted into an index.

This is done by dividing the indicator value by a socio-economic developmental target which acts as reference standard. The result represents the distance, in a poverty scale, a group or community is away from the

reference standard or target.

Indices, therefore, are highly informative as they indicate the magnitude of the condition marked by the indicator, its distance to the developmental target; and provides an idea of the effort, resources and time needed to reach that particular developmental target.

They can undergo consistency tests, even if its measurement levels or scale units are heterogenous, by means of aggregation exercises.

Indices particular to each sector can be aggregated to form composite indices by sector, and the latter to form an overall index.

Indices can also undergo simulation tests on the effects of alternative developmental policies by systematically varying the pattern of weights.

Information on the geographic location of varying relative levels of poverty and its effect on human populations can be obtained through the application of this methodology.

It also allows the collection of base information prior

to assistance program intervention and impact monitoring throughout the life of a project, upon its termination and even some time after its PACD. In other words, it will be possible to monitor the behavior of relative conditions of poverty in any area at any time. It will also allow USAID/Guatemala to prioritize efforts, improving the focus and quality of individual programs, especially when USAID budgets for Central America have begun to diminish.

This monitoring system is, therefore, as important as greater intensity of donor efforts.

3. HOW WAS THE STUDY UNDERTAKEN?

The undertaking of this baseline study was done in three phases: desk work, fieldwork, and data processing and analysis (see detailed description included in Annex 1).

3.1 The desk work stage included review of documentation and bibliography available relating to third world poverty, primarily in Guatemala. Poverty definitions, methodologies for its study and results obtained were revised (Annex 2). A new and more appropriate definition of the term "poverty" was developed. Jointly with the USAID/Guatemala Technical Representative, indicators and reference standards were selected to construct indices

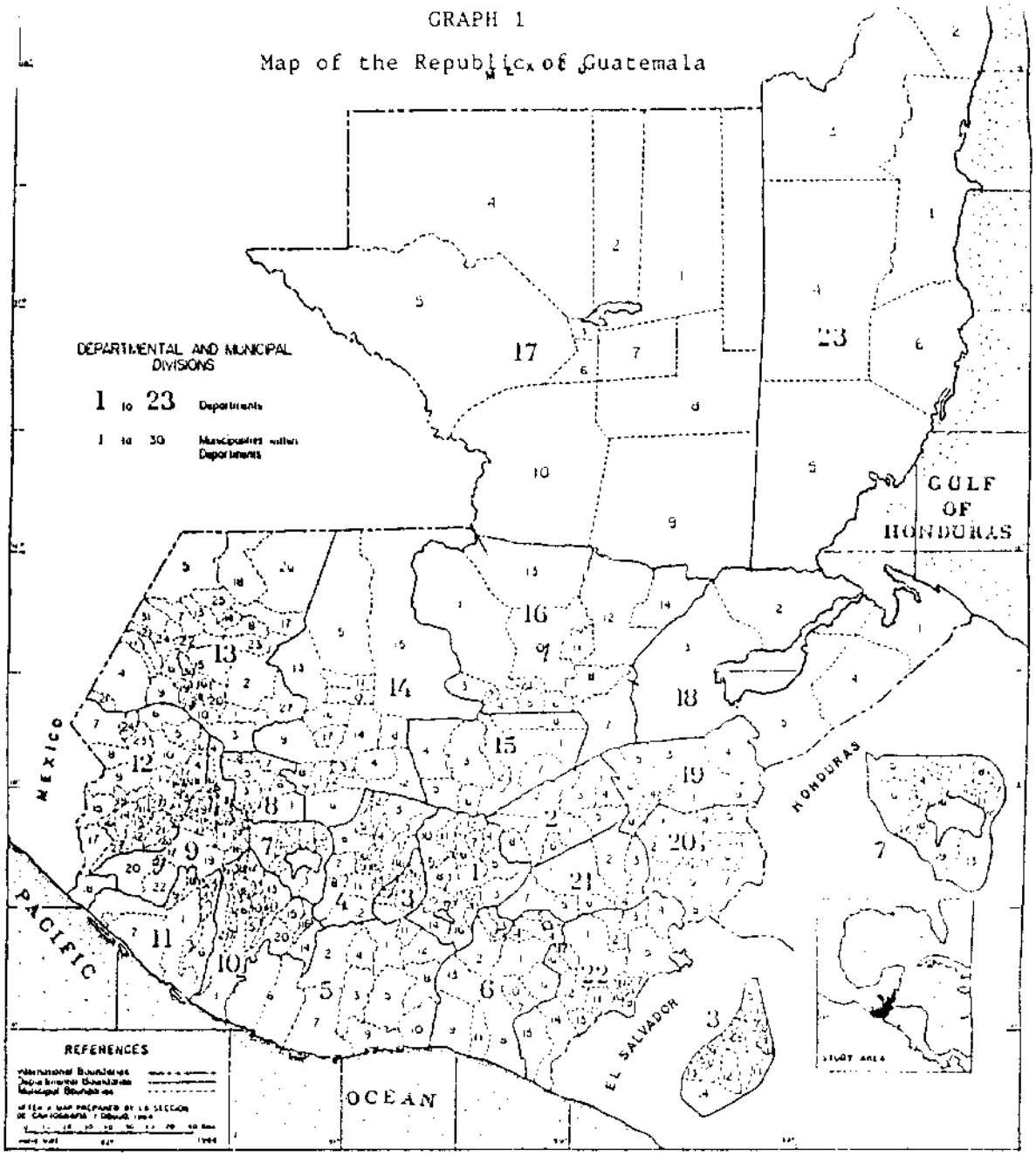
and variation patterns of weights to simulate the effects on indices of alternative developmental policies. The Second Part of the report, the Indicators and Indices Chapter, deals in detail with indicators, reference standards and indices constructed for each sector (Agriculture, Economics, Education, Infrastructure and Health); and sector and overall tests.

Lists of municipios assisted by USAID sponsored programs and of similar areas not receiving such assistance were prepared; in total 30, (see Graph 1), all located in regions known as Guatemala's Central and Western Highlands (see Graph 2). It is important to point this out, as it means that the scope of work precisely instructed that municipios not be selected at random, therefore making the survey not probabilistic at this level. Questionnaires were prepared for interviews to heads of families or their representatives, municipal, health an education authorities in all 30 municipios (see Annexes 3 and 4).

3.2 The Fieldwork Stage included three teams of senior field workers, which undertook the survey in all 30 municipios. In accordance with the plan approved by the USAID/Guatemala Technical Representative, the same number of interviews (67) was carried out in each municipio, 27

GRAPH 1

Map of the Republic of Guatemala



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DEPARTMENTS AND MUNICIPALITIES

1. GUATEMALA
   1. Guatemala
   2. Santa Catarina Pinula
   3. San José Pinula
   4. San José del Golfo
   5. Palencia
   6. Chinautla
   7. San Pedro Ayampuc
   8. Mixco
   9. San Pedro Sacatepéquez
   10. San Juan Sacatepéquez
   11. San Raimundo
   12. Chuarrancho
   13. Fraijanes
   14. Amatitlán
   15. Villa Nueva
   16. Villa Canales
   17. Petapa

2. EL PROGRESO
   1. El Progreso
   2. Morazán
   3. San Agustín Acasaguastlán
   4. San Cristóbal Acasaguastlán

3. SACATEPEQUEZ
   1. Antigua Guatemala
   2. Jocotenango
   3. Pastores
   4. Sumpango
   5. Santo Domingo Xenacoj
   6. Santiago Sacatepéquez
   7. San Bartolomé Milpas Altas
   8. San Lucas Sacatepéquez
   9. Santa Lucía Milpas Altas
   10. Magdalena Milpas Altas
   11. Santa María de Jesús
   12. Ciudad Vieja
   13. San Miguel Dueñas
   14. Alotenango
   15. San Antonio Aguas Calientes
   16. Santa Catarina Barahona

4. CHIMALTENANGO
   1. Chimaltenango
   2. San José Poaquil
   3. San Martín Jilotepeque
   4. Comalapa
   5. Santa Apolonia
   6. Tecpán Guatemala
   7. Chimaltenango
   8. Yepocapa
   9. San Andrés Itzapa
   10. Parramos
   11. Zaragoza
   12. El Tejar

5. ESCUINTLA
   1. Escuintla
   2. Santa Lucía Cotzumalguapa
   3. La Democracia
   4. Siquinalá
   5. Masagua
   6. Tiquisate
   7. La Gomera
   8. Guanagazapa
   9. San José
   10. Iztapa
   11. Palín
   12. San Vicente Pacaya
   13. Santa Ana Mixtán

6. SANTA ROSA
   1. Cuilapa
   2. Barberena
   3. Santa Rosa de Lima
   4. Casillas
   5. San Rafael Las Flores
   6. Oratorio
   7. San Juan Tecuaco
   8. Chiquimulilla
   9. Taxisco
   10. Santa María Ixhuatán
   11. Guazacapán
   12. Santa Cruz Naranjo
   13. Pueblo Nuevo Viñas
   14. Nueva Santa Rosa

7. SOLOLA
   1. Solola
   2. San José Chacayá
   3. Santa María Visitación
   4. Santa Lucía Utatlán
   5. Nahuala
   6. Santa Catarina Ixtahuacán
   7. Santa Clara La Laguna
   8. Concepción
   9. San Andrés Semetabaj
   10. Panajachel
   11. Santa Catarina Palopó
   12. San Antonio Palopó
   13. San Lucas Tolimán
   14. Santa Cruz La Laguna
   15. San Pablo La Laguna

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8. TOTONICAPÁN

1. Totonicapán
2. San Cristóbal Totonicapán
3. San Francisco El Alto
4. San Andrés Xecul
5. Momostenango
6. Santa María Chiquimula
7. Santa Lucía La Reforma
8. San Bartolo

9. QUEZALTENANGO

1. Quezaltenango
2. Salcajá
3. Olintepeque
4. San Carlos Sija
5. Sibilia
6. Cabricán
7. Cajolá
8. San Miguel Sigüilá
9. Ostuncalco
10. San Mateo
11. Concepción Chiquirichapa
12. San Martín Sacatepéquez
13. Almolonga
14. Cantel
15. Huitán
16. Zunil
17. Colomba
18. San Francisco La Unión
19. El Palmar
20. Coatepeque
21. Génova
22. Flores Costa Cuca
23. La Esperanza
24. Palestina de los Altos

10. SUCHITEPÉQUEZ

1. Mazatenango
2. Cuyotenango
3. San Francisco Zapotitlán
4. San Bernardino
5. San José El Ídolo
6. Santo Domingo Suchitepéquez
7. San Lorenzo
8. Samayac
9. San Pablo Jocopilas
10. San Antonio Suchitepéquez
11. San Miguel Panán
12. San Gabriel
13. Chicacao
14. Patulul
15. Santa Bárbara
16. San Juan Bautista
17. Santo Tomás La Unión
18. Zunilito
19. Pueblo Nuevo
20. Río Bravo

11. RETALHULEU

1. Retalhuleu
2. San Sebastián
3. Santa Cruz Muluá
4. San Martín Zapotitlán
5. San Felipe
6. San Andrés Villa Seca
7. Champerico
8. Nuevo San Carlos
9. El Asintal

12. SAN MARCOS

1. San Marcos
2. San Pedro Sacatepéquez
3. San Antonio Sacatepéquez
4. Comitancillo
5. San Miguel Ixtahuacán
6. Concepción Tutuapa
7. Tacaná
8. Sibinal
9. Tajumulco
10. Tejutla
11. San Rafael Pié De La Cuesta
12. Nuevo Progreso
13. El Tumbador
14. El Rodeo
15. Malacatán
16. Catarina
17. Ayutla
18. Ocós
19. San Pablo
20. El Quetzal
21. La Reforma
22. Pajapita
23. Ixchiguán
24. San José Ojetenám
25. San Cristóbal Cucho
26. Sipacapa
27. Esquipulas Palo Gordo
28. Río Blanco
29. San Lorenzo

13. HUEHUETENANGO

1. Huehuetenango
2. Chiantla
3. Malacatancito
4. Cuilco
5. Nentón
6. San Pedro Necta
7. Jacaltenango
8. Soloma
9. Ixtahuacán
10. Santa Bárbara
11. La Libertad
12. La Democracia
13. San Miguel Acatán
14. San Rafael La Independencia
15. Todos Santos Cuchumatán
16. San Juan Atitán
17. Santa Eulalia
18. San Mateo Ixtatán
19. Colotenango
20. San Sebastián Huehuetenango
21. Tectitán
22. Concepción
23. San Juan Ixcoy
24. San Antonio Huista
25. San Sebastián Coatán
26. Barillas
27. Aguacatán
28. San Rafael Petzal
29. San Gaspar Ixchil
30. Santiago Chimaltenango
31. Santa Ana Huista

14. QUICHÉ

1. Santa Cruz del Quiché
2. Chiché
3. Chinique
4. Zacualpa
5. Chajul
6. Chichicastenango
7. Patzité
8. San Antonio Ilotenango
9. San Pedro Jocopilas
10. Cunén
11. San Juan Cotzal
12. Joyabaj
13. Nebaj
14. San Andrés Sajcabajá
15. Uspantán
16. Sacapulas
17. San Bartolomé Jocotenango
18. Canillá

15. BAJA VERAPAZ

1. Salamá
2. San Miguel Chicaj
3. Rabinal
4. Cubulco
5. Granados
6. El Chol
7. San Jerónimo
8. Purulhá

16. ALTA VERAPAZ

1. Cobán
2. Santa Cruz Verapaz
3. San Cristóbal Verapaz
4. Tactic
5. Tamahú
6. Tucurú
7. Panzós
8. Senahú
9. San Pedro Carchá
10. San Juan Chamelco
11. Lanquín
12. Cahabón
13. Chisec
14. Chahal

17. EL PETÉN

1. Flores
2. San José
3. San Benito
4. San Andrés
5. La Libertad
6. San Francisco
7. Santa Ana
8. Dolores
9. San Luis
10. Sayaxché
11. Melchor De Mer

18. IZABAL

1. Puerto Barrios
2. Livingston
3. El Estor
4. Morales
5. Los Amates

19. ZACAPA

1. Zacapa
2. Estanzuela
3. Río Hondo
4. Gualán
5. Teculután
6. Usumatlán
7. Cabañas
8. San Diego
9. La Unión
10. Huité

20. CHIQUIMULA

1. Chiquimula
2. San José La Arad
3. San Juan Ermita
4. Jocotán
5. Camotán
6. Olopa
7. Esquipulas
8. Concepción Las M
9. Quezaltepeque
10. San Jacinto
11. Ipala

21. Jalapa

1. Jalapa
2. San Pedro Pinula
3. San Luis Jilotepeque
4. San Manuel Chaparrón
5. Mataquescuintla

22. Jutiapa

1. Jutiapa
2. El Progreso
3. Santa Catarina Mita
4. Agua Blanca
5. Asunción Mita
6. Yupiltepeque
7. Atescatempa
8. Jerez
9. El Adelanto
10. Zapotitlán
11. Cuapa
12. Jalpatagua
13. Conguaco
14. Moyuta
15. Pasaco
16. San José Acatempa
17. Quesada

23. Belize

1. Belize
2. Corozal
3. Orange Walk
4. Cayo
5. Toledo
6. Stann Creek

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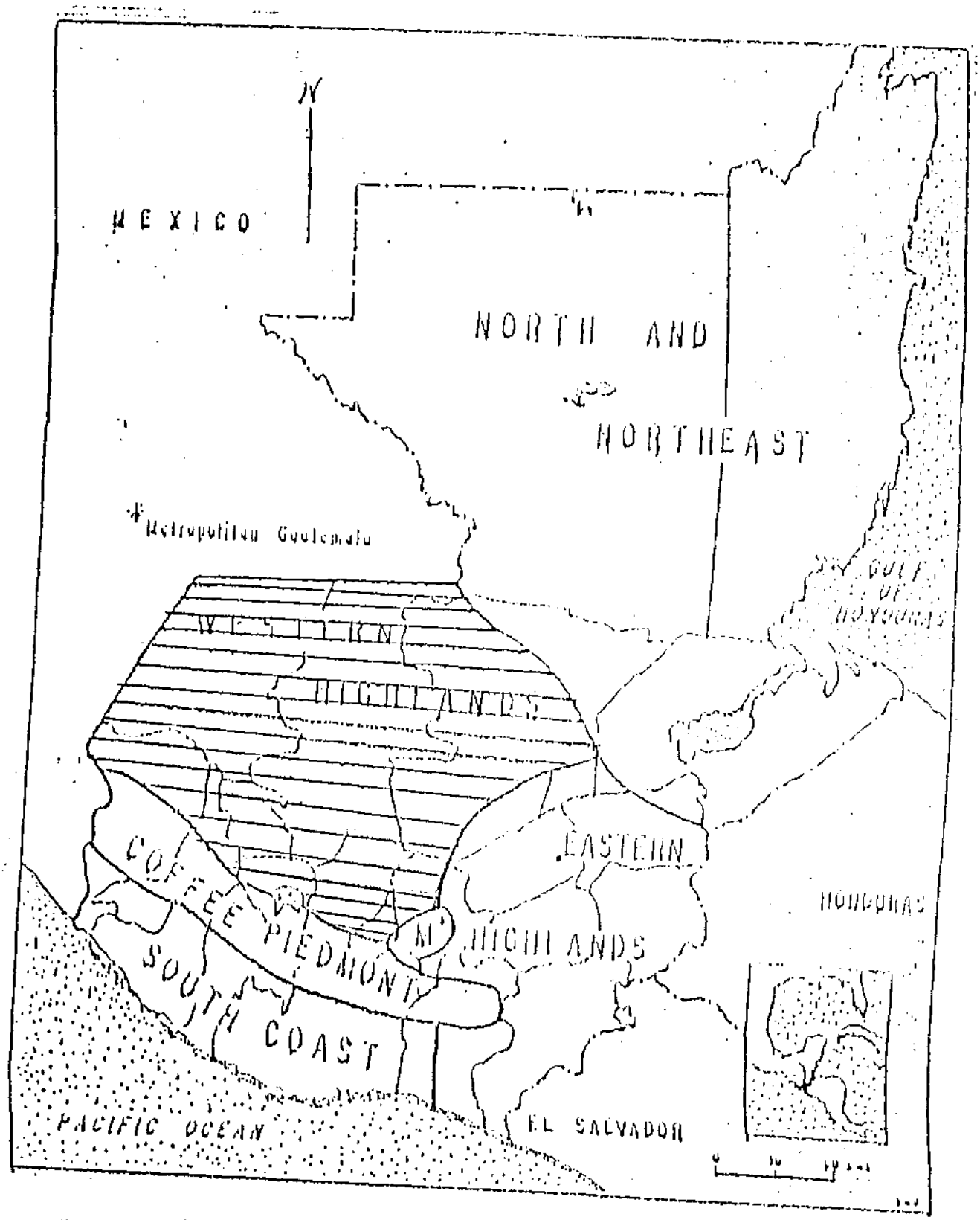
in the area's head town and 40 in two of its villages. This procedure distorts the real variances, that can be avoided with a thoroughly probabilistic survey, which, naturally, requires more time and a budget higher than those approved for the present study. However, units surveyed were selected strictly at random, using croquis and random numbers tables.

(Continued after Chart No. 1)

GRAPH 2

GUATEMALA'S CENTRAL AND WESTERN HIGHLANDS



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GRAPH 3

SURVEY AREA

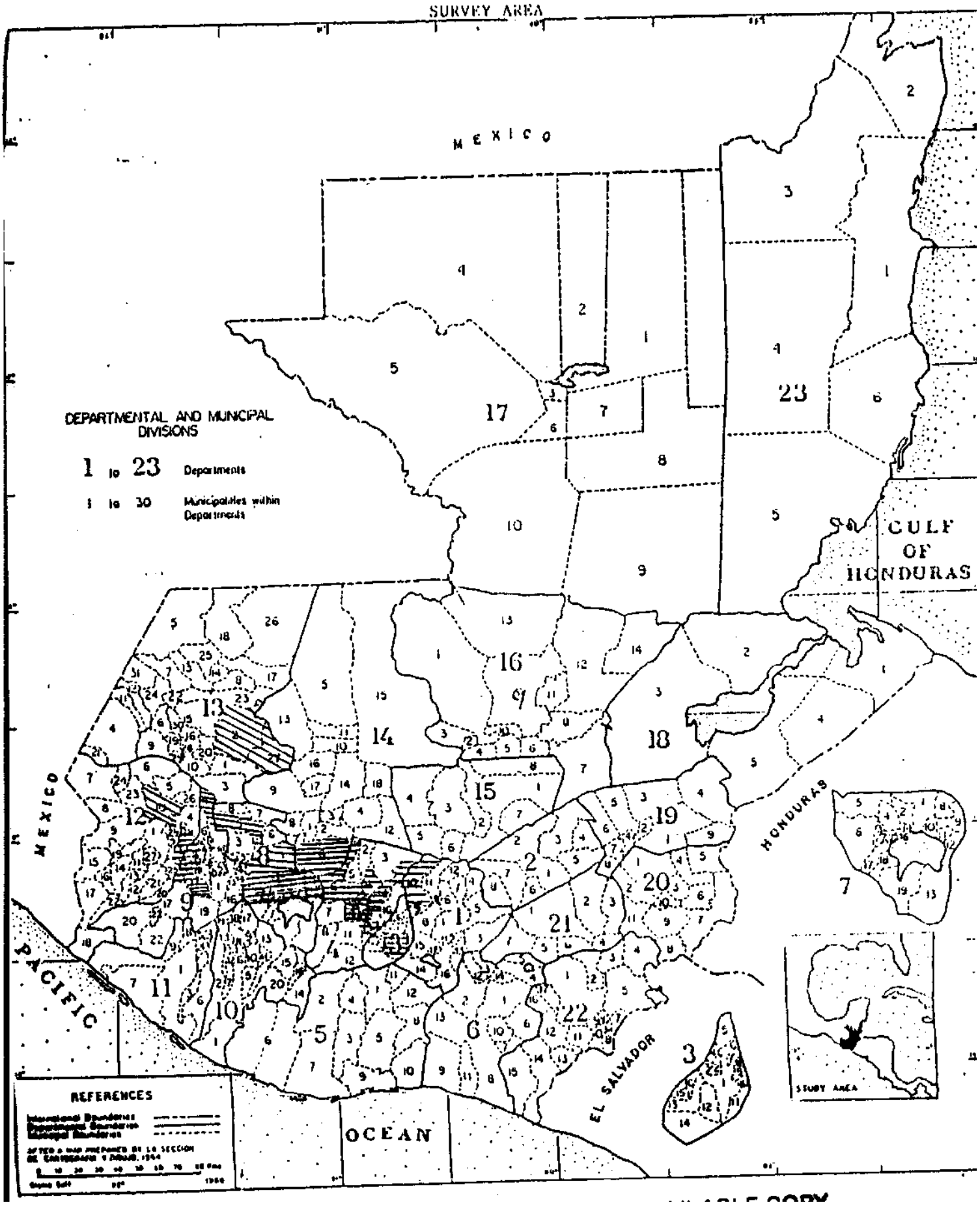

CHART NO. 1

SURVEY AREAS AND OUTPUT

		AID/NON-AID (+) (-)	Interviews to Family Representatives	Interviews to Municipal, Health & Education Authorities
NORTH-WESTERN REGION				
Department:	Huehuetenango			
Head Town:	Aguacatán	+	27	3
Villages:	La Estancia		20	
	El Manzanillo		20	
Head Town:	Chiantla	-	27	3
Villages:	Ixquiac		20	
	Las Guayabitas		20	
Department:	El Quiché			
Head Town:	Sta. Cruz	-	27	3
Villages:	Xatinap		20	
	Sn Sebastián Lemoa		20	
Head Town:	Chichicastenango	+	27	3
Villages:	Los Churumales		20	
	Chuwecha 2		20	
SOUTH WESTERN REGION				
Department:	Quetzaltenango			
Head Town:	Sn Juan Ostuncalco	+	27	3
Villages:	Monrovia		20	
	La Esperanza		20	
Head Town:	Sibilia	-	27	3
Villages:	Piedra Grande		20	
	El Rincón		20	
Head Town:	Palestina de los Altos	+	27	3
Villages:	El Edén		20	
	Buena Vista		20	
Head Town:	San Martín Sa			

Head Town:	San Martín Sa catepéquez	-	27	3
Villages:	Estancia		20	
	San Martín Chiquito		20	
Head Town:	Sn Carlos Sija	+	27	3
Villages:	Estancia		22	
	Panorama		18	

Department: Totonicapán

Head Town:	Totonicapán	+	27	3
Villages:	Rancho de Teja		20	
	Vásquez		20	
Head Town:	Momostenango	+	27	3
Villages:	Tierra Blanca		20	
	Santa Ana		20	
Head Town:	Sn Cristóbal	-	27	3
Villages:	Patachaj		20	
	Pacanac		20	

Department: San Marcos

Head Town:	Sn Pedro Sac.	+	27	3
Villages:	Sn José Caben		20	
	Sn Andrés Chapil		20	
Head Town:	Tejutla	+	27	3
Villages:	Horizontes		20	
	Esquipulas		20	
Head Town:	Esquipulas Palo Gordo	-	27	3
Villages:	Ojo de Agua		20	
	Tanil		20	
Head Town:	Sn Antonio Sac	+	27	3
Villages:	St. Domingo		20	
	Sn José Granados		20	

Department: Sololá

Head Town:	Nahualá	+	27	3
Villages:	Palanquix		20	
	Xolcaj		20	
Head Town:	Sololá		27	3
Villages:	Argueta		20	

	El Rancho		20	
Head Town:	Sta. Lucía Utatlán	-	27	3
Villages:	Pamezabal		20	
	Chuchexic		20	
Head Town:	Sn Andrés Semetabaj	+	27	3
Villages:	Godínez		20	
	Las Canoas		20	
Head Town:	Panajachel	-	27	3
Village:	Patanatiz		40	

CENTRAL REGION

Department: Chimaltenango

Head Town:	Tecpán	+	27	3
Villages:	Chirijuyú		20	
	Zaculeu		20	
Head Town:	Sta. Cruz Balanyá	-	27	1
Village:	Chimazaat		40	
Head Town:	Chimaltenango	+	27	3
Villages:	San Jacinto		20	
	Buena Vista		20	
Head Town:	Comalapa	+	27	3
Villages:	Pamumus		20	
	Cojoljuyú		20	
Head Town:	Zaragoza	+	27	3
Villages:	Puerta Abajo		20	
	Las Lomas		20	

Department: Sacatepequez

Head Town:	Sumpango	+	27	3
Villages:	Rejón		20	
	Rancho Alegre		20	
Head Town:	Ciudad Vieja	-	27	3
Villages:	Sn Lorenzo El Cubo		20	
	San Miguel Escobar		20	

Department: Guatemala

Head Town:	San Pedro Sacatepéquez +	27	3
Villages:	Buena Vista	20	
	Vista Hermosa	20	
Head Town:	San Juan Sacatepéquez +	27	3
Villages:	Comunidad Ruiz	20	
	Loma Alta	20	

SUMMARY

Total:
- 9 Departments
- 30 head towns
- 58 villages
- 810 interviews with heads of families in head towns
- 1,199 interviews with heads of families in villages
- 2,009 total interviews with heads of families
- 80 interviews with municipal, health and education authorities

3.3 The Data Processing and Analysis Stage includes the following activities: The screening (review and clean up) and coding of 2,009 questionnaires of heads of families or representatives surveyed was performed first. Secondly, came the data entry in dBase III. There are four flat (or plain) data basis, with the exception of the family composition section. Thirdly, the analysis was performed, in SPSS/PC+, which included the completion of the following activities:

- Values for each indicator were obtained for each one of the 30 municipios. Four of these indicators deal with agricultural aspects, seven with economics, three with education, five with infrastructure (homes, electricity, water, etc.), and the remaining four with health.

Each indicator was selected according to its importance as a condition limiting well-being, in other words, contributing to poverty. Each indicator, by itself, does not necessarily indicate the poverty of a family or of an area. However, if several indicators provide information on lack of resources or deteriorated conditions, there should be

no doubt that particular family, group or municipio has a poverty problem.

- The next step was the selection of development targets (reference standards); in other words, numeric values of each indicator, which can help as work targets for development projects in each area.

- Every indicator was divided into its target/reference standard, the result of which was a new numeric value known as index. The latter expresses the distance a particular municipio is from the target/reference standard, in the indicator scale.

  This procedure reflects the municipios where important conditions are the most deteriorated and where assistance programs should be prioritized to reach intended targets, and what areas have reached the target. The higher the index value, the greater is the need for a successful intervention at a project area. It also provides an idea of the magnitude of effort, funds and time needed to reach an intended target in a particular area. This information would not be available if only indicators (crude measurements) were used, in other words, if indices were not constructed.

- Tests of significance for differences between USAID-assisted project areas and similar areas not receiving such assistance were applied; and correlations between indices were measured, with exploratory and illustrative purposes.

- However, development official policies often prioritize agricultural development, sometimes infrastructure (highways, electric power networks, water), sometimes health or education. It is, therefore, convenient and helpful to measure impact upon these assistance sectors in a certain area, with alternative policy implementations. This can be done, at least partially, through simulations of alternative policy effects, by systematically varying sector weights and recalculating indices. As a consequence, methodology applied in the study includes varying the patterns of weights, which can be done by sector, department, region, indicator, index, target groups (i.e., AID vrs. non-AID), and globally.

- In addition to obtaining the value of individual indices in each sector, an Index for each Sector was also tested, as well as an Overall Poverty Index, for

each area, averaging or weighing the sector indices. This was done to test for index consistency.

- Charts with numeric values, histograms and other types of graphs were prepared to illustrate results.

- Data concerning interviews to municipal, health and education authorities was tabulated (see annexes 5 - 7).

Once obtained, the results of the various calculations were subject of discussion with AID's technical representative, Dr. Gary H. Smith, who provided precise instructions on results presentation and report preparation.

B. MAIN FINDINGS

All municipios surveyed are comparable in each indicator and in its related index, with no problems of scale heterogeneity. This chapter will deal first with sector comparisons in each indicator and index. More results were obtained from combination tests of individual indices into a composite index by sector, combination of sector indices into an overall index, and from the application of varying weight patterns to indices. These results are illustrated in Annex 8.

1. RESULTS OBTAINED IN INDICATORS AND INDICES

To simplify descriptions, survey results have been graphed. Graphs are based on numeric results, the charts of which are included in Chapter C, Part II. The vertical axis of the graphs illustrate the measurement scale and and the horizontal axis shows all 30 municipios surveyed. Except in the economics and health sectors, the graphs present the municipios in two blocks. The left side of the graph shows USAID/Guatemala project municipios in the sector to which the indicator and index correspond. The right side shows municipios not receiving such assistance. In both groups, municipios are ranked by index and

indicator values from left to right in descending order. It should be kept in mind that the indices and indicators are signs of poverty, scarcity, or lack of choice and deteriorated conditions (not well-being). Therefore, the higher the value, the greater the problem or the degree of poverty.

It is important to point out that each page contains two graphs. The one on the top displays results (values) of the indicator while the bottom one, shows index values corresponding to that same indicator. It should be kept in mind that the index is the indicator divided by its development target/reference standard. Please note that both graphs are identical, except in the vertical scale axis, where the scale for the top one is for the indicator, while in the second, the scale is for the index. Both scales are different. Nevertheless, the magnitudes attained by the areas, along with their relative ranking position remain the same.

However, there is an important difference: the indicator scale fails to include the development target or reference standard; the index scale does. The reference standard was obtained subtracting a given amount of standard deviation to the indicator average of the areas (z value). Some municipios show higher indicator values than the

reference standard (the poorest), while others show values lower than the latter (the less poor). Therefore, when dividing area values by the target or reference standard, the quotient, in other words, the value obtained, will be greater than 1 or less than 1. The 1 in the index graphs marks the line or level under which the municipios having reached or surpassed the development target are located; while those above the line require more development. This line has been graphed for easier interpretation. The higher the municipio-related bar rises over the line, the more deteriorated is the condition represented by the index, and therefore, the municipio requires greater donor assistance. Bar height, then, is indicative of the amount of resources, effort and time needed in a particular municipio. This is the case for both the indicator and the index graphs. However, the latter includes the target line indicating the municipios not requiring donor assistance in regard to that particular poverty condition symbolized by the index. As a result, it is still advisable to set and include a target or reference standard, even when it is determined through a procedure different from the one used herein.

Below each bar in the horizontal axis of the graphs is a code number identifying the municipio represented by the bar. Although indicator or index values for a particular

municipio may vary (bar heights and their relative position within the series), the code number remains unchanged throughout the graphs. It should also be pointed out that while in a certain sector, agriculture for example, a particular municipio is a recipient of USAID/Guatemala assistance, in other sectors, infrastructure for example, it might be in the non-USAID block.

municipios surveyed and their codes are set forth below:

MUNICIPIO CODES

CODE	MUNICIPIO
1	San Pedro Sacatepequez
2	San Juan Sacatepéquez
3	Sumpango
4	Ciudad Vieja
5	Chimaltenango
6	Comalapa
7	Tecpán
8	Zaragoza
9	Santa Cruz Balanyá
10	Sololá
11	Santa Lucia Utatlan
12	Nahualá
13	Panajachel
14	San Andrés Semetabaj
15	San Carlos Sija
16	Palestina
17	San Martín Sacatepéquez
18	San Juan Ostuncalco
19	Sibilia
20	Aguacatán
21	Chiantla
22	San Antonio Sacatepéquez
23	San Pedro Sacatepéquez
24	Tejutla
25	Esquipulas Palo Gordo
26	Momostenango
27	Totonicapán
28	San Cristóbal Totonicapán

29 Chichicastenango
30 Santa Cruz del Quiché

When commenting on the results, we usually refer to the index graph and to the municipios located under the target or reference standard line, in other words, to municipios in less need of assistance in terms of index values. Obviously, the rest on the list require assistance, both in the block having USAID/Guatemala sponsored programs and in the block not receiving such assistance. However, some of them require it with greater urgency. This is what we will point out. The graphs are included at the end of this chapter.

1.1 Agriculture Sector

The following are areas receiving or recently having received USAID/Guatemala sponsored assistance.

1. Chimaltenango
2. Comalapa
3. Tecpán
4. Zaragoza
5. Nahualá
6. San Martín Sacatepéquez
7. Aguacatán
8. San Antonio Sacatepéquez
9. San Pedro Sacatepéquez
10. Momostenango
11. Chichicastenango

1.1.1 Lack of Land Ownership

(Graphs 4 and 5)

Ostuncalco, Palestina, Semetabaj and Santa Lucía

Utatlán (AID), and Aquacatán and Sija (Non-AID) reached the target; the rest didn't. The problem is especially serious in Sumpango, San Pedro Sacatepéquez-Gua, Esquipulas Palo Gordo, Ciudad Vieja and Panajachel (AID), and in San Antonio Sacatepéquez, Zaragoza and San Pedro Sacatepéquez-S.M. (non-AID). In a general sense, the graph suggests the problem is more serious in areas receiving USAID/Guatemala sponsored assistance.

1.1.2 Low yields in corn production

(Graphs 6 and 7)

Only Totonicapán (AID), Tecpán, Zaragoza and San Pedro Sacatepéquez-S.M. (non-AID) reached the target. In terms of the rest, the problem is more serious in Santa Cruz, San Pedro Sacatepéquez-Gua., Sololá, San Cristóbal Totonicapán, Chiantla, Tejutla (AID) Aguacatán and Chichicastenango. The problem is, therefore, greater in USAID/Guatemala project areas.

1.1.3 Agriculture Traditionality

(Graphs 8 and 9)

Concerning this indicator, the municipios in better condition are San Juan Sacatepéquez, San Cristóbal Totonicapán, Panajachel, Chiantla y Sololá (AID); Nahualá, Chimaltenango, and Momostenango (non-AID).

The problem is more serious in Tejutla, Sibilia, Palestina and San Cruz Balanyá (AID); and San Martín Sacatepéquez (non-AID), the latter being an area where traditionality is especially serious.

1.1.4 Limited Agriculture Technology

(Graphs 10 and 11)

Both AID and non-AID blocks are similar. However, in the former, the problem is more serious in Santa Lucía Utatlán, Esquipulas Palo Gordo, San Cristóbal Totonicapán, Ostuncalco and in the latter, San Pedro Sacatepéquez.

1.2 Economics Sector

In view of the fact that no USAID/Guatemala assistance program deals specifically with the Economics sector, no distinction is made in terms of this particular sector between USAID/Guatemala project areas and those not receiving comparable assistance. A group of indicators and indices not directly agricultural, but of economic importance, have been included under this same heading.

1.2.1 Total Expenditure Incapacity

(Graphs 12 and 13)

Only Chiantla, San Juan Sacatepéquez, Panajachel, San Pedro Sacatepéquez-S.M., San Pedro Sacatepéquez-Gua.,

and Ciudad Vieja, surpass the target. Of the remaining municipios, the problem is especially serious in Comalapa followed by San Martín Sacatepéquez, San Cristóbal Totonicapán, Santa Lucía Utatlán and Nahualá.

1.2.2 Subsistence

(Graphs 14 and 15)

No municipio reaches the target. However, close to reaching it are San Cristóbal Totonicapán, Semetabaj, Tejutla, Sija and Sibilia. Those farthest from it are Nahualá, Santa Lucía Utatlán, Ciudad Vieja, Esquipulas Palo Gordo, Panajachel, and Sumpango.

1.2.3 Savings Incapacity

(Graphs 16 and 17)

Tejutla, San Martín Sacatepéquez, San Antonio Sacatepéquez, Sija and Sibilia reach the target. Zaragoza and Momostenango are very close to it. However, Sumpango, Ciudad Vieja, Totonicapán, Panajachel, Nahualá, and Chimaltenango are the municipios farthest away from the target.

1.2.4 Unemployment

(Graphs 18 and 19)

Only San Juan Sacatepéquez, Semetabaj, Panajachel and

San Pedro Sacatepéquez-Gua., surpass the target. The municipios farthest away are San Antonio Sacatepéquez, Chiantla, Sumpango, and Esquipulas Palo Gordo. The rest lie between the latter group and the target.

1.2.5 Traditional Employment

(Graphs 20 and 21)

Twelve municipios surpass the target and four more are close to reaching it. Sumpango, San Martín Sacatepéquez and Sibilia are the areas farthest away. Ostuncalco, Aguacatán, Sija and Esquipulas Palo Gordo form a second block far away from the target, but not as far as the former. The rest (7) lie in between these two blocks and those closest to the target.

1.2.6 Lack of income due to unemployment

(Graphs 22 and 23)

Sololá, San Juan Sacatepéquez, Sumpango, Tejutla, Sija, Sibilia, Palestina and San Martín Sacatepéquez surpass the target. San Cristóbal Totonicapán and Comalapa are close to reaching it. San Antonio Sacatepéquez is extremely far from it. The rest, starting with Totonicapán and Semetabaj, descend softly towards the target.

1.2.7 Lack of Farm Ownership

(Graphs 24 and 25)

Balanyá, San Antonio Sacatepéquez, San Martín Sacatepéquez, Sibilia and Tejutla surpass the target. About seven municipios are close to it. The municipios farthest away are Chimaltenango, San Juan Sacatepéquez, San Pedro Sacatepéquez-Gua., Panajachel, and Ciudad Vieja. The rest descend softly towards the target.

1.3 Education

The following are municipios having or recently having had USAID/Guatemala sponsored education programs.

- San Pedro Sacatepéquez-Gua.
- Ciudad Vieja
- Tecpán
- Zaragoza
- Balanyá
- Santa Lucia Utatlán
- Panajachel
- San Martín Sacatepéquez
- Ostuncalco
- Sibilia
- Chiantla
- San Antonio Sacatepéquez
- Tejutla
- Esquipulas Palo Gordo
- San Cristóbal Totonicapán
- Santa Cruz del Quiché

1.3.1 Illiteracy

(Graphs 26 and 27)

Tejutla, Esquipulas, Palo Gordo, Sibilia, Ciudad Vieja and Balanyá (AID) surpass the target. Only one non-AID municipios surpasses the target. The rest

adopt similar distributions in both groups. The municipio farthest away are San Martín Sacatepéquez and San Cristóbal Totonicapán (AID) and Nahualá, Chichicastenango, Aguacatán, Totonicapán, Momostenango and Sololá (non-AID). Overall, USAID/Guatemala project areas are better than those not receiving comparable assistance.

1.3.2 Female Illiteracy

(Graphs 28 and 29)

Only Tejutla, Balanyá and Ciudad Vieja, of the AID group surpass the target. No municipio in the non-AID group even comes close to reaching it. The rest have similar distributions both in the AID block, as well as non-AID one. The municipios farthest away from the target are San Martín Sacatepéquez, San Cristóbal Totonicapán (AID), Chichicastenango, Nahualá and Totonicapán (non-AID). The rest form blocks located in between both of these extremes and the target.

1.3.3 Male Illiteracy

(Graphs 30 and 31)

While only three municipios (of the AID block) in the graphs relating to illiteracy in women surpass or reach the target, graphs illustrating illiteracy in

men show 10 AID municipios and 5 non-AID ones surpassing or reaching the target. In general the graphs also display a better male literacy situation in USAID project areas. Only San Martin Sacatepéquez, San Cristóbal Totonicapán and Ostuncalco (AID) and Nahualá, Chichicastenango, Aguacatán, Totonicapán and Momostenango (non-AID) lie very far away from the target.

1.3.4 Lack of Schooling

(Graphs 32 and 33)

Only Ciudad Vieja and Balanyá (AID) and Chimaltenango (non-AID) surpass the target. The rest are similarly distributed among both blocks. The municipios farthest away are San Martin Sacatepéquez (AID), Nahualá, Aguacatán, San Cristóbal Totonicapán, Momostenango and Sumpango (non-AID).

1.3.5 Lack of Female Schooling

(Graphs 34 and 35)

Only Balanyá (AID) and Chimaltenango (non-AID) surpass the target. The graphs show that the situation is better in the AID block. The municipios farthest away are San Martin Sacatepéquez, Santa Cruz del Quiché (AID) and Nahualá, Chichicastenango, Sumpango and Aguacatán (non-AID).

1.3.6 Lack of Male Schooling

(Graphs 36 and 37)

Six municipios of the USAID/Guatemala sponsored block and five non-AID surpass the target. The rest are relatively close to it, particularly those in the AID block. The municipios farthest away are San Martín Sacatepéquez and Ostuncalco (AID) and Aguacatán, Nahualá, Momostenango and Chichicastenango (non-AID).

1.3.7 School Dropouts

(Graphs 38 and 39)

San Martín Sacatepéquez and Sibilia (AID) and San Pedro Sacatepéquez-S.M., San Juan Sacatepéquez, Palestina, Sija and Chimaltenango surpass the target. The rest are dispersed in a wide range of distances. However, a large group of non-AID municipios lie farther away from the target than the rest: Nahualá, Momostenango, Sololá, Totonicapán, and Comalapa. Project areas far away from the target are: Tecpán, Santa Lucía Utatlán, and Panajachel.

1.3.8 Female School Dropouts

(Graphs 40 and 41)

Balanyá, San Martín Sacatepéquez, Sibilia (AID), and San Pedro Sacatepéquez (non-AID) surpass or reach the

target. The municipios farthest away are Santa Lucia Utatlán, Tecpán (AID), Momostenango, Totonicapán and Nahualá (non-AID). Other AID municipios are closer to the target than those not receiving such assistance.

1.3.9 Male School Dropouts

(Graphs 42 and 43)

In this variable, the situation dichotomizes on the side of non-AID areas: it has a larger cluster which lies farthest away from the target and also one which surpasses it: San Juan Sacatepéquez, Palestina, San Pedro Sacatepéquez-S.M., Sija, Chimaltenango, San Martín Sacatepéquez, and Sibilia (AID). municipios farthest away from the target are Tecpán, Santa Lucia Utatlán and Panajachel (AID) and Nahualá, Sololá, Totonicapán and Momostenango (Non-AID).

1.4 Infrastructure

Fourteen out of all 30 municipios receive or have received USAID sponsored assistance in infrastructure projects:

San Antonio Sacatepéquez
San Martín Sacatepéquez
Tejutla
San Cristóbal Totonicapán
Zaragoza
Sija
Semetabaj
Esquipulas Palo Gordo
San Pedro Sacatepéquez-S.M.
San Juan Sacatepéquez
Panajachel

Sibilia
Ciudad Vieja
San Pedro Sacatepéquez-Gua.

1.4.1 Lack of Water Supply for Domestic Use

(Graphs 44 and 45)

Seven AID municipios and five non-AID ones surpass or reach the target. The municipios farthest away are San Pedro Sacatepéquez-Gua., San Antonio Sacatepéquez, San Cristóbal Totonicapán and Zaragoza (AID), and Sumpango, Chiantla, Ostuncalco and Momostenango (non-AID).

1.4.2 Lack of Home Ownership

(Graphs 46 and 47)

Only San Martin Sacatepéquez (AID), Balanyá, Sumpango, Nahualá, and Comalapa (non-AID) surpass the target. In general terms, non-AID municipios are farther away from the target: Santa Cruz del Quiché, Chimaltenango, Chiantla. AID municipios far away from the target (but not as far as the non-AID block) are Ciudad Vieja, Semetabaj and Zaragoza.

1.4.3 Lack of radio receptors

(Graphs 48 and 49)

San Juan Sacatepéquez, Panajachel, Sibilia, Ciudad Vieja and San Pedro Sacatepéquez-Gua. (AID), and Sumpango (non-AID) surpass or reach the target. The

municipios farthest away are San Antonio Sacatepéquez, San Martín Sacatepéquez (AID), Aguacatán, Santa Lucía Utatlán, Ostuncalco and Nahualá (non-AID).

1.4.4 Lack of domestic electrical power supply

(Graphs 50 and 51)

San Pedro Sacatepéquez-Gua., Sibilia, Panajachel, Ciudad Vieja (AID), Sololá, Chimaltenango, and Balanya (non-AID) surpass the target. The tendency of non-AID municipios is to get farther away from the target; the variation of the AID block is greater. The municipios farthest away are San Antonio Sacatepéquez, Tejutla, San Cristóbal Totonicapán, Zaragoza, San Martín Sacatepéquez (AID), Aguacatán, Chichicastenango and Chiantla (non-AID).

1.4.5 Lack of domestic underground drainage

(Graphs 52 and 53)

Esquipulas Palo Gordo, San Juan Sacatepéquez and Sibilia (AID) and Sololá (non-AID) surpass the target. The AID block profile descends uniformly; there are 3 non-AID valleys or clusters which come less close to the target than those integrating the AID block. The municipios farthest away are Esquipulas Palo Gordo, Zaragoza, San Martín

Sacatepéquez, San Antonio Sacatepéquez, and San Cristóbal Totonicapán (AID), Sumpango, and Comalapa (non-AID).

1.5 Health

No distinction is made in this sector between USAID/Guatemala project areas and those not receiving such assistance. USAID support is probably dispersed throughout the country by means of public sector health institutions and private donor organizations.

1.5.1 Child Morbidity

(Graphs 54 and 55)

Only Chichicastenango surpasses the target. Half of the municipios are fairly close to it; the other half move gradually away from the target. Three municipios are the farthest away: San Pedro Sacatepéquez-Gua., Tecpán and Semetabaj.

1.5.2 Traditional Cure

(Graphs 56 and 57)

San Juan Sacatepéquez, Sololá, Semetabaj and Panajachel surpass the target. Following these, six steps are observed in the profile, each step occupied by two to five municipios, gradually moving away from the target. The municipios farthest away are Santa

Cruz del Quiché, Santa Lucía Utatlán, Sumpango, Balanyá, San Pedro Sacatepéquez-Gua., and San Antonio Sacatepéquez.

1.5.3 Health Education

(Graphs 58 and 59)

Chiantla, Tejutla, San Pedro Sacatepéquez-S.M., Palestina and San Antonio Sacatepéquez surpass the target. The curve then gradually ascends until it reaches the top. Five municipios are the farthest away: Chimaltenango, Totonicapán, Comalapa, Sumpango, and San Juan Sacatepéquez.

1.5.4 Immunization

(Graphs 60 and 61)

Tecpán, Santa Lucía Utatlán, Chimaltenango and San Pedro Sacatepéquez-S.M., lie exactly on the target. San Martin Sacatepéquez, Esquipulas Palo Gordo and Sija surpass it. In addition, carefully observe: in the horizontal axis, at level "zero" lie Santa Cruz, Ciudad Vieja, Sibilia, Panajachel, Palestina, and San Juan Sacatepéquez where there is a full immunization coverage. The curve then ascends in higher steps every time. At the highest one, lie Zaragoza, Totonicapán, Sololá, and San Cristóbal Totonicapán, the municipios farthest away from the target.

2. DIFFERENCES BETWEEN AREAS RECEIVING USAID/GUATEMALA SPONSORED ASSISTANCE AND AREAS NOT RECEIVING SUCH ASSISTANCE

The T Student test was used to measure the statistical difference of means, using the SPSS/PC+ package. It indicates a percentage of points, for which there is a significant difference. In these terms, the greater the percentage, the higher is the significance difference. This difference was not studied in the economics and health sectors, where there are no AID and non-AID group areas.

It should be pointed out that the mean difference test among groups was applied to particular indices, so no scale problem is present therein;

2.1 Agriculture Sector

In this category, both groups were composed as follows:

AID GROUP

1. Chimaltenango
2. Comalapa
3. Tecpán
4. Zaragoza
5. Nahualá
6. San Martín Sacatepéquez
7. Aguacatán
8. San Antonio Sacatepéquez
9. San Pedro Sacatepéquez
10. Momostenango
11. Chichicastenango

NON-AID GROUP

1. San Pedro Sacatepéquez
2. San Juan Sacatepéquez
3. Sumpango
4. Ciudad Vieja
5. Santa Cruz Balanyá
6. Sololá
7. Santa Lucía Utatlán
8. Panajachel
9. San Andrés Semetabaj
10. Palestina
11. San Juan Ostuncalco
12. Sibilia
13. Chiantla
14. Tejutla
15. Esquipulas Palo Gordo
16. Totonicapán
17. San Cristobal Toto.
18. Santa Cruz del Quiche

CHART NO. 2

Differences between AID/non-AID areas: AGRICULTURE

	INDEX	SIGNIFICANT DIFFERENCE FOR
A1:	Lack of Land Ownership	93%
A2:	Low Yields of Corn Production	96%
A3:	Agriculture Traditionality	45%
A4:	Limited Agriculture Technology	30%

In general terms, there is only a significant difference for those Indices over 90%, A2 and A1.

2.2 Education Sector

AID GROUP (14)	NON-AID GROUP (16)
1. San Juan Sacatepéquez	1. San Pedro Sacatepéquez
2. Sumpango	2. Ciudad Vieja
3. Chimaltenango	3. Tecpán
4. Comalapa	4. Zaragoza
5. Sololá	5. Santa Cruz Balanyá
6. Nahualá	6. Santa Lucía Utatlán
7. San Andrés Semetabaj	7. Panajachel
8. San Carlos Sija	8. San Martin Sacatepéquez
9. Palestina	9. San Juan Ostuncalco
10. Aguacatán	10. Sibilia
11. San Pedro Sacatepéquez	11. Chiantla
12. Momostenango	12. San Antonio Sacatepéquez
13. Totonicapán	13. Tejutla
14. Chichicastenango	14. Esquipulas Palo Gordo
	15. San Cristobal Toto.
	16. Santa Cruz del Quiché

CHART NO. 3

Differences between AID/non-AID areas: EDUCATION

	INDEX	SIGNIFICANT DIFFERENCE FOR
E1m:	Male Illiteracy	93%
E1f:	Female Illiteracy	94%
E1:	Overall Illiteracy	94%
E2m:	Men Lacking Schooling	61%
E2f:	Women Lacking Schooling	74%
E2:	Overall Lack of Schooling	69%
E3m:	Male School Dropouts	73%
E3f:	Female School Dropouts	66%
E3:	Overall School Dropouts	71%

In general terms, there is only a significant difference for those Indices over 90%, Eim, Eif, and Ei.

2.3 Infrastructure Sector

In this case, both groups are composed as follows:

AID GROUP	NON-AID GROUP
1. Sumpango	1. San Pedro Sac.-Gua.
2. Chimaltenango	2. San Juan Sac.-Gua.
3. Comalapa	3. Ciudad Vieja
4. Tecpán	4. Zaragoza
5. Santa Cruz Balanyá	5. Panajachel
6. Sololá	6. San Andrés Semetabaj
7. Santa Lucía Utatlán	7. San Carlos Sija
8. Nahualá	8. San Martín Sac.
9. Palestina	9. Sibilia
10. San Juan Ostuncalco	10. San Antonio Sac.
11. Aguacatán	11. San Pedro Sac.-S.M.
12. Chiantla	12. Tejutla
13. Momostenango	13. Esquipulas Palo Gordo
14. Totonicapán	14. San Cristóbal Toto.
15. Chichicastenango	
16. Santa Cruz Balanyá	

CHART NO. 4

Differences between AID/non-AID areas: INFRASTRUCTURE

INDEX	SIGNIFICANT DIFFERENCE FOR
C1: Lack of Clean Water for Domestic Use	56%
C2: Lack of Home Ownership	53%
C3: Lack of Radio Receptors (good)	65%
C4: Lack of Electric Power Installation	55%
C5: Lack of underground drainage	50%

In general terms, there are no significant differences.

3. Summary

Although addition and subtraction of individual indicators or indices is inappropriate in this case because they belong to heterogenous scales, an ordinal grouping is possible and useful.

The chart below shows, for example, the location of each municipio in an ordinal arrangement of five categories, from worse socio-economic conditions to better conditions. The five categories are: the lowest group, the low group, the middle group, the high group, and the highest group. The assignment of each municipio to one of these categories depends on its index value. In

other words, the matrix locates all 30 municipios in their respective categories of the 26 indices used. To establish limits within ordinal categories, quintiles were calculated for each index. The code numbers, rather than the names of each municipio, were written down in each index category intersection cell. However, after the chart, the situation of each municipio, by its name, is summarized in index quintiles. There is no location problem for 21 of all 30 municipios. However, 8 of them fall into more than one quintile. Consequently, their final location should depend on the relative importance of each index.

CHART 4-A

Overall Socio-economic condition of municipios

(Continues)

Index	Socio-economic Condition Categories	Lowest Group	Low Group	Middle Group
A1	Land Ownership	1 3 4 13 22 25	8 21 19 30 23 24	2 5 6 7 9 17 18
A2	Corn Yields	1 10 20 21 28 29	3 13 14 16 24	4 9 15 17 18 22 25
A3	Agriculture Traditionality	9 16 17 19 24 30	3 4 15 18 20 22 25	6 7 8 11 14 23 29 30
A4	Agriculture Technology	11 18 23 25 28	12 13 16 29 30	1 2 6 8 22 24
Y1	Expenditure Power	6 7 11 12 17 18 28	5 20 24	9 16 22 25 29 30
Y2	Subsistence	3 4 11 12 13 25	1 2 5 8 9 10 26 29	7 17 20 21 22 23 27 30
Y3	Savings	3 4 5 12 13 27	1 6 10 11 23 25	2 14 20 29
Y4	Unemployment	3 21 22 25	8 10 45 17 23 24 26 27 30 18	9 16 19 22
Y5	Traditional Employment	3 17 19	15 18 20 25	6 8 9
Y6	Lack of Income due to Unemployment	11 14 21 22 25 27	5 8 9 18	4 7 12
Y7	Farm Ownership	1 2 4 5 13	3 7 8 10 20 21	14 23 27 29
E1M	Male Illiteracy	12 17 18 20 26 27 28 29	2 7 10 11	3 5 6 13 14 30
E2M	Male Schooling	12 17 18 20 22 26	3 7 11 21 27 28 30	2 8 10 15 16 19 24 25
E3M	Male School Dropout	7 10 12	6 13 26 22 27	1 14 18 20 21 24 25 28 29
E1F	Female Illiteracy	12 17 29	3 10 11 20 26 27 28	2 18 22 30
E2F	Female Schooling	3 12 17 29	18 20 26 28 30	2 7 10 11 16 21 27
E3F	Female School Dropout	7 11 12 13 26 27	6 10 21 25	3 14 20 22 29
C1	Acces to water for domestic use	1 3 21 22 28	8 19 26	2 5 7 15 16 17 19 20 24 22 29
C2	Home Ownership	4 5 21 30	2 8 10 14 20 22 23 28	1 13 16 24 28 29
C3	Availability of Radio Receptors	11 17 18 20 22	8 12 24 28	6 7 10 14 15 27 29
C4	Domestic Electrical Power Supply	8 20 21 22 24 28 29	6 15 17 26 30	3 7 11 12 14 16 18
C5	Home underground drainage	3 6 8 17 22 25	9 18 28 29	5 11 15 20 21 24 26 30
H1	Child morbidity	1 7	4 5 14 16 17 19 21 22 24	2 10 12 15 18 23 25 27 28
H2	Traditional curative care	3 11 30	1 4 7 9 12 20 22 25 26 29	5 21 23 24 27
H3	Health Education	1 2 3 4 5 6 9 20 26 27 29	7 8 12 14 17 18	10 11 13 15 19 25 28 30
H4	Immunization	8 10 27 28	1 6 9 21 26	3 12 14 18 20 22 24 29

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CHART 4-A

Overall Socio-economic condition of municipios

(Continuation)

Index	Socio-economic Condition Categories	High Group	Highest Group
A1	Land Ownership	8 9 14 15 16	10 11 12 26 27 28 29
A2	Corn Yields	5 6 11 26 2	7 8 23 27
A3	Agriculture Traditionality	12 13 21 27	1 5 10 26
A4	Agriculture Technology	5 7 9 26 27	3 4 10 14 15 17 19 20 21
Y1	Expenditure Power	3 19 26 27	1 2 4 8 10 13 14 15 21 23
Y2	Subsistence	6 16 18 28	14 15 19 24
Y3	Savings	7 8 9 18 21 26 30	15 16 17 19 22 24 28
Y4	Unemployment	4 5 6 7 11 12 20 28	1 2 13 14
Y5	Traditional Employment	7 11 12 21 22 24 28	1 2 4 5 10 13 14 23 26 27 29 30
Y6	Lack of Income due to Unemployment	1 6 20 23 26 28 29 30 13	2 3 10 15 16 17 19 24
Y7	Farm Ownership	6 11 12 15 18 25 26 28 30	9 16 17 19 22 24
E1M	Male Illiteracy	1 15 16 21 24 8	4 9 19 22 23 25
E2M	Male Schooling	1 6 19	4 5 9 14 23
E3M	Male School Dropout	3 4 8 9 30	2 5 15 16 17 19 23
E1F	Female Illiteracy	1 6 13 14 21 23 5 7 8 15	4 9 16 19 24 25
E2F	Female Schooling	1 6 8 14 23 25	4 5 9 13 19 25
E3F	Female School Dropout	1 4 8 18 24 28 30	5 9 15 17 19 2 3
C1	Acces to water for domestic use	4 6 10 13 14 23 25 30	9 11 12
C2	Home Ownership	7 11 15 18 19 25 26	3 6 9 12 17
C3	Availability of Radio Receptor	5 16 21 23 25 26	1 2 3 4 9 13 19 30
C4	Domestic Electrical Power Supply	2 10 23 25 27	1 4 5 9 13 19
C5	Home underground drainage	1 4 7 12 13 14 16 27	2 10 19 23
H1	Child morbidity	3 6 8 9 11 13 20 26 30	29
H2	Traditional curative care	6 8 15 17 18 28	2 10 13 14 16 19
H3	Health Education	21 23 24	16 22
H4	Immunization	5 7 11 15 17 23 25	2 4 13 16 19 30

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CHART 4-6

Position of the Municipios in quintiles for all of the sectors

QUINTILE	MUNICIPIO	COMMUNITY	No. OF INDIVIDUAL INDICES IN THIS QUINTILE
1	3	Sumpango	10
	12	Nahuala	9
	22	San Antonio Sacatepequez	8
	28	San Cristobal Totonicapan	7
2	8	Zaragoza	9
	18	San Juan Cotuncalco	8
	22	Aguacatan	8
3	19	Chichicastenango	11
	14	San Andres Semetabaj	9
	24	Tejutla	9
	17	Totonicapan	7
	10	Solola	5
4	6	Comalapa	14
	12	Tanajachel	10
	21	San Pedro Sacatepequez	7
	15	San Carlos Sija	4
	21	Chiantla	8
	20	Santa Cruz del Quiche	8
	25	Esquipulas Palo Gordo	7
	1	San Pedro Sacatepéquez	7
	16	Palestina	8
	5	Chimaltenango	7
5	19	Sibilia	15
	4	Ciudad Vieja	10
	9	Santa Cruz Balanya	10
	2	San Juan Sacatepequez	99

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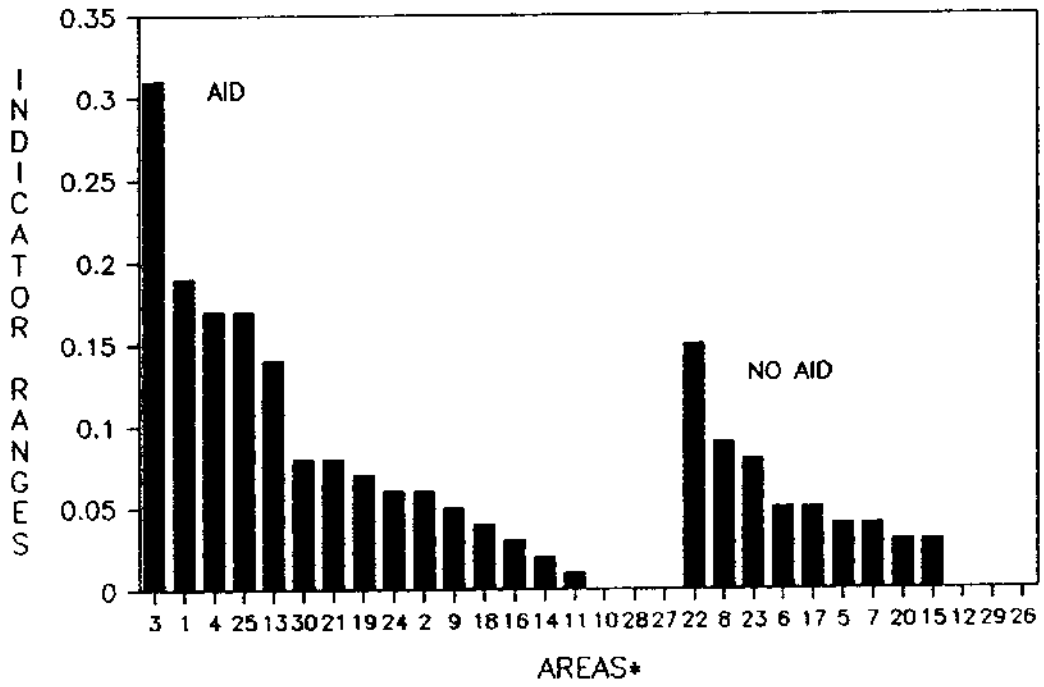
Chart 4-C

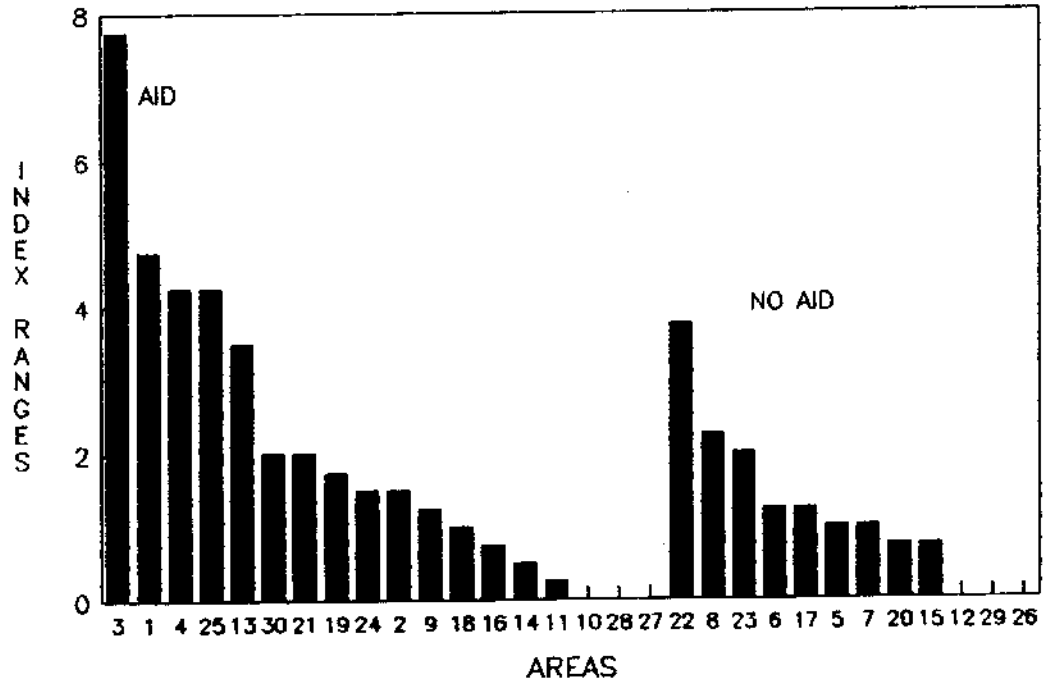
Undecided Municipio location

MUNICIPIO NO.	COMMUNITY	POSSIBLES QUINTILES TO LOCATE IT	QUINTIL FRECUENCIES	SUGESTED DEFINITIVE QUINTILE
17	San Martin Sacatepéquez	01	8	3
		05	7	
22	San Antonio Sacatepéquez	01	8	1
		03	7	
7	Tecpán	03	7	3
		04	3	
26	Momostenango	02	7	3
		04	18	
11	Sta. Lucia Utatlán	01	7	3
		04	8	
28	San Cristóbal Totonicapán	01	7	2
		04	8	
16	Palestina	03	8	4
		05	8	
10	Sololá	02	8	3
		05	8	
5	Chimaltenango	04	7	4
		05	7	

GRAPH 4
LACK OF LAND INDICATOR

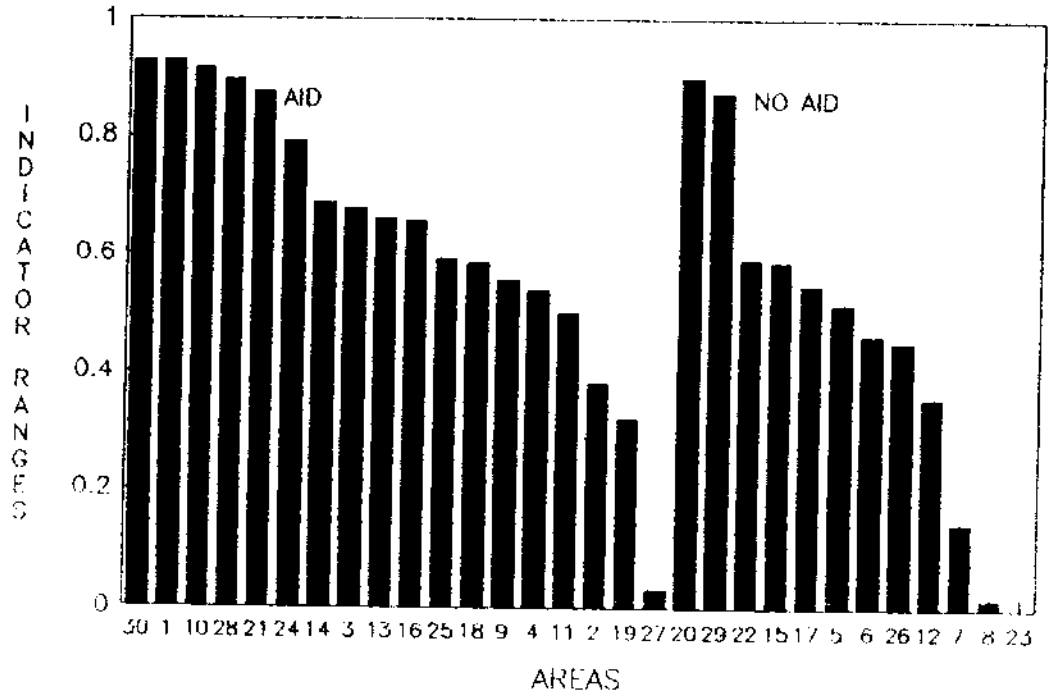


GRAPH 5
LACK OF LAND INDEX

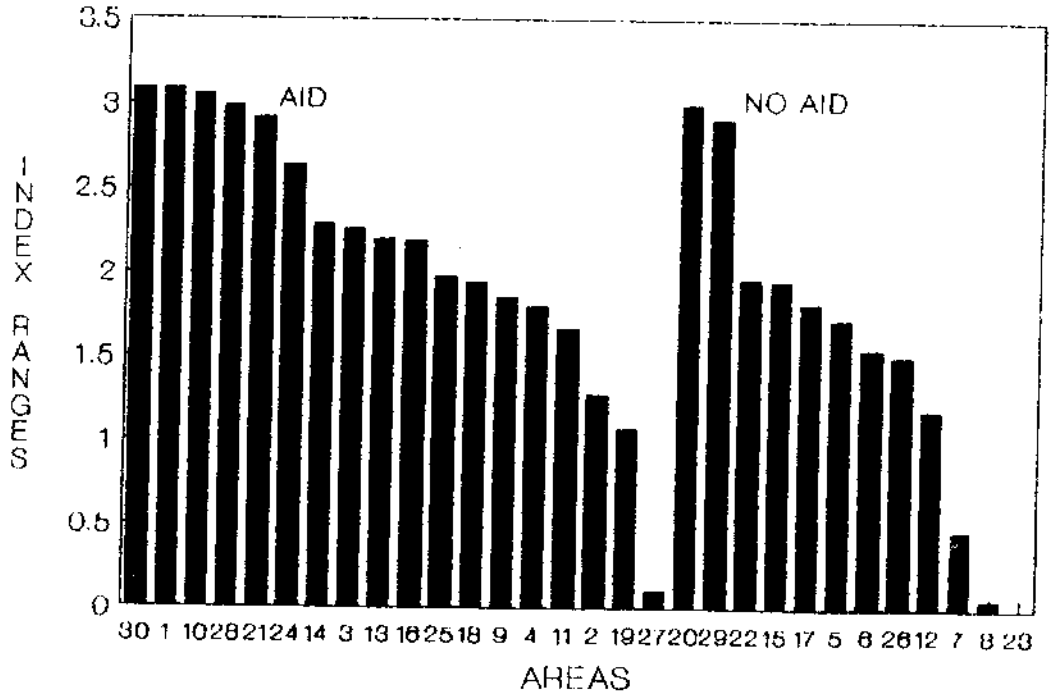


*AREAS = MUNICIPIOS

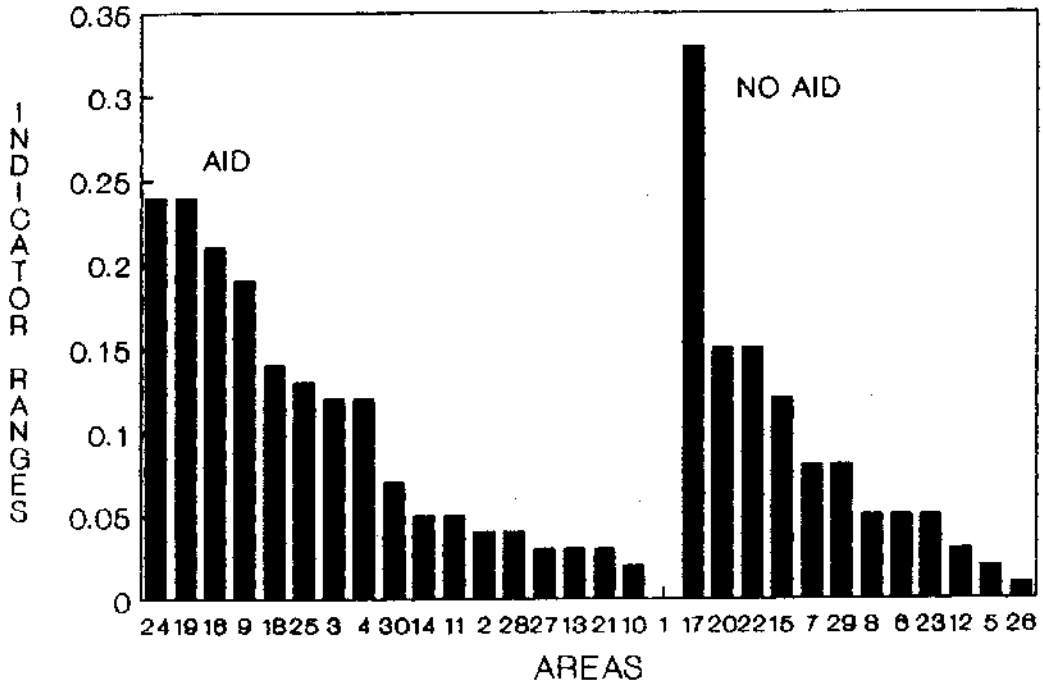
GRAPH 6
LOW CORN YIELDS INDICATOR



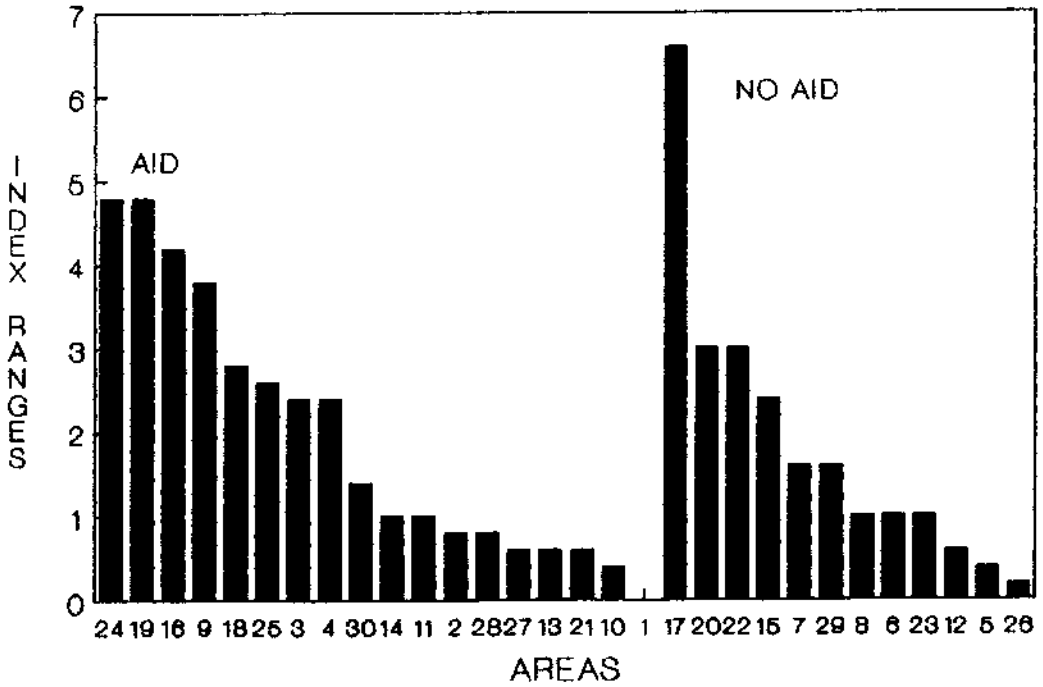
GRAPH 7
LOW CORN YIELDS INDEX



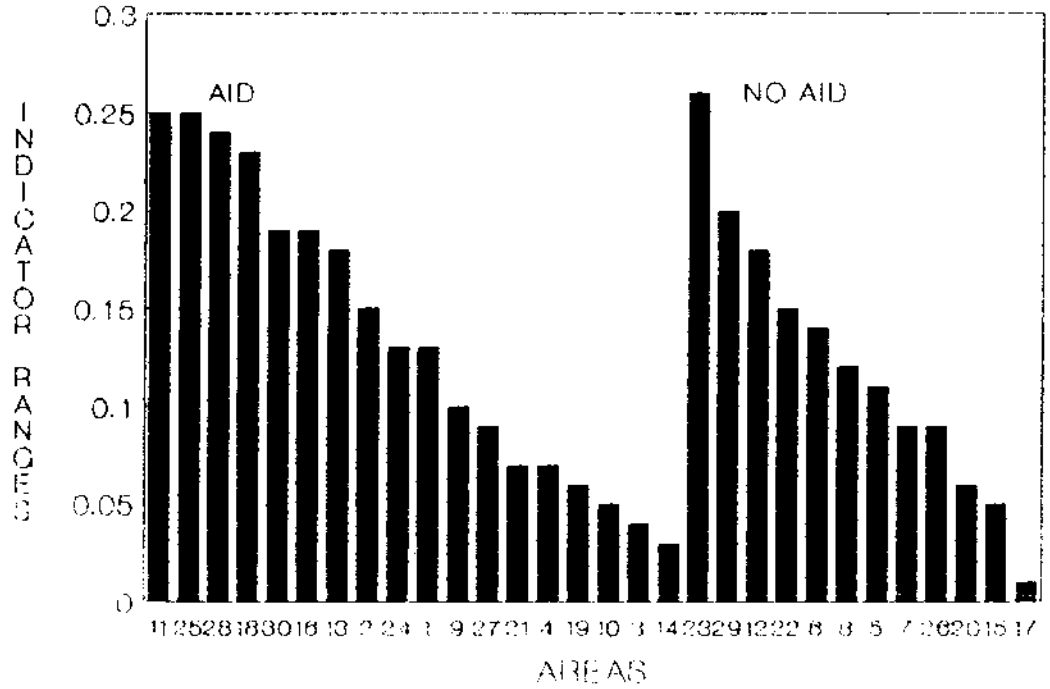
GRAPH 8
AGRICULTURE TRADITIONALITY INDICATOR



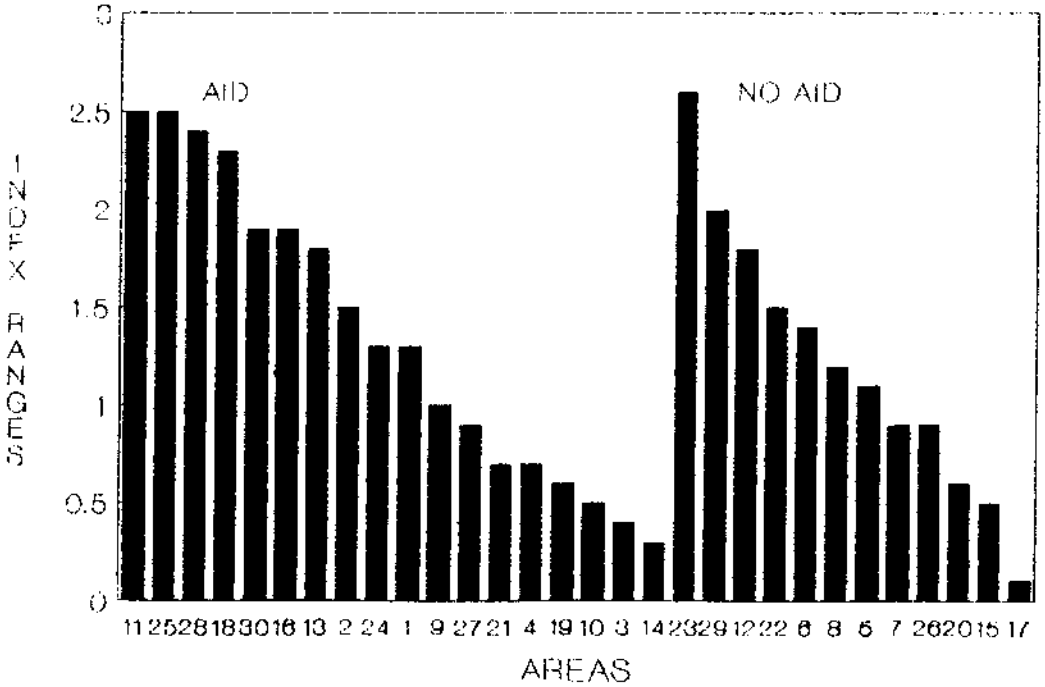
GRAPH 9
AGRICULTURE TRADITIONALITY INDEX



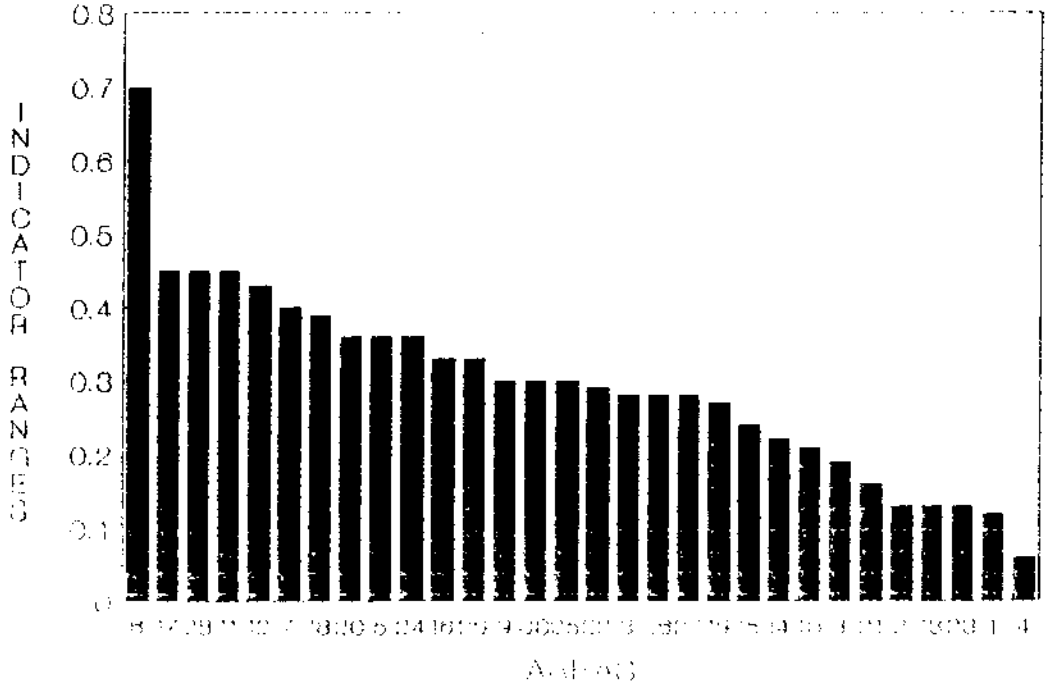
GRAPH 10
LOW AGRICULTURE TECHNOLOGY INDICATOR



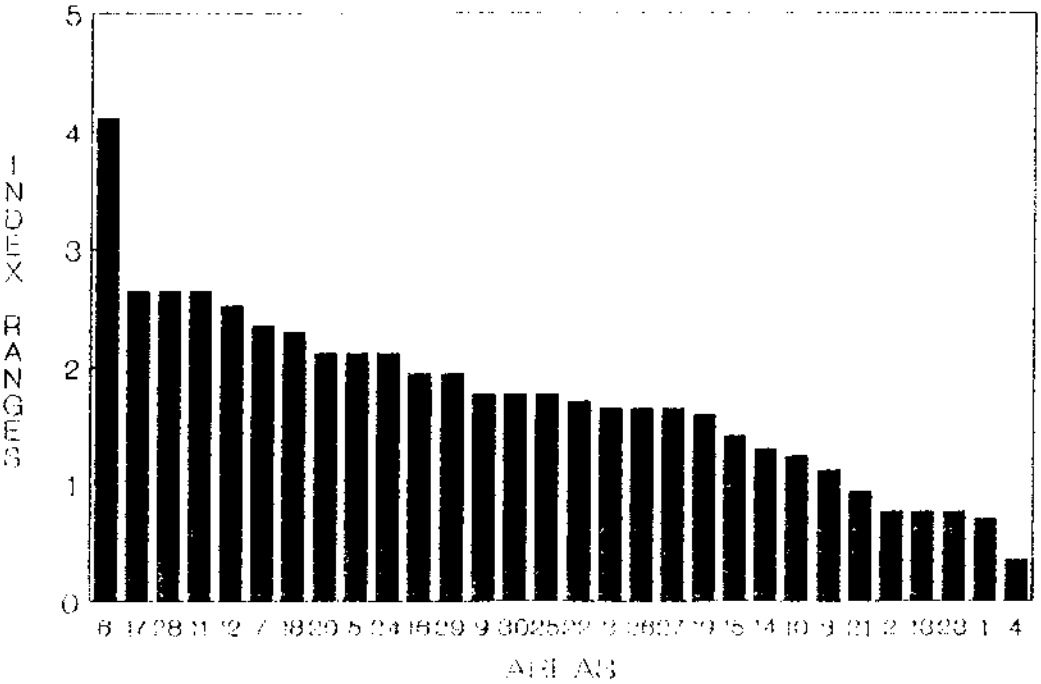
GRAPH 11
LOW AGRICULTURE TECHNOLOGY INDEX

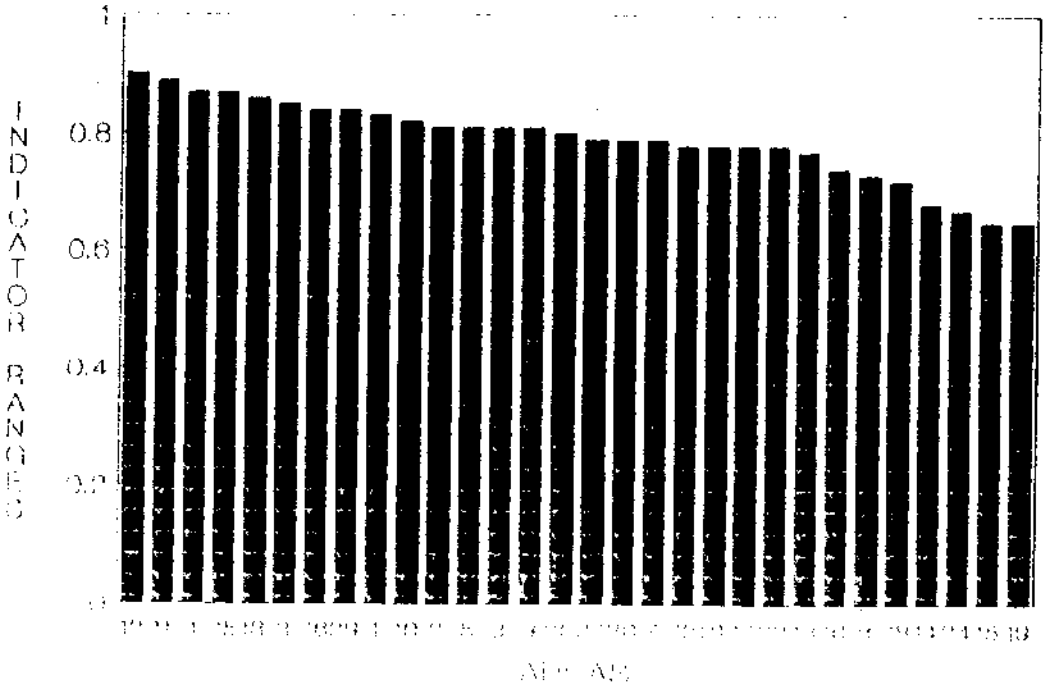


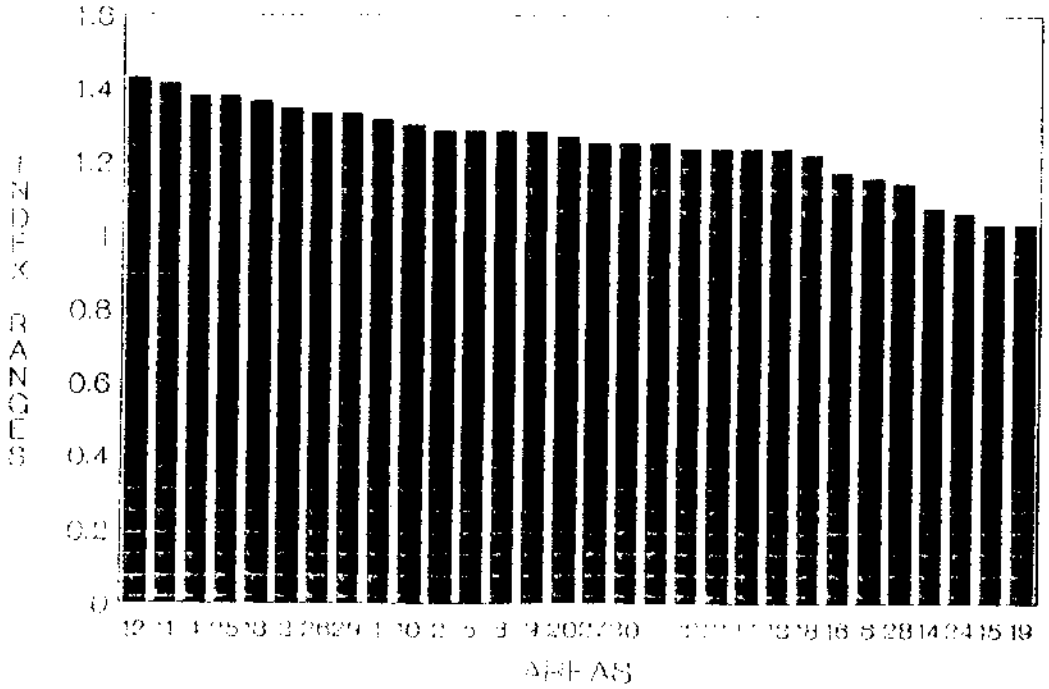
GRAPH 12
TOTAL OFFENDER INCAPACITY INDICATOR



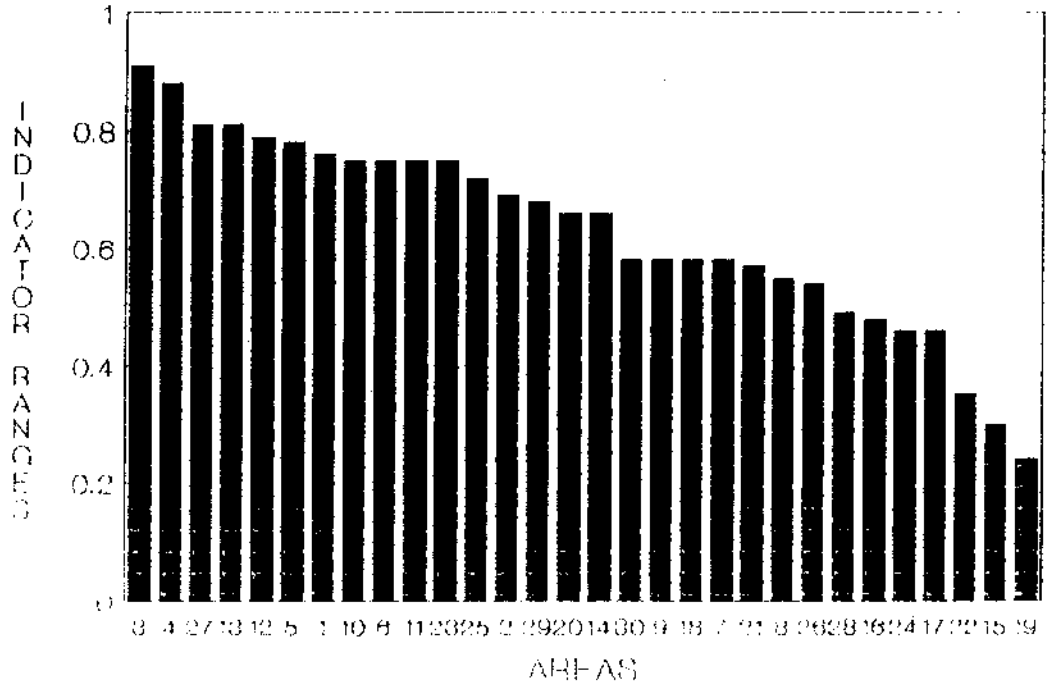
GRAPH 13
TOTAL OFFENDER INCAPACITY INDEX



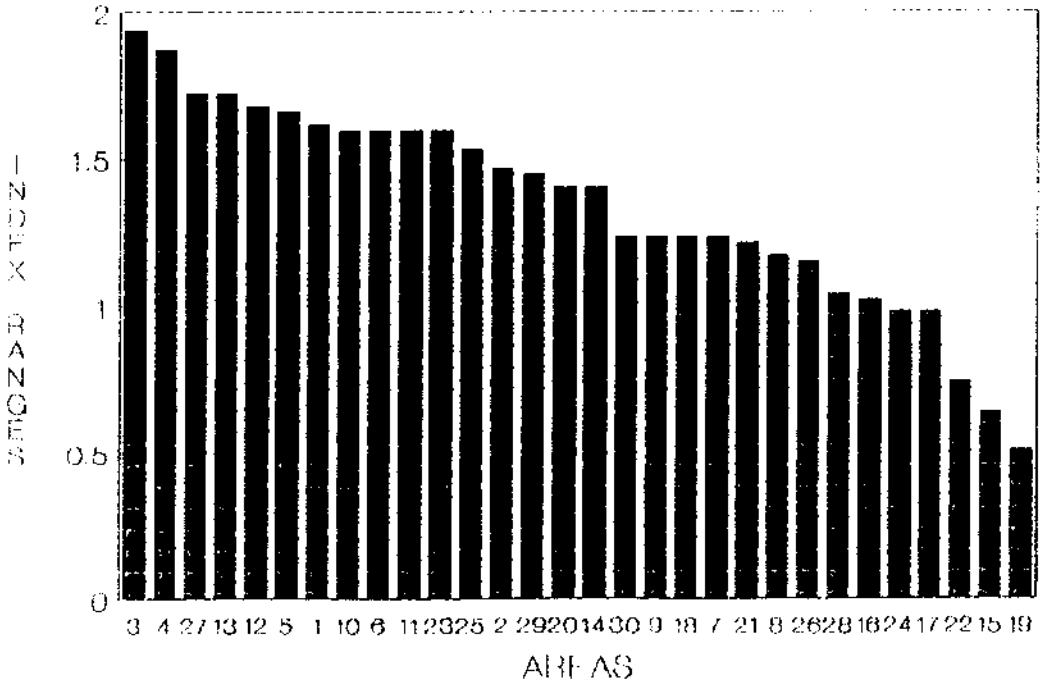

INDICATOR RANGES
1
0.8
0.6
0.4
0.2
0


INDEX RANGES
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
0

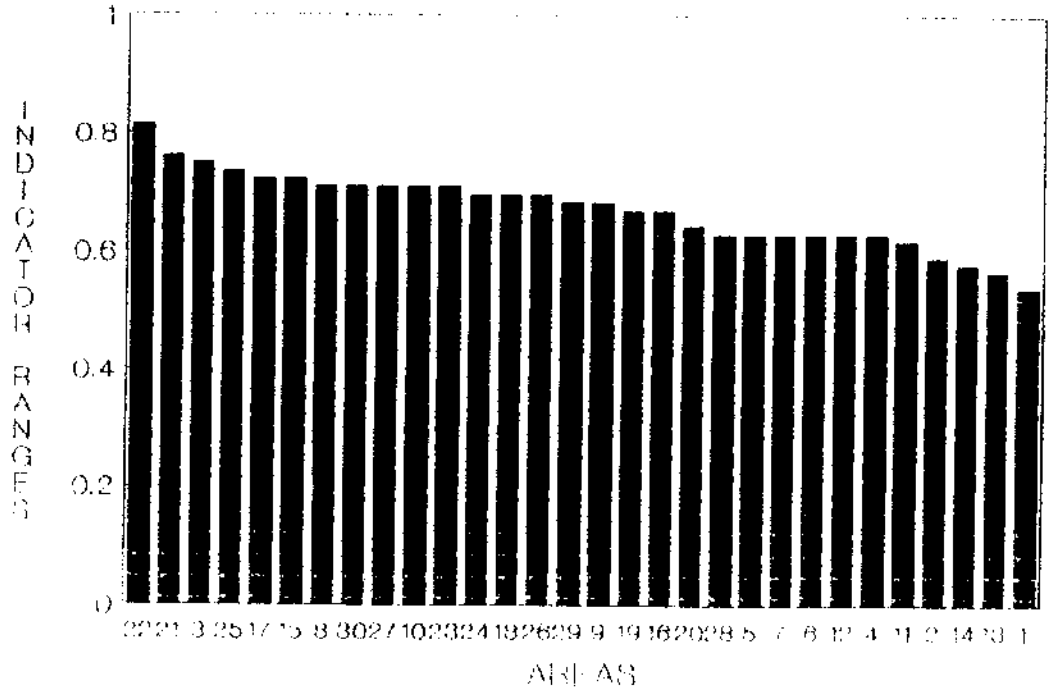
GRAPH 16
SAVINGS INCAPACITY INDICATOR



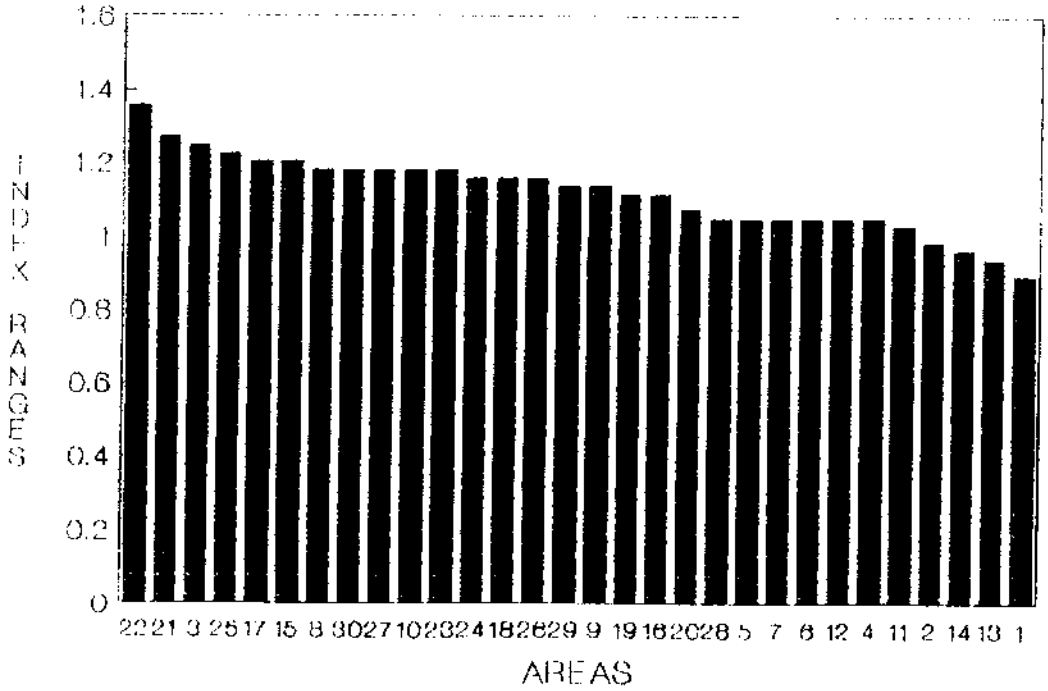
GRAPH 17
SAVINGS INCAPACITY INDEX



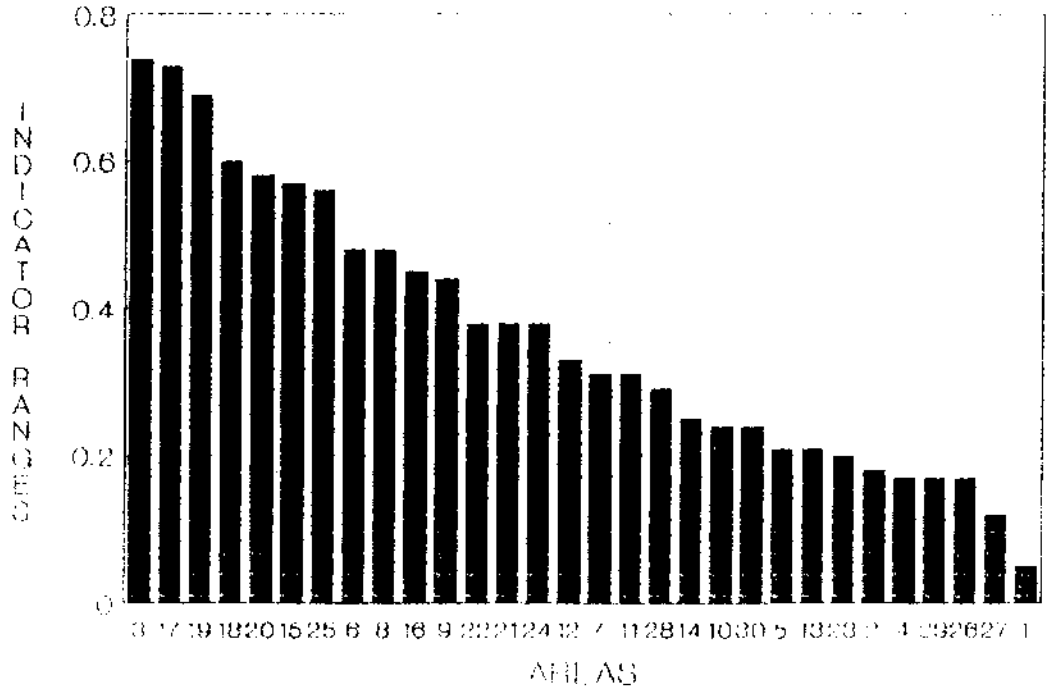
GRAPH 18
UNEMPLOYMENT INDICATOR



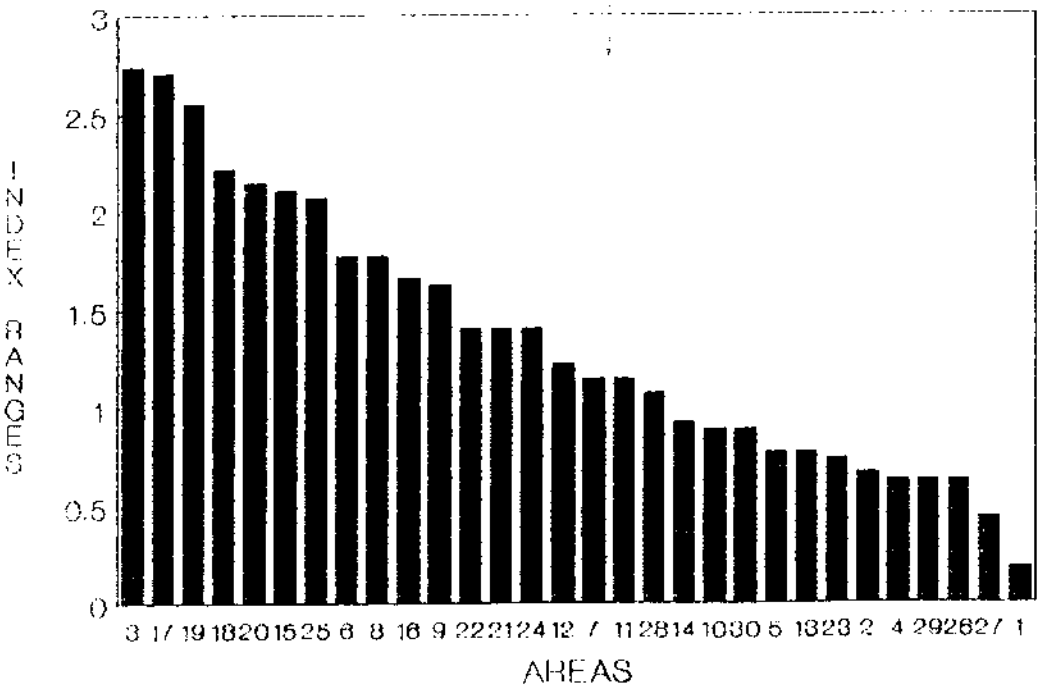
GRAPH 19
UNEMPLOYMENT INDEX



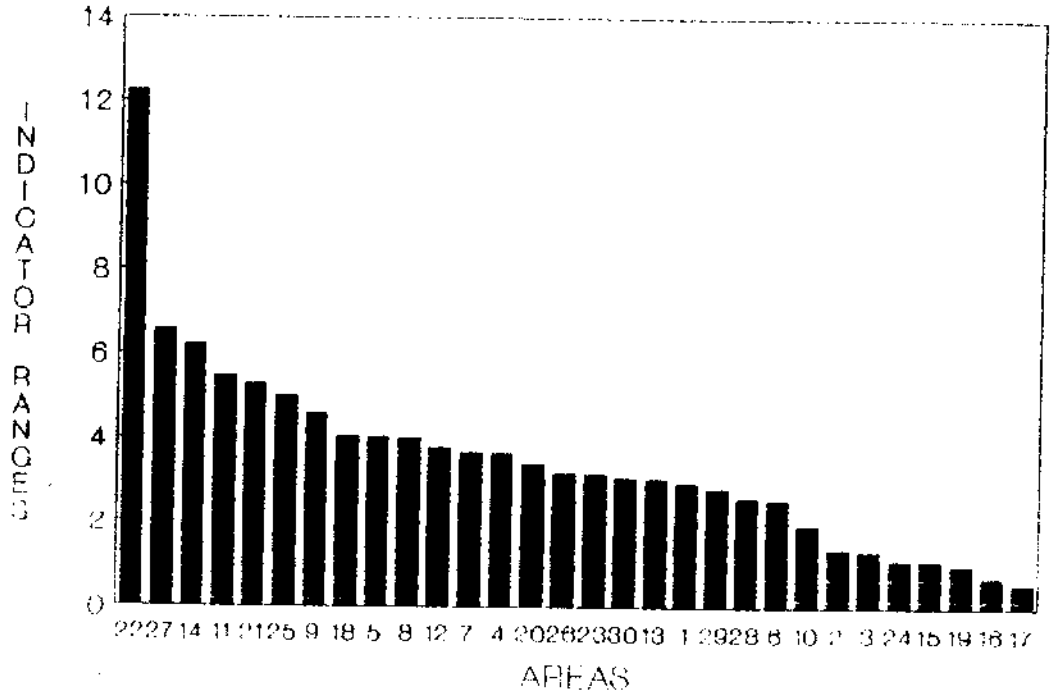
GRAPH 20
TRADITIONAL EMPLOYMENT INDICATOR



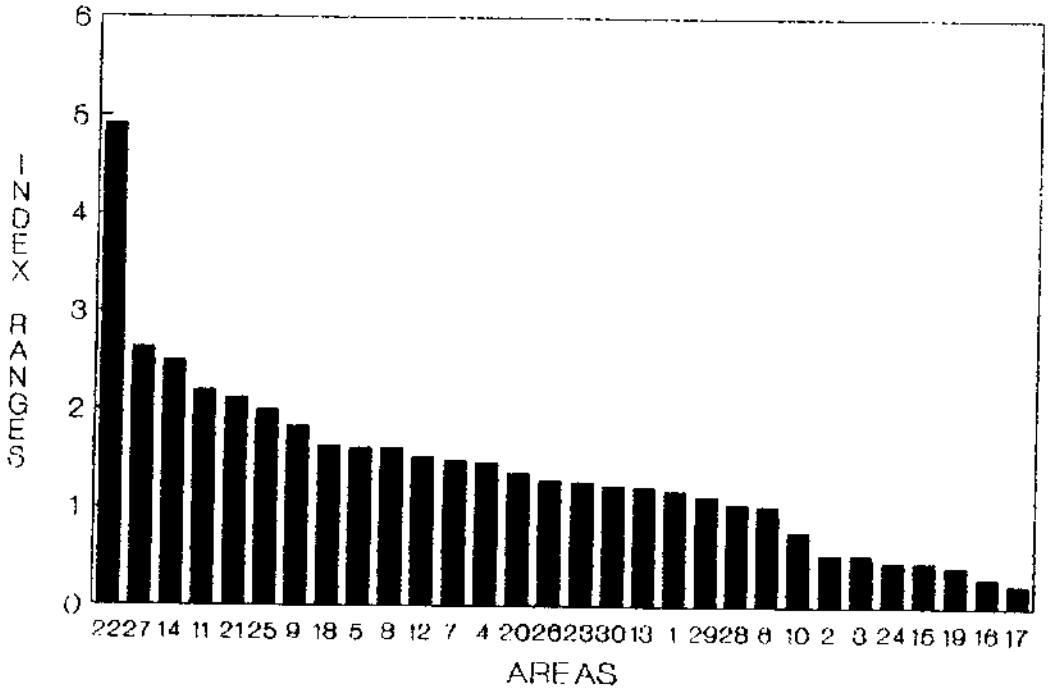
GRAPH 21
TRADITIONAL EMPLOYMENT INDEX



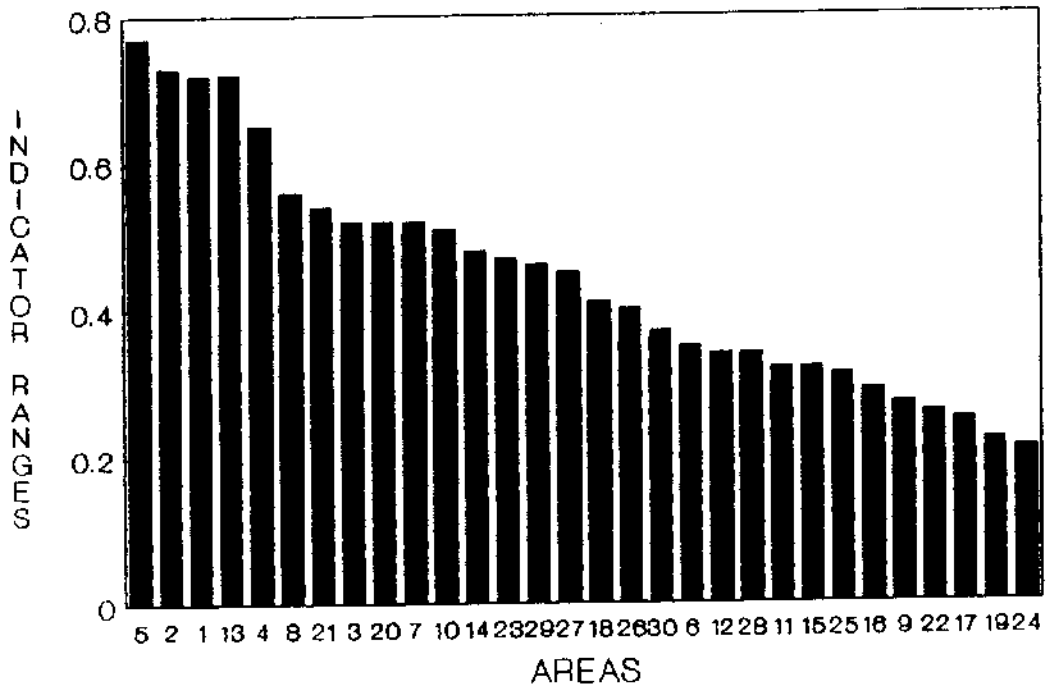
GRAPH 22
INDICATOR LACK INCOME DUE TO UNEMPLOYMEN



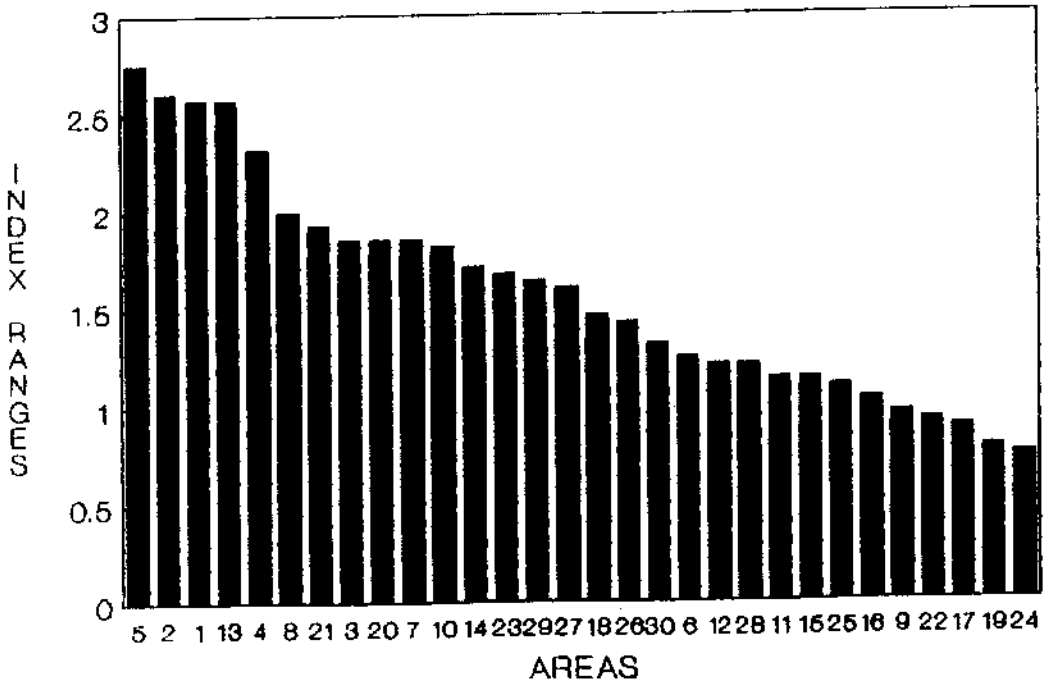
GRAPH 23
INDEX LACK INCOME DUE TO UNEMPLOYMENT



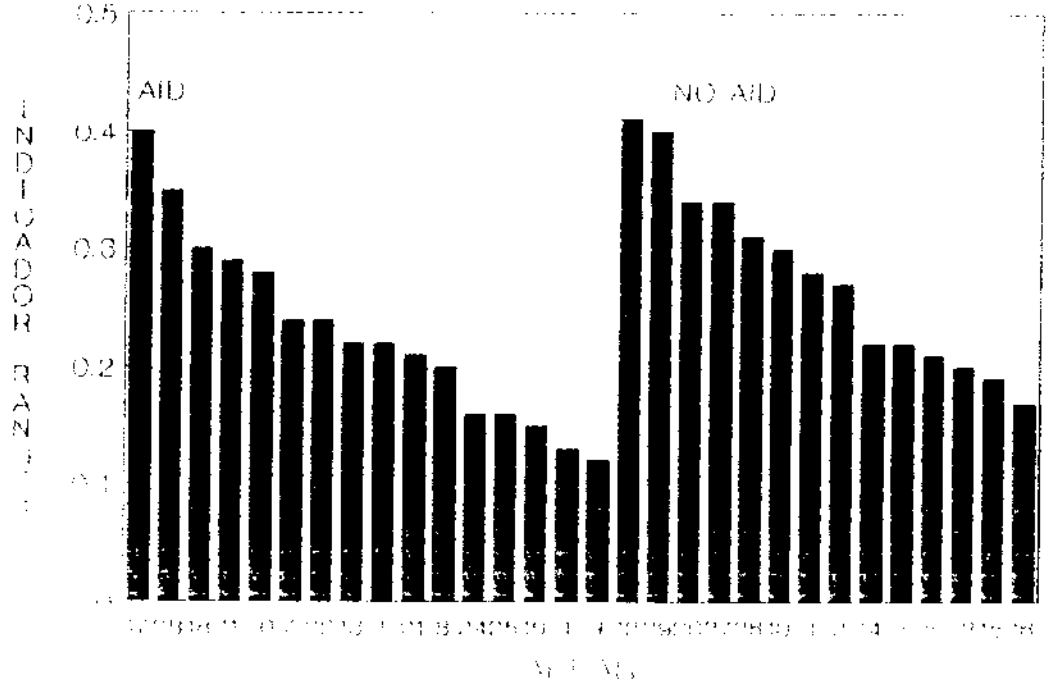
GRAPH 24
LACK OF OWNED FARMS INDICATOR



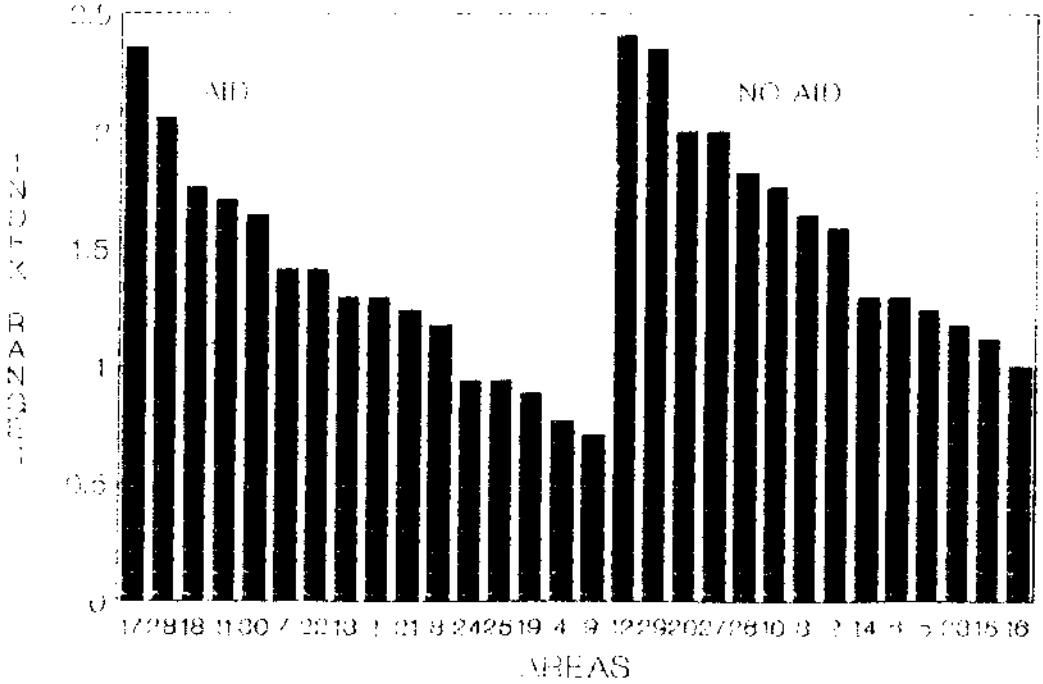
GRAPH 25
LACK OF OWNED FARMS INDEX



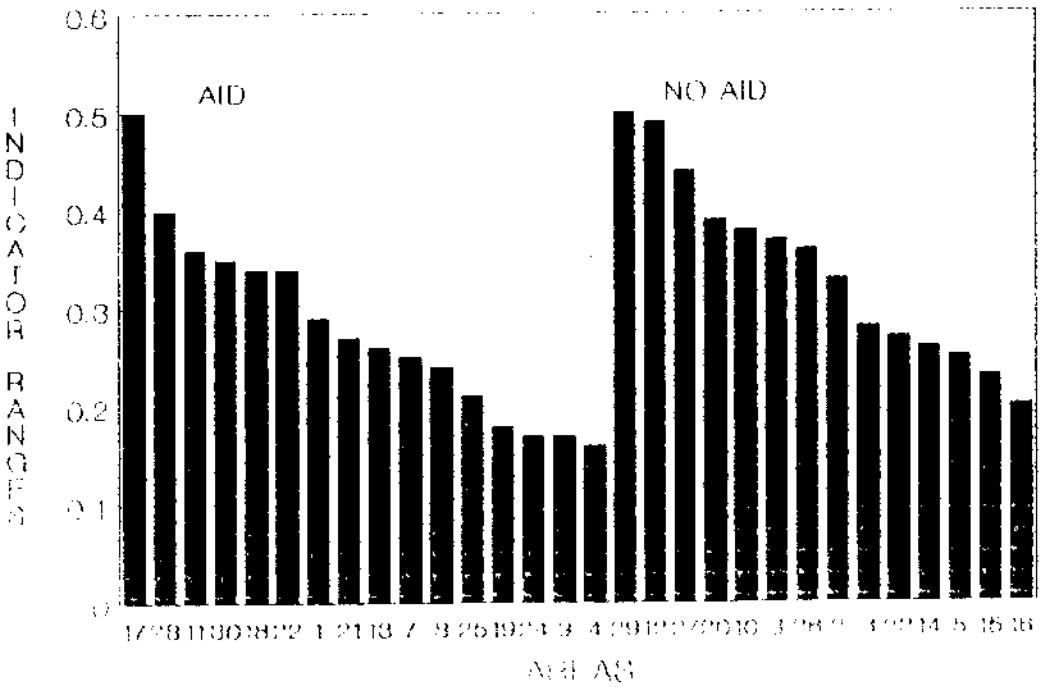
GRAPH 26
LITERACY INDICATOR



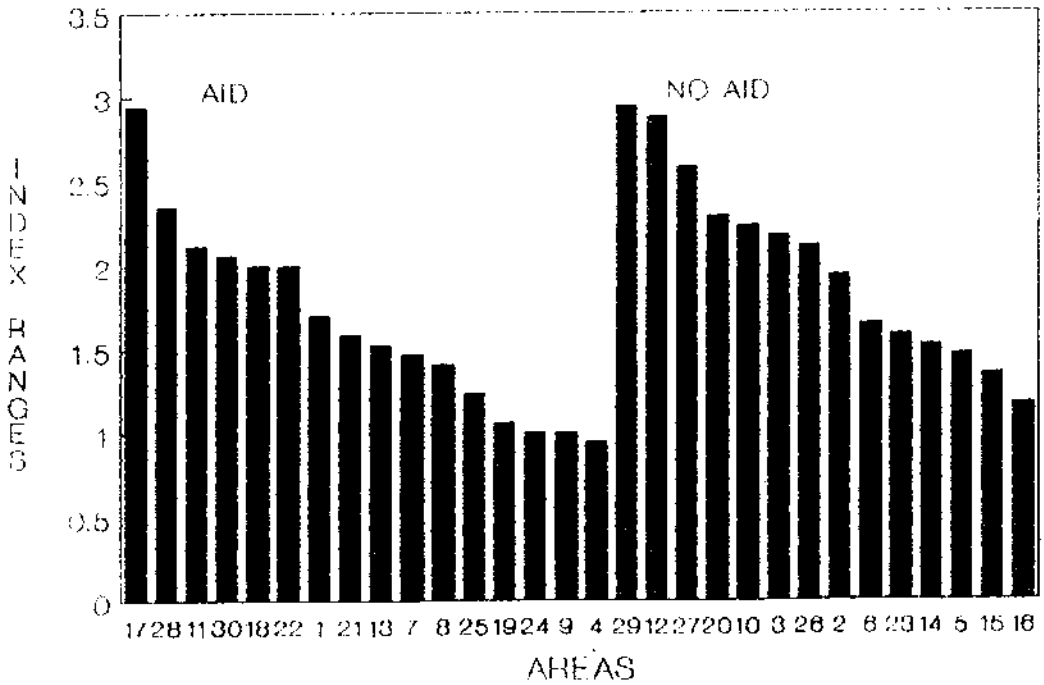
GRAPH 27
[illegible]



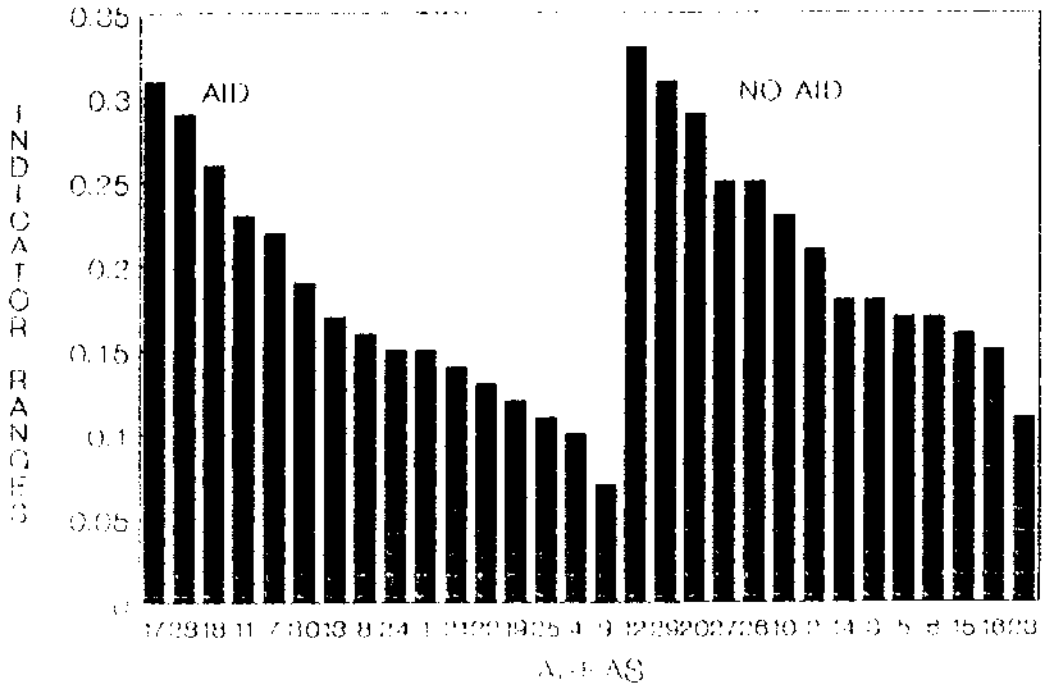
GRAPH 28
FEMALE ILLITERACY INDICATOR



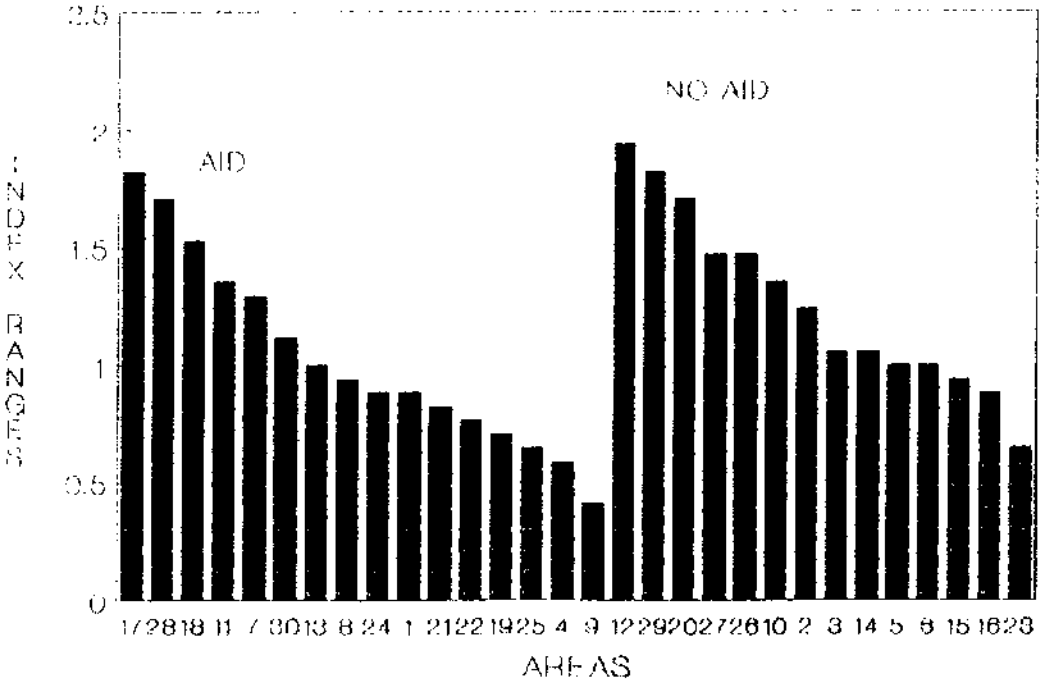
GRAPH 29
FEMALE ILLITERACY INDEX



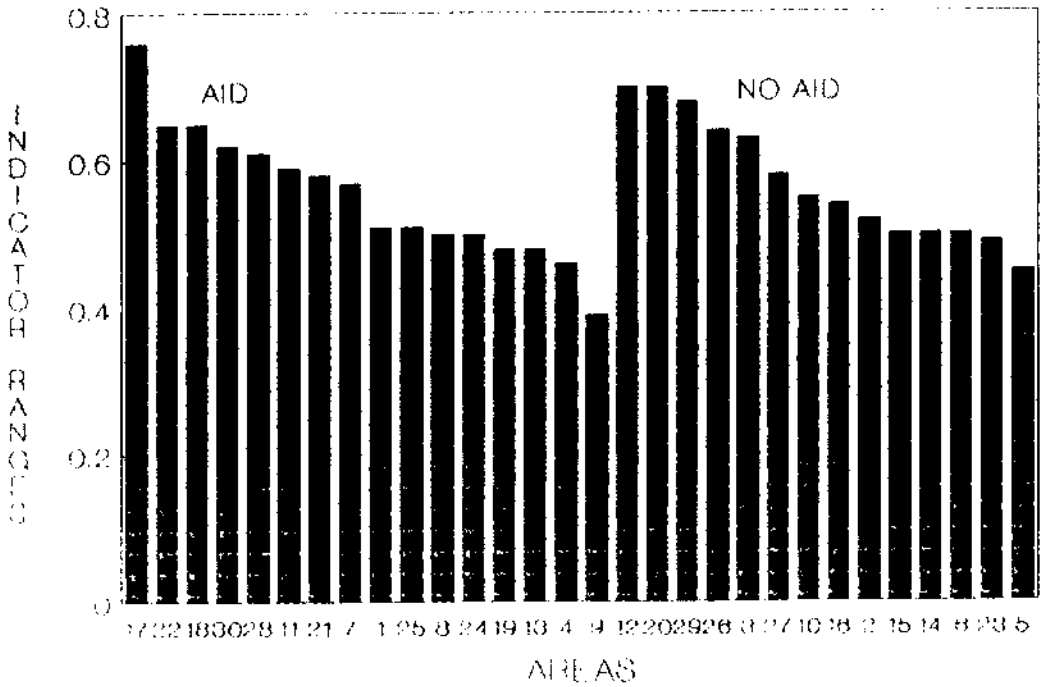
GRAPH 30
MALE ILLITERACY INDICATOR



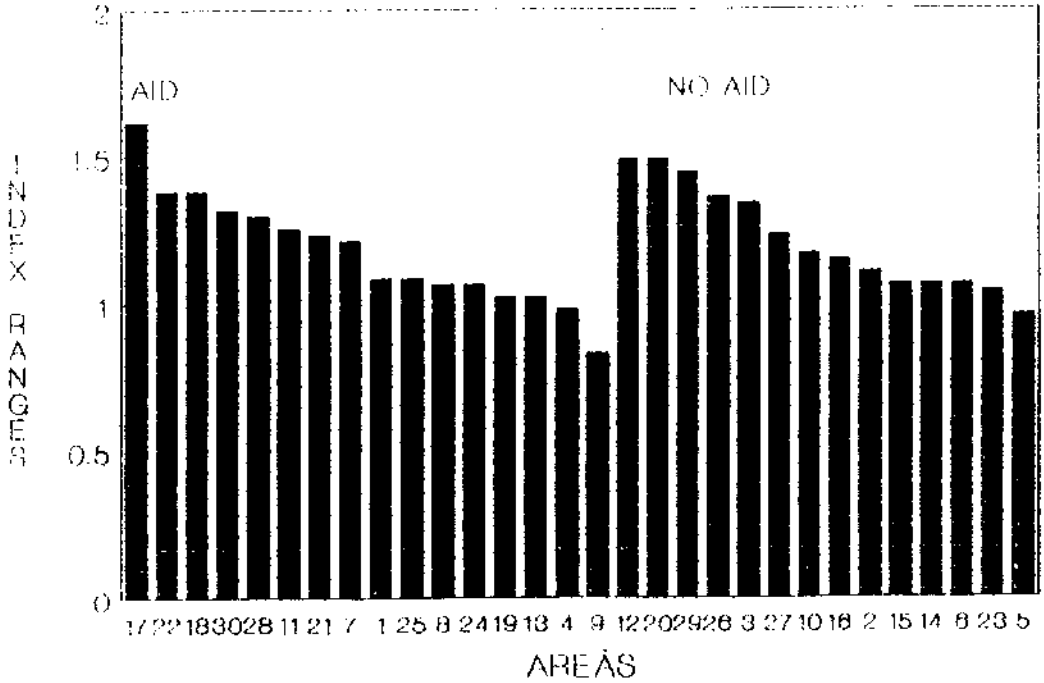
GRAPH 31
MALE ILLITERACY INDEX



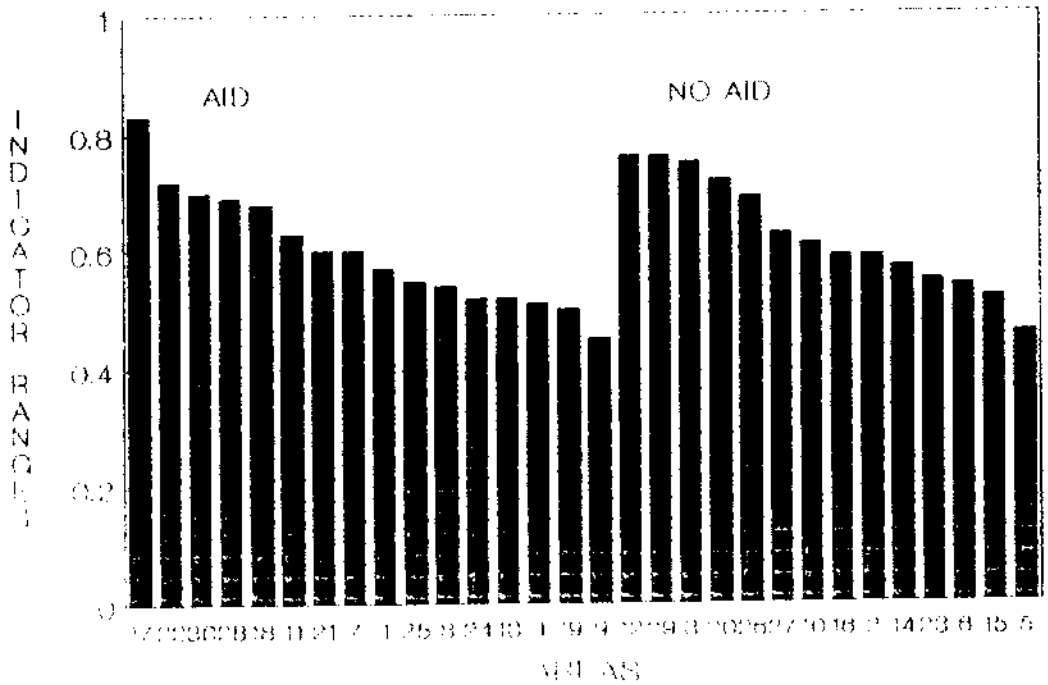
GRAPH 32
LACK OF SCHOOLING INDICATOR



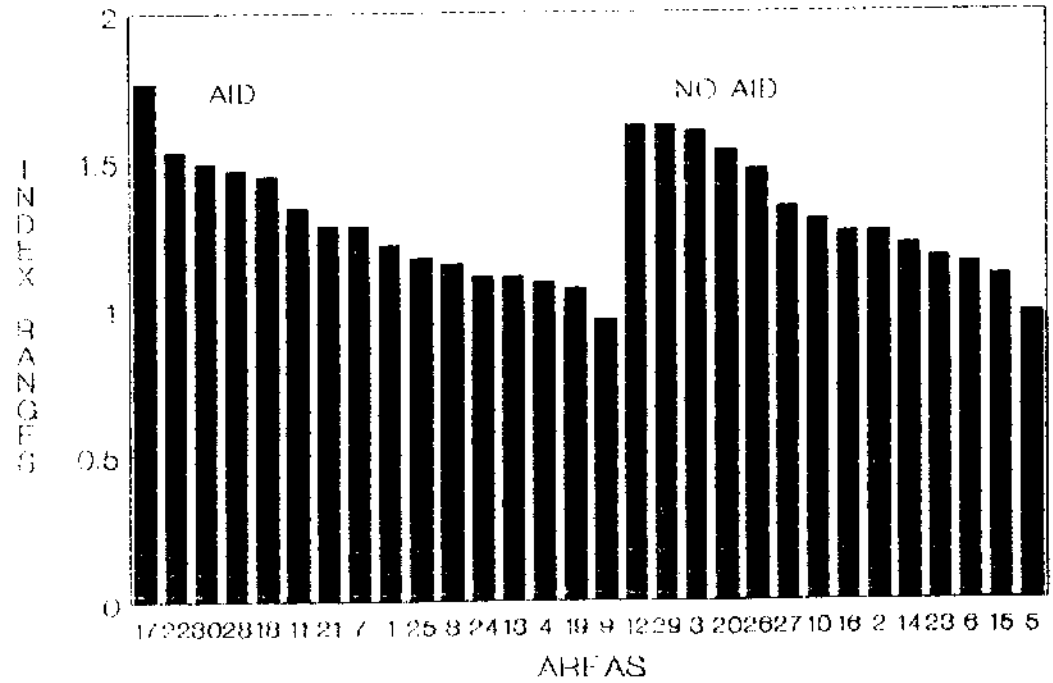
GRAPH 33
LACK OF SCHOOLING INDEX



GRAPH 34
FEMALE LACK OF SCHOOLING INDICATOR

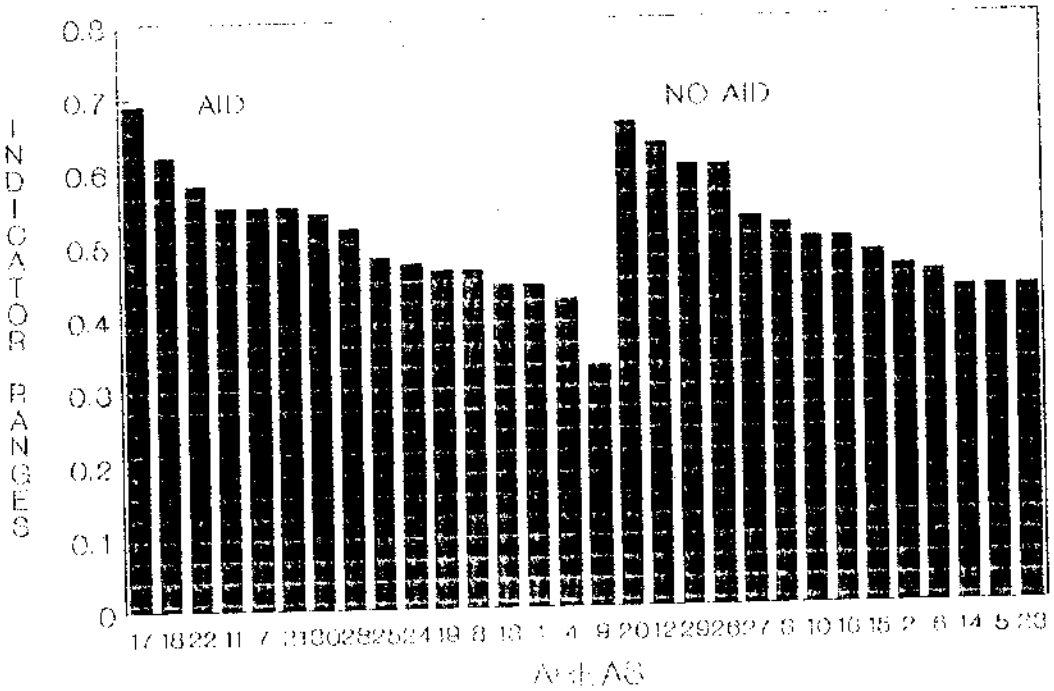


GRAPH 35
FEMALE LACK OF SCHOOLING INDEX



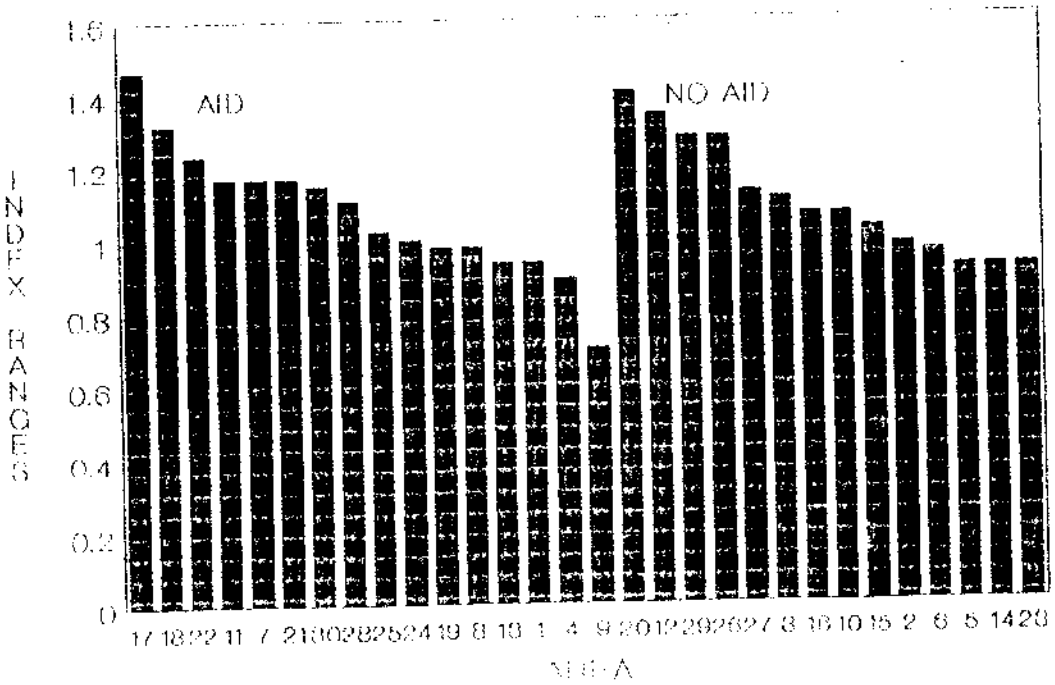
GRAPH 5b

MALL LACK OF COOLING INDICATOR

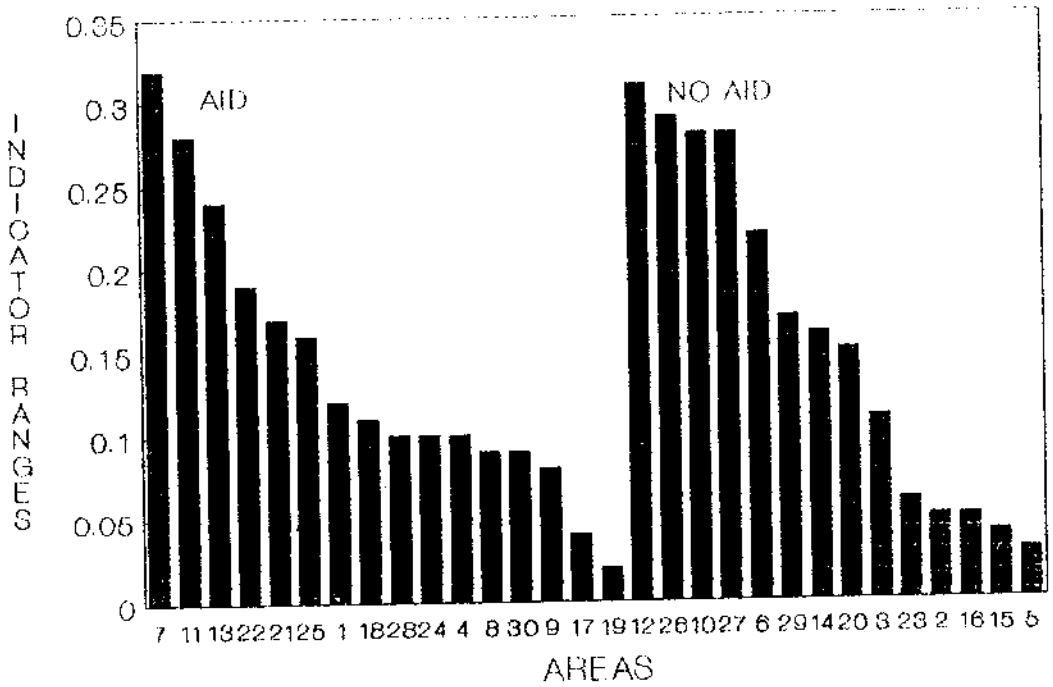


GRAPH 5c

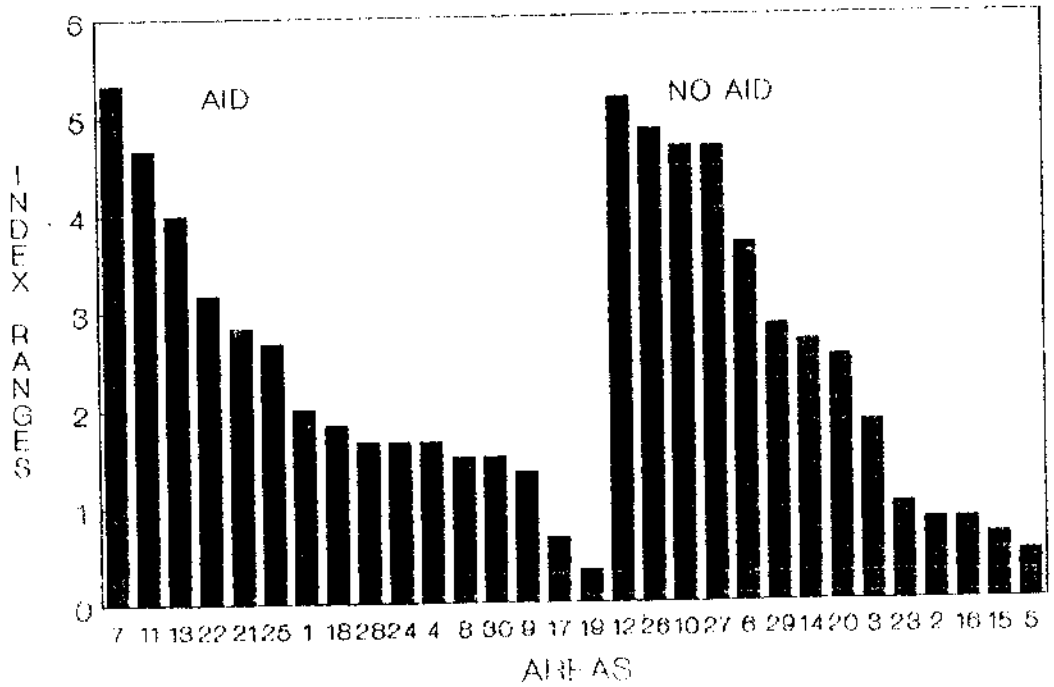
MALL LACK OF COOLING INDEX



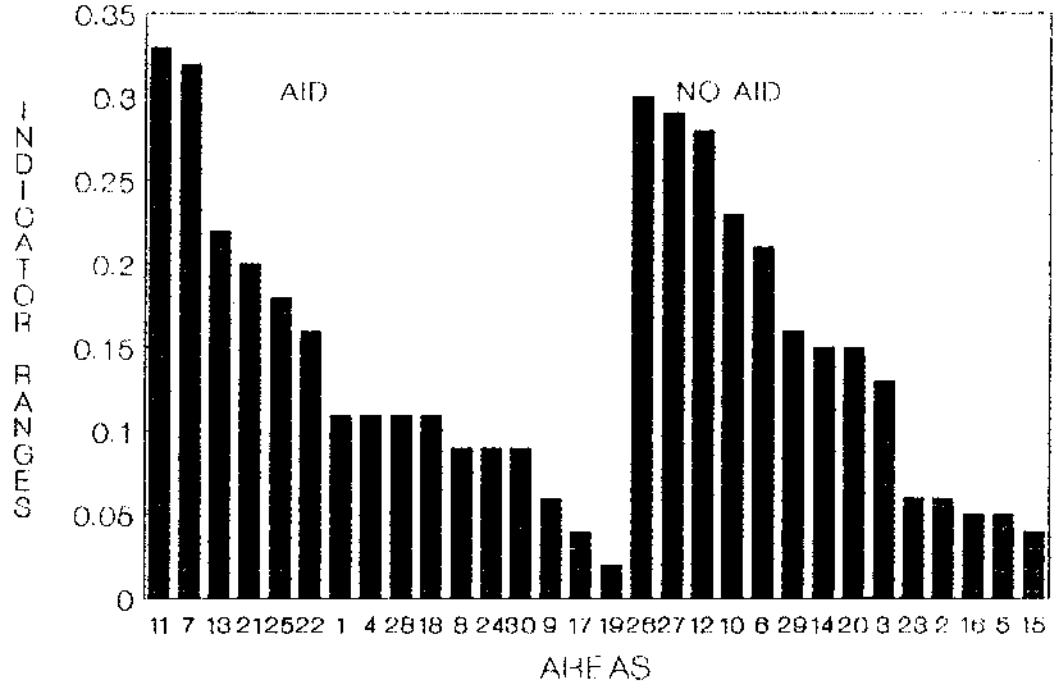
GRAPH 38
SCHOOL DROPOUT INDICATOR



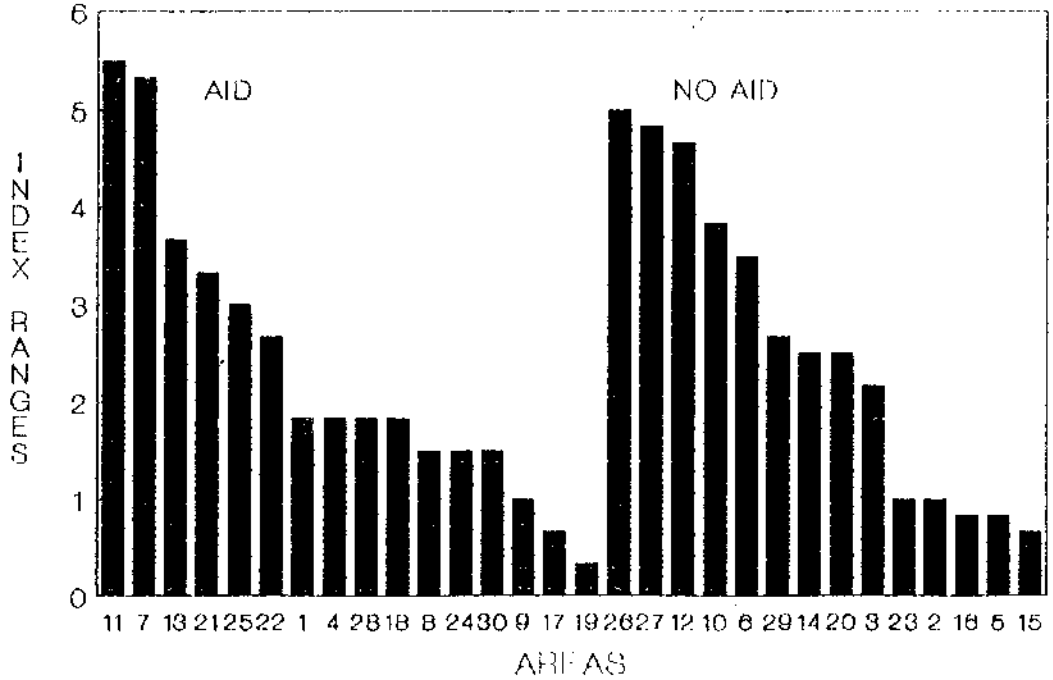
GRAPH 39
SCHOOL DROPOUT INDEX



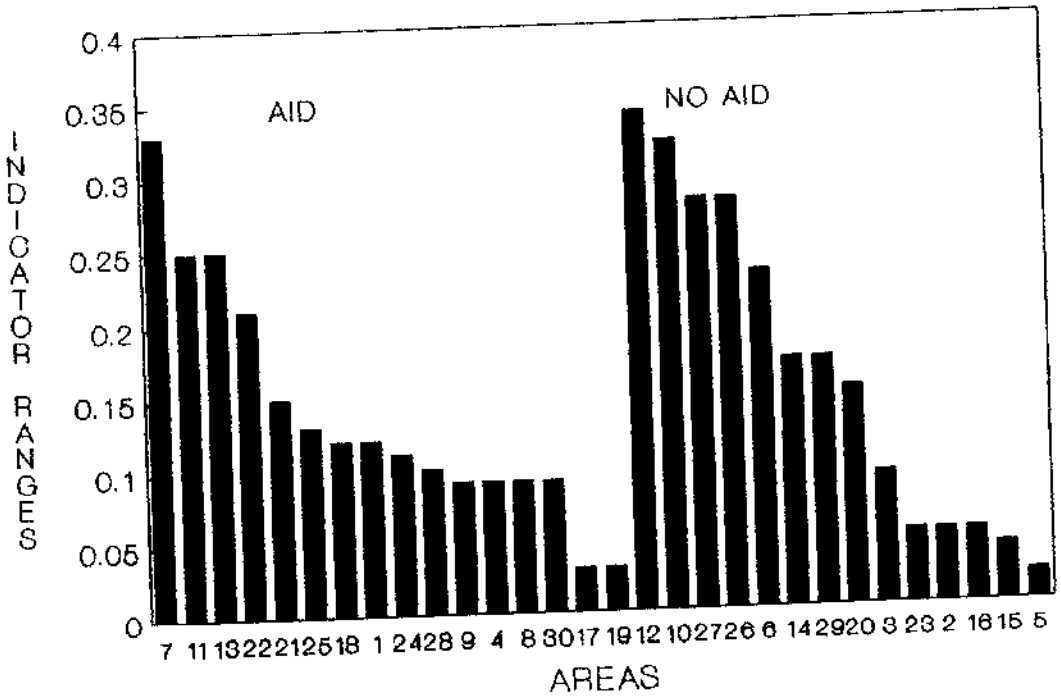
GRAPH 40
FEMALE SCHOOL DROPOUT INDICATOR



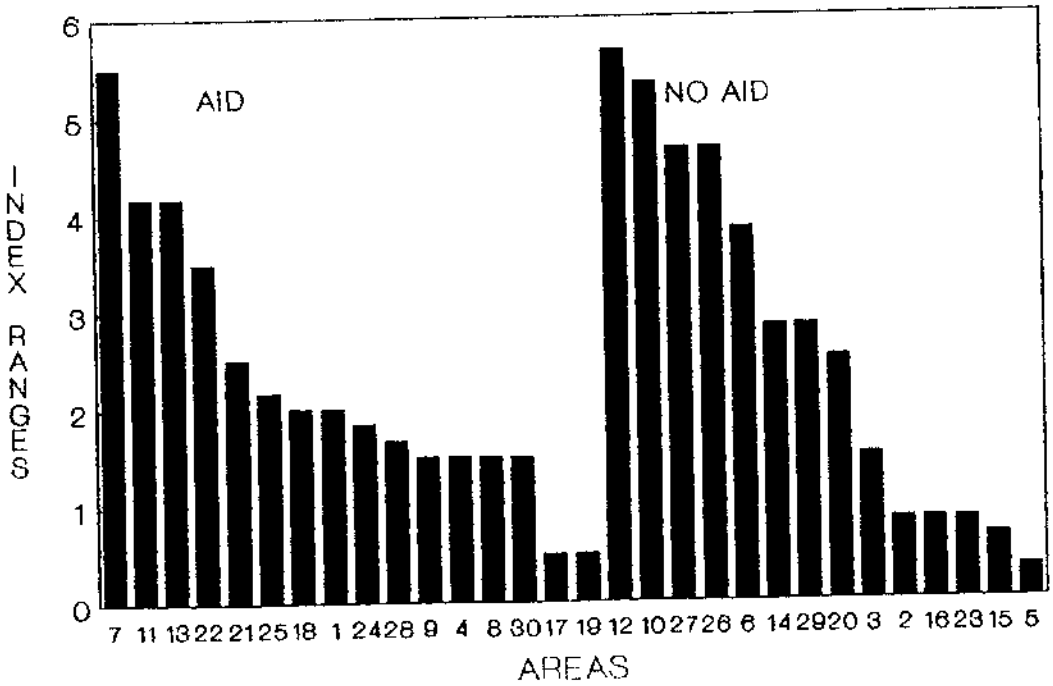
GRAPH 41
FEMALE SCHOOL DROPOUT INDICATOR



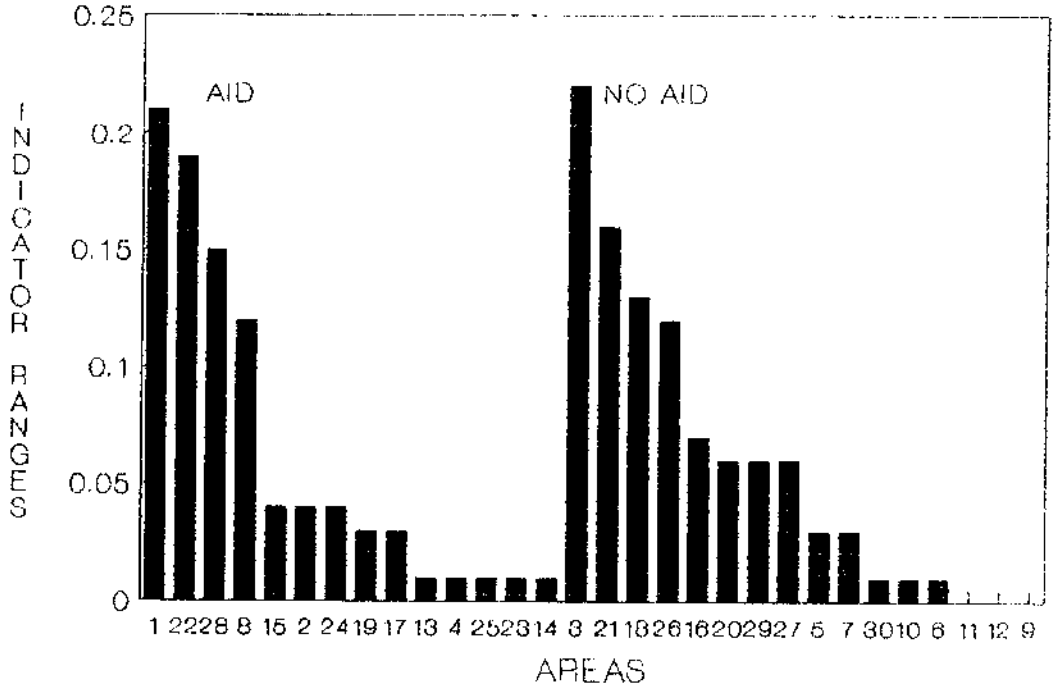
GRAPH 42
MALE SCHOOL DROPOUT INDICATOR



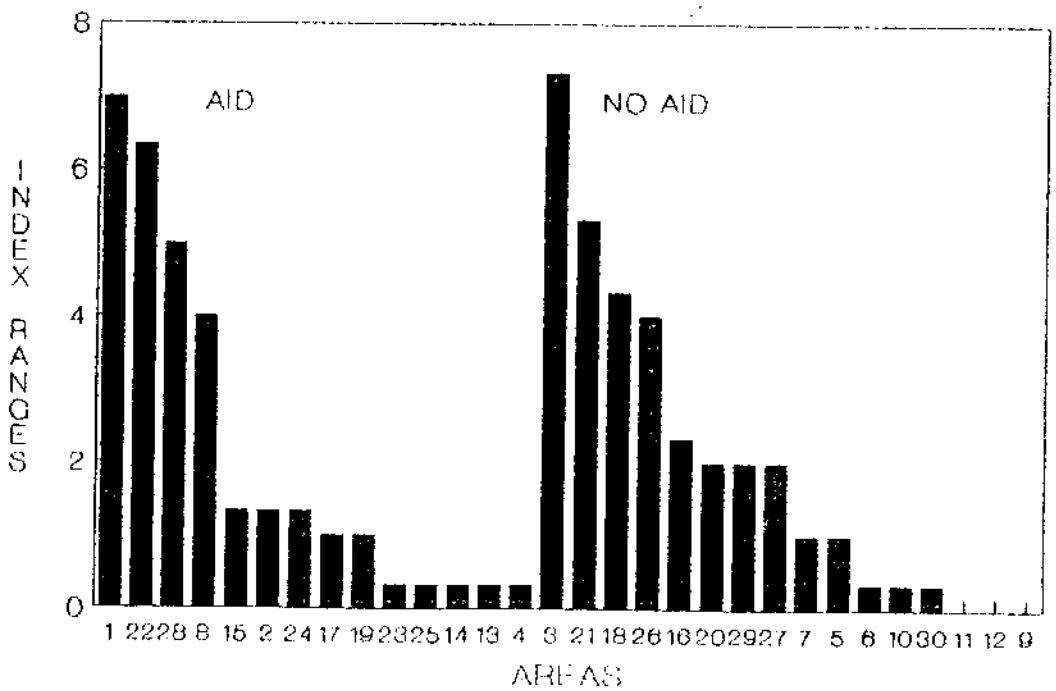
GRAPH 43
MALE SCHOOL DROPOUT INDEX



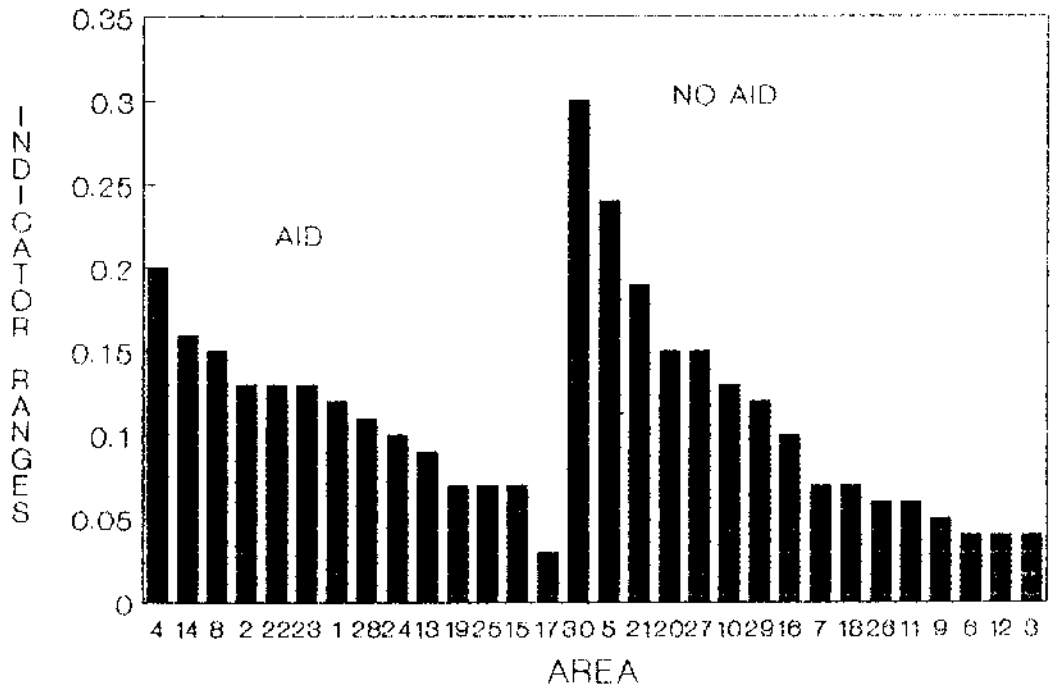
GRAPH 44
LACK CLEAN WATER INSTALLATION INDICATOR



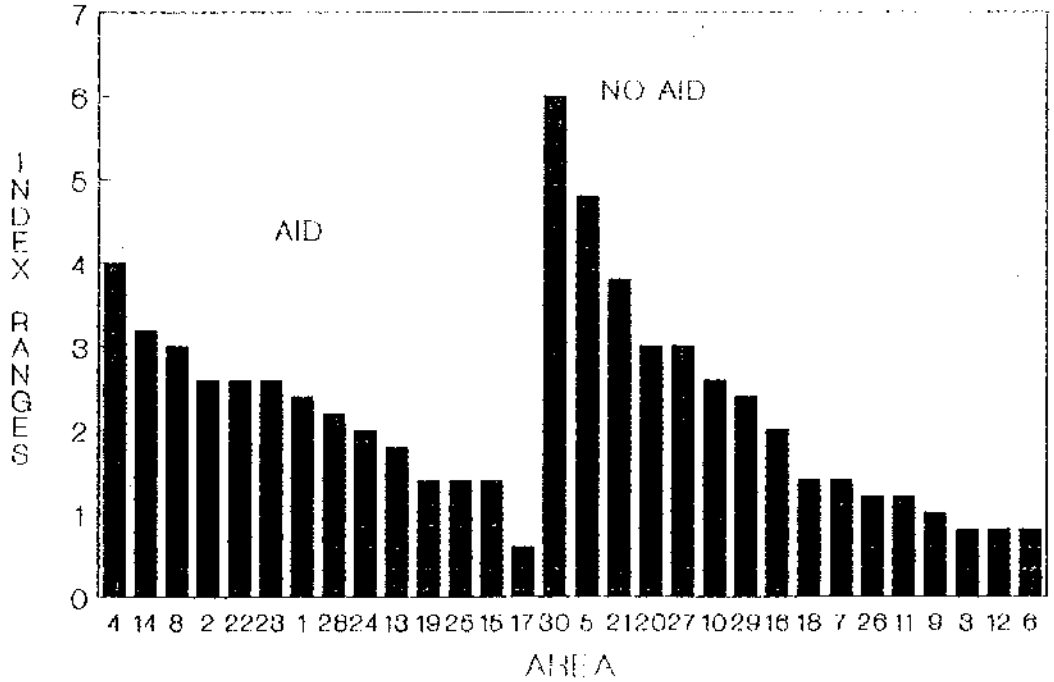
GRAPH 45
LACK OF CLEAN WATER INSTALLATION INDEX



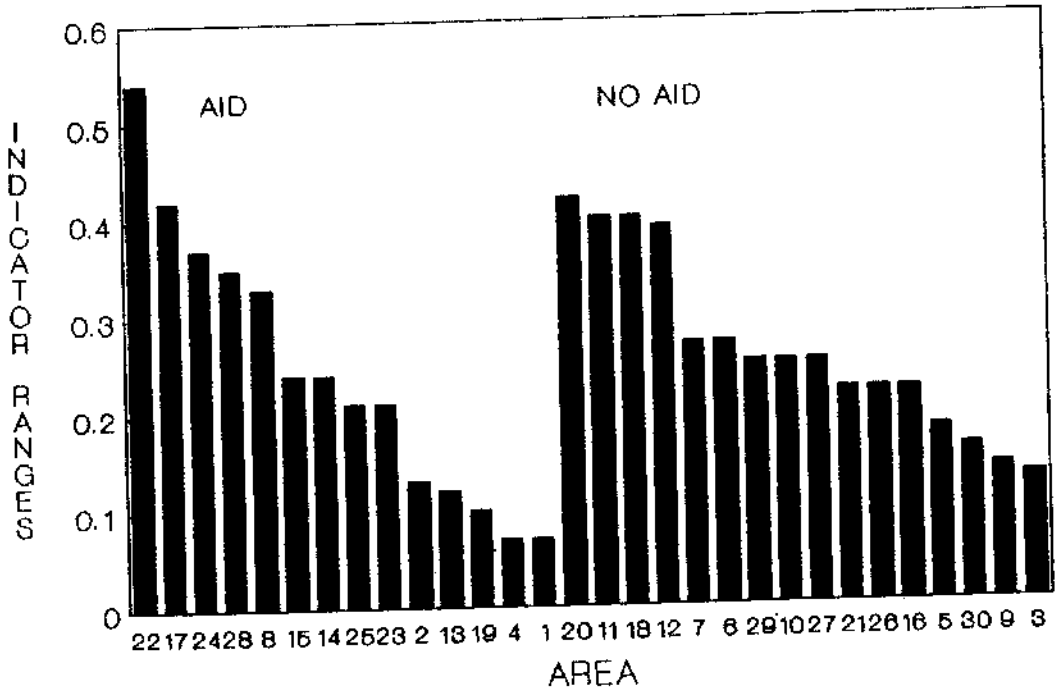
GRAPH 46
LACK OF HOME OWNERSHIP INDICATOR



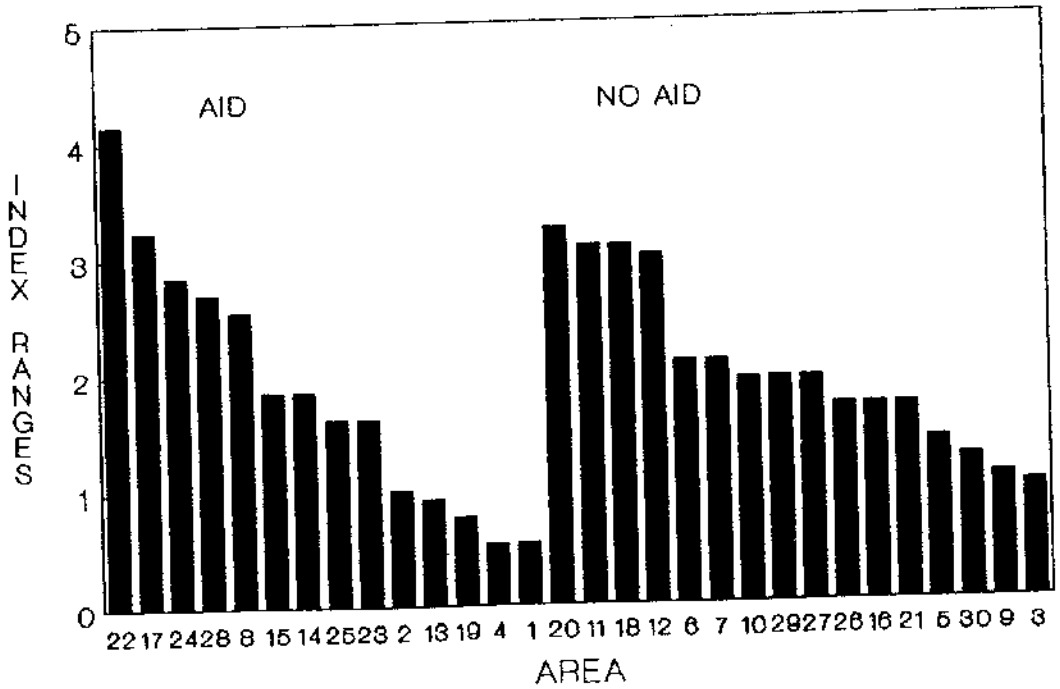
GRAPH 47
LACK OF HOME OWNERSHIP INDEX



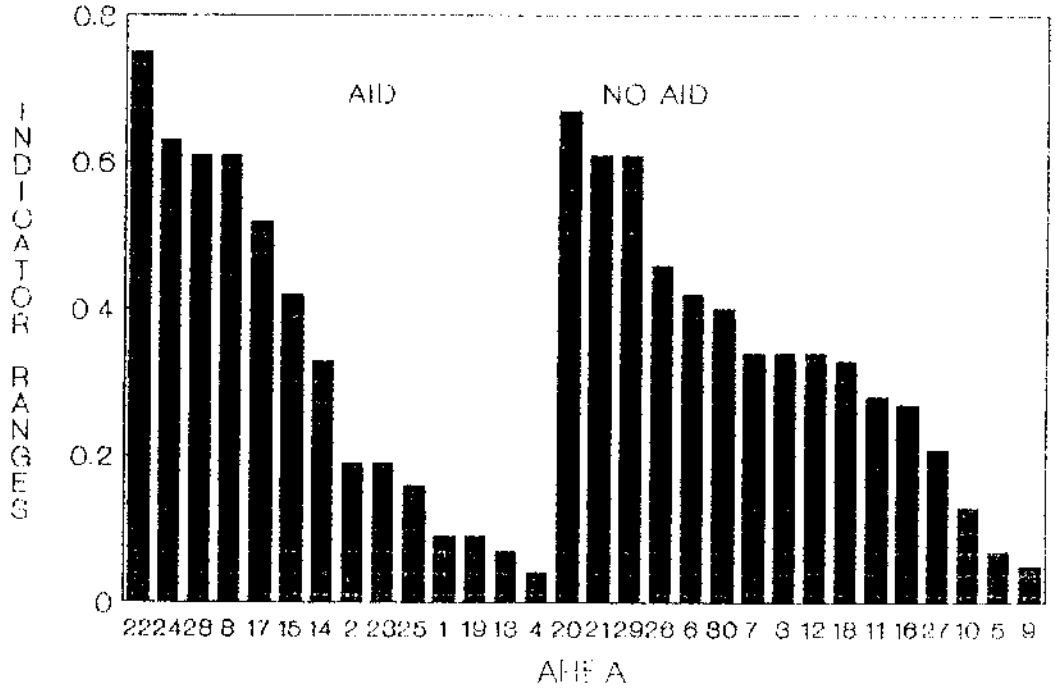
GRAPH 48
LACK OF RADIO RECEIVER INDICATOR



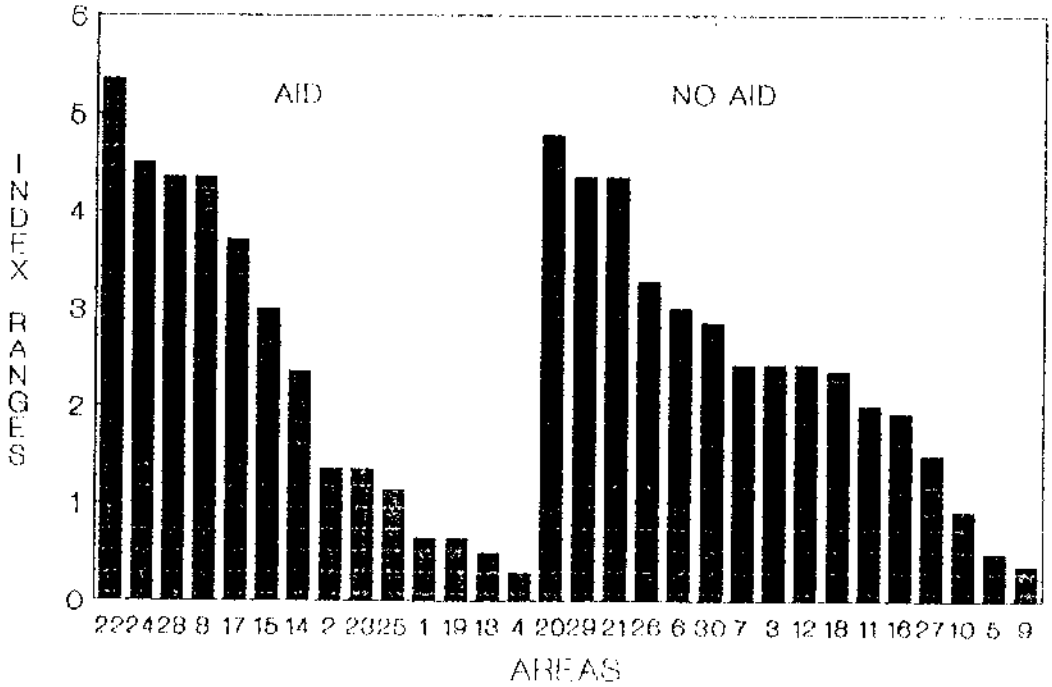
GRAPH 49
LACK OF RADIO RECEIVER INDEX



GRAPH 50
LACK OF DOMESTIC POWER SUPPLY INDICATOR

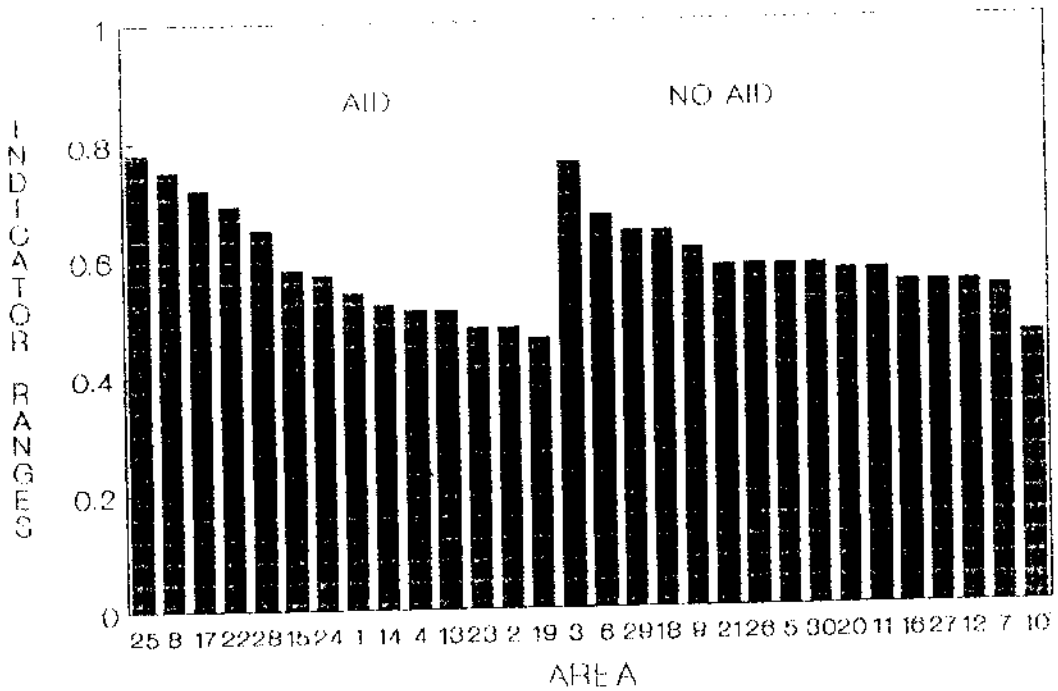


GRAPH 51
LACK OF DOMESTIC POWER SUPPLY INDEX



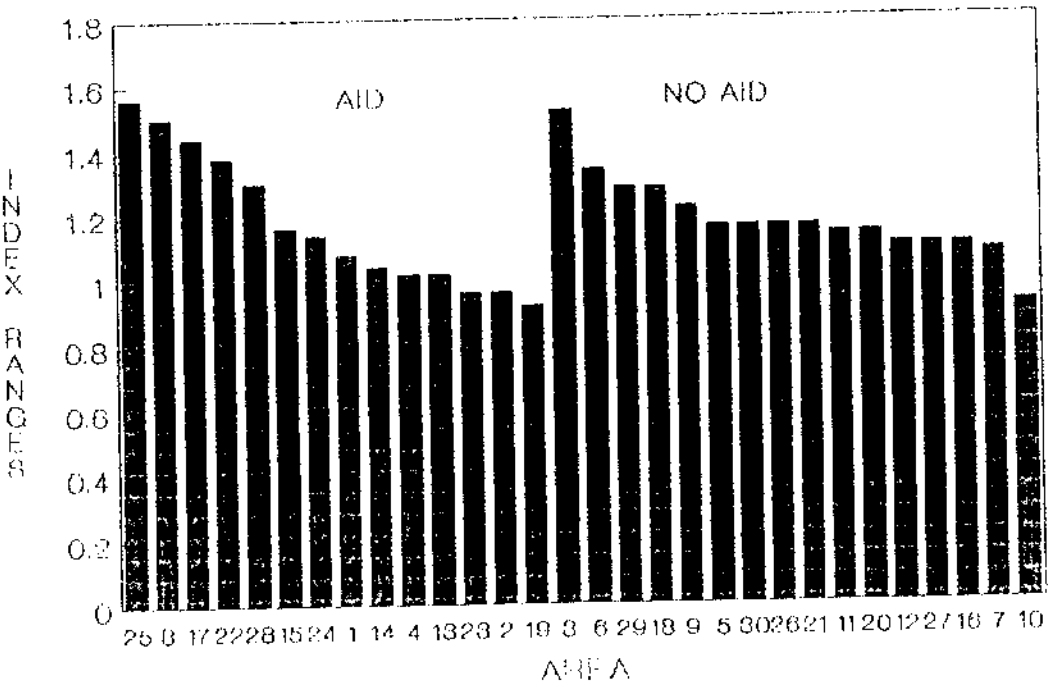
GRAPH 52

LACK DOMESTIC UNDERGROUND DRAINAGE INDOR

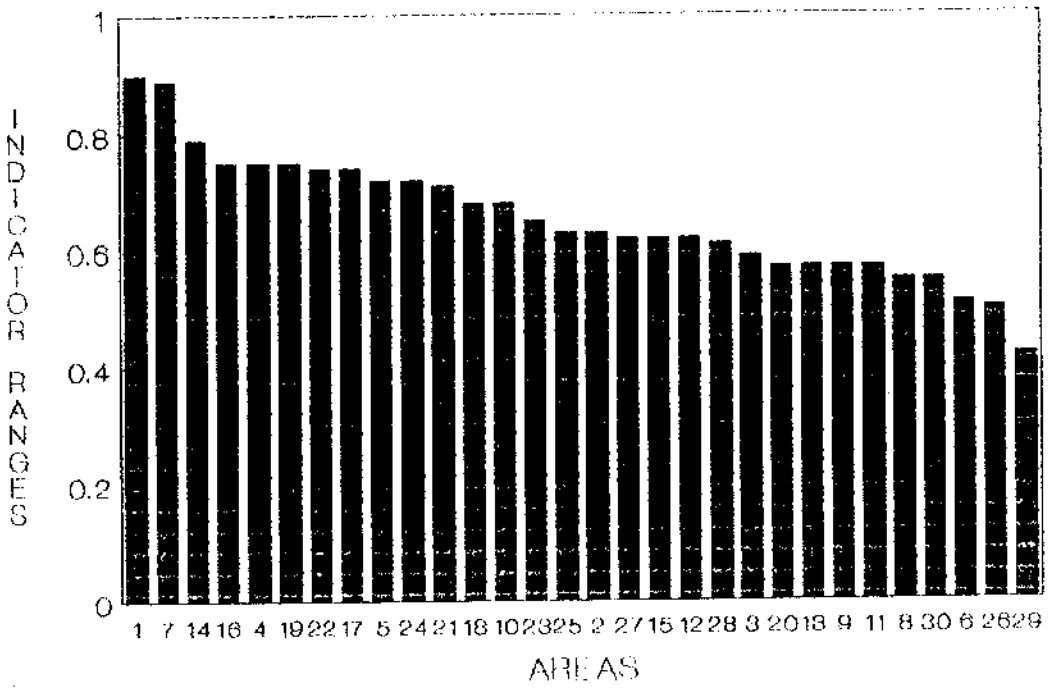


GRAPH 53

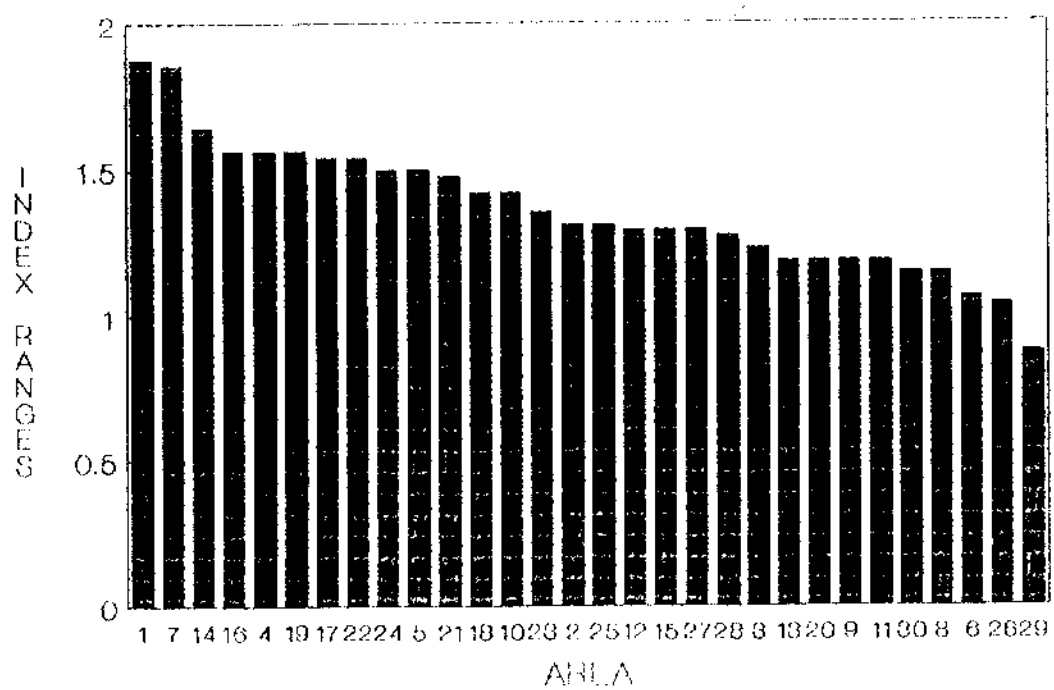
LACK DOMESTIC UNDERGROUND DRAINAGE INDEX



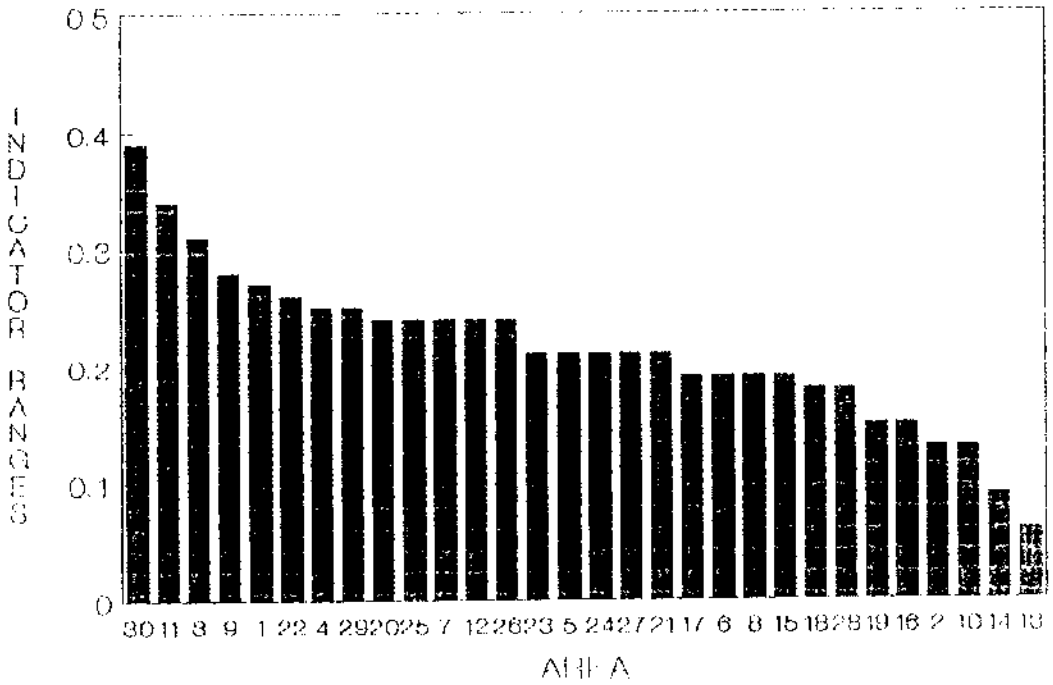
GRAPH 54
CHILD MORBIDITY INDICATOR



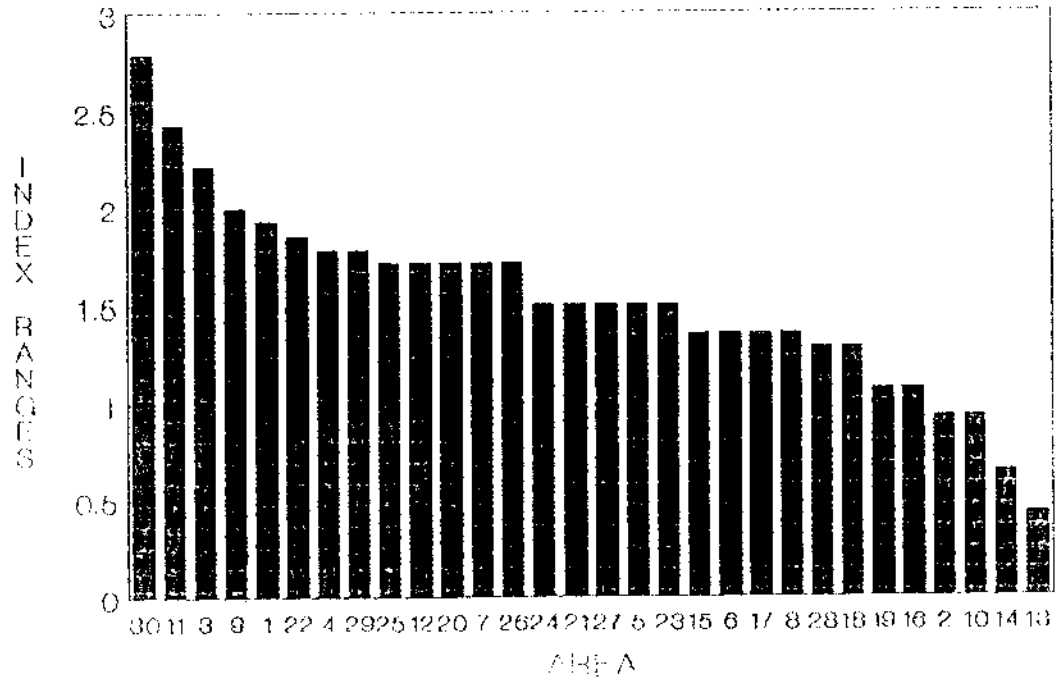
GRAPH 55
CHILD MORBIDITY INDEX



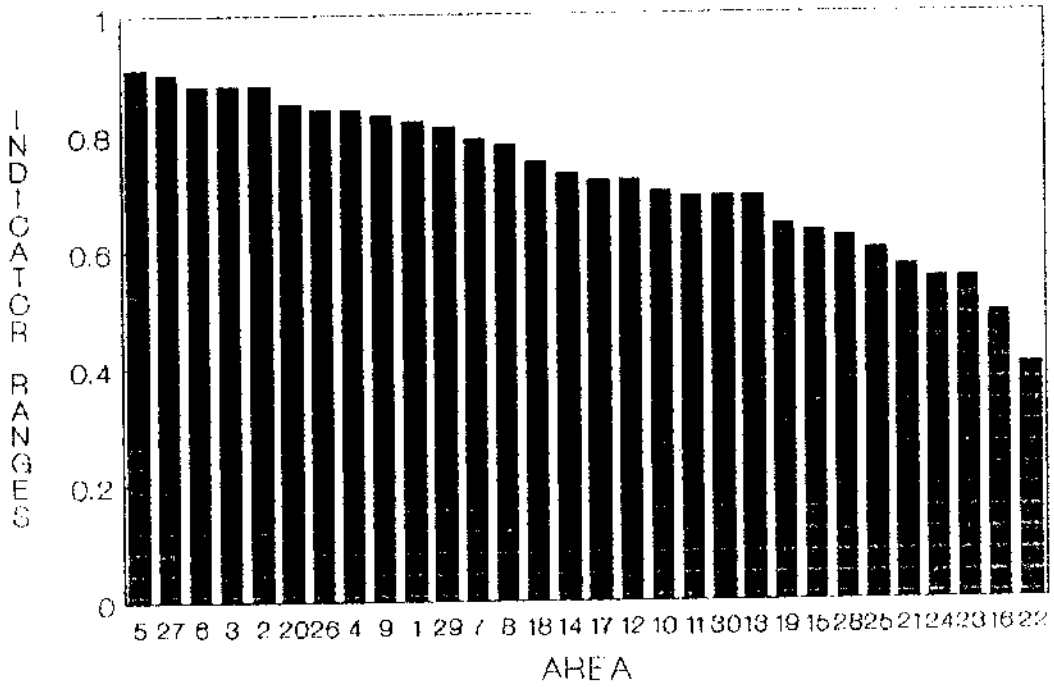
GRAPH 66
TRADITIONAL CURATIVE CARE INDICATOR



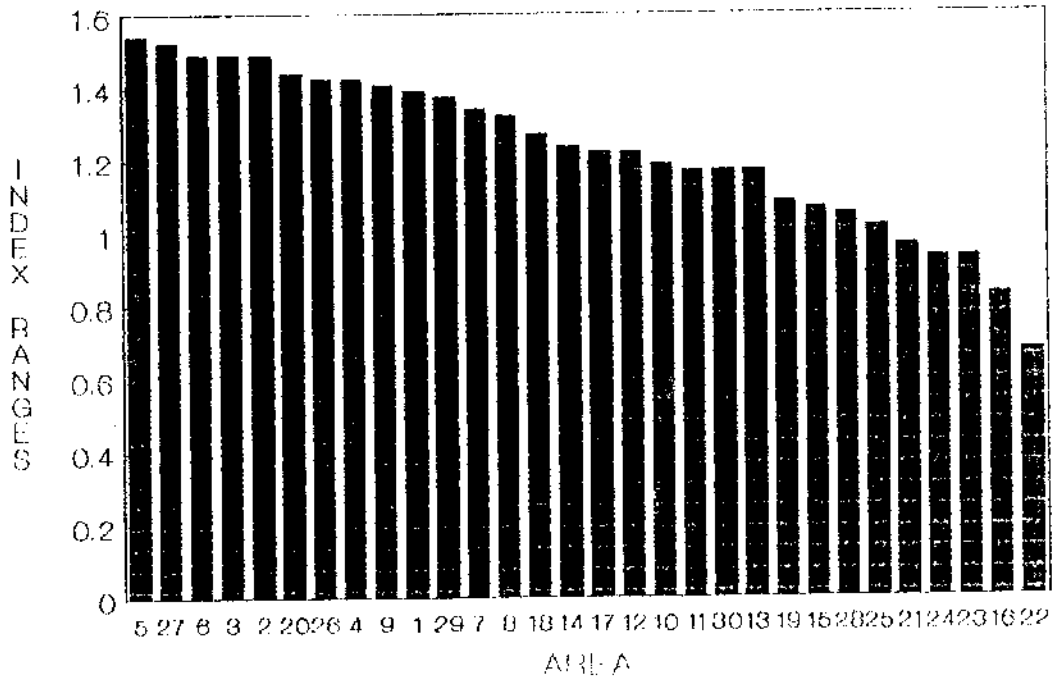
GRAPH 67
TRADITIONAL CURATIVE CARE INDEX



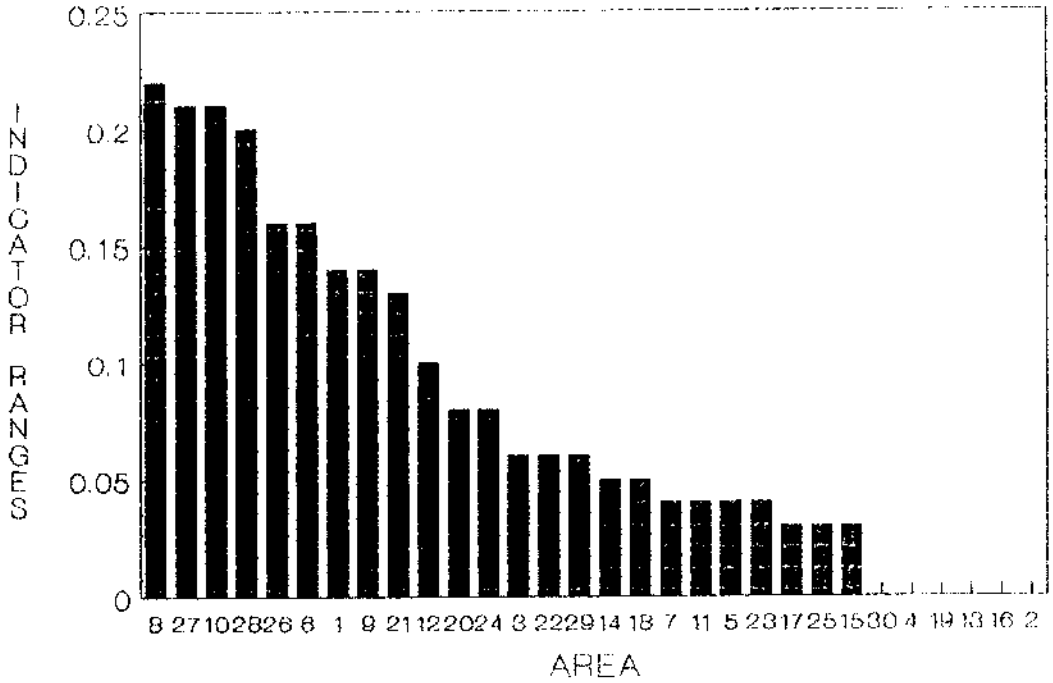
GRAPH 58
LACK OF HEALTH EDUCATION INDICATOR



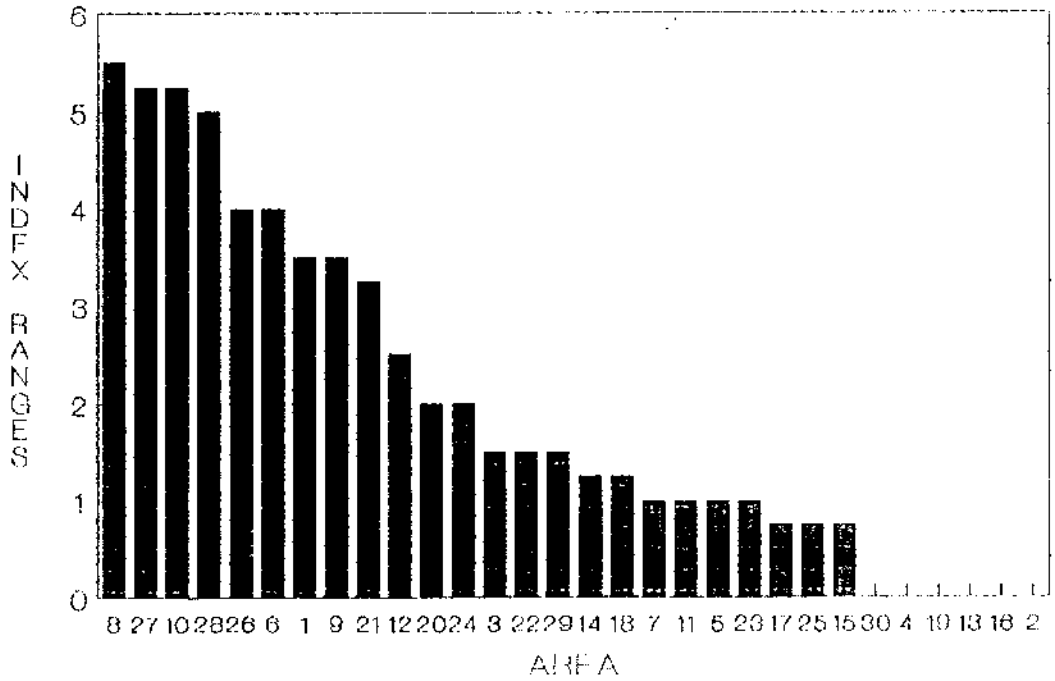
GRAPH 59
LACK OF HEALTH EDUCATION INDEX



GRAPH 60
LACK OF IMMUNIZATION INDICATOR



GRAPH 61
LACK OF IMMUNIZATION INDEX



II: PART TWO: TECHNICAL SECTION

C. CONSTRUCTION OF POVERTY INDICATORS AND INDICES

1. Overall Explanation

The methodology applied in studying poverty--defined in terms of lack of choice--includes constructs and calculations for different levels. Such concepts and constructs are set forth below:

1.1 Indicators

The indicator is a quotient obtained from dividing a particular poverty variable by a context variable. It is called a "poverty variable" because it points out to an feature or condition contributing to poverty. It is divided by a context variable to achieve comparable values. (Sections 3 - 7 of this chapter, first parts).

1.2 Individual Indices

Every individual index is also a quotient resulting from dividing an indicator by a reference value (reference standard). (Sections 3-7 of this chapter, intermediate parts).

1.3 Reference Standards

Reference standards are statistical values calculated on the basis of each municipio indicator value. It

establishes a development target (section 9 of this chapter).

1.4 Other Concepts

For testing purposes, sectorial indices were constructed, representing an average of individual indices. (Section 3-7 of this chapter, final parts). And an Overall Weight Index was constructed, adding the Sectorial Composite Indices. (Section 8 of this chapter).

1.5 Patterns of systematic weight variation

To simulate effects of alternative development policies, varying weight patterns were developed (Section 10 of this chapter).

This chapter deals with the construction of sector-related indicators, indices and reference standards in the following order: agriculture, economics, education, infrastructure and health. It presents the pattern of weights utilized. Because the language is symbolic, a presentation and explanation, of such symbology is included. (Section 2 of this chapter).

The results of the calculations are presented in Chapter D.

2. Symbology

2.1 Definition of simple symbols

Indicators		Indices	
a =	agriculture	A:	Agriculture
y =	economics	Y:	Economics
e =	education	E:	Education
c =	communication & infrastructure	C:	Communications & Infrastructure
h =	health	H:	Health

R = Target/Reference Standard value

w = Weight

2.2 Compound symbols

- Composite indices:

A = Agriculture sector index

Y = Economics sector index

E = Education sector index

C = Communications and infrastructure sector index

H = Health sector index

- Individual indices:

Aj = Individual index No. j in Agriculture;

j = 1, 2, 3, 4, 5.

Yj = Individual index No. j in Economics;

j = 1, 2, 3, 4, 5, 6, 7.

Ej = Individual index No. j in Education; male and female

j = 1, 2, 3.

Cj = Individual index No. j in Infrastructure;

j = 1, 2, 3, 4, 5.

Hj = Individual index No. j in Health

j = 1, 2, 3, 4.

Examples:

A1 = Individual index No. 1 in agriculture

Y5 = Individual index No. 5 in economics

E2 = Individual index No. 2 in education

C4 = Individual index No. 4 in infrastructure

H3 = Individual index No. 3 in health

Individual Indicators

aj = Individual indicator No. j in Agriculture;

j = 1,2,3,4,5.

yj = Individual indicator No. j in Economics;

j = 1,2,3,4,5.

ej = Individual indicator No. j in Education; male and female

j = 1, 2, 3.

cj = Individual indicator No. j in Infrastructure;

j = 1, 2, 3, 4, 5.

hj = Individual indicator No. j in Health

j = 1, 2, 3, 4.

Examples

a5 = Agriculture Indicator No. 5

y2 = Economics Indicator No. 2

e1 = Education Indicator No. 1

c3 = Infrastructure Indicator No. 3

h4 = Health Indicator No. 4

3. Agriculture Indicators and Indices

3.1 Indicators

$$a1 = \frac{\text{Number of manzanas other than owned by family}}{\text{Number of manzanas utilized by the family}}$$

$$a2 = \frac{\text{Yields of corn[a] production in the area}}{\text{Yields of corn at highest yielding municipio}}$$

$$a3 = \frac{\text{Number of farms less than 5 manzanas which failed to produce at least 2 non-traditional agricultural products in the last three years}}{\text{Total number of farms less than 5 manzanas in size}}$$

---

a/ Corn Yield: $\frac{\text{Number of quintales of corn obtained}}{\text{Number of planted hectares}}$

$$a4 = \frac{\text{Number of farms less than 5 manzanas which have failed to utilize fertilizers, pesticides, high yield seed or irrigation in the last three years}}{\text{Total number of farms less than 5 manzanas in size}}$$

a5 = Average number of kilometers to the closest marketplace per family.[4]

3.2 Indices

Formulas	Reference Standards
No land ownership	
$A1 = \frac{a1}{Ra1}$	Ra1 = 0.04
Low Yields of Corn Production:	
$A2 = \frac{a2}{Ra2}$	Ra2 = 0.30
Agriculture Traditionality:	
$A3 = \frac{a3}{Ra3}$	Ra3 = 0.05
Technologic Deficiency:	
$A4 = \frac{a4}{Ra4}$	Ra4 = 0.1

4/ This indicator will not be part of the composite

3.3 Sector Index

$$A = \frac{A1 + A2 + A3 + A4}{4}$$

4. Economics Indicators and Indices

4.1 Indicators

$$y1 = \frac{\text{Number of families whose annual expenses are less than Q1,400}}{\text{Total number of families}}$$

$$y2 = \frac{\text{The family's monthly expenditures in food and energy (amount in quetzales)}}{\text{The family's total monthly expenditures}}$$

$$y3 = \frac{\text{Number of families which have not saved a portion of their income, nor own pigs}}{\text{Total number of families}}$$

$$y4 = \frac{\text{Number of people over 10 years old employed less than 8 weeks this year}}{\text{Total number of people over 10 years old who have been employed}}$$

$$y5 = \frac{\text{Number of people employed in agriculture at least 80\% of the time this year}}{\text{Total number of people employed}}$$

$$y6 = \frac{\text{Number of working days with no income earned this year}}{\text{Total number of working days up to May 1990}}$$

$$y7 = \frac{\text{Number of farms less than 5 manzanas in size other than owned}}{\text{Total number of farms less than 5 manzanas}}$$

4.2 Indices

Formulas	Reference Standards
Expenditure incapacity index	
$Y1 = \frac{y1}{Ry1}$	$Ry1 = 0.17$
Subsistence expense index:	
$Y2 = \frac{y2}{Ry2}$	$Ry2 = 0.63$
Savings Incapacity index:	
$Y3 = \frac{y3}{Ry3}$	$Ry3 = 0.47$
Unemployment Index:	
$Y4 = \frac{y4}{Ry4}$	$Ry4 = 0.6$

Agriculture Employment Index:

$$Y5 = \frac{y5}{Ry5} \qquad Ry5 = 0.27$$

Lack of income caused by unemployment:

$$Y6 = \frac{y6}{Ry6} \qquad Ry6 = 2.5$$

Lack of land ownership:

$$Y7 = \frac{y7}{Ry7} \qquad Ry7 = 0.28$$

4.3 Sector Index

$$Y = \frac{Y1 + Y2 + Y3 + Y4 + Y5 + Y6 + Y7}{7}$$

5. Education Indicators and Indices

5.1 Indicators

$$e1 = \frac{\text{Number of people over 12 who cannot read}}{\text{Total number of people over 12}}$$

$$e2 = \frac{\text{Number of people over 12 who have not completed three primary grades}}{\text{Total number of people over 12}}$$

$$e3 = \frac{\text{Number of people over 12 who registered in school at some time, but dropped out.}}{\text{Total number of people registered in school}}$$

5.2 Indices

Formulas	Reference Standards
Illiteracy index:	
$E1 = \frac{e1}{Re1}$	Re1 = 0.17
Lack of schooling index:	
$E2 = \frac{e2}{Re2}$	Re2 = 0.47
School dropout index:	
$E3 = \frac{e3}{Re3}$	Re3 = 0.06
by Gender:	
Male illiteracy index:	
$E1m = \frac{e1m}{Re1}$	Re1 = 0.17
Female illiteracy index:	
$E1f = \frac{e1f}{Re1}$	Re1 = 0.17

Male Lack of Schooling Index:

$$E2m = \frac{ie2m}{R} \qquad Re2 = 0.47$$

Female Lack of Schooling Index:

$$E2f = \frac{ie2f}{R} \qquad Re2 = 0.47$$

Male Dropout index:

$$E3m = \frac{e3m}{Re3} \qquad Re3 = 0.47$$

Female Dropout Index:

$$E3f = \frac{e3f}{Re3} \qquad Re3 = 0.47$$

5.3 <u>Sector Index</u>

$$E = \frac{E1 + E2 + E3}{3}$$

Please note that in the general indices, both numerator and denominator variables add both gender frequencies. However, indices by gender have only taken into account the frequencies of each gender.

6. Infrastructure Indicators and Indices

6.1 Indicators

$$c1 = \frac{\text{Number of families having no access to a water supply (public water supply, wells)}}{\text{Total number of families}}$$

$$c2 = \frac{\text{Number of families who do not own their house}}{\text{Total number of families}}$$

$$c3 = \frac{\text{Number of families who do not have a radio receiver}}{\text{Total number of families}}$$

$$c4 = \frac{\text{Number of families with no domestic electric power supply}}{\text{Total number of families}}$$

$$c5 = \frac{\text{Number of families with no underground drainage systems}}{\text{Total number of families}}$$

6.2 Indices

Formulas	Reference Standards
Lack of domestic use water supply index:	
$C1 = \frac{c1}{Rc1}$	$Rc1 = 0.03$

Lack of home ownership index:

$$C2 = \frac{c2}{Rc2} \qquad Rc2 = 0.05$$

Lack of radio receiver index:

$$C3 = \frac{c3}{Rc3} \qquad Rc3 = 0.13$$

Lack of electrical power supply index:

$$C4 = \frac{c4}{Rc4} \qquad Rc4 = 0.14$$

Lack of underground drainage index:

$$C5 = \frac{c5}{Rc5} \qquad Rc5 = 0.5$$

6.3 Sector Index

$$C = \frac{C1 + C2 + C3 + C4 + C5}{5}$$

7. Health Indicators and Indices

7.1 Indicators

$$h1 = \frac{\text{Number of children under 5 years old who have been ill this year}}{\text{Number of children under 5 years old}}$$

$$h2 = \frac{\text{Number of families which have had an ill member this year and which have not received medical assistance from a doctor, Health Center or hospital}}{\text{Number of families having members who were ill this year}}$$

$$h3 = \frac{\text{Number of families with children under 3 which have not participated in any health education program this year}}{\text{Number of families having children under 3 years of age}}$$

$$h4 = \frac{\text{Number of children under 3 with no immunization coverage}}{\text{Number of children under 3}}$$

7.2 Indices

Formulas	Reference Standards
Child Morbidity Index:	
$H1 = \frac{h1}{Rh1}$	$Rh1 = 0.48$
Traditional curative care index:	
$H2 = \frac{h2}{Rh2}$	$Rh2 = 0.14$

Lack of health education index:

$$H3 = \frac{h3}{Rh3} \qquad Rh3 = 0.59$$

Lack of immunization coverage index:

$$H4 = \frac{h4}{Rh4} \qquad Rh4 = 0.04$$

7.3 Sector Index

$$H = \frac{H1 + H2 + H3 + H4}{4}$$

8. The Overall Poverty Index

$$P = \frac{A + Y + E + C + H}{5}$$

9. Reference Standard Generation Procedure

The procedure to determine reference standards was as follows:

When each indicator was calculated, 30 values were obtained: one for each municipio. With these 30 values, the mean or simple average (x) and the standard deviation (s) were obtained for each indicator.

The standard deviation can be subtracted half times, once, one and a half times, twice, etc., from the average. The amount of standard deviation subtracted is know as z value.

Chart No. 17 shows each indicator, its maximum value, its mean, its minimum value, and its standard deviation. With these data before us, the decision was made as to the z value to be subtracted from each indicator's mean, trying to avoid that the subtraction result be very close to or very far away from the indicator's minimum value. The chart shows the value z applied to each indicator. Following that, the subtraction was made.

The subtraction result is the reference standard and its value is lower than the mean, as it should be kept in mind that the indicators symbolize poverty conditions. The greater the value, the greater the level of poverty. If the reference standard should act as a development or well-being target, its value must be lower than the average. This is the reason why the standard deviation was subtracted from the average. The subtraction result, in other words, the reference standard obtained, was included in the chart.

Additional information, some national figures obtained

from official documents, were also included in the chart and can also be used as reference standards. This is chart No. 31.

One advantage of using indices over simple indicators, is that indices require quantitative thinking in terms of targets and objectives, as well as policies and priorities. The selection of a reference standard is in itself the establishment of a target.

10. Weights

One way to anticipate or simulate the effects on living conditions of undertaking alternative socio-economic development policies and programs is by applying varying weights on the indices by sector and observing the effects it has over index values.

The following pattern of alternative weights was used in the study:

CHART NO. 5

Patterns of Weight Variation

Sector	A	B	C	D	E	F	G	H	I	J	K
Agriculture	1	0	0	0	0	0.2	0.4	0.15	0.15	0.15	0.15
Economics	0	1	0	0	0	0.2	0.15	0.4	0.15	0.15	0.15
Education	0	0	1	0	0	0.2	0.15	0.15	0.4	0.15	0.15
Infrastructure	0	0	0	1	0	0.2	0.15	0.15	0.15	0.4	0.15
Health	0	0	0	0	1	0.2	0.15	0.15	0.15	0.15	0.4
TOTAL	1	1	1	1	1	1.0	1.00	1.00	1.00	1.00	1.00

A: Only the agriculture sector intervenes

B: Only the economics sector intervenes

C: Only the education sector intervenes

D: Only the infrastructure sector intervenes

E: Only the health sector intervenes

F: All sector equally intervene

From G through K, sectors intervene according to the assigned weights.

D. Charts of Results

This chapter contains charts with data obtained in various stages of the assessment laying the groundwork for the preceeing graphs. The individual indicator values obtained for each municipio, by sector (Charts 6 - 34) are presented first. They are followed by a chart containing statistical data utilized to generate targets or reference standards (Chart 35). After that come charts with individual indices for each sector. Please note that two or three charts appear on the same page, each one with its own number, title and ranking of AID and non-AID block areas (Charts 36 through 64). Following the latter, charts with some statistical data of individual indices (charts 65 through 69) are included, and finally, analogy measures among individual indices (charts 70 through 72). The reader should keep in mind that individual indices and indicators are not affected by scale problems, and the information it provides is substantial.

1. Charts of Indicator Results

1.1 Agriculture Sector

6				7			
Lack of Land Ownership				Low Corn Yields			
*AID N-AID	COD	MUNICIPIO	a1	AID N-AID	COD	MUNICIPIO	a2
1	3	Sumpango	0.31	1	30	Sta. Cruz del Quiche	0.93
1	1	Sn. Pedro Sctpqz.	0.19	1	1	Sn. Pedro Sctpqz.	0.93
1	4	Ciudad Vieja	0.17	1	10	Solola	0.92
1	25	Esquipulas Palo Gordo	0.17	1	28	Sn. Cristobal Ttncpn.	0.90
1	13	Panajachel	0.14	1	21	Chiantla	0.88
1	30	Sta. Cruz del Quiche	0.08	1	24	Tejutla	0.79
1	21	Chiantla	0.08	1	14	Sn. Andres Semetabaj	0.69
1	19	Sibilia	0.07	1	3	Sumpango	0.68
1	24	Tejutla	0.06	1	13	Panajachel	0.66
1	2	Sn. Juan Sctpqz.	0.06	1	16	Palestina	0.66
1	9	Sta. Cruz Balanya	0.05	1	25	Esquipulas Palo Gordo	0.59
1	18	Sn. Juan Ostnclc.	0.04	1	18	Sn. Juan Ostnclc.	0.59
1	16	Palestina	0.03	1	9	Sta. Cruz Balanya	0.56
1	14	Sn. Andres Semetabaj	0.02	1	4	Ciudad Vieja	0.54
1	11	Sta. Lucia Uttln.	0.01	1	11	Sta. Lucia Uttln.	0.50
1	10	Solola	0.00	1	2	Sn. Juan Sctpqz.	0.38
1	28	Sn. Cristobal Ttncpn.	0.00	1	19	Sibilia	0.32
1	27	Totonicapan	0.00	1	27	Totonicapan	0.03
2	22	Sn. Antonio Sctpqz	0.15	2	20	Aguacatan	0.90
2	8	Zaragoza	0.09	2	29	Chichicastenango	0.88
2	23	Sn. Pedro Sctpqz-SM	0.08	2	22	Sn. Antonio Sctpqz	0.59
2	6	Comalapa	0.05	2	15	Sn. Carlos Sija	0.59
2	17	Sn. Martin Sctpqz.	0.05	2	17	Sn. Martin Sctpqz.	0.55
2	5	Chimaltenango	0.04	2	5	Chimaltenango	0.52
2	7	Tecpan	0.04	2	6	Comalapa	0.46
2	20	Aguacatan	0.03	2	26	Momostenango	0.45
2	15	Sn. Carlos Sija	0.03	2	12	Nahuala	0.36
2	12	Nahuala	0.02	2	7	Tecpan	0.14
2	29	Chichicastenango	0.00	2	8	Zaragoza	0.02
2	26	Momostenango	0.00	2	23	Sn. Pedro Sctpqz-SM	0.00

* 1 = Municipios with USAID/Guatemala assistance

2 = Municipios without that assistance

8				9			
Agriculture Traditionality				Low Technology			
AID N-AID	COD	MUNICIPIO	a3	AID N-AID	COD	MUNICIPIO	a4
1	24	Tejutla	0.24	1	11	Sta. Lucia Utlin.	0.25
1	19	Sibilia	0.24	1	25	Esquipulas Palo Gorgo	0.25
1	16	Palestina	0.21	1	23	Sn. Cristobal Ttncpn.	0.24
1	9	Sta. Cruz Balanya	0.19	1	18	Sn. Juan Ostuncalco.	0.23
1	18	Sn. Juan Ostuncalco.	0.14	1	30	Sta. Cruz del Quiche	0.19
1	25	Esquipulas Palo Gorgo	0.13	1	16	Palestina	0.19
1	3	Sumpango	0.12	1	13	Panajachel	0.16
1	4	Ciudad Vieja	0.12	1	2	Sn. Juan Sctpqz.	0.15
1	30	Sta. Cruz del Quiche	0.07	1	24	Tejutla	0.13
1	14	Sn. Andres Semetabaj	0.05	1	1	Sn. Pedro Sctpqz.	0.13
1	11	Sta. Lucia Utlin.	0.05	1	9	Sta. Cruz Balanya	0.10
1	2	Sn. Juan Sctpqz.	0.04	1	27	Totonicapan	0.09
1	23	Sn. Cristobal Ttncpn.	0.04	1	21	Chiantla	0.07
1	27	Totonicapan	0.03	1	4	Ciudad Vieja	0.07
1	13	Panajachel	0.03	1	19	Sibilia	0.06
1	21	Chiantla	0.03	1	10	Solola	0.05
1	10	Solola	0.02	1	3	Sumpango	0.04
1	1	Sn. Pedro Sctpqz.	0.00	1	14	Sn. Andres Semetabaj	0.03
2	17	Sn. Martin Sctpqz.	0.33	2	23	Sn. Pedro Sctpqz-SM	0.26
2	20	Aguacatan	0.15	2	29	Chichicastenango	0.23
2	22	Sn. Antonio Sctpqz	0.15	2	12	Nahuala	0.13
2	15	Sn. Carlos Sija	0.12	2	22	Sn. Antonio Sctpqz	0.15
2	7	Tecpan	0.08	2	6	Comalapa	0.14
2	29	Chichicastenango	0.08	2	8	Zaragoza	0.12
2	8	Zaragoza	0.05	2	5	Chimaltenango	0.11
2	6	Comalapa	0.05	2	7	Tecpan	0.09
2	23	Sn. Pedro Sctpqz-SM	0.05	2	26	Momostenango	0.09
2	12	Nahuala	0.03	2	20	Aguacatan	0.06
2	5	Chimaltenango	0.02	2	15	Sn. Carlos Sija	0.05
2	26	Momostenango	0.01	2	17	Sn. Martin Sctpqz.	0.01

1.2 Economics Factor

10		11		12		13		17	
Total expenses incapacity		Subsistence		Savings incapacity		Unemployment			
COD AREA	y1	COD AREA	y2	COD AREA	y3	COD AREA	y4
6 Comalapa	0.78	12 Nahuala	0.90	3 Sumpango	0.91	22 Sn. Antonio Sctpqz	0.82
17 Sn. Martin Sctpqz.	0.45	11 Sta. Lucia Uttln.	0.84	4 Ciudad Vieja	0.88	21 Chiantla	0.76
28 Sn. Cristobal Ttncpn.	0.45	4 Ciudad Vieja	0.87	27 Totonicapan	0.81	3 Sumpango	0.75
11 Sta. Lucia Uttln.	0.45	25 Esquipulas Palo Gordo	0.87	13 Panajachel	0.81	25 Esquipulas Palo Gordo	0.74
12 Nahuala	0.43	13 Panajachel	0.86	12 Nahuala	0.79	17 Sn. Martin Sctpqz.	0.72
7 Tecpan	0.42	3 Sumpango	0.85	5 Chimaltenango	0.78	15 Sn. Carlos Sija	0.72
18 Sn. Juan Ostncic.	0.39	26 Momostenango	0.84	1 Sn. Pedro Sctpqz.	0.76	8 Zaragoza	0.71
20 Aguacatan	0.36	29 Chichicastenango	0.84	10 Solola	0.75	30 Sta. Cruz del Quiche	0.71
5 Chimaltenango	0.36	1 Sn. Pedro Sctpqz.	0.83	6 Comalapa	0.75	27 Totonicapan	0.71
24 Tejutla	0.36	10 Solola	0.82	11 Sta. Lucia Uttln.	0.75	10 Solola	0.71
16 Palestina	0.33	2 Sn. Juan Sctpqz.	0.81	23 Sn. Pedro Sctpqz-SM	0.75	23 Sn. Pedro Sctpqz-SM	0.71
29 Chichicastenango	0.33	5 Chimaltenango	0.81	15 Esquipulas Palo Gor.	0.72	24 Tejutla	0.70
9 Sta. Cruz Balanya	0.30	8 Zaragoza	0.81	2 Sn. Juan Sctpqz.	0.69	18 Sn. Juan Ostncic.	0.70
30 Sta. Cruz del Quiche	0.30	9 Sta. Cruz Balanya	0.81	29 Chichicastenango	0.68	26 Momostenango	0.70
25 Esquipulas Palo Gordo	0.30	20 Aguacatan	0.80	20 Aguacatan	0.65	29 Chichicastenango	0.68
22 Sn. Antonio Sctpqz	0.29	27 Totonicapan	0.79	14 Sn. Andres Semetabaj	0.66	9 Sta. Cruz Balanya	0.68
3 Sumpango	0.28	30 Sta. Cruz del Quiche	0.79	30 Sta. Cruz del Quiche	0.58	19 Sibilia	0.67
26 Momostenango	0.28	7 Tecpan	0.79	9 Sta. Cruz Balanya	0.58	16 Palestina	0.67
27 Totonicapan	0.28	22 Sn. Antonio Sctpqz	0.78	18 Sn. Juan Ostncic.	0.56	20 Aguacatan	0.64
19 Sibilia	0.27	21 Chiantla	0.78	7 Tecpan	0.56	28 Sn. Cristobal Ttncpn.	0.62
15 Sn. Carlos Sija	0.24	17 Sn. Martin Sctpqz.	0.78	21 Chiantla	0.87	5 Chimaltenango	0.60
14 Sn. Andres Semetabaj	0.22	23 Sn. Pedro Sctpqz-SM	0.76	8 Zaragoza	0.55	7 Tecpan	0.60
10 Solola	0.21	18 Sn. Juan Ostncic.	0.77	26 Momostenango	0.54	6 Comalapa	0.60
8 Zaragoza	0.19	16 Palestina	0.74	28 Sn. Cristobal Ttncpn.	0.49	12 Nahuala	0.63
21 Chiantla	0.16	6 Comalapa	0.73	16 Palestina	0.48	4 Ciudad Vieja	0.63
2 Sn. Juan Sctpqz.	0.13	28 Sn. Cristobal Ttncpn.	0.72	24 Tejutla	0.46	11 Sta. Lucia Uttln.	0.62
13 Panajachel	0.13	14 Sn. Andres Semetabaj	0.68	17 Sn. Martin Sctpqz.	0.46	2 Sn. Juan Sctpqz.	0.59
23 Sn. Pedro Sctpqz-SM	0.13	24 Tejutla	0.67	22 Sn. Antonio Sctpqz	0.35	14 Sn. Andres Semetabaj	0.58
1 Sn. Pedro Sctpqz.	0.12	15 Sn. Carlos Sija	0.65	15 Sn. Carlos Sija	0.32	13 Panajachel	0.56
4 Ciudad Vieja	0.06	19 Sibilia	0.65	19 Sibilia	0.24	1 Sn. Pedro Sctpqz.	0.54

14 Traditional Employment		15 Lack of Income Due to Unemployment		16 Lack of Farms	
COD AREA	%	COD AREA	%	COD AREA	%
3 Sumpango	0.74	22 Sn. Antonio Sctpqz	12.27	5 Chimaltenango	0.77
17 Sn. Martin Sctpqz.	0.73	27 Totonicapan	6.58	2 Sn. Juan Sctpqz.	0.72
19 Sibilia	0.69	14 Sn. Andres Semetabaj	6.23	1 Sn. Pedro Sctpqz.	0.71
18 Sn. Juan Ostncic.	0.60	11 Sta. Lucia Uttln.	5.48	13 Panajachel	0.71
20 Aguacatan	0.58	21 Chiantla	5.26	4 Ciudad Vieja	0.65
15 Sn. Carlos Sija	0.57	25 Esquipulas Palo Gordo	4.93	8 Zaragoza	0.58
25 Esquipulas Palo Gordo	0.56	9 Sta. Cruz Balanya	4.58	21 Chiantla	0.54
6 Comalapa	0.45	18 Sn. Juan Ostncic.	4.36	3 Sumpango	0.51
8 Zaragoza	0.45	5 Chimaltenango	4.03	20 Aguacatan	0.51
16 Palestina	0.45	8 Zaragoza	4.01	7 Tecpan	0.51
9 Sta. Cruz Balanya	0.44	12 Nahuala	3.77	10 Solola	0.51
22 Sn. Antonio Sctpqz	0.38	7 Tecpan	3.67	14 Sn. Andres Semetabaj	0.46
21 Chiantla	0.36	4 Ciudad Vieja	3.64	23 Sn. Pedro Sctpqz-SM	0.47
24 Tejutla	0.32	20 Aguacatan	3.39	29 Chichicastenango	0.40
12 Nahuala	0.32	26 Momostenango	3.19	27 Totonicapan	0.45
7 Tecpan	0.31	23 Sn. Pedro Sctpqz-SM	3.15	15 Sn. Juan Ostncic.	0.41
11 Sta. Lucia Uttln.	0.31	30 Sta. Cruz del Quiche	3.07	16 Momostenango	0.40
28 Sn. Cristobal Ttncpn.	0.29	13 Panajachel	3.05	30 Sta. Cruz del Quiche	0.3[illegible]
14 Sn. Andres Semetabaj	0.25	1 Sn. Pedro Sctpqz.	2.94	6 Comalapa	0.3[illegible]
10 Solola	0.24	29 Chichicastenango	2.82	12 Nahuala	0.34
30 Sta. Cruz del Quiche	0.24	28 Sn. Cristobal Ttncpn.	2.62	28 Sn. Cristobal Ttncpn.	0.34
5 Chimaltenango	0.21	6 Comalapa	2.36	11 Sta. Lucia Uttln.	0.32
13 Panajachel	0.21	10 Solola	1.92	15 Sn. Carlos Sija	0.31
23 Sn. Pedro Sctpqz-SM	0.20	2 Sn. Juan Sctpqz.	1.36	25 Esquipulas Palo Gordo	0.31
2 Sn. Juan Sctpqz.	0.18	3 Sumpango	1.35	16 Palestina	0.[illegible]
4 Ciudad Vieja	0.17	24 Tejutla	1.14	9 Sta. Cruz Balanya	0.17
29 Chichicastenango	0.17	15 Sn. Carlos Sija	1.14	22 Sn. Antonio Sctpqz	0.16
26 Momostenango	0.17	19 Sibilia	1.35	17 Sn. Martin Sctpqz.	0.15
27 Totonicapan	0.12	16 Palestina	0.72	19 Sibilia	0.12
1 Sn. Pedro Sctpqz.	0.09	17 Sn. Martin Sctpqz.	0.34	24 Tejutla	0.21

1.3 Education Sector

17

Male illiteracy indicator

AID X-AID	CDD	MUNICIPIO	elm
1	17	Sn. Martin Sctpqz.	0.31
1	28	Sn. Cristobal Ttncpn.	0.29
1	18	Sn. Juan Ostncic.	0.26
1	11	Sta. Lucia Uttin.	0.23
1	7	Tecpan	0.22
1	30	Sta. Cruz del Quiche	0.19
1	13	Panajachel	0.17
1	8	Zaragoza	0.16
1	24	Tejutla	0.15
1	1	Sn. Pedro Sctpqz.	0.15
1	21	Chiantla	0.14
1	22	Sn. Antonio Sctpqz	0.13
1	19	Sibilia	0.12
1	25	Esquipulas Palo Gorco	0.11
1	4	Ciudad Vieja	0.10
1	9	Sta. Cruz Balanya	0.07
2	12	Nahuala	0.33
2	29	Chichicastenango	0.31
2	20	Aguacatan	0.29
2	27	Totonicapan	0.25
2	26	Momostenango	0.23
2	10	Solola	0.23
2	2	Sn. Juan Sctpqz.	0.21
2	14	Sn. Andres Semetabaj	0.19
2	3	Sumpango	0.18
2	5	Chimaltenango	0.17
2	6	Comalapa	0.17
2	15	Sn. Carlos Sija	0.16
2	16	Palestina	0.15
2	23	Sn. Pedro Sctpqz-SM	0.11

16

Male lack of education

AID X-AID	CDD	MUNICIPIO	elm
1	17	Sn. Martin Sctpqz.	0.69
1	18	Sn. Juan Ostncic.	0.62
1	22	Sn. Antonio Sctpqz	0.56
1	11	Sta. Lucia Uttin.	0.58
1	7	Tecpan	0.55
1	21	Chiantla	0.55
1	30	Sta. Cruz del Quiche	0.54
1	28	Sn. Cristobal Ttncpn.	0.51
1	25	Esquipulas Palo Gorco	0.46
1	24	Tejutla	0.47
1	19	Sibilia	0.46
1	6	Zaragoza	0.46
1	13	Panajachel	0.44
1	1	Sn. Pedro Sctpqz.	0.44
1	4	Ciudad Vieja	0.42
1	9	Sta. Cruz Balanya	0.33
2	20	Aguacatan	0.56
2	12	Nahuala	0.53
2	29	Chichicastenango	0.50
2	27	Totonicapan	0.50
2	26	Momostenango	0.48
2	10	Solola	0.50
2	3	Sumpango	0.52
2	10	Solola	0.50
2	16	Palestina	0.50
2	15	Sn. Carlos Sija	0.49
2	2	Sn. Juan Sctpqz.	0.46
2	6	Comalapa	0.45
2	14	Sn. Andres Semetabaj	0.43
2	5	Chimaltenango	0.43
2	23	Sn. Pedro Sctpqz-SM	0.43

15

Male School-to-Dropout

AID X-AID	CDD	MUNICIPIO	elm
1	7	Tecpan	0.30
1	11	Sta. Lucia Uttin.	0.25
1	13	Panajachel	0.15
1	22	Sn. Antonio Sctpqz	0.21
1	21	Chiantla	0.15
1	25	Esquipulas Palo Gorco	0.13
1	18	Sn. Juan Ostncic.	0.10
1	1	Sn. Pedro Sctpqz.	0.12
1	24	Tejutla	0.11
1	28	Sn. Cristobal Ttncpn.	0.10
1	9	Sta. Cruz Balanya	0.07
1	4	Ciudad Vieja	0.07
1	8	Zaragoza	0.09
1	30	Sta. Cruz del Quiche	0.09
1	17	Sn. Martin Sctpqz.	0.03
1	19	Sibilia	0.03
2	12	Nahuala	0.34
2	10	Solola	0.32
2	27	Totonicapan	0.28
2	26	Momostenango	0.15
2	6	Comalapa	0.23
2	14	Sn. Andres Semetabaj	0.17
2	29	Chichicastenango	0.17
2	20	Aguacatan	0.15
2	3	Sumpango	0.09
2	23	Sn. Pedro Sctpqz-SM	0.05
2	2	Sn. Juan Sctpqz.	0.05
2	16	Palestina	0.06
2	15	Sn. Carlos Sija	0.04
2	5	Chimaltenango	0.02

20

Female Illiteracy

AID N-AID	COD	MUNICIPIO	eif
1	17	Sn. Martin Sctpqz.	0.50
1	26	Sn. Cristobal Ttncpn.	0.40
1	11	Sta. Lucia Uttln.	0.36
1	30	Sta. Cruz del Quiche	0.35
1	18	Sn. Juan Ostncic.	0.34
1	22	Sn. Antonio Sctpqz	0.34
1	1	Sn. Pedro Sctpqz.	0.29
1	21	Chiantla	0.27
1	13	Panajachel	0.26
1	7	Tecpan	0.25
1	6	Zaragoza	0.24
1	25	Esquipulas Palo Gordo	0.21
1	19	Sibilia	0.18
1	24	Tejutla	0.17
1	9	Sta. Cruz Balanya	0.17
1	4	Ciudad Vieja	0.16
2	29	Chichicastenango	0.50
2	12	Nahuala	0.49
2	27	Totonicapan	0.44
2	20	Aguacatan	0.39
2	10	Solola	0.39
2	3	Sumpango	0.37
2	26	Momostenango	0.36
2	2	Sn. Juan Sctpqz.	0.33
2	6	Comalapa	0.28
2	23	Sn. Pedro Sctpqz-SM	0.27
2	14	Sn. Andres Semetabaj	0.26
2	5	Chimaltenango	0.25
2	15	Sn. Carlos Sija	0.23
2	16	Palestina	0.20

21

Lack of Female Schooling

AID N-AID	COD	MUNICIPIO	e3f
1	17	Sn. Martin Sctpqz.	0.83
1	22	Sn. Antonio Sctpqz	0.72
1	30	Sta. Cruz del Quiche	0.73
1	26	Sn. Cristobal Ttncpn.	0.69
1	18	Sn. Juan Ostncic.	0.68
1	11	Sta. Lucia Uttln.	0.63
1	21	Chiantla	0.60
1	7	Tecpan	0.60
1	1	Sn. Pedro Sctpqz.	0.57
1	25	Esquipulas Palo Gordo	0.55
1	6	Zaragoza	0.54
1	24	Tejutla	0.52
1	13	Panajachel	0.52
1	4	Ciudad Vieja	0.51
1	19	Sibilia	0.50
1	9	Sta. Cruz Balanya	0.45
2	12	Nahuala	0.75
2	29	Chichicastenango	0.75
2	3	Sumpango	0.73
2	20	Aguacatan	0.72
2	26	Momostenango	0.67
2	27	Totonicapan	0.63
2	10	Solola	0.61
2	16	Palestina	0.59
2	2	Sn. Juan Sctpqz.	0.59
2	14	Sn. Andres Semetabaj	0.57
2	23	Sn. Pedro Sctpqz-SM	0.55
2	6	Comalapa	0.54
2	15	Sn. Carlos Sija	0.52
2	5	Chimaltenango	0.46

22

Female School Dropout

AID N-AID	COD	MUNICIPIO	e4f
1	11	Sta. Lucia Uttln.	0.33
1	7	Tecpan	0.32
1	13	Panajachel	0.22
1	21	Chiantla	0.20
1	25	Esquipulas Palo Gordo	0.16
1	22	Sn. Antonio Sctpqz	0.16
1	1	Sn. Pedro Sctpqz.	0.11
1	4	Ciudad Vieja	0.11
1	26	Sn. Cristobal Ttncpn.	0.11
1	18	Sn. Juan Ostncic.	0.11
1	6	Zaragoza	0.09
1	24	Tejutla	0.09
1	30	Sta. Cruz del Quiche	0.09
1	9	Sta. Cruz Balanya	0.06
1	17	Sn. Martin Sctpqz.	0.04
1	19	Sibilia	0.02
2	26	Momostenango	0.30
2	27	Totonicapan	0.29
2	12	Nahuala	0.26
2	10	Solola	0.23
2	6	Comalapa	0.21
2	29	Chichicastenango	0.16
2	14	Sn. Andres Semetabaj	0.15
2	20	Aguacatan	0.15
2	3	Sumpango	0.13
2	23	Sn. Pedro Sctpqz-SM	0.06
2	2	Sn. Juan Sctpqz.	0.06
2	16	Palestina	0.05
2	5	Chimaltenango	0.05
2	15	Sn. Carlos Sija	0.04

23

Illiteracy

AID	N-AID	COD	MUNICIPIO	e1
1		17	Sn. Martin Sctpqz.	0.40
1		28	Sn. Cristobal Ttncpn.	0.35
1		18	Sn. Juan Ostncic.	0.30
1		11	Sta. Lucia Uttln.	0.29
1		20	Sta. Cruz del Quiche	0.28
1		7	Tecpan	0.24
1		22	Sn. Antonio Sctpqz	0.24
1		13	Panajachel	0.22
1		1	Sn. Pedro Sctpqz.	0.22
1		21	Chiantla	0.21
1		8	Zaragoza	0.20
1		24	Tejutla	0.16
1		25	Esquipulas Palo Gordo	0.16
1		19	Sibilia	0.15
1		4	Ciudad Vieja	0.13
1		9	Sta. Cruz Balanya	0.12
2		12	Nahuala	0.41
2		29	Chichicastenango	0.40
2		20	Aguacatan	0.34
2		27	Totonicapan	0.34
2		26	Momostenango	0.31
2		10	Solola	0.28
2		3	Sumpango	0.28
2		2	Sn. Juan Sctpqz.	0.27
2		14	Sn. Andres Semetabaj	0.22
2		6	Comalapa	0.22
2		5	Chimaltenango	0.21
2		23	Sn. Pedro Sctpqz-SM	0.20
2		15	Sn. Carlos Sija	0.19
2		16	Palestina	0.17

24

Lack of Schooling

AID	N-AID	COD	MUNICIPIO	e2
1		17	Sn. Martin Sctpqz.	0.76
1		22	Sn. Antonio Sctpqz	0.65
1		15	Sn. Juan Ostncic.	0.59
1		20	Sta. Cruz del Quiche	0.52
1		28	Sn. Cristobal Ttncpn.	0.51
1		11	Sta. Lucia Uttln.	0.59
1		21	Chiantla	0.53
1		7	Tecpan	0.57
1		1	Sn. Pedro Sctpqz.	0.51
1		25	Esquipulas Palo Gordo	0.51
1		8	Zaragoza	0.50
1		24	Tejutla	0.50
1		19	Sibilia	0.46
1		13	Panajachel	0.48
1		4	Ciudad Vieja	0.46
1		9	Sta. Cruz Balanya	0.39
2		12	Nahuala	0.10
2		20	Aguacatan	0.70
2		29	Chichicastenango	0.66
2		26	Momostenango	0.64
2		3	Sumpango	0.65
2		27	Totonicapan	0.56
2		10	Solola	0.55
2		16	Palestina	0.54
2		2	Sn. Juan Sctpqz.	0.52
2		15	Sn. Carlos Sija	0.50
2		14	Sn. Andres Semetabaj	0.50
2		6	Comalapa	0.50
2		23	Sn. Pedro Sctpqz-SM	0.49
2		5	Chimaltenango	0.45

25

School dropout

AID	N-AID	COD	MUNICIPIO	e3
1		7	Tecpan	0.32
1		11	Sta. Lucia Uttln.	0.28
1		13	Panajachel	0.24
1		22	Sn. Antonio Sctpqz	0.19
1		21	Chiantla	0.17
1		25	Esquipulas Palo Gordo	0.16
1		1	Sn. Pedro Sctpqz.	0.12
1		18	Sn. Juan Ostncic.	0.11
1		28	Sn. Cristobal Ttncpn.	0.10
1		24	Tejutla	0.10
1		4	Ciudad Vieja	0.10
1		8	Zaragoza	0.09
1		20	Sta. Cruz del Quiche	0.09
1		9	Sta. Cruz Balanya	0.08
1		17	Sn. Martin Sctpqz.	0.04
1		19	Sibilia	0.02
2		12	Nahuala	0.21
2		26	Momostenango	0.29
2		29	Chichicastenango	0.28
2		27	Totonicapan	0.26
2		6	Comalapa	0.22
2		29	Chichicastenango	0.19
2		14	Sn. Andres Semetabaj	0.16
2		20	Aguacatan	0.13
2		3	Sumpango	0.11
2		23	Sn. Pedro Sctpqz-SM	0.06
2		2	Sn. Juan Sctpqz.	0.05
2		16	Palestina	0.05
2		15	Sn. Carlos Sija	0.04
2		5	Chimaltenango	0.03

2.4 Infrastructure Deficit

26 Lack of domestic water supply

RID N-RID	COD	MUNICIPIO	C1
1	1	Sn. Pedro Sctpqz.	0.21
1	22	Sn. Antonio Sctpqz	0.19
1	28	Sn. Cristobal Tincpn.	0.15
1	8	Zaragoza	0.12
1	15	Sn. Carlos Sija	0.04
1	2	Sn. Juan Sctpqz.	0.04
1	24	Tejutla	0.04
1	19	Sibilia	0.03
1	17	Sn. Martin Sctpqz.	0.03
1	13	Panajachel	0.01
1	4	Ciudad Vieja	0.01
1	25	Esquipulas Palo Gordo	0.01
1	23	Sn. Pedro Sctpqz-SM	0.01
1	14	Sn. Andres Semetabaj	0.01
2	3	Sumpango	0.22
2	21	Chiantla	0.16
2	18	Sn. Juan Ostuncalco	0.13
2	26	Momostenango	0.12
2	16	Palestina	0.07
2	20	Aguacatan	0.06
2	29	Chichicastenango	0.06
2	27	Totonicapan	0.06
2	5	Chimaltenango	0.03
2	7	Tecpan	0.03
2	30	Sta. Cruz del Quiche	0.01
2	10	Solola	0.01
2	6	Comalapa	0.01
2	11	Sta. Lucia Utlin.	0.00
2	12	Nahuala	0.00
2	9	Sta. Cruz Balanya	0.00

27 Lack of home ownership

RID N-RID	COD	MUNICIPIO	C2
1	4	Ciudad Vieja	0.20
1	14	Sn. Andres Semetabaj	0.16
1	8	Zaragoza	0.13
1	1	Sn. Juan Sctpqz.	0.13
1	22	Sn. Antonio Sctpqz	0.12
1	13	Sn. Pedro Sctpqz-SM	0.12
1	1	Sn. Pedro Sctpqz.	0.12
1	28	Sn. Cristobal Tincpn.	0.11
1	24	Tejutla	0.10
1	13	Panajachel	0.09
1	19	Sibilia	0.07
1	25	Esquipulas Palo Gordo	0.07
1	15	Sn. Carlos Sija	0.07
1	17	Sn. Martin Sctpqz.	0.03
2	30	Sta. Cruz del Quiche	0.30
2	5	Chimaltenango	0.24
2	21	Chiantla	0.19
2	20	Aguacatan	0.16
2	27	Totonicapan	0.16
2	10	Solola	0.13
2	29	Chichicastenango	0.12
2	16	Palestina	0.10
2	7	Tecpan	0.07
2	18	Sn. Juan Ostuncalco	0.07
2	26	Momostenango	0.06
2	11	Sta. Lucia Utlin.	0.06
2	6	Comalapa	0.04
2	12	Nahuala	0.04
2	3	Sumpango	0.04

28 Lack of Radio Receivers

RID N-RID	COD	MUNICIPIO	C3
1	22	Sn. Antonio Sctpqz	0.54
1	17	Sn. Martin Sctpqz.	0.43
1	24	Tejutla	0.37
1	28	Sn. Cristobal Tincpn.	0.35
1	8	Zaragoza	0.35
1	15	Sn. Carlos Sija	0.24
1	14	Sn. Andres Semetabaj	0.24
1	25	Esquipulas Palo Gordo	0.21
1	23	Sn. Pedro Sctpqz-SM	0.21
1	2	Sn. Juan Sctpqz.	0.13
1	13	Panajachel	0.12
1	19	Sibilia	0.10
1	4	Ciudad Vieja	0.07
1	1	Sn. Pedro Sctpqz.	0.07
2	20	Aguacatan	0.42
2	11	Sta. Lucia Utlin.	0.40
2	18	Sn. Juan Ostuncalco	0.40
2	12	Nahuala	0.39
2	7	Tecpan	0.27
2	6	Comalapa	0.27
2	29	Chichicastenango	0.25
2	10	Solola	0.25
2	27	Totonicapan	0.25
2	21	Chiantla	0.22
2	26	Momostenango	0.22
2	16	Palestina	0.22
2	5	Chimaltenango	0.18
2	30	Sta. Cruz del Quiche	0.16
2	9	Sta. Cruz Balanya	0.14
2	3	Sumpango	0.13

19

Lack of domestic power supply

AID N-AID	COD	MUNICIPIO	c4
1	22	Sn. Antonio Sctpqz	0.75
1	24	Tejutla	0.63
1	28	Sn. Cristobal Ttncon.	0.61
1	8	Zaragoza	0.61
1	17	Sn. Martin Sctpqz.	0.52
1	15	Sn. Carlos Sija	0.42
1	14	Sn. Andres Semetabaj	0.33
1	2	Sn. Juan Sctpqz.	0.19
1	23	Sn. Pedro Sctpqz-SM	0.19
1	25	Esquipulas Palo Gordo	0.16
1	1	Sn. Pedro Sctpqz.	0.09
1	19	Sibilia	0.09
1	13	Panajachel	0.07
1	4	Ciudad Vieja	0.04
2	20	Aguacatan	0.67
2	21	Chiantla	0.61
2	29	Chichicastenango	0.61
2	26	Momostenango	0.46
2	6	Comalapa	0.42
2	30	Sta. Cruz del Quiche	0.40
2	7	Tecpan	0.34
2	3	Sumpango	0.34
2	12	Nahuala	0.34
2	18	Sn. Juan Ostnclc.	0.33
2	11	Sta. Lucia Uttln.	0.28
2	16	Palestina	0.27
2	27	Totonicapan	0.21
2	10	Solola	0.13
2	5	Chimaltenango	0.07
2	9	Sta. Cruz Balanya	0.05

30

Lack of underground

AID N-AID	COD	MUNICIPIO	c5
1	25	Esquipulas Palo Gordo	0.78
1	8	Zaragoza	0.75
1	17	Sn. Martin Sctpqz.	0.72
1	22	Sn. Antonio Sctpqz	0.69
1	28	Sn. Cristobal Ttncon.	0.65
1	15	Sn. Carlos Sija	0.58
1	24	Tejutla	0.57
1	1	Sn. Pedro Sctpqz.	0.54
1	14	Sn. Andres Semetabaj	0.52
1	4	Ciudad Vieja	0.51
1	13	Panajachel	0.51
1	23	Sn. Pedro Sctpqz-SM	0.48
1	2	Sn. Juan Sctpqz.	0.48
1	19	Sibilia	0.46
2	3	Sumpango	0.76
2	6	Comalapa	0.67
2	29	Chichicastenango	0.64
2	18	Sn. Juan Ostnclc.	0.64
2	9	Sta. Cruz Balanya	0.61
2	21	Chiantla	0.58
2	26	Momostenango	0.58
2	5	Chimaltenango	0.56
2	30	Sta. Cruz del Quiche	0.58
2	20	Aguacatan	0.57
2	11	Sta. Lucia Uttln.	0.57
2	16	Palestina	0.55
2	27	Totonicapan	0.55
2	12	Nahuala	0.55
2	7	Tecpan	0.54
2	10	Solola	0.46

1.3 Health Services

31 Morbidity			32 Traditional Curative Care			33 Lack of Health Education			34 Lack of Immunization		
COD	AREA	Hi:COD	MUNICIPIO	Hi:COD	MUNICIPIO	Hi:COD	MUNICIPIO	Hi:COD	MUNICIPIO	Hi:COD	MUNICIPIO
1	Sn. Pedro Sctpqz.	0.90	30 Sta. Cruz del Quiche	0.39	5 Chimaltenango	0.91	8 Zaragoza	0.22	
7	Tecpan	0.89	11 Sta. Lucia Utlin.	0.34	27 Totonicapan	0.90	27 Totonicapan	0.21	
14	Sn. Andres Semetabaj	0.79	3 Sumpango	0.31	6 Comalapa	0.89	10 Solola	0.21	
16	Palestina	0.75	9 Sta. Cruz Balanya	0.28	3 Sumpango	0.88	18 Sn. Cristobal Ttncpn.	0.20	
4	Ciudad Vieja	0.75	1 Sn. Pedro Sctpqz.	0.27	2 Sn. Juan Sctpqz.	0.88	26 Momostenango	0.16	
19	Sibilia	0.75	22 Sn. Antonio Sctpqz	0.26	20 Aguacatan	0.85	6 Comalapa	0.16	
22	Sn. Antonio Sctpqz	0.74	4 Ciudad Vieja	0.25	26 Momostenango	0.84	1 Sn. Pedro Sctpqz.	0.14	
17	Sn. Martin Sctpqz.	0.74	29 Chichicastenango	0.25	4 Ciudad Vieja	0.84	9 Sta. Cruz Balanya	0.14	
5	Chimaltenango	0.72	20 Aguacatan	0.24	9 Sta. Cruz Balanya	0.83	21 Chiantla	0.13	
24	Tejutla	0.72	25 Esquipulas Palo Gordo	0.24	1 Sn. Pedro Sctpqz.	0.82	12 Nahuala	0.10	
21	Chiantla	0.71	7 Tecpan	0.24	29 Chichicastenango	0.81	20 Aguacatan	0.05	
18	Sn. Juan Ostuncalc.	0.68	12 Nahuala	0.24	7 Tecpan	0.79	24 Tejutla	0.05	
10	Solola	0.68	26 Momostenango	0.24	8 Zaragoza	0.76	3 Sumpango	0.06	
23	Sn. Pedro Sctpqz-SM	0.65	23 Sn. Pedro Sctpqz-SM	0.21	18 Sn. Juan Ostuncalc.	0.75	22 Sn. Antonio Sctpqz	0.06	
25	Esquipulas Palo Gordo	0.63	5 Chimaltenango	0.21	14 Sn. Andres Semetabaj	0.73	29 Chichicastenango	0.06	
2	Sn. Juan Sctpqz.	0.63	24 Tejutla	0.21	17 Sn. Martin Sctpqz.	0.72	14 Sn. Andres Semetabaj	0.05	
27	Totonicapan	0.62	27 Totonicapan	0.21	12 Nahuala	0.72	18 Sn. Juan Ostuncalc.	0.05	
15	Sn. Carlos Sija	0.62	21 Chiantla	0.21	10 Solola	0.70	7 Tecpan	0.04	
12	Nahuala	0.62	17 Sn. Martin Sctpqz.	0.19	11 Sta. Lucia Utlin.	0.69	11 Sta. Lucia Utlin.	0.04	
28	Sn. Cristobal Ttncpn.	0.61	6 Comalapa	0.19	30 Sta. Cruz del Quiche	0.69	5 Chimaltenango	0.04	
3	Sumpango	0.59	8 Zaragoza	0.19	13 Panajachel	0.67	23 Sn. Pedro Sctpqz-SM	0.04	
20	Aguacatan	0.57	15 Sn. Carlos Sija	0.19	19 Sibilia	0.64	17 Sn. Martin Sctpqz.	0.03	
13	Panajachel	0.57	18 Sn. Juan Ostuncalc.	0.18	15 Sn. Carlos Sija	0.63	25 Esquipulas Palo Gordo	0.03	
9	Sta. Cruz Balanya	0.57	28 Sn. Cristobal Ttncpn.	0.18	28 Sn. Cristobal Ttncpn.	0.61	15 Sn. Carlos Sija	0.03	
11	Sta. Lucia Utlin.	0.57	19 Sibilia	0.15	25 Esquipulas Palo Gordo	0.60	30 Sta. Cruz del Quiche	0.00	
8	Zaragoza	0.55	16 Palestina	0.15	21 Chiantla	0.57	4 Ciudad Vieja	0.00	
30	Sta. Cruz del Quiche	0.55	2 Sn. Juan Sctpqz.	0.13	24 Tejutla	0.56	19 Sibilia	0.00	
6	Comalapa	0.51	10 Solola	0.13	23 Sn. Pedro Sctpqz-SM	0.55	13 Panajachel	0.00	
26	Momostenango	0.50	14 Sn. Andres Semetabaj	0.09	16 Palestina	0.49	16 Palestina	0.00	
29	Chichicastenango	0.42	13 Panajachel	0.06	22 Sn. Antonio Sctpqz	0.43	2 Sn. Juan Sctpqz.	0.00	

2. Statistics to generate or determine boundaries

Chart 15

Sector and Indicators	Summary of Results: Highest Value	Lowest Value	Range	Average	Standard Deviation	T Value	Reference According To Consultores	Standards According to National Values
AGRICULTURE								
1. Land Ownership: (a1)	0.31	0.00	0.31	0.07	0.07	0.5	0.04	--
2. Lack of corn productivity: (a2)	0.93	0.00	0.93	0.57	0.27	1.0	0.32	--
3. Agriculture Traditionality: (a3)	0.33	0.00	0.33	0.10	0.06	0.3	0.05	--
4. Lack of Agriculture Technology: (a4)	0.25	0.03	0.22	0.13	0.07	0.5	0.10	--
ECONOMICS								
1. Expenditure power: (y1)	0.73	0.06	0.64	0.30	0.13	1.30	0.17	0.70
2. Subsistence: (y2)	0.90	0.65	0.25	0.79	0.07	1.13	0.87	0.61
3. Savings capacity: (y3)	0.91	0.32	0.67	0.60	0.16	1.00	0.47	0.41
4. Unemployment: (y4)	0.82	0.54	0.28	0.67	0.06	1.00	0.53	--
5. Traditional Employment: (y5)	0.74	0.05	0.69	0.36	0.19	0.18	0.27	--
6. Lack of income due to unemployment: (y6)	12.07	0.59	11.48	3.49	2.26	0.50	2.80	--
7. Farm Ownership: (y7)	0.77	0.21	0.56	0.44	0.16	1.00	0.28	--
EDUCATION								
1. Illiteracy: (e1)	0.41	0.12	0.29	0.28	0.06	1.00	0.17	0.46
2. Schooling: (e2)	0.70	0.45	0.25	0.56	0.09	1.00	0.47	0.75
3. Shool dropout: (e3)	0.32	0.22	0.10	0.15	0.09	1.00	0.06	0.23

Sector and Indicators	Summary of Results: Highest Value	Lowest Value	Range	Average	Standard Deviation	Z Value	Reference Standards: According to Consultores	According to National Values
INFRASTRUCTURE								
1. Acces to water of domestic use: (c1)	0.22	0.00	0.22	0.06	0.07	0.5	0.02	0.11
2. Home Ownership: (c2)	0.30	0.03	0.27	0.11	0.06	1.0	0.05	0.31
3. Availability of radio receptors: (c3)	0.54	0.07	0.47	0.15	0.12	1.0	0.11	0.39
4. Domestic electrical power supply: (c4)	0.75	0.04	0.71	0.34	0.21	1.3	0.14	0.63
5. Underground Drainage:(c5)	0.79	0.46	0.33	0.59	0.09	1.0	0.50	0.75
HEALTH								
1. Morbidity: (h1)	0.90	0.42	0.48	0.65	0.11	1.5	0.40	0.32
2. Traditional curative care: (h2)	0.39	0.06	0.33	0.21	0.07	1.0	0.14	0.45
3. Lack of Health Education: (h3)	0.91	0.40	0.51	0.72	0.13	1.0	0.59	0.38
4. Immunization: (h4)	0.22	0.00	0.22	0.08	0.07	0.5	0.34	--

3. Charts of Index Results

3.1 Agricultural problem

Lack of land ownership

AID N-AID	COD	AREA	A1
1	3	Sumpango	5.750
1	1	Sn. Pedro Sotpqz.	4.750
1	4	Ciudad Vieja	4.250
1	25	Esquipulas Palo Gordo	4.250
1	13	Panajachel	3.500
1	30	Sta. Cruz del Quiche	2.300
1	21	Chiantla	2.000
1	19	Sibilia	1.750
1	24	Tejutla	1.500
1	2	Sn. Juan Sotpqz.	1.500
1	9	Sta. Cruz Balanya	1.250
1	18	Sn. Juan Ostuncalco	1.000
1	16	Palestina	0.750
1	14	Sn. Andres Semetabaj	0.500
1	11	Sta. Lucia Utila.	0.250
1	10	Solola	0.000
1	28	Sn. Cristobal Totonicapan.	0.000
1	27	Totonicapan	0.000
2	22	Sn. Antonio Sotpqz	3.750
2	8	Zaragoza	2.250
2	23	Sn. Pedro Sotpqz-SM	2.000
2	6	Comalapa	1.250
2	17	Sn. Martin Sotpqz.	1.250
2	5	Chimaltenango	1.000
2	7	Tecpan	1.000
2	20	Aguacatan	0.750
2	15	Sn. Carlos Sija	0.750
2	12	Nahuala	0.000
2	29	Chichicastenango	0.000
2	26	Momostenango	0.000

Low corn yields

AID N-AID	COD	AREA	A2
1	30	Sta. Cruz del Quiche	3.895
1	1	Sn. Pedro Sotpqz.	3.895
1	10	Solola	3.857
1	28	Sn. Cristobal Totonicapan.	2.750
1	21	Chiantla	2.412
1	24	Tejutla	2.342
1	14	Sn. Andres Semetabaj	2.291
1	3	Sumpango	2.262
1	13	Panajachel	2.205
1	16	Palestina	2.195
1	25	Esquipulas Palo Gordo	1.930
1	18	Sn. Juan Ostuncalco	1.951
1	9	Sta. Cruz Balanya	1.863
1	4	Ciudad Vieja	1.385
1	11	Sta. Lucia Utila.	1.674
1	2	Sn. Juan Sotpqz.	1.276
1	19	Sibilia	1.079
1	27	Totonicapan	0.107
2	20	Aguacatan	3.804
2	29	Chichicastenango	2.914
2	22	Sn. Antonio Sotpqz	1.771
2	15	Sn. Carlos Sija	1.962
2	17	Sn. Martin Sotpqz.	1.829
2	5	Chimaltenango	1.716
2	6	Comalapa	1.348
2	26	Momostenango	1.518
2	12	Nahuala	1.191
2	7	Tecpan	0.476
2	8	Zaragoza	0.033
2	23	Sn. Pedro Sotpqz-SM	0.000

AID			AID		
D-AID COD AREA		m2	D-AID COD AREA		m2
1	14 Tejutla	4.500	1	11 Sta. Lucía Utila	1.500
1	19 Sipitate	4.000	1	17 Santiago Paso Borro	2.000
1	10 Palestina	4.100	1	10 Sn. Cristobal Itacoa	2.400
1	9 Sta. Cruz Balanya	3.500	1	22 Sn. Juan Betapla	2.000
1	16 Sn. Juan Letrero	2.800	1	13 Sta. Cruz del Quiche	1.700
1	25 Santiago Paso Burro	1.900	1	12 Palestina	1.700
1	7 Sucanango	1.400	1	21 Panajachel	1.600
1	4 Cruzo Vieja	2.400	1	1 Sn. Juan Sacapq.	1.300
1	30 Sta. Cruz del Quiche	1.400	1	14 Tejutla	1.300
1	14 Sn. Andres Semetabaj	1.300	1	1 Sn. Pedro Sacapq.	1.100
1	11 Sta. Lucía Utila	1.000	1	9 Sta. Cruz Balanya	1.000
1	2 Sn. Juan Sacapq.	3.500	1	27 Chichicastenango	3.900
1	28 Sn. Cristobal Totonic.	3.900	1	31 Chiantla	3.700
1	27 Chichicastenango	3.300	1	4 Cruzo Vieja	3.700
1	13 Panajachel	3.500	1	19 Sipitate	3.600
1	31 Chiantla	3.400	1	18 Sololá	3.500
1	18 Sololá	3.400	1	7 Sucanango	3.400
1	1 Sn. Pedro Sacapq.	3.300	1	14 Sn. Andres Semetabaj	3.300
2	17 Sn. Martin Sacapq.	6.600	2	28 Sn. Pedro Sacapq-SM	2.600
2	23 Aguacatan	3.300	2	27 Chichicastenango	2.300
2	21 Sn. Antonio Sacapq	3.000	2	22 Nebaj	1.800
2	15 Sn. Carlos Sija	2.400	2	23 Sn. Marcos Sacapq	1.500
2	8 Zacapa	1.600	2	8 Quetzaltenango	1.400
2	29 Chichicastenango	1.500	2	6 Zaragoza	1.200
2	6 Zaragoza	1.300	2	5 Chiqualtenango	1.100
2	8 Cuatlapa	1.000	2	7 Zacapa	1.000
2	23 Sn. Pedro Sacapq-SM	1.000	2	26 Nuevetenango	1.000
2	12 Nebaja	1.600	2	23 Aguacatan	1.600
2	5 Chiqualtenango	1.400	2	15 Sn. Carlos Sija	0.500
2	26 Nuevetenango	0.700	2	17 Sn. Martin Sacapq.	0.100

3.2 Economic Support

40 Total Expenses Incapacity			41 Subsistence			42 Savings Incapacity			43 Rescucation		
COD	MUNICIPIO	VALOR	COD	MUNICIPIO	VALOR	COD	MUNICIPIO	VALOR	COD	MUNICIPIO	VALOR
6	Comalapa	4.118	12	Manuela	1.429	3	Sumpango	1.936	22	Sn. Antonio Sctpqz	1.389
17	Sn. Martin Sctpqz.	2.647	11	Sta. Lucia Utila.	1.413	4	Ciudad Vieja	1.872	21	Chiantla	1.271
23	Sn. Cristobal Ttncpn.	2.647	4	Ciudad Vieja	1.351	17	Totonicapan	1.723	3	Sumpango	1.249
11	Sta. Lucia Utila.	2.647	25	Esquipulas P. Gordo	1.381	12	Panajachel	1.723	25	Esquipulas P. Gordo	1.227
12	Manuela	2.529	13	Panajachel	1.381	12	Manuela	1.661	17	Sn. Martin Sctpqz.	1.243
7	Tecpan	2.353	3	Sumpango	1.349	5	Chimaltenango	1.608	15	Sn. Carlos Sija	1.205
18	Sn. Juan Ostncic.	2.294	26	Momostenango	1.333	1	Sn. Pedro Sctpqz.	1.617	8	Zaragoza	1.183
20	Aguacatan	2.118	29	Chichicastenango	1.333	18	Sololá	1.566	28	Sta. Cruz del Quiche	1.183
5	Chimaltenango	2.118	1	Sn. Pedro Sctpqz.	1.317	6	Comalapa	1.595	27	Totonicapan	1.183
24	Tejutla	2.118	18	Sololá	1.302	11	Sta. Lucia Utila.	1.595	18	Sololá	1.183
16	Palestina	1.941	2	Sn. Juan Sctpqz.	1.286	23	Sn. Pedro Sctpqz-SM	1.595	13	Sn. Pedro Sctpqz-SM	1.183
29	Chichicastenango	1.941	5	Chimaltenango	1.286	25	Esquipulas Palo Gordo	1.532	24	Tejutla	1.161
9	Sta. Cruz Balanya	1.765	8	Zaragoza	1.286	2	Sn. Juan Sctpqz.	1.466	18	Sn. Juan Ostncic.	1.161
28	Sta. Cruz del Quiche	1.765	9	Sta. Cruz Balanya	1.286	29	Chichicastenango	1.447	26	Momostenango	1.161
25	Esquipulas P. Gordo	1.765	20	Aguacatan	1.270	20	Aguacatan	1.404	29	Chichicastenango	1.139
22	Sn. Antonio Sctpqz	1.786	27	Totonicapan	1.254	14	Sn. Andres Semetabaj	1.404	9	Sta. Cruz Balanya	1.139
3	Sumpango	1.647	28	Sta. Cruz del Quiche	1.254	28	Sta. Cruz del Quiche	1.224	19	Sibilia	1.117
26	Momostenango	1.647	7	Tecpan	1.254	9	Sta. Cruz Balanya	1.224	16	Palestina	1.117
27	Totonicapan	1.647	22	Sn. Antonio Sctpqz	1.238	18	Sn. Juan Ostncic.	1.224	20	Aguacatan	1.072
19	Sibilia	1.588	21	Chiantla	1.238	7	Tecpan	1.224	23	Sn. Cristobal Ttncpn.	1.051
15	Sn. Carlos Sija	1.411	17	Sn. Martin Sctpqz.	1.238	21	Chiantla	1.122	5	Chimaltenango	1.051
14	Sn. Andres Semetabaj	1.294	23	Sn. Pedro Sctpqz-SM	1.238	8	Zaragoza	1.170	7	Tecpan	1.051
18	Sololá	1.235	15	Sn. Juan Ostncic.	1.222	26	Momostenango	1.147	6	Comalapa	1.051
8	Zaragoza	1.118	16	Palestina	1.175	29	Sn. Cristobal Ttncpn.	1.248	12	Manuela	1.051
21	Chiantla	0.941	6	Comalapa	1.159	16	Palestina	1.021	4	Ciudad Vieja	1.051
2	Sn. Juan Sctpqz.	0.765	28	Sn. Cristobal Ttncpn	1.143	24	Tejutla	0.979	11	Sta. Lucia Utila.	1.029
13	Panajachel	0.765	14	Sn. Andres Semetabaj	1.079	17	Sn. Martin Sctpqz.	0.979	2	Sn. Juan Sctpqz.	0.935
23	Sn. Pedro Sctpqz-SM	0.765	24	Tejutla	1.063	22	Sn. Antonio Sctpqz	0.941	14	Sn. Andres Semetabaj	0.963
1	Sn. Pedro Sctpqz.	0.735	15	Sn. Carlos Sija	1.032	15	Sn. Carlos Sija	0.908	13	Panajachel	0.941
4	Ciudad Vieja	0.353	19	Sibilia	1.032	19	Sibilia	0.911	1	Sn. Pedro Sctpqz.	0.847

44		45		46	
Traditional Employment		Income due to unemployment		Lack of Farms	
COD MUNICIPIO	Y5	COD MUNICIPIO	Y6	COD MUNICIPIO	Y7
3 Sumpango	2.741	22 Sn. Antonio Sctpqz	[illegible]	1 Chimaltenango	2.7[illegible]
17 Sn. Martin Sctpqz.	2.704	27 Totonicapan	[illegible]	2 Sn. Juan Sctpqz.	2.[illegible]
19 Sibilia	2.556	14 Sn. Andres Semetabaj	[illegible]	1 Sn. Pedro Sctpqz.	2.[illegible]
18 Sn. Juan Ostnclc.	2.222	11 Sta. Lucia Uttln.	[illegible]	13 Panajachel	2.[illegible]
20 Aguacatan	2.148	21 Chiantla	2.112	4 Ciudad Vieja	2.[illegible]
15 Sn. Carlos Sija	2.111	25 Esquipulas Palo Gordo	1.992	6 Zaragoza	2.000
25 Esquipulas Palo Gordo	2.074	9 Sta. Cruz Balanya	1.8[illegible]	21 Chiantla	1.92[illegible]
6 Comalapa	1.778	16 Sn. Juan Ostnclc.	1.624	3 Sumpango	1.85[illegible]
8 Zaragoza	1.778	5 Chimaltenango	1.612	20 Aguacatan	1.[illegible]
16 Palestina	1.667	8 Zaragoza	1.[illegible]	7 Tecpan	1.8[illegible]
9 Sta. Cruz Balanya	1.630	12 Nahuala	1.[illegible]	10 Solola	1.8[illegible]
22 Sn. Antonio Sctpqz	1.407	7 Tecpan	1.4[illegible]	14 Sn. Andres Semetabaj	1.7[illegible]
21 Chiantla	1.407	4 Ciudad Vieja	1.4[illegible]	23 Sn. Pedro Sctpqz-SM	1.6[illegible]
24 Tejutla	1.407	20 Aguacatan	1.356	29 Chichicastenango	1.64[illegible]
12 Nahuala	1.222	26 Momostenango	1.27[illegible]	27 Totonicapan	1.6[illegible]
7 Tecpan	1.148	23 Sn. Pedro Sctpqz-SM	1.260	18 Sn. Juan Ostnclc.	1.46[illegible]
11 Sta. Lucia Uttln.	1.148	30 Sta. Cruz del Quiche	1.226	26 Momostenango	1.429
28 Sn. Cristobal Ttncpn.	1.074	13 Panajachel	1.220	30 Sta. Cruz del Quiche	1.32[illegible]
14 Sn. Andres Semetabaj	0.926	1 Sn. Pedro Sctpqz.	1.1[illegible]	6 Comalapa	1.2[illegible]
10 Solola	0.889	29 Chichicastenango	1.1[illegible]	12 Nahuala	1.214
30 Sta. Cruz del Quiche	0.889	28 Sn. Cristobal Ttncpn.	1.044	28 Sn. Cristobal Ttncpn.	1.21[illegible]
5 Chimaltenango	0.778	6 Comalapa	1.024	11 Sta. Lucia Uttln.	1.1[illegible]
13 Panajachel	0.778	10 Solola	0.768	15 Sn. Carlos Sija	1.14[illegible]
23 Sn. Pedro Sctpqz-SM	0.741	2 Sn. Juan Sctpqz.	0.544	25 Esquipulas Palo Gordo	1.10[illegible]
2 Sn. Juan Sctpqz.	0.667	3 Sumpango	0.[illegible]	16 Palestina	1.0[illegible]
4 Ciudad Vieja	0.630	24 Tejutla	0.4[illegible]	9 Sta. Cruz Balanya	0.9[illegible]
29 Chichicastenango	0.630	15 Sn. Carlos Sija	0.4[illegible]	22 Sn. Antonio Sctpqz	0.929
26 Momostenango	0.630	19 Sibilia	0.4[illegible]	17 Sn. Martin Sctpqz.	0.89[illegible]
27 Totonicapan	0.444	16 Palestina	0.29[illegible]	19 Sibilia	0.786
1 Sn. Pedro Sctpqz.	0.185	17 Sn. Martin Sctpqz.	0.2[illegible]	24 Tejutla	0.752

5.3 Scrutation

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Male Illiteracy

AID	N-AID	DOD AREA	Eia
1	17	Sn. Martin Sctpqz.	1.824
1	29	Sn. Cristobal Tncpn.	1.706
1	18	Sn. Juan Ostncic.	1.529
1	11	Sta. Lucia Utlin.	1.353
1	7	Tecpan	1.294
1	30	Sta. Cruz del Quiche	1.118
1	13	Panajachel	1.000
1	8	Zaragoza	0.941
1	24	Tejutla	0.882
1	1	Sn. Pedro Sctpqz.	0.882
1	21	Chiantla	0.824
1	22	Sn. Antonio Sctpqz	0.765
1	19	Sibilia	0.706
1	25	Esquipulas Palo Gordo	0.647
1	4	Ciudad Vieja	0.588
1	9	Sta. Cruz Balanya	0.412
2	12	Nahuala	1.941
2	29	Chichicastenango	1.824
2	20	Aguacatan	1.706
2	27	Totonicapan	1.471
2	26	Momostenango	1.471
2	10	Solola	1.353
2	2	Sn. Juan Sctpqz.	1.235
2	3	Sumpango	1.059
2	14	Sn. Andres Semetabaj	1.059
2	5	Chimaltenango	1.000
2	6	Comalapa	1.000
2	15	Sn. Carlos Sija	0.941
2	16	Palestina	0.882
2	23	Sn. Pedro Sctpqz-SM	0.847

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Male Lack of schooling

AID	N-AID	DOD AREA	Eia
1	17	Sn. Martin Sctpqz.	1.466
1	18	Sn. Juan Ostncic.	1.319
1	22	Sn. Antonio Sctpqz	1.234
1	11	Sta. Lucia Utlin.	1.170
1	7	Tecpan	1.170
1	21	Chiantla	1.170
1	30	Sta. Cruz del Quiche	1.149
1	28	Sn. Cristobal Tncpn.	1.106
1	25	Esquipulas Palo Gordo	1.021
1	24	Tejutla	1.000
1	19	Sibilia	0.979
1	8	Zaragoza	0.979
1	13	Panajachel	0.936
1	1	Sn. Pedro Sctpqz.	0.936
1	4	Ciudad Vieja	0.894
1	9	Sta. Cruz Balanya	0.702
2	20	Aguacatan	1.404
2	12	Nahuala	1.340
2	29	Chichicastenango	1.277
2	26	Momostenango	1.277
2	27	Totonicapan	1.213
2	3	Sumpango	1.128
2	16	Palestina	1.064
2	10	Solola	1.064
2	15	Sn. Carlos Sija	1.021
2	2	Sn. Juan Sctpqz.	0.979
2	6	Comalapa	0.957
2	5	Chimaltenango	0.915
2	14	Sn. Andres Semetabaj	0.915
2	23	Sn. Pedro Sctpqz-SM	0.915

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Male School Dropout

AID	N-AID	DOD AREA	Eia
1	7	Tecpan	5.000
1	11	Sta. Lucia Utlin.	4.167
1	13	Panajachel	4.167
1	22	Sn. Antonio Sctpqz	3.500
1	21	Chiantla	2.500
1	25	Esquipulas Palo Gordo	2.167
1	18	Sn. Juan Ostncic.	2.000
1	1	Sn. Pedro Sctpqz.	2.000
1	24	Tejutla	1.833
1	28	Sn. Cristobal Tncpn.	1.667
1	9	Sta. Cruz Balanya	1.500
1	4	Ciudad Vieja	1.500
1	8	Zaragoza	1.333
1	30	Sta. Cruz del Quiche	1.333
1	17	Sn. Martin Sctpqz.	0.333
1	19	Sibilia	0.500
2	12	Nahuala	5.667
2	10	Solola	5.333
2	27	Totonicapan	4.667
2	26	Momostenango	4.667
2	6	Comalapa	3.833
2	14	Sn. Andres Semetabaj	2.833
2	29	Chichicastenango	2.333
2	20	Aguacatan	2.500
2	3	Sumpango	1.500
2	2	Sn. Juan Sctpqz.	0.833
2	16	Palestina	0.833
2	23	Sn. Pedro Sctpqz-SM	0.833
2	15	Sn. Carlos Sija	0.667
2	5	Chimaltenango	0.333

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Female Illiteracy

AID N-AID	COD	AREA	E1f
1	17	Sn. Martin Sctpqz.	2.941
1	28	Sn. Cristobal Ttncpn.	2.353
1	11	Sta. Lucia Uttln.	2.118
1	30	Sta. Cruz del Quiche	2.054
1	18	Sn. Juan Ostncic.	2.000
1	22	Sn. Antonio Sctpqz	2.000
1	1	Sn. Pedro Sctpqz.	1.706
1	21	Chiantla	1.588
1	13	Panajachel	1.529
1	7	Tecpan	1.471
1	8	Zaragoza	1.412
1	25	Esquipulas Palo Gordo	1.235
1	19	Sibilia	1.059
1	24	Tejutla	1.000
1	9	Sta. Cruz Balanya	1.000
1	4	Ciudad Vieja	0.941
2	29	Chichicastenango	2.941
2	12	Nahuala	2.882
2	27	Totonicapan	2.369
2	20	Aguacatan	2.294
2	10	Solola	2.235
2	3	Sumpango	2.176
2	26	Momostenango	2.118
2	2	Sn. Juan Sctpqz.	1.941
2	6	Comalapa	1.647
2	23	Sn. Pedro Sctpqz-SM	1.588
2	14	Sn. Andres Semetabaj	1.529
2	5	Chimaltenango	1.471
2	15	Sn. Carlos Sija	1.353
2	16	Palestina	1.176

51

Lack of Female Schooling

AID N-AID	COD	AREA	E2f
1	17	Sn. Martin Sctpqz.	1.756
1	22	Sn. Antonio Sctpqz	1.532
1	30	Sta. Cruz del Quiche	1.489
1	28	Sn. Cristobal Ttncpn.	1.468
1	18	Sn. Juan Ostncic.	1.447
1	11	Sta. Lucia Uttln.	1.340
1	21	Chiantla	1.277
1	7	Tecpan	1.277
1	1	Sn. Pedro Sctpqz.	1.212
1	25	Esquipulas Palo Gordo	1.170
1	8	Zaragoza	1.149
1	24	Tejutla	1.106
1	13	Panajachel	1.106
1	4	Ciudad Vieja	1.085
1	19	Sibilia	1.064
1	9	Sta. Cruz Balanya	0.957
2	12	Nahuala	1.617
2	29	Chichicastenango	1.617
2	3	Sumpango	1.596
2	20	Aguacatan	1.532
2	26	Momostenango	1.468
2	27	Totonicapan	1.340
2	10	Solola	1.245
2	16	Palestina	1.235
2	2	Sn. Juan Sctpqz.	1.183
2	14	Sn. Andres Semetabaj	1.213
2	23	Sn. Pedro Sctpqz-SM	1.170
2	6	Comalapa	1.149
2	15	Sn. Carlos Sija	1.106
2	5	Chimaltenango	0.979

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Female School Dropout

AID N-AID	COD	AREA	E3f
1	11	Sta. Lucia Uttln.	3.333
1	7	Tecpan	3.333
1	13	Panajachel	3.667
1	21	Chiantla	3.333
1	25	Esquipulas Palo Gordo	3.000
1	22	Sn. Antonio Sctpqz	2.667
1	1	Sn. Pedro Sctpqz.	1.333
1	4	Ciudad Vieja	1.333
1	28	Sn. Cristobal Ttncpn.	1.333
	18	Sn. Juan Ostncic.	1.333
1	8	Zaragoza	1.333
1	24	Tejutla	1.333
1	30	Sta. Cruz del Quiche	1.333
1	9	Sta. Cruz Balanya	1.333
1	17	Sn. Martin Sctpqz.	0.667
1	19	Sibilia	0.333
2	26	Momostenango	5.000
2	27	Totonicapan	4.833
2	12	Nahuala	4.667
2	10	Solola	3.333
2	6	Comalapa	3.333
2	29	Chichicastenango	2.667
2	14	Sn. Andres Semetabaj	2.500
2	20	Aguacatan	2.500
2	3	Sumpango	2.167
2	23	Sn. Pedro Sctpqz-SM	1.667
2	2	Sn. Juan Sctpqz.	1.000
2	16	Palestina	0.833
2	5	Chimaltenango	0.833
2	15	Sn. Carlos Sija	0.667

83			84			85		
Illiteracy			Lack of Sanitation			Bible Attendance		
AID N-AID	COD	NAME	81	AID N-AID	COD	NAME	82	AID N-AID	COD	NAME	83
1	17	Sn. Martin Sotoqz.	1.230	1	17	Sn. Martin Sotoqz.	1.617	1	7	Tecpan	3.333
1	13	Sn. Cristobal Totonic.	1.359	1	11	Sta. Antonio Ilotenan	1.768	1	11	Sta. Lucia Utlan.	4.267
1	13	Sn. Juan Ostuncalco	1.763	1	13	Sn. Juan Ostuncalco	1.320	1	13	Panajachel	4.000
1	11	Sta. Lucia Utlan.	1.766	1	28	Sta. Cruz del Quiche	1.319	1	22	Sn. Antonio Sotoqz	3.167
1	28	Sta. Cruz del Quiche	1.847	1	12	Sn. Cristobal Totonic.	1.276	1	21	Chiantla	2.833
1	7	Tecpan	1.411	1	11	Sta. Lucia Utlan.	1.158	1	25	Esquipulas Palo Gordo	2.667
1	22	Sn. Antonio Sotoqz	1.412	1	21	Chiantla	1.214	1	1	Sn. Pedro Sotoqz.	2.833
1	13	Panajachel	1.294	1	7	Tecpan	1.213	1	16	Sn. Juan Ostuncalco	1.833
1	1	Sn. Pedro Sotoqz.	1.294	1	1	Sn. Pedro Sotoqz.	1.035	1	18	Sn. Cristobal Totonic.	1.667
1	21	Chiantla	1.233	1	25	Esquipulas Palo Gordo	1.025	1	24	Tejutla	1.667
1	8	Zaragoza	1.176	1	8	Zaragoza	1.064	1	4	Ciudad Vieja	1.667
1	24	Tejutla	0.941	1	24	Tejutla	1.064	1	8	Zaragoza	1.333
1	25	Esquipulas Palo Gordo	0.941	1	19	Sibilia	1.011	1	28	Sta. Cruz del Quiche	1.500
1	19	Sibilia	0.882	1	13	Panajachel	1.011	1	9	Sta. Cruz Balanya	1.333
1	4	Ciudad Vieja	0.765	1	4	Ciudad Vieja	0.979	1	17	Sn. Martin Sotoqz.	0.667
1	9	Sta. Cruz Balanya	0.706	1	9	Sta. Cruz Balanya	0.930	1	19	Sibilia	0.333
2	12	Nahuala	2.412	2	12	Nahuala	1.464	2	12	Nahuala	5.167
2	29	Chichicastenango	2.353	2	20	Aguacatan	1.424	2	26	Momostenango	4.833
2	20	Aguacatan	2.000	2	29	Chichicastenango	1.447	2	10	Sololá	4.667
2	27	Totonicapan	2.000	2	26	Momostenango	1.362	2	27	Totonicapan	4.667
2	26	Momostenango	1.824	2	3	Sumpango	1.140	2	6	Comalapa	3.667
2	10	Sololá	1.765	2	27	Totonicapan	1.134	2	29	Chichicastenango	2.333
2	3	Sumpango	1.647	2	10	Sololá	1.170	2	14	Sn. Andres Semetabaj	2.667
2	2	Sn. Juan Sotoqz.	1.533	2	15	Palestina	1.149	2	20	Aguacatan	2.500
2	14	Sn. Andres Semetabaj	1.294	2	2	Sn. Juan Sotoqz.	1.135	2	3	Sumpango	1.833
2	6	Comalapa	1.294	2	15	Sn. Carlos Sija	1.064	2	23	Sn. Pedro Sotoqz-SM	1.000
2	5	Chimaltenango	1.235	2	14	Sn. Andres Semetabaj	1.064	2	2	Sn. Juan Sotoqz.	0.833
2	23	Sn. Pedro Sotoqz-SM	1.176	2	6	Comalapa	1.064	2	16	Palestina	0.833
2	15	Sn. Carlos Sija	1.118	2	23	Sn. Pedro Sotoqz-SM	1.043	2	15	Sn. Carlos Sija	0.667
2	16	Palestina	1.033	2	5	Chimaltenango	0.957	2	5	Chimaltenang.	0.500

3.4 [illegible]

56 — Lack of domestic water

AID	N-AID	COD	MUNICIPIO	01
1	1	Sn. Pedro Sctpqz.	7.333
1	22	Sn. Antonio Sctpqz	5.333
1	28	Sn. Cristobal Tncpn.	5.000
1	8	Zaragoza	4.333
1	15	Sn. Carlos Sija	1.333
1	2	Sn. Juan Sctpqz.	1.333
1	24	Tejutla	1.333
1	17	Sn. Martin Sctpqz.	1.000
1	19	Sibilia	1.000
1	23	Sn. Pedro Sctpqz-SM	0.333
1	25	Esquipulas Palo Gordo	0.333
1	14	Sn. Andres Semetabaj	0.333
1	13	Panajachel	0.333
1	4	Ciudad Vieja	0.333
2	3	Sumpango	7.333
2	21	Chiantla	5.333
2	18	Sn. Juan Ostucic.	4.333
2	26	Momostenango	4.000
2	16	Palestina	2.333
2	20	Aguacatan	2.000
1	29	Chichicastenango	2.000
1	27	Totonicapan	2.000
2	7	Tecpan	1.000
2	5	Chimaltenango	1.000
2	6	Comalapa	0.333
2	10	Solola	0.333
2	30	Sta. Cruz del Quiche	0.333
2	11	Sta. Lucia Uttin.	0.000
2	12	Nahuala	0.000
2	9	Sta. Cruz Balanya	0.000

57 — Lack of home ownership

AID	N-AID	COD	MUNICIPIO	02
1	4	Ciudad Vieja	4.000
1	14	Sn. Andres Semetabaj	3.200
1	6	Zaragoza	3.400
1	2	Sn. Juan Sctpqz.	2.200
1	22	Sn. Antonio Sctpqz	2.600
1	23	Sn. Pedro Sctpqz-SM	2.600
1	1	Sn. Pedro Sctpqz.	2.400
1	28	Sn. Cristobal Tncpn.	2.200
1	24	Tejutla	2.000
1	13	Panajachel	1.800
1	19	Sibilia	1.400
1	25	Esquipulas Palo Gordo	1.400
1	15	Sn. Carlos Sija	1.400
1	17	Sn. Martin Sctpqz.	0.600
2	30	Sta. Cruz del Quiche	6.800
2	5	Chimaltenango	4.800
2	21	Chiantla	3.600
2	20	Aguacatan	3.000
2	27	Totonicapan	3.000
2	10	Solola	2.600
2	29	Chichicastenango	2.400
2	16	Palestina	2.000
2	18	Sn. Juan Ostucic.	1.400
2	7	Tecpan	1.400
2	26	Momostenango	1.200
2	11	Sta. Lucia Uttin.	1.200
2	9	Sta. Cruz Balanya	1.000
2	3	Sumpango	0.800
2	12	Nahuala	0.600
2	6	Comalapa	0.600

58 — Lack of Radio Receiver

AID	N-AID	COD	MUNICIPIO	03
1	22	Sn. Antonio Sctpqz	4.154
1	17	Sn. Martin Sctpqz.	3.231
1	24	Tejutla	2.846
1	28	Sn. Cristobal Tncpn.	2.692
1	8	Zaragoza	2.538
1	15	Sn. Carlos Sija	1.846
1	14	Sn. Andres Semetabaj	1.846
1	25	Esquipulas Palo Gordo	1.615
1	23	Sn. Pedro Sctpqz-SM	1.615
1	2	Sn. Juan Sctpqz.	1.308
1	13	Panajachel	0.923
1	19	Sibilia	0.769
1	4	Ciudad Vieja	0.538
1	1	Sn. Pedro Sctpqz.	0.538
2	20	Aguacatan	3.231
2	11	Sta. Lucia Uttin.	3.077
2	18	Sn. Juan Ostucic.	3.077
2	12	Nahuala	3.000
2	6	Comalapa	2.077
2	7	Tecpan	2.077
2	10	Solola	1.923
2	29	Chichicastenango	1.923
2	27	Totonicapan	1.923
2	26	Momostenango	1.692
2	16	Palestina	1.692
2	21	Chiantla	1.692
2	5	Chimaltenango	1.385
2	30	Sta. Cruz del Quiche	1.231
2	9	Sta. Cruz Balanya	1.077
2	3	Sumpango	1.000

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Lack of domestic power supply

AID N-AID	COD	MUNICIPIO	C4
1	21	Sn. Antonio Sctpqz	5.357
1	24	Tejutla	4.500
1	13	Sn. Cristobal Ytncpn.	4.357
1	5	Zaragoza	4.357
1	17	Sn. Martin Sctpqz.	3.714
1	15	Sn. Carlos Sija	3.000
1	14	Sn. Andres Semetabaj	2.357
1	2	Sn. Juan Sctpqz.	1.357
1	23	Sn. Pedro Sctpqz-SM	1.357
1	25	Esquipulas Palo Gordo	1.143
1	1	Sn. Pedro Sctpqz.	0.643
1	19	Sibilia	0.643
1	13	Panajachel	0.500
1	4	Ciudad Vieja	0.286
2	20	Aguacatan	4.786
2	29	Chichicastenango	4.357
2	21	Chiantla	4.357
2	26	Momostenango	3.286
2	6	Comalapa	3.000
2	30	Sta. Cruz del Quiche	2.857
2	7	Tecpan	2.429
2	3	Sumpango	2.429
2	12	Nahuala	2.429
2	18	Sn. Juan Ostnclc.	2.357
2	11	Sta. Lucia Uttln.	2.000
2	16	Palestina	1.929
2	27	Totonicapan	1.500
2	10	Solola	0.929
2	5	Chimaltenango	0.500
2	9	Sta. Cruz Balanya	0.357

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Lack of underground drainage

AID N-AID	COD	MUNICIPIO	C5
1	25	Esquipulas Palo Gordo	1.[illegible]
1	8	Zaragoza	1.[illegible]
1	17	Sn. Martin Sctpqz.	1.440
1	22	Sn. Antonio Sctpqz	1.[illegible]
1	28	Sn. Cristobal Ytncpn.	1.[illegible]
1	15	Sn. Carlos Sija	1.[illegible]
1	24	Tejutla	1.140
1	1	Sn. Pedro Sctpqz.	1.080
1	14	Sn. Andres Semetabaj	1.040
1	4	Ciudad Vieja	1.020
1	13	Panajachel	1.020
1	23	Sn. Pedro Sctpqz-SM	0.[illegible]
1	2	Sn. Juan Sctpqz.	0.[illegible]
1	19	Sibilia	0.[illegible]
2	3	Sumpango	1.[illegible]
2	6	Comalapa	1.[illegible]
2	29	Chichicastenango	1.[illegible]
2	18	Sn. Juan Ostnclc.	1.[illegible]
2	9	Sta. Cruz Balanya	1.[illegible]
2	5	Chimaltenango	1.[illegible]
2	30	Sta. Cruz del Quiche	1.[illegible]
2	26	Momostenango	1.[illegible]
2	21	Chiantla	1.[illegible]
2	11	Sta. Lucia Uttln.	1.140
2	20	Aguacatan	1.140
2	12	Nahuala	1.100
2	27	Totonicapan	1.100
2	16	Palestina	1.100
2	7	Tecpan	1.080
2	10	Solola	0.[illegible]

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Lack of access power source

AÑO	N-AÑO	COD	MUNICIPIO	CA
1		22	Sn. Antonio Sotoqr	5.357
1		24	Tejutla	4.828
1		28	Sn. Cristobal Totonic.	4.757
1		6	Zaragoza	4.357
1		27	Sn. Martin Sotoqr.	3.714
1		15	Sn. Carlos Sija	3.800
1		14	Sn. Andres Semetabaj	2.357
1		2	Sn. Juan Sotoqr.	1.357
1		23	Sn. Pedro Sotoqr-SM	1.357
1		29	Esquipulas Palo Gordo	1.143
1		1	Sn. Pedro Sotoqr.	0.343
1		19	Sibilia	0.843
1		13	Panajachel	0.388
1		4	Ciudad Vieja	0.186
2		18	Aquacatan	4.786
2		29	Chichicastenango	4.357
2		21	Chiantla	4.357
2		26	Momostenango	3.286
2		8	Comalapa	3.000
2		30	Sta. Cruz del Quiche	2.357
2		7	Tecpan	2.429
2		3	Sumpango	2.429
2		12	Nahuala	2.429
2		18	Sn. Juan Ostuncalc.	2.357
2		11	Sta. Lucia Utila.	2.000
2		16	Palestina	1.929
2		27	Totonicapan	1.500
2		10	Salcaja	0.929
2		5	Chiquitenango	0.500
2		9	Sta. Cruz Balanya	0.357

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Lack of transportation

AÑO	N-AÑO	COD	MUNICIPIO	CA
1		29	Esquipulas Palo Gordo	1.286
1		6	Zaragoza	1.286
1		27	Sn. Martin Sotoqr.	1.440
1		22	Sn. Antonio Sotoqr	1.380
1		28	Sn. Cristobal Totonic.	1.300
1		15	Sn. Carlos Sija	1.100
1		14	Tejutla	1.140
1		1	Sn. Pedro Sotoqr.	1.350
1		14	Sn. Andres Semetabaj	1.340
1		4	Ciudad Vieja	1.250
1		[illegible]	Panajachel	1.014
1		23	Sn. Pedro Sotoqr-SM	1.[illegible]
1		2	Sn. Juan Sotoqr.	1.[illegible]
1		19	Sibilia	0.429
2		[illegible]	Sumpango	1.528
2		8	Comalapa	1.342
2		29	Chichicastenango	1.330
2		26	Sn. Juan Ostuncalc.	1.280
2		5	Sta. Cruz Balanya	1.228
2		3	Chimaltenango	1.150
2		30	Sta. Cruz del Quiche	1.143
2		26	Momostenango	1.154
2		21	Chiantla	1.150
2		[illegible]	Sta. Lucia Utila.	1.140
2		18	Aquacatan	1.140
2		12	Nahuala	1.126
2		27	Totonicapan	1.103
2		16	Palestina	1.100
2		7	Tecpan	1.083
2		13	Salcaja	0.920

3.5 Health [illegible]

61 Morbidity			62 Traditional curative care			63 Lack of Health Education			64 Lack of Immunization		
COD	MUNICIPIO	61	COD	MUNICIPIO	62	COD	MUNICIPIO	63	COD	MUNICIPIO	64
1	Sn. Pedro Sctpqz.	1.875	10	Sta. Cruz del Quiche	2.786	5	Chimaltenango	1.542	9	Zaragoza	5.000
9	Tecpan	1.854	11	Sta. Lucia Utlm.	2.429	27	Totonicapan	1.525	27	Totonicapan	5.250
14	Sn. Andres Semetabaj	1.846	5	Sumpango	2.214	6	Comalapa	1.492	10	Solola	5.250
16	Palestina	1.563	9	Sta. Cruz Balanya	2.000	3	Suapango	1.492	28	Sn. Cristobal Ttncpn.	5.000
4	Ciudad Vieja	1.063	1	Sn. Pedro Sctpqz.	1.929	2	Sn. Juan Sctpqz.	1.492	26	Momostenango	4.000
19	Sibilia	1.563	22	Sn. Antonio Sctpqz	1.857	20	Aguacatan	1.441	6	Comalapa	4.000
17	Sn. Martin Sctpqz.	1.542	4	Ciudad Vieja	1.786	26	Momostenango	1.424	1	Sn. Pedro Sctpqz.	3.500
22	Sn. Antonio Sctpqz	1.542	29	Chichicastenango	1.786	4	Ciudad Vieja	1.424	9	Sta. Cruz Balanya	3.300
24	Tejutla	1.500	25	Esquipulas P. Gordo	1.714	9	Sta. Cruz Balanya	1.387	21	Chiantla	3.250
5	Chimaltenango	1.500	12	Nahuala	1.714	1	Sn. Pedro Sctpqz.	1.360	12	Nahuala	2.500
21	Chiantla	1.479	20	Aguacatan	1.714	29	Chichicastenango	1.373	20	Aguacatan	2.500
18	Sn. Juan Ostncln.	1.417	7	Tecpan	1.714	7	Tecpan	1.337	24	Tejutla	2.000
10	Solola	1.417	26	Momostenango	1.714	8	Zaragoza	1.322	3	Suapango	1.500
23	Sn. Pedro Sctpqz-SM	1.354	24	Tejutla	1.500	16	Sn. Juan Ostncln.	1.271	22	Sn. Antonio Sctpqz	1.500
2	Sn. Juan Sctpqz.	1.313	21	Chiantla	1.500	14	Sn. Andres Semetabaj	1.237	29	Chichicastenango	1.500
25	Esquipulas Palo Gord	1.313	27	Totonicapan	1.500	17	Sn. Martin Sctpqz.	1.229	14	Sn. Andres Semetabaj	1.250
12	Nahuala	1.292	5	Chimaltenango	1.500	12	Nahuala	1.220	18	Sn. Juan Ostncln.	1.250
15	Sn. Carlos Sija	1.292	23	Sn. Pedro Sctpqz-SM	1.500	10	Solola	1.186	7	Tecpan	1.000
27	Totonicapan	1.292	15	Sn. Carlos Sija	1.357	11	Sta. Lucia Utlm.	1.169	11	Sta. Lucia Utlm.	1.000
28	Sn. Cristobal Ttncpn	1.271	6	Comalapa	1.357	30	Sta. Cruz del Quiche	1.162	5	Chimaltenango	1.000
3	Suapango	1.229	17	Sn. Martin Sctpqz.	1.357	13	Panajachel	1.164	13	Sn. Pedro Sctpqz-SM	1.000
13	Panajachel	1.188	8	Zaragoza	1.357	19	Sibilia	1.065	17	Sn. Martin Sctpqz.	0.750
20	Aguacatan	1.188	28	Sn. Cristobal Ttncpn.	1.286	15	Sn. Carlos Sija	1.046	25	Esquipulas P. Gordo	0.750
9	Sta. Cruz Balanya	1.188	18	Sn. Juan Ostncln.	1.286	28	Sn. Cristobal Ttncpn.	1.051	15	Sn. Carlos Sija	0.750
11	Sta. Lucia Utlm.	1.188	19	Sibilia	1.071	25	Esquipulas P. Gordo	1.017	30	Sta. Cruz del Quiche	0.000
30	Sta. Cruz del Quiche	1.146	16	Palestina	1.071	21	Chiantla	0.966	4	Ciudad Vieja	0.000
8	Zaragoza	1.146	2	Sn. Juan Sctpqz.	0.929	24	Tejutla	0.932	19	Sibilia	0.000
6	Comalapa	1.063	10	Solola	0.929	23	Sn. Pedro Sctpqz-SM	0.931	13	Panajachel	0.000
26	Momostenango	1.042	14	Sn. Andres Semetabaj	0.643	16	Palestina	0.801	16	Palestina	0.000
29	Chichicastenango	0.875	13	Panajachel	0.429	22	Sn. Antonio Sctpqz	0.678	2	Sn. Juan Sctpqz.	0.000

4. MAIN STATISTICS INDICES CHARTS

4.1 From the Individual Indices of the Agriculture Sector

Chart 65

Statistic data on individual agriculture indices

INDEX	HIGHEST VALUE	LOWEST VALUE	RANGE	MEAN	STANDARD DEVIATION	MEDIAN	MODE	SKEW	KURTOSIS	SAMPLE ERROR
Land Ownership: A1	[illegible]	0.000	7.750	[illegible]	[illegible]	1.250	0.000	[illegible]	3.335	0.325
Low Corn Yields: A2	3.100	0.000	3.100	[illegible]	0.987	[illegible]	[illegible]	- 0.505	- 0.173	0.166
Agriculture Traditionality: A3	6.600	0.000	6.600	[illegible]	[illegible]	1.200	1.000	[illegible]	[illegible]	0.297
Lack of Agriculture Technology: A4	2.600	0.100	2.500	[illegible]	0.719	1.250	[illegible]	[illegible]	- 1.025	0.133

4.2 From the Individual Indices of the Economic Sector

Chart 66

Statistics data on individual economic indices

INDEX	HIGHEST VALUE	LOWEST VALUE	RANGE	MEAN	STANDARD DEVIATION	MEDIAN	MODE	SKEW	KURTOSIS	SAMPLE ERROR
Total expenses incapacity Y1	4.120	0.350	3.770	1.745	0.776	1.735	0.760	0.706	1.683	0.142
Subsistence : Y2	1.430	1.030	0.400	1.254	0.107	1.260	1.254	- 0.638	- 0.071	0.020
Savings Incapacity: Y3	1.940	0.510	1.430	1.341	0.357	1.400	[illegible]	- 0.538	- 0.189	0.065
Unemployment: Y4	1.360	0.900	0.460	1.120	0.104	1.140	1.030	- 0.096	- 0.008	0.019
Traditional Employment: Y5	2.740	0.190	2.550	1.348	0.701	1.185	0.630	0.486	- 0.723	0.128
Lack of income due to unemployment: Y6	4.910	0.240	4.670	[illegible]	0.920	1.270	0.460	1.932	6.392	0.168
Farmless: Y7	2.750	0.750	2.000	[illegible]	0.574	1.535	[illegible]	0.533	- 0.610	0.105

4.3 From the individual indices of the education sector

Chart 1

Statistics Data on individual education indices

INDEX	HIGHEST VALUE	LOWEST VALUE	RANGE	MEAN	STANDARD DEVIATION	MEDIAN	MODE	SKEW	KURTOSIS	SAMPLE ERROR
Illiteracy: E1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	- [illegible]	[illegible]
Lack of Schooling: E2	[illegible]	0.330	0.790	[illegible]	[illegible]	1.160	[illegible]	[illegible]	- 0.433	0.034
Schooling dropouts: E3	5.330	0.330	5.000	2.450	[illegible]	1.915	[illegible]	[illegible]	- 0.967	0.281
Male Illiteracy: E1m	1.940	0.410	1.530	[illegible]	[illegible]	1.230	0.880	[illegible]	- 0.732	0.074
Male Schooling: E2m	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	- 0.102	[illegible]
Male School Dropout: E3m	5.670	0.330	5.540	[illegible]	[illegible]	2.100	1.520	[illegible]	- 0.785	[illegible]
Female Illiteracy: E1f	2.940	0.940	2.000	[illegible]	[illegible]	1.680	1.000	0.402	- 0.605	0.106
Female Schooling: E2f	1.770	0.960	0.810	[illegible]	0.209	1.270	1.110	0.408	- 0.665	0.238
Female School dropout: E3f	5.500	0.330	5.170	[illegible]	1.521	2.800	1.830	0.619	- 0.693	0.276

4.4 From the individual indices of the infrastructure sector

Chart [illegible]

Data on individual infrastructure indices

INDEX	HIGHEST VALUE	LOWEST VALUE	RANGE	MEAN	STANDARD DEVIATION	MEDIAN	MODE	SKEW	KURTOSIS	SAMPLE ERROR
Modes to water for domestic use: C1	[illegible]	3.000	[illegible]	[illegible]	[illegible]	1.168	0.300	[illegible]	0.1[illegible]	0.40[illegible]
Home ownership: C2	[illegible]	0.[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	1.[illegible]	[illegible]	1.[illegible]	0.2[illegible]
Availability of radio receptor: C3	4.1[illegible]	0.340	3.610	[illegible]	0.[illegible]	1.650	1.[illegible]	0.470	- 0.296	0.16[illegible]
Domestic electrical power supply C4:	[illegible]	[illegible]	5.072	[illegible]	[illegible]	[illegible]	[illegible]	0.256	- [illegible]	0.277
Home underground drainage: C5	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	1.1[illegible]	[illegible]	- [illegible]	[illegible]

4.5 From the individual indices of the health index

Chart 59

Statistics data on individual health indices

INDEX	HIGHEST VALUE	LOWEST VALUE	RANGE	MEAN	STANDARD DEVIATION	MEDIAN	MODE	SKEW	KURTOSIS	SAMPLE ERROR
Morbidity: H1	1.870	0.880	0.990	[illegible]	0.225	1.310	1.190	0.315	0.132	0.041
Traditional curative care: H2	2.770	0.470	2.360	1.[illegible]	0.49	1.320	1.300	0.178	0.952	0.095
Lack of health education: H3	1.540	0.680	0.860	1.[illegible]	0.22	1.132	1.170	- 0.568	- 0.306	0.041
Lack of immunization: H4	5.500	0.000	5.500	1.[illegible]	1.774	1.370	0.000	0.181	- 0.673	0.324

5. Correlations among individual indices

CHART NO. 70

5.1 Correlations between Individual Indices in each sector

According to results obtained when finding the correlation coefficients between two indices of the same socio-economic sector. Only some significant correlation between the following index pairs was found:

AGRICULTURE SECTOR

None

ECONOMIC SECTOR

Iy1 with Iy5 with 0.3688 significant to 5%

Iy2 with Iy3 with 0.7023 significant to 0.1

Iy3 with Iy4 with -0.3690 significant to 5%

Iy3 with Iy5 with -0.4114 significant to 5%

There is a correlation of 0.7023 significant to 0.1% between the subsistence index Y2 and the savings incapacity index Y3.

EDUCATION SECTOR

Ie1 with Ie2 with 0.8630 significant to 0.1%

Ie1 with Ie3 with 0.3846 significant to 5%

There is a correlation of 0.8630 significant to 0.1% between the illiteracy index E2 and the lack of schooling index E3.

INFRASTRUCTURE SECTOR

Ic1 with Ic4 with 0.3987 significant to 5%

Ic1 with Ic5 with 0.3937 significant to 5%

Ic3 with Ic4 with 0.7136 significant to 0.1%

Ic3 with Ic5 with 0.3652 significant to 5%

Ic4 with Ic5 with 0.4638 significant to 1%

There is a correlation of 0.7136 significant to 0.1% between the lack of radio receiver in good condition (index C3) and the lack of domestic electrical power supply (index C4).

HEALTH SECTOR

None

Chart No. 71

5.2 Correlations between Indices of Various Sectors

According to the results obtained when finding the correlation coefficient between two indices of various sectors, there is only some significant correlation between the following pairs:

AGRICULTURE SECTOR/ECONOMICS SECTOR

Ia3 with Iy3 with 0.5422 significant to 0.1%

Ia3 with Iy5 with 0.6982 significant to 0.1%

Ia3 with Iy7 with -0.5106 significant to 0.1%

Ia with Iy5 with -0.6961 significant to 0.1%

AGRICULTURE SECTOR/EDUCATION SECTOR

Ia3 with Ie3 with -0.4853 significant to 1%

Ia3 with Ie with -0.4289 significant to 1%

Ia with Ie3 with -0.4566 significant to 1%

Ia with Ie with -0.4458 significant to 1%

AGRICULTURE SECTOR/INFRASTRUCTURE SECTOR

Ia1 with Ic1 with 0.4396 significant to 1%

AGRICULTURE SECTOR/HEALTH SECTOR

Ia3 with Ih4 with -0.3944 significant to 5%

Ia with Ih4 with -0.4433 significant to 1%

Ia with Ih with -0.5832 significant to 5%

ECONOMICS SECTOR/EDUCATION SECTOR

Iy1 with Ie1 with 0.3647 significant to 5%

Iy1 with Ie2 with 0.3672 significant to 5%

Iy2 with Ie3 with 0.4363 significant to 1%

Iy2 with Ie with 0.4530 significant to 1%

Iy3 with Ie3 with 0.3573 significant to 5%

Iy6 with Ie3 with 0.3747 significant to 5%

Iy with Ie3 with 0.3341 significant to 5%

Iy with Ie with 0.3736 significant to 5%

ECONOMICS SECTOR/INFRASTRUCTURE SECTOR

Iy1 with Ic2 with -0.4060 significant to 5%

Iy1 with Ic3 with 0.5424 significant to 0.2%

Iy3 with Ic4 with -0.4366 significant to 1%

Iy4 with Ic4 with 0.4330 significant to 1%

Iy4 with Ic with 0.4314 significant to 1%

Iy5 with Ic2 with -0.4738 significant to 1%

Iy6 with Ic3 with 0.3815 significant to 5%

Iy6 with Ic with 0.3600 significant to 5%

Iy7 with Ic2 with 0.4440 significant to 1%

Iy7 with Ic3 with -0.4802 significant to 1%

Iy7 with Ic4 with -0.3563 significant to 5%

Iy with Ic3 with 0.4754 significant to 1%

ECONOMICS SECTOR/HEALTH SECTOR

Iy2 with Ih2 with 0.3752 significant to 5%

Iy3 with Ih3 with 0.3562 significant to 0.1%

Iy4 with Ih3 with -0.4253 significant to 1%

Iy7 with Ih3 with 0.3257 significant to 1%

EDUCATION SECTOR/INFRASTRUCTURE SECTOR

Ie1 with Ic3 with 0.4736 significant to 1%

Ie1 with Ic4 with 0.3997 significant to 5%

Ie2 with Ic3 with 0.6088 significant to 0.1%

Ie2 with Ic with 0.3146 significant to 1%

Ie with Ic3 with 0.3909 significant to 5%

EDUCATION SECTOR/HEALTH SECTOR

Ie3 with Ih3 with 0.3669 significant to 5%

Ie3 with Ih with 0.3715 significant to 5%

Ie with Ih4 with 0.3622 significant to 5%

Ie with Ih with 0.3728 significant 5%

INFRASTRUCTURE SECTOR/HEALTH SECTOR

Ic1 with Ih with 0.3523 significant to 5%

5.3 Summary of Correlations less than -0.5 and greater than 0.5 among sector related indices

Economics Sector - Agriculture Sector

- Correlation between the Agriculture Traditionality Index A3 with:

1. The savings incapacity index Y3 with a value of 0.5422, significant to 0.1%
2. The traditional employment index Y6 with a value of 0.6982, significant to 0.1%
3. The lack of farm ownership index Y7 with a value of 0.6105, significant to 0.1%

Economics Sector - Infrastructure Sector

1. Correlation between the total expenditure incapacity index Y1 and the lack of radio receivers index C3 with a value of 0.5424, significant to 0.1%

Economics Sector - Health Sector

1. Correlation between the savings incapacity index Y3 and the lack of health education index H3 with a value of 0.5562, significant to 0.1%.
2. Correlation between the lack of farm ownership index Y7 and the lack of health education index H3 with a value of 0.5207, significant to 0.1%.

Education Sector - Infrastructure Sector

- Correlation between the lack of schooling index E2 with:

  1. The lack of radio receptor index C5 with a value of 0.6000, significant to 0.1%.
  2. The lack of domestic electrical power supply C4 with a value of 0.6010, significant to 0.1%.

Chart No. 72

5.4 Correlations between the Total Expenditure Incapacity Y1 and all other Indices

a) With Sector-related Indices

Index	A	Y	E	C	H
Correlation	-0.0759	0.4869	0.3060	0.0662	0.1713
Significance(*)	0.347	0.003	0.050	0.364	0.183

b) With Agriculture Indices

Index	A1	A2	A3	A4
Correlation	-0.3842	0.0153	0.2136	0.1626
Significance(*)	0.018	0.468	0.129	0.195

c) With Economics Indices

Index	Y2	Y3	Y4	Y5	Y6	Y7
Correlation	-0.1553	0.1336	0.0305	0.3668	-0.0535	-0.524[illegible]
Significance(*)	0.206	0.242	0.436	0.022	0.390	0.001

d) With Education Indices

Index	E1	E2	E3
Correlation	-0.3647	0.3679	0.2162
Significance(*)	0.024	0.023	0.126

e) With Infrastructure Indices

Index	C1	C2	C3	C4	C5
Correlation	-0.1430	0.4060	0.5424	0.3475	0.392[illegible]
Significance(*)	0.225	0.013	0.001	0.030	0.016

f) With Health Indices

Index	H1	H2	H3	H4
Correlation	-0.0759	0.4869	0.3060	0.0662
Significance(*)	0.347	0.003	0.050	0.364

(*) Significance probability in one-tailed tests

III. CONCLUSIONS AND RECOMMENDATIONS

F. Conclusions

1. The Overall Poverty Index provides, at its best, only a crude profile for comparing communities; however, it is not valid in terms of its scale.

2. Sector-related composite indices show crude estimations of each sector's relative contribution to poverty in project municipios; however, in terms of the scale, they still face a problem.

3. Individual indices do not face the scales problem, making comparisons between municipios possible. They also provide comparisons between each municipios and the well-being or development target (reference standard) selected for each indicator.

4. Indicators also face no scale problem, so comparisons between municipios are also possible; however, they constitute measures at a stage preceding the incorporation of the target (reference standard), and therefore, it fails to express a comparison between each municipio and the development target.

5. Comparisons between groups of municipios with one or more USAID/Guatemala sponsored assistance projects and municipios not receiving such assistance, provide evidence that the Mission's agriculture activities are having an impact upon the agriculture sector indicators utilized as factors contributing to poverty, as we understand it; indicators of other sectors show very little impact.

6. In terms of the indicators, the order in which communities were ranked as a result of the survey is consistent with information from other sources on poverty levels.

6. Recommendations

1. Each USAID/Guatemala office should select the indicators for their corresponding sectors and programs. Each office should define a battery for monitoring poverty/well-being in its sector or programs.

2. Each USAID/Guatemala office should examine the system for determining socio-economic development targets (or reference standard) utilized in this study; and develop its own target/reference standard file or establish its own way for determining them.

3. When selecting targets/reference standards, those reflecting GOG (Government of Guatemala) performance should be separated from those reflecting the Mission's performance.

4. USAID/Guatemala-selected poverty/well-being indicators employed in probes (sondeos) and surveys, must be related with (divided by) targets/reference standards revealing the impact of USAID/Guatemala sponsored programs ("Mission's performance") and not with those revealing impact of the GOG ("GOG performance"). Otherwise, the poverty/well-being measurements obtained will reflect a worsened reality, that is to say, the measurement will be invalid by distortion or bias.

5. Indicators and indices employed in this study point out to poverty, not well-being. When their value is higher, it indicates greater poverty. However, many officials are not comfortable with this form; for them, indicators should indicate well-being; they prefer an increase in the indicator or index value to symbolize greater well-being and not greater poverty. This is not a problem; indicators and related indices can be constructed in a manner in which an increase of its value indicates greater well-being. In the end, it is the same; poverty and well-being are two sides of the same coin.

6. The main objective of USAID/Guatemala's project monitoring system is watching and reporting changes in conditions related to poverty and well-being in the country. This will enable the Mission to prioritize efforts in its fight against poverty and in the promotion of well-being. However, at this time, only a pilot study to test the methodology has been undertaken. The starting point of a monitoring system must be to undertake an overall poverty/well-being baseline survey covering all of the highlands regions. This should be a statistical survey (probabilistic).

7. In addition to the survey, local, periodic probes ("sondeos") and surveys will be required to detect and measure poverty/well-being conditions. Without the overall baseline survey and the periodic regional probes and surveys, a monitoring system will not be really working.

8. Local surveys will be used as baselines for future projects; or as medium-term evaluations for ongoing projects; or as final impact evaluations for projects in their terminal stage.

9. The Overall Baseline Survey should utilize the National

Statistics institute s (Instituto Nacional de Estadistica - INE) sample frame. In the present assessment, areas were not selected at random, because the Consulting Group was requested comparisons between areas receiving USAID sponsored assistance and those not receiving such assistance. The INE's Sample Frame will provide pre-fixed segments, allowing the expansion of data and the establishment of generalizations.

10. The time frame for undertaking the National Baseline Survey and the regional soundings and surveys should be established by the Consulting Group; the experience acquired in the present pilot study will be necessary, especially in terms of data analysis.

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ANNEXES

ANNEX I

ANNEX 1

DETAILED DESCRIPTION OF THE ASSESSMENT

1. Type of Assessment

The "Pilot Assessment on Poverty in Guatemala's Central and Western Highlands" is a non-probabilistic exploratory survey.

1.1 One of its main objectives was testing a methodology for the study of poverty in heterogeneous cultural, ethnic, economic and social conditions in Guatemala. This involved a review of concepts of poverty, to include variables traditionally not studied and combining them into indicators, the sensibility of which was the main purpose of the test. Then, a systematic comparison between community values of each indicator and a target value/reference standard for the latter (to estimate relative distances between municipios in the poverty continuum) was made. The comparison was made by dividing the points of each municipio by its reference standard; the result is an index. Indices were obtained by varying the relative weight of various sectors to simulate effects on varying development policy focus.

1.2 However, as will be explained further in sections to

come, the population segments where information was collected can only be considered "samples" in a special sense of the word and not completely statistical; the population cannot be considered as the survey's "universe."

One main reason for not considering the segments as samples and the population as the universe is that USAID/Guatemala, through the assessment's scope of work, requested a comparison of poverty levels between areas of Guatemala presently receiving USAID/Guatemala assistance and in similar areas not receiving such assistance. If areas are not selected at random, no data expansion nor sample error measurements are warranted. Another reason is that the number of statistical units to be covered in full and in each segment was determined in a fixed form by USAID/Guatemala (see Scope of Work, Annex 9), rather than taking into account the variances of some variables. No minimum sample error was previously set, either.

1.3 The types of units handled in the study must be indicated. Statistical units mentioned have been the domestic group (corresponding to a home, and in most cases, to a nuclear family). These units were selected

in a strictly aleatory manner at each municipio, by means of probabilistic sampling using croquis and tables of random numbers. In this sense, statistical units or questionnaires obtained are statistically representative of their communities or study sites, even if the number of them is not proportional with that community's population.

Primary analysis units represent the municipios. However, consolidated analyses by AID and non-AID groups of municipios are also performed.

1.4 Another component of the study was information collected through interviews to municipal, health and education authorities of all 30 municipios in the study.

2. Study area

The assessment's title states that the area is "Guatemala's Central and Western Highlands." The latter include the departments of Huehuetenango and El Quiché (excluding its septentrional portion known as the "Franja Transversal del Norte" and sectors extending to the northern Mexican border); Totonicapán and Sololá; San Marcos and Quetzaltenango (down to the volcanic chain dividing its coastal portion from the Highlands); Chimaltenango, Sacatepéquez, and the northwestern part

of the department of Guatemala. (see Graphs 1 and 2).

3. Study sites (see chart 1)

3.1 USAID/Guatemala Project Areas

USAID/Guatemala required a comparison of poverty levels in two block areas--one having AID assistance programs and the other not receiving such assistance. USAID/Guatemala provided a listing of areas in these departments (and Alta Verapaz) where AID-sponsored Agriculture, Education and Infrastructure projects have been officially carried out. The consulting team and AID's technical representative jointly included a selection of 20 of them in the study. This procedure hindered a random selection of survey municipios and therefore, the survey is not probabilistic at this particular level.

3.2 Other areas

For comparison purposes, 10 additional municipios not receiving USAID/Guatemala assistance were selected by the consulting group and AID's technical representative in the same departments as the other 20, and were also included in the study. Those 10 areas have similar demographic, ethnic, socio-economic and ecological characteristics as those of the other 20.

4. Techniques Applied

4.1 Document and bibliographic analysis

Documents and scientific literature concerning poverty were reviewed, as well as study reports on living conditions in Guatemala's highlands and similar regions (Annex 2).

4.2 Personal Interviews

Direct visits to all 30 survey municipios and personal interviews were programmed.

4.3 Type of interviews

In accordance to USAID/Guatemala instructions, interviews were undertaken with:

- municipal, health and education authorities
- heads of families or their representatives

Municipal, education and health authorities interviewed were mayors and municipal secretaries, directors and teachers of both urban and rural primary schools, and heads or staff members of health centers and posts. Interviews to heads of families or family representatives were undertaken at towns and villages.

5. Instruments

5.1 A questionnaire structured with closed questions was

used for interviews to heads of families or their representatives. It included an introduction, instructions to interviewers and eight sections: identification: family, education and ethnic characteristics; home and communications; health; pregnancies and births in the family; agriculture; family economics and occupation. It is composed of 281 entries capturing the information of each indicator variable (see Questionnaire I, Annex 3).

5.2 To interview municipal, education and health authorities, a questionnaire structured in open questions was used. It included an introduction, instructions to interviewers, identification, community and infrastructure data section, health data section and education data section; it consists of 70 entries (see Questionnaire II, Annex 4).

6. Survey Design

6.1 Number of interviews by municipio

In accordance to the scope of work, about 2,000 interviews would be conducted to heads of families/representatives in the 30 areas. Since the latter were not aleatorily selected, it was agreed to undertake 67 interviews: 27 in the municipal town (cabecera) and 40 in two or more villages of each area.

Because the number of interviews is not proportional to the population of each area, the resulting variance becomes artificially diminished.

6.2 Village selection

It was agreed to aleatorily select two villages of each area to perform the rural interviews (20 in each). This was done with the help of a complete list of villages in the area (c.f., Diccionario Geográfico de Guatemala--Geographic Dictionary of Guatemala), and a table of random numbers. Some areas have only one village, case in which all of the 40 interviews were performed therein). (See Chart 1).

7. Recruiting, training and organization of interviewers

7.1 Recruiting

Twenty-one interviewers were contracted, all with prior experience in socio-economic surveys in the country with institutions like INCAP, UNICEF, Westinghouse, CARITAS, AID and Consultores y Asesores Agroindustriales. Three Mayan speakers were included.

7.2 Training

A training agenda was prepared and carried out with the consultants' participation.

Training included the study of objectives, methodology, organization, schedules, logistics, and administrative considerations. Special emphasis was given to survey techniques, questionnaire handling and prevention and solution of fieldwork problems; an Interviewer's Handbook was developed (see Second Progress Report).

Training included interview practices in the classroom, as well as in villages near Guatemala City (on the road to San Pedro Sacatepéquez). This procedure allowed questionnaire testing and editing. As a result, bridge questions were added, the wording of other questions was modified; and one question was suppressed. No data processing or analysis was made to test the software.

7.3 Organization

Three senior interviewers with broad experience in sample surveys and studies were appointed as team supervisors.

Three 7-member teams properly balanced in terms of gender, age, academic level and Mayan dialect speakers, were organized.

Each team was assigned a group of ten adjacent municipios and a schedule was prepared.

8. Fieldwork: the aleatory selection of informers

8.1 Head towns

Croquis of the municipal towns were obtained at the National Statistics Institute (INE--Instituto Nacional de Estadistica) and with the help of a table of random numbers, a selection of huts or houses to undertake the interviews were selected (with replacement). A systematic substitution procedure was established to be applied when necessary.

8.2 Villages

Interviewers were trained to draw simple croquis of the villages, and to select with a table of random numbers (with replacement), the huts or houses to be surveyed, using the same procedure as that for head towns.

8.3 In addition, interviews to mayors or municipal secretaries, Health Center officials and public education authorities were undertaken in every area.

9. Survey Performance

The number of interviews undertaken in head towns and villages, by municipio, department and region, to heads of families/representatives, and municipal, health and education officials are shown in Chart No. 1.

10. Data Processing

10.1 Data on interviews held with municipal, health and education authorities

Questionnaires were processed manually and entered into matrices for AID project areas and non-AID areas. See data tabulation in Annexes 5 - 7.

10.2 Data on interviews with heads of families

10.2.1 Screening and Coding

These questionnaires underwent a coding and screening process. It was performed by a team of analysts with 5-15 years experience in screening and coding of socio-economic surveys. Work included the revision of each questionnaire answer noted down by each interviewer, cross checking each questionnaire with other analysts. Errors and problems are detected in this stage of the survey and are solved with the help of the rest of the information contained in that particular questionnaire, other ones or other documents. The final product is a group of consistent answers for each questionnaire.

The information obtained is then translated into the previously-established codes.

10.2.2 Data Entry

Four data bases on dBase III were established for data entry. The information was entered by a team of qualified computer operators, all of them college students with previous experience in socio-economic surveys undertaken by **Consultores y Asesores Agroindustriales, S.A.** for AID, GTZ and other institutions.

10.2.3 Base, file and code revision

With the support of Dr. Edgar Nesman, data entry was revised, and the key controls variables such as AID/non-AID questionnaires, municipios, departments, villages and towns were carefully checked.

11. The analysis plan and its execution

The analysis was performed in accordance with the methodology set by Dr. Gary H. Smith, USAID/Guatemala's technical representative, with the SPSS/PC+ program, proceeding as follows:

- Value calculation for each variable, by municipio. Frequencies for qualitative variables; means and standard deviations for quantitative variables.

- Value calculation of indicators (quotients relating one variable to another)

- Reference standard calculations

- Calculation of index values, (quotients resulting from dividing the indicators by the reference standards). Individual within each sector. For testing purposes, composite indices by sector and an Overall Index were calculated.

- Preparation of histograms and other graphs for index values by municipio.

- Calculation of values varying patterns of weight, by sector

- Calculation of statistical significance of differences between USAID and non-USAID project municipios, by sector

- Calculation of correlations between indices

- Discussion and interpretation of results obtained in each stage of the analysis.

12. Preparation of the final report

Drafts of the final report were discussed with AID's technical representative, Dr. Gary H. Smith. The report's preliminary version was distributed to USAID/Guatemala's chiefs of offices, who provided observations and comments. The final version of the report responds to these comments and suggestions. A Spanish version of this report was also prepared.

ANNEX II

ANNEX 2

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ANNEX III

ASSESSMENT ON POVERTY IN THE GUATEMALAN HIGHLANDS, 1990
CONSULTORES Y ASESORES AGROINDUSTRIALES - AID

Questionnaire I

(Interviewer, introduce yourself as follows:)

Good morning (afternoon). My name is (state your name slowly and clearly). We are chatting with people in this area regarding family, work and crops. This study will help to improve life in the villages. I would be very grateful if you could help me by answering some questions. Each person's answers will not be known by the others. We are interested all the answers together, not the answers of an individual person.)

(Go to Section II)

Section I: Identification

(for office use)

1. Questionnaire:
2. Interviewer: ___ ___
3. Date of interview: ___ ___ ___
4. Department: ___ ___
5. Area: ___ ___
6. Village ___ ___ ___

Section II: Family, Education, Ethnicity

"Lets start chatting about your family, those who live at your home with you"

1. How many persons live at your home, including everyone, children and adults, men and women

(Interviewer: Write them down from older to younger. In the first row, write down the data of the head of family. Then, row by row, write down the data of the each member).

2	3	4	5	6	7	8
Relationship to head of family	Man or Woman?	Age?	Can he or she read?	Has he or she ever been registered in school?	Did he or she leave a grade unfinished in school?	What was the last grade that he (she) passed in school?
No.	M (0) F (1)		Yes (0) No (1)	Yes (0) No (1)	Yes (0) No (1)	
1 Head						
2						
3						
4						
5						
6						
7						
8						
9						
TOTALS						

9. How far is your home to the school?

C: _____ UM: _____

10. What language do you speak at home, Spanish or a "Lengua" dialect?

(0) "Lengua" Go to question 11

(1) "Spanish" Go to question 12

11. What language do you speak?

(1) Cackchiquel (2) Quiché

(3) Mam (4) Tzutuhil

(0) Other _____
Specify

12. Interviewer: write down without asking: what type of clothes is the interviewee wearing?

(1) Indian (2) Ladina

(3) Mixture

Section III: Homes and Communication

"Lets now talk a little about your home..."

1. You _____ your home.

(1) Own (2) Borrow

(3) Rent ( ) Other _____
(Specify)

2. Where do you get the water you use and drink?

(1) you get it at home (2) you have a well

(3) you go to a public water supply (4) you buy it from your neighbors

(5) you go to the river

( ) Other _____
(specify)

3. Does your home have underground drainage?

4. Does your home have electric installations (electric wires, light bulbs, etc).

(0) Yes (1) No

5. Do you have (own) a radio that works?

(0) Yes (1) No

6. How many rooms does your home have?
(Interviewer: If possible, observe the number of rooms and write them down)

_____

Section IV: Health

"Lets talk a little about your family's health"

1. (For families with children under 5 years old) How many of your children under 5 years old have been sick this year with diarrhea or a cold?

_____

2. (For families with children under 3 years old) Have you vaccinated your children under 3 years old?

(1) All of them Go to question 3

(2) Some of them Go to question 3

(3) None of them Go to question 4

3. How many times have you vaccinated each of your children under 3 (injected vaccination, oral, or with a stick?)

	CHILD (Name)	TIMES VACCINATED Injected	Oral	Stick
1				
2				
3				
4				
5				

4. Has anyone in your family (over 5 years old) been sick this year?

(0) Yes Go to question 5

(1) No Go to question 6

5. What have you done to cure members of your family who get sick?

(1) a person who prays cures them

(2) a witch doctor cures them

(3) a local health promoter cures them

(4) the staff at the Health Center or Post or hospital cures them

(5) A private doctor cures them

(6) A midwife cures them

(7) Other _____
Specify

6. Has any member of your family attended lectures on how to be healthy and how to avoid getting sick this year?

(0) Yes (1) No

Section V: Pregnancy and Births in the Family

"Lets talk now about your children's births"

Woman in the family	1. How many pregnancies has she had?	2. How many live births has she had?	4. How many children have died after being born alive and before turning 5 years old?
1. Head of Family			
2. Wife of Head of Family			
3. Daughter			
4. Other			

Section VI: Agriculture

"Lets talk now about land and production"

1. Do you have land?
   (0) Yes Go to question 2

   (1) No Go to Section VII

2. Do you _____ _____ the land?

own	C _____	UM _____
rent	C _____	UM _____
borrow	C _____	UM _____
other	C _____	UM _____

(If the U.M. (manzanas) are "cuerdas", indicate the square area):

_____

3. What area of the land you have cannot be cultivated?

C: _____ UM _____

4. You _____ your land

(1) cultivate — Go to question 5

(2) have animals in — Go to question 11

(3) rent — Go to question 11

(4) Other — Go to question 11

5. What did you grow last year	6. Associated with another product?	7. How much land did you culti-vate of each product?	8. How much did you harvest of each crop?	9. How much of the harvest was for your family's consump-tion?	10. How much did the ani-mals eat?
		C: UM:	C: UM:	C: UM:	
1.					
2.					
3.					
4.					
5.					
6.					
7.					
8.					

11. In the last three years, have you cultivated something other than

corn, wheat, black beans, lima beans or pumpkins?

(0) Yes Go to question 12

(1) No Go to question 13

12. What have you cultivated?

1. _____
2. _____
3. _____
4. _____

13. Have you made terraces, contour lines, or irrigation ditches in your land in the last three years?

(0) Yes (1) No

14. Have you tried planting high yield seeds in the last three years?

(0) Yes (1) No

15. Have you used irrigation or small-scale irrigation in your farmland in the last three years?

(0) Yes (1) No

16. (If you have had cultivated crops) Have you used chemical fertilizers in the last three years?

(0) Yes (1) No

17. Have you fumigated or applied granulated pesticides to eradicate plaques and/or cure crop diseases?

(0) Yes (1) No

18. Do you sell a part of your production?

(0) Yes Go to question 19

(1) No Go to Section VII

19. Where do you sell it?

(1) at the farm Go to Section VII

(2) at home Go to Section VII

(3) in the truck Go to Section VII

(4) at the market Go to question 20

(3) at the plant Go to question 20

20. How far is the market or plant where you sell it at?

D_____ UM_____

21. Do you own pigs?

(0) Yes Go to question 22

(1) No Go to Section VII

22. How many pigs do you own? Q: _____

23. Have you saved some corn?

(0) Yes Go to question 24

(1) No

24. How much? C _____ UM_____

Section VII: Household Economy

"Let's talk now about your family's expenses"

1. About how much money did your family spend last month (April) on...

1.	home payment	Q. _____
2.	land payment	Q. _____
3.	water	Q. _____
4.	electricity	Q. _____
5.	payment of wages	Q. _____
6.	membership fees to coops	Q. _____
7.	medicines and curative care	Q. _____
8.	other	Q. _____
	TOTAL	Q. _____

2. About how much money did the family spend last week on...

1.	basic grains	Q. _____
2.	sugar, salt	Q. _____
3.	seasonings (onions, garlic)	Q. _____
4.	vegetables	Q. _____
5.	meat	Q. _____
6.	pasta	Q. _____
7.	tortillas	Q. _____
8.	eggs	Q. _____
9.	soups	Q. _____
10.	beverages	Q. _____
11.	milk	Q. _____
12.	soap and detergent	Q. _____
13.	propane gas	Q. _____
14.	firewood, ocote, charcoal	Q. _____
15.	candles	Q. _____
16.	batteries	Q. _____
17.	other	Q. _____
	TOTAL	Q. _____

3. Do you have savings?

(0) Yes (1) No

4. Have you applied for a loan in the last three years?

(0) Yes Go to question 5

(1) No Go to question 6

5. Have you been given the loan?

(0) Yes (1) No

6. Have you requested chemical fertilizers or chemical products on credit in the last three years?

(0) Yes Go to question 7

(1) No Go to Section VIII

7. Did you get the fertilizers on credit?

(0) Yes (1) No

8. Do you think your family's life could be improved?

(0) Yes Go to question 9

(1) No Go to question 10

9. How?

10. What could people do to live better?

11. How could people earn more money?

ANNEX IV

ASSESSMENT ON POVERTY LEVELS IN THE GUATEMALAN HIGHLANDS 1990

CONSULTORES Y ASESORES AGROINDUSTRIALES, S. A. - AID

QUESTIONNAIRE II

(for Officials and Community Leaders)

Instructions

Team Leader: Interview the Mayor or Municipal Secretary to obtai community and infrastructure data; with Heads of a Health Center o Post or Hospital to obtain data on health; and with an educatio supervisor or school director(s) to obtain data on education.

A. Identification

1. Interviewer: _____

2. Area: _____

3. Date of interviews: _____

4. People interviewed:

4.1 Mayor or Secretary: _____

4.2 Health Official(s) (name and title) _____

_____

4.3 Education supervisor and/or school director (s): _____

_____

B. Community and Infrastructure information:

1. **Number of inhabitants:** _____

2. **Percentage of Indian Population:** _____

3. **Percentage of Rural Population:** _____

4. **Amount of homes:**

Head Town: _____

Rest of Area: _____

5. Percentage of homes with electrical power supply:

Head Town: _____
Rest of Area: _____

6. Percentage of homes with potable water supply:

Head Town: _____
Rest of Area: _____

7. Percentage of homes with underground drainage:

Head Town: _____
Rest of Area: _____

8. Electricity is supplied by:

INDE _____
Municipal Plant _____
Other _____

9. Number of highway kilometers in the area:

Paved _____
Unpaved, but passable year round _____
Unpaved, passable only in the dry season _____

10. Number of heads of families whose main work is

agriculture _____
cattle _____
artisanry _____
commerce _____
other _____

11. How many telephone lines are in the area?

Head Town: _____
Rest of Area: _____

C. Health Information

12. Number of Health Centers in the area: _____

13. Number of Health Posts in the area: _____

14. Number of hospitals in the area: _____

15. Number of doctors in public health institutions: _____

Head Town: _____
Rest of Area: _____

16. Number of private doctors:

Head Town: _____
Rest of Area: _____

17. Registered nurses:

Head Town: _____
Rest of Area: _____

18. Auxiliary nurses:

Head Town: _____
Rest of Area: _____

19. Rural Health Technicians:

Head Town: _____
Rest of Area: _____

20. Midwives:

Head Town: _____
Rest of Area: _____

21. Health Promoters:

Head Town: _____
Rest of Area: _____

22. Percentage of population using public health services:

Head Town: _____
Rest of Area: _____

23. Percentage of population using private clinics:

Head Town: _____
Rest of Area: _____

24. Are there family planning programs?

Yes _____
No _____

25. Approximate number of people using the family planning programs?

Indigenous _____
Ladino _____

D. Information on Education

26. Number of primary schools:

Head Town: _____
Rest of Area: _____

27. Number of schoolrooms in primary schools:
Head Town: _____
Rest of Area: _____

28. Number of teachers in primary schools:
Head Town: _____
Rest of Area: _____

29. Number of students registered in primary schools:
Head Town: _____
Rest of Area: _____

30. Number of students attending primary schools:
Head Town: _____
Rest of Area: _____

31. Percentage of student failure (repeats) (in 1989) in prima school
Head Town: _____
Rest of Area: _____

32. Percentage of school dropouts (in 1989) in primary schools
Head Town: _____
Rest of Area: _____

33. How many grades does each teacher teach in primary schools?
Head Town: _____
Rest of Area: _____

34. How many primary schools are bilingual? (Spanish-Mayan dialect)
Head Town: _____
Rest of Area: _____

ANNEX V

ANNEX 5a

PRIMARY EDUCATION INFORMATION

USAID/Guatemala project areas	Staff Interviewed D	S	P	# Schools HT*	Rest.	# School Classroom HT	Rest.	# teachers HT	Rest.	students registered in the school HT	Rest.	TOTAL	% repeat students (1989) HT	Rest.	% Dropout Students (1989) HT	Rest.	# grade per teacher HT	Rest.	# Bilingual Schools HT	Rest.	TOTAL
QUETZALTENANGO																					
San Carlos Sija		x		4	50	13	100	14	100	798	3691		10	20	21	12	1	3	nd	2	
Palestina		x		1	9	6	nd	7	3	290	nd		10	nd	5	nd	1	3	nd	nd	
San Martin Sacatepequez		x		1	26	11	nd	8	33	412	775		65	nd	nd	nd	2	1	nd	10	
San Juan Ostuncalco	x			2	18	14	8	32	80	1400	3500		10	15	10	5	1	2	2	15	
HUEHUETENANGO																					
Aguacatan		x		4	44	8	88	37	89	1493	5000		40	60	20	50	1	5	nd	4	
SAN MARCOS																					
San Antonio Sacatepequez		x		1	18	8	50	8	50	30	5000		15	nd	12	nd	1	3	nd	nd	
San Pedro Sacatepequez	x			8	60	12	100	13	130	538	nd		31	nd	26	nd	1	3	nd	nd	
Tejutla	x			1	39	11	nd	12	98	552	3909		75	nd	nd	nd	1	2	nd	nd	
TOTONICAPAN												5570									
Momostenango		x		28	nd	14	804	127	nd	nd	nd		nd	nd	nd	nd	3	4	nd	nd	9
Totonicapan	x			25	50	12	nd	315	nd	nd	nd		nd	nd	nd	nd	1	2	16	34	
EL QUICHE																					
Chichicastenango	nd			nd	nd	nd	nd	nd	nd	nc	nc		nd	nd	nd	nd	nd	nd	nd	nd	
SOLOLA																					
Solola	x			4	68	6	3	15	4	1848	nd		nd	nd	5	20	1	3	1	5	
San Andres Semetabaj				nd	nd	nd	nd	nd	nd	nc	nd		nd	nd	nd	nd	nd	nd	nd	nd	
Nahuala	x			1	23	18	2	20	25	1025	1500		40	90			1	3	nd	nd	
SUCHITEPEQUEZ																					
Cuyalitenango	x			4	18	48	nc	71	39	5044	1325		nd	nd	nd	nd	1	2	nc	3	
Tecpan	x			17	nd	25	3	55	12	1352	580		nd	nd	nd	nd	1	3	nc	6	
Cuyalapa	nd			nc	nd	nd	nc	nd	nd	nc	nc		nd	nd	nd	nd	nd	nd	nc	nc	
Zaragoza	x			1	13	nd	nc	19	10	1158	1102		nd	nd	15	30	1	4	nc	2	
SACATEPEQUEZ																					
Sumpango	x			4	6	nd	nc	47	27	nd	nc		nd	nd	1	2	nd	nd	1	5	
GUATEMALA																					
San Juan Sacatepequez																					

* HT = Head Towns
Rest = Rural municipal areas

ANNEX 5b

PRIMARY EDUCATION INFORMATION

. not receiving) assistance	Staff Interviewed D	S	P	n of schools HT*	Rest.	TOTAL	n of school classrooms HT	Rest.	TOTAL	n of teachers HT	Rest.	TOTAL	students registered in the school HT	Rest.	TOTAL	Students assistance HT	Rest.	TOTAL	% repeat students HT	Rest.	TOTAL	% dropout students HT	Rest.	TOTAL	# grades per teacher HT	Rest.	Numb hill scho HT
ALTENANGO																											
ulia		*		2	17		10	4		10	nd		442	nd		400	nd		nd	nd		70	nd		1	nd	nd
ETENANGO																											
antia		*		95	nd		10	3		38	192		nd	nd		1076	5340		nd	nd		nd	nd		nd	nd	nd
ARCOS																											
quipulas Palo Gordo			*	1	10		9	30		6	40		247	150		200	nd		20	nd		98	nd		1	2	nd
ICAPAN																											
Cristobal Totonicapan			*	1	9		20	nd		24	54		938	nd		838	nd		5	nd		5	nd		1	3	[illegible]
ICHE																											
ta Cruz del Quiche		*		66	nd	66	nd	nd	326	nd	nd	284	nd	nd	4486	nd	nd	4200	nd	nd	5	nd	nd	3	nd	nd	
A																											
ta Lucia Utatlan			*	3	10		16	nd		15	nd		606	nd		606	nd		nd	nd		nd	nd		1	2	[illegible]
ajachel				1	2		20	10		24	10		799	nd		799	106		nd	nd		nd	nd		1	2	[illegible]
LTENANGO																											
ta Cruz Balanga				nd	nd		nd	nd		nd	nd		nd	nd		nd	nd		nd	nd		nd	nd		nd	nd	[illegible]
TEPEQUEZ																											
dad Vieja				2	2		1	1		31	20		1270	nd		1270	nd		nd	nd		30	nd		1	1	[illegible]
EMALA																											
Pedro Sacatepequez				nd	nd		nd	nd		nd	nd		nd	nd		nd	nd		nd	nd		nd	nd		nd	nd	[illegible]

* HT = Head Towns
Rest = Rural municipal areas

BEST AVAILABLE COPY

ANNEX VI

COMMUNITY AND INFRASTRUCTURE INFORMATION

			POPULATION		HOMES		HOMES WITH ELECTRICAL POWER SUPPLY		POTABLE WATER		UNDERGROUND DRAINAGE		ELECTRICAL PLANT		KILOMETERS OF HIGHWAYS			HEAD OF FAMILY MAIN OCCUPATION					TELEPHONE	
	A.S.O.	Total Population	% Indigenous	% Rural	n. of homes Head Town	n. of home rest	% homes Head town	% homes rest	% homes head town	% homes rest	% homes head town	% homes rest	INDE	Municipal	Paved	all-weather roads	Only dry seasons	Agri-culture	cattle	Artis-sanry	commercial	other	n. telephone coverage	n. telep rest
[illegible]	S	28000	25	nd	500	1500	30	15	30	20	75	nd	N		nd	24	nd	75	10	10	30	5	nd	
	N	7719	70	nd	534	1142	90	10	40	5	30	nd	N		3	9	9	10	nd	15	nd	nd	nd	
[illegible]	N	17000	90	90	2000	3000	60	nd	60	90	100	nd	N		20	4	6	100	nd	nd	80	nd	nd	
[illegible]	N	7[illegible]	80	90	6167	8088	90	50	90	60	60	nd	N		25	nd	nd	70	nd	10	10	10	20	
	N	35000	25	70	nd	nd	90	50	90	25	90	nd	N		nd	250	250	nd	nd	nd	nd	nd	nd	
[illegible]	N	8000	90	nd	190	nd	nd	nd	150	nd	150	nd	N		1	nd	nd	nd	nd	nd	nd	nd	3	
	N	55000	nd	75	1030	nd	75	nd	100	nd	95	nd	N		6	6	6	50	nd	50	nd	nd	4	
	N	17000	10	80	331	nd	95	5	98	60	98	60	N		74	nd	nd	90	nd	2	nd	nd	3	
	N	62000	95	70	200	nd	98	nd	100	nd	90	nd	N		nd	nd	nd	nd	nd	nd	nd	nd	nd	
	N	75000	90	10	5000	nd	90	80	100	60	100	nd	N		28	11	nd	80	nd	70	10	nd	nd	
[illegible]		70000	90	90	2000	nd	1300	nd	1270	nd	1500	nd	N		nd	nd	nd	90	nd	80	90	20	nd	
[illegible]	N	nd	95	5	2500	nd	60	nd	nd	nd	nd	nd	N		4	nd	nd	90	nd	30	25	nd	nd	
[illegible]		nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd			nd	nd	nd	nd	nd	nd	nd	nd	nd	
	N	55000	100	nd	2530	nd	90	30	100	70	100	nd	N		21	nd	nd	100	nd	20	30	nd	1	
	N	27017	65	nd	nd	nd	nd	nd	nd	nd	nd	nd	N		nd	nd	nd	nd	nd	nd	nd	nd	nd	
	N	51000	90	10	1615	nd	90	20	90	60	90	nd	N		6	12	nd	90	nd	50	40	40	nd	
		23000	95	nd	nd	nd	95	nd	nd	nd	nd	nd	N		nd	nd	nd	nd	nd	nd	nd	nd	nd	
	N	14594	15	95	nd	nd	100	nd	nd	nd	80	nd	N		nd	nd	nd	nd	nd	nd	nd	nd	nd	
	N	20200	95	30	1700	1550	90	nd	50	nd	85	nd	N		0.5	nd	nd	80	nd	20	20	[illegible]	nd	

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ANNEX 6B

COMMUNITY AND INFRASTRUCTURE INFORMATION

Location Name	H.S.U.	POPULATION Total Population	% Indigenous	% Rural	HOMES No. of homes Head Town	No. of homes rest	HOMES WITH ELECTRICAL POWER SUPPLY % homes head town	% homes rest	POTABLE WATER % homes head town	% homes rest	UNDERGROUND DRAINAGE % homes head town	% homes rest	ELECTRICAL POWER INDE	Muni cipal	KILOMETERS OF HIGHWAYS Paved	all weather roads	Only dry seasons	HEAD OF FAMILY MAIN OCCUPATION Agri culture	AVERAGE Cattle	Arsa	Sheep	Goats	Other	% telephone coverage	Tot P
[illegible]	[illegible]	7000	5	60	5000	nd	70	10	10	5	50	nd	8		20	10	40	70	nd	nd	nd	nd		1
[illegible]	[illegible]	5715	40	60	nd	nd	nd	nd	nd	nd	nd	nd	4		5	15-1	15.0	nd	nd	nd	nd	nd		50
[illegible]	[illegible]	6000	5	80	150	150	100	25	100	80	nd	nd	5		5	nd	nd	90	2	1.5	0.5	nd		1
[illegible]	[illegible]	2648	40	95	nd	nd	100	90	100	60	100	nd	8		1	50	nd	50	nd	100	30	[illegible]		5
[illegible]	[illegible]	5500	75	nd	nd	nd	nd	nd	16	nd	nd	nd	5		50	nd	[illegible]	95	nd	[illegible]	nd	nd		nd
[illegible]	[illegible]	1150	40	10	50	15000	60	40	60	50	50	nd	8		nd	15	10	90	nd	20	50	nd		nd
[illegible]	[illegible]	9532	40	10	4000	150	90	10	75	nd	80	nd	8		15	2	2	20	nd	15	90	nd		200
[illegible]	[illegible]	1900	40	10	500	100	70	nd	80	10	75	nd	5		nd	4	nd	80	nd		80	nd		2
[illegible]	[illegible]	1500	nd	10	3000	1000	90	90	60	nd	80	nd	8		0	3	nd	80	5	nd	5	nd		2
[illegible]	[illegible]	2100	40	40	nd	nd	nd	nd	nd	nd	nd	nd			nd	nd	nd	nd	nd	nd	nd	nd		80

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ANNEX VII

ANNEX 7a

HEALTH INFRASTRUCTURE

Health area	Chief interviewed	n health centers town	n health posts Rest.	Hospital	n dentists in government departments HTN	n dentists in government departments Rest.	TOTAL	n private doctors HT.	n private doctors Rest.	n registered nurses HT.	n registered nurses Rest.	TOTAL	n auxiliary nurses HT.	n auxiliary nurses Rest.	TOTAL	Rural health technicians HT.	Rural health technicians Rest.	TOTAL	n of midwives H.	n of midwives Rest.	TOTAL	n health promoter H.	n health promoter Rest.	TOTAL	% Population using public services HT.	% Population using public services Rest.	% Population using private clinics HT.	% Population using private clinics Rest.	Family planning program yes	Family planning program no	Users family planning
CITIES																															
[illegible]		1	1	nd	1	nd		1	nd	1	nd		5	1		nd	nd		nd	nd	20	nd	nd		95	nd	nd	95	1		10
[illegible]	1	1	1	nd	1	nd		nd	nd	1	nd		1	1		1	1		nd	nd	20	nd	nd		95	95	nd	nd	1		45
[illegible]		1	1	nd	1	nd		nd	nd	1	nd		—	nd		1	1		50	75	75	40	15		95	nd	nd	nd	1		95
[illegible]	1	1	0	nd	1	nd		1	nd	1	24					nd	2		nd	nd											
TERRITORY																															
[illegible]	1	1	0	nd	1	nd		2	2	1	nd		2	1		1	nd		20	nd	nd		nd		60	30	1	20	1		25
PROVS																															
[illegible]	1	nd	2	nd	nd	nd		nd	nd	nd	nd		nd	nd		2	nd		—	10	nd	—	30	nd	5	1	nd	nd	1		nd
[illegible]	1	1	2	nd	12	nd		15	nd	1	nd		2	1		4	nd		nd	nd	90	nd	nd	40	50	50	25	10	1		20
[illegible]	1	1	5	1	1	nd		4	nd	1	nd		2	2		2	nd		3	87	nd	nd	nd	70	35	nd	nd	nd	1		
[illegible]																															
[illegible]	1	2	2	n	1	2	nd	2	nd	1	nd		4	1		nd	2		—	20		1	nd						1		40
[illegible]	1	4	10	1	nd	nd	19	nd	nd	nd	nd	24			126	nd	10	21			300			275	1	20	nd		2		
[illegible]																															
[illegible]		nd	nd	nd	nd	nd	nd	nd	nd	nd	nd		nd	nd		nd	nd		nd	45	nd	nd	nd	10	nd	nd	nd			nd
[illegible]																															
[illegible]	1	1	5	1	20	8	nd	1	0	0	0		30	1		5	17		40	30		nd	75		21	20	21		0		21
[illegible]	1	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd		nd	nd		nd	nd		nd	nd		nd	nd		nd	nd	nd				nd
[illegible]	1	1	8	nd	1	nd	nd	2	nd	1	nd		1	8		1	8		48	176		70	100		24	nd	5			0	nd
TERRITO																															
[illegible]	0	1	nd	1	1	nd	nd	nd	nd	30	nd		nd	nd	48	nd	nd		nd	nd	30	nd	nd	25	nd	nd	nd				nd
[illegible]		1	12	nd	1	nd	nd	1	nd	1	nd		nd	nd	18	nd	nd		nd	nd	36	nd	nd	75	nd	nd	nd		0		nd
[illegible]	1	1	100	nd	1	nd	nd	1	nd	1	nd		2	1	nd	1	nd		12	12	nd	20	1	nd	nd	nd	3		0		28
[illegible]	1	nd	4	1	nd	nd	nd	nd	nd	nd	nd		1	10	nd	1	1		—	nd	nd	nd	nd	nd	nd	nd	nd		0		nd
[illegible]																															
[illegible]	1	1	nd	nd	1	nd	nd	1		nd	nd		2	1	nd	1	nd		1	14	nd	10	20	nd	10		nd	30			20
[illegible]																															
[illegible]	1	1	3	nd	3	nd	nd	24		1	nd		5	6		1	nd		1	1	nd	nd	70	nd	nd	nd	nd	nd	0		nd

* HT = Head Town
Rest = Rural/Sub Municipal areas

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HEALTH INFORMATION

Location of health area	Staff in attendance	% health centers room	% health posts roof	Hospital beds	% doctors in government departments HT.	% doctors in government departments rest.	% private doctors HT.	% private doctors rest.	% registered nurses HT.	% registered nurses rest.	% auxiliary nurses HT.	% auxiliary nurses rest.	% rural health technicians HT.	% rural health technicians rest.	TOTAL	Midwives HT.	Midwives rest.	TOTAL	% master promoters HT.	% master promoters rest.	TOTAL	% using contraceptives HT.	% using contraceptives rest.	% population using private clinics HT.	% population using private clinics rest.	Family planning program	% women of reproductive age HT.	% women of reproductive age rest.
Lilongwe																												
[illegible]		1	-	nd	1	nd	nd	nd	1	1	2	1	nd		nd	nd		nd	nd	20	nd	nd		nd	nd	-	15	15
Dedza																												
[illegible]		nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd			nd	nd		nd	nd		nd	nd	nd	nd		-	nd
Zomba																												
[illegible]	1	1	nd	nd	nd	nd	nd	nd	nd	2	nd	1	nd	10		nd	nd	nd	nd	nd		nd	nd	nd	nd	1	-	nd
Chikwawa																												
[illegible]	1	1	-	nd	1	nd	nd	nd	1	4	5	nd	1			nd	nd		nd	nd		nd	nd	nd	nd	1	-	-
Nsanje																												
[illegible]	1	1	nd	1	nd	nd	nd	nd	nd	nd	nd	2	2			nd	nd		nd	nd		nd	nd	nd	nd	-	-	nd
[illegible]	-	2	nd	nd	1	1	1	2	1	3	4	1	1			10	20		5	nd		nd	Nd	nd	nd	-	nd	nd
Blantyre	nd	1	nd	nd	2	nd	5	nd	1	4	nd	nd	nd			nd	nd	7	nd	3		40	40	15	nd	5	40	40
Thyolo																												
[illegible]		nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd			nd	nd		nd	nd		nd	nd	nd	nd		-	-
Mulanje																												
[illegible]	-	nd	1	nd	1	nd	2	nd	nd	3	nd	2	nd			1	5		20	5		nd	20	nd	nd	-		nd
Phalombe																												
[illegible]		1		nd	1	nd	2	nd	1	5	1	1	-			1	4		nd	nd		nd	75	20	4	-	-	nd

* HT = Head Office
Rest = Rural Municipal area

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ANNEX VIII

ANEXO 8

INDEX AGGREGATION TEST: SECTOR AND OVERALL INDICES WITH VARYING WEIGHTS

8.1 Sector indices a weight (w) of 1.00 each

Chart 73

SECTOR RELATED INDICES

DEPTM CODE	MUNICIPIO	A	Y	E	C	H
1	1 Sn. Pedro Sctpqz.	2.286	1.210	1.460	2.332	2.173
1	2 Sn. Juan Sctpqz.	1.269	1.189	1.176	1.458	0.933
3	3 Sumpango	3.203	1.616	1.607	2.616	1.609
3	4 Ciudad Vieja	2.288	1.295	1.137	1.236	1.193
4	5 Chimaltenango	1.057	1.608	0.898	1.769	1.386
4	6 Comalapa	1.299	1.711	2.008	1.510	1.978
4	7 Tecpan	0.994	1.481	2.653	1.597	1.477
4	8 Zaragoza	1.126	1.448	1.247	3.079	2.331
4	9 Sta. Cruz Balanya	1.977	1.407	0.956	0.731	2.024
7	10 Solola	0.989	1.256	2.534	1.341	2.195
7	11 Sta. Lucia Uttln.	1.356	1.595	2.543	1.483	1.446
7	12 Nahuala	0.898	1.519	3.023	1.466	1.682
7	13 Panajachel	2.026	1.338	2.105	0.915	0.696
7	14 Sn. Andres Semetabaj	1.023	1.410	1.675	1.755	1.194
9	15 Sn. Carlos Sija	1.403	1.142	0.949	1.748	1.117
9	16 Palestina	2.261	1.178	0.994	1.811	0.866
9	17 Sn. Martin Sctpqz.	2.445	1.414	1.546	1.997	1.217
9	18 Sn. Juan Ostnclc.	2.013	1.603	1.660	2.489	1.306
9	19 Sibilia	2.057	1.143	0.746	0.946	0.930
13	20 Aguacatan	1.838	1.604	1.996	2.831	1.586
13	21 Chiantla	1.556	1.444	1.768	3.269	1.799
12	22 Sn. Antonio Sctpqz	2.556	1.756	1.987	3.965	1.394
12	23 Sn. Pedro Sctpqz-SM	1.400	1.209	1.073	1.373	1.197
12	24 Tejutla	2.561	1.133	1.224	2.364	1.483
12	25 Esquipulas Palo Gordo	2.832	1.582	1.564	1.210	1.198
8	26 Momostenango	0.652	1.232	2.673	2.268	2.045
8	27 Totonicapan	0.402	1.499	2.634	1.905	2.392
8	28 Sn. Cristobal Ttncpn.	1.548	1.316	1.674	3.110	2.152
14	29 Chichicastenango	1.630	1.322	2.211	2.392	1.383
14	30 Sta. Cruz del Quiche	2.099	1.268	1.489	2.316	1.275

Notas:

A=General index of the Agriculture Sector
Y=General index of the Economics Sector
E=General index of the Education Sector
C=General index of the Community and Infrastructure Sector
H=General index of the Health Sector

8.2 Indices with a weight of 1.000 each, aid/non-aid block areas and ranking by range

8.2.1 Agriculture

Chart 74

AGRICULTURE SECTOR INDEX (A)

WEIGHT w 1

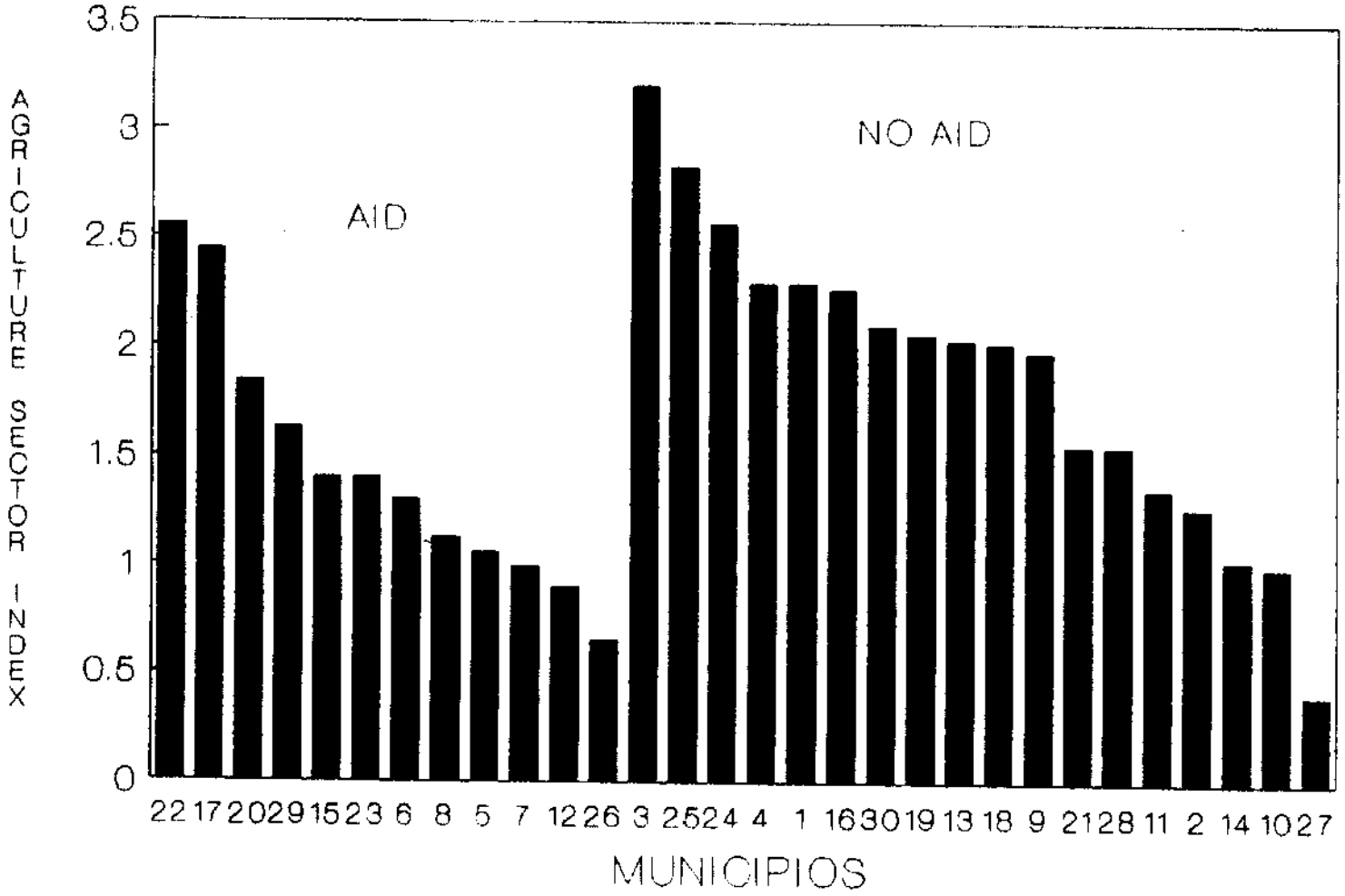
AID AGRC	DEPTM	CODE	MUNICIPIO	A
1	1	1	Sn. Pedro Sctpqz.	2.286
1	1	2	Sn. Juan Sctpqz.	1.269
1	3	3	Sumpango	3.203
1	3	4	Ciudad Vieja	2.288
2	4	5	Chimaltenango	1.057
2	4	6	Comalapa	1.299
2	4	7	Tecpan	0.994
2	4	8	Zaragoza	1.126
1	4	9	Sta. Cruz Balanya	1.977
1	7	10	Solola	0.989
1	7	11	Sta. Lucia Uttln.	1.356
2	7	12	Nahuala	0.898
1	7	13	Panajachel	2.026
1	7	14	Sn. Andres Semetabaj	1.023
2	9	15	Sn. Carlos Sija	1.403
1	9	16	Palestina	2.261
2	9	17	Sn. Martin Sctpqz.	2.445
1	9	18	Sn. Juan Ostncic.	2.013
1	9	19	Sibilia	2.057
2	13	20	Aguacatan	1.836
1	13	21	Chiantla	1.556
2	12	22	Sn. Antonio Sctpqz	2.556
2	12	23	Sn. Pedro Sctpqz-SM	1.400
1	12	24	Tejutla	2.561
1	12	25	Esquipulas Palo Gordo	2.832
2	8	26	Momostenango	0.652
1	8	27	Totonicapan	0.402
1	8	28	Sn. Cristobal Ttncpn.	1.548
2	14	29	Chichicastenango	1.630
1	14	30	Sta. Cruz del Quiche	2.099

AGRICULTURE SECTOR INDEX (A)
RANKED FROM GRATER TO LESS POVERTY AND BY
GROUND AID (2) NON-AID (1)

AID AGRC	CODE	MUNICIPIO	A	RANGE
1	3	Sumpango	3.203	1
1	15	Esquipulas Palo Gordo	2.832	2
1	24	Tejutla	2.561	3
2	22	Sn. Antonio Sctpqz	2.556	4
2	17	Sn. Martin Sctpqz.	2.445	5
1	4	Ciudad Vieja	2.288	6
1	1	Sn. Pedro Sctpqz.	2.286	7
1	16	Palestina	2.261	8
1	30	Sta. Cruz del Quiche	2.099	9
1	19	Sibilia	2.057	10
1	13	Panajachel	2.026	11
1	18	Sn. Juan Ostncic.	2.013	12
1	9	Sta. Cruz Balanya	1.977	13
2	20	Aguacatan	1.836	14
2	29	Chichicastenango	1.630	15
1	21	Chiantla	1.556	16
1	28	Sn. Cristobal Ttncpn.	1.548	17
2	15	Sn. Carlos Sija	1.403	18
2	23	Sn. Pedro Sctpqz-SM	1.400	19
1	11	Sta. Lucia Uttln.	1.356	20
2	5	Comalapa	1.299	21
1	2	Sn. Juan Sctpqz.	1.269	22
2	8	Zaragoza	1.126	23
2	5	Chimaltenango	1.057	24
1	14	Sn. Andres Semetabaj	1.023	25
2	7	Tecpan	0.994	26
1	10	Solola	0.989	27
2	12	Nahuala	0.898	28
2	26	Momostenango	0.652	29
1	27	Totonicapan	0.402	30

GRAPH 62

AGRICULTURE INDEX RANGES

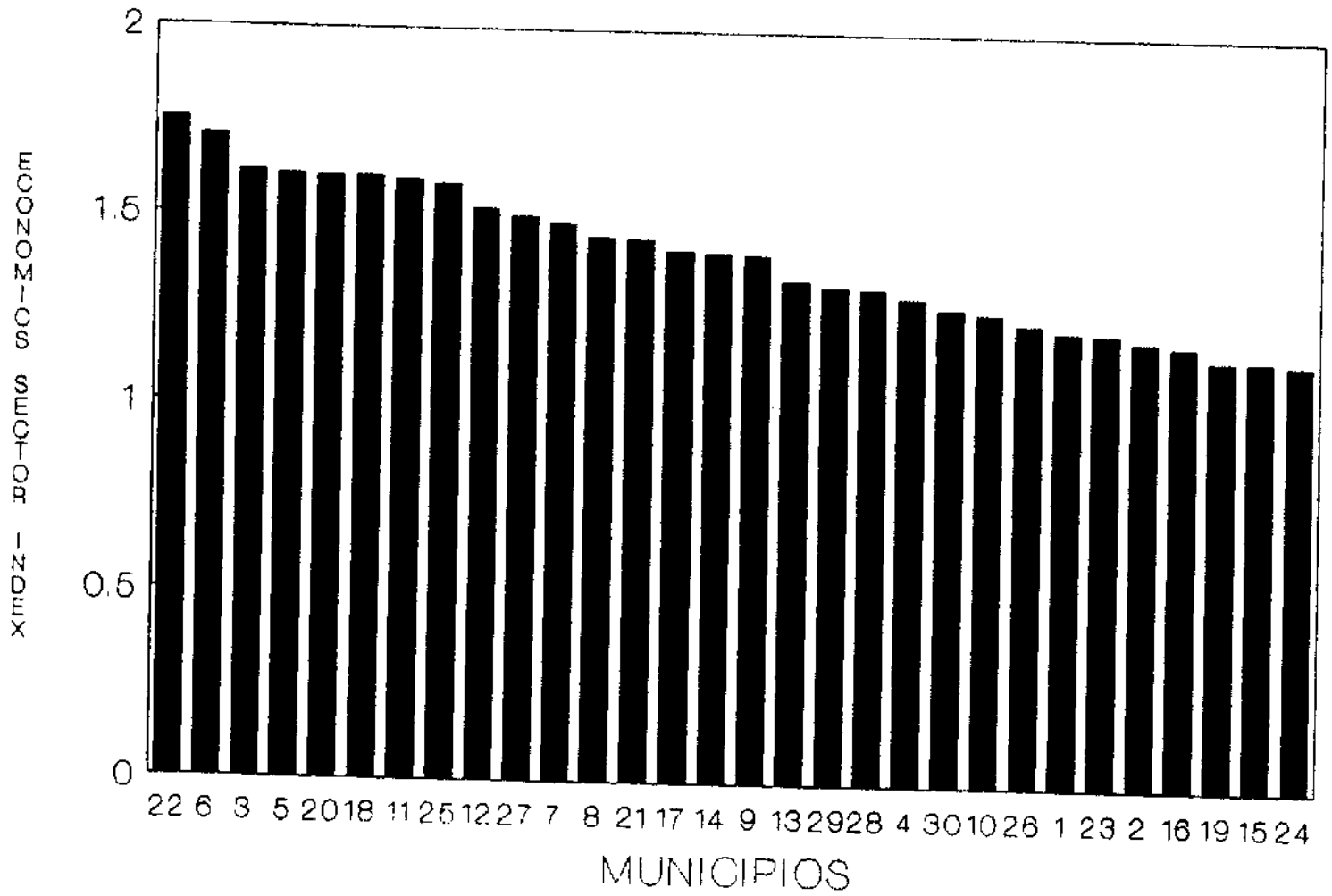


8.2.2 Economics

Chart 75

AID ECO	DEPTM	CODE	MUNICIPIO	WEIGHT W 1 Y	CODE	MUNICIPIO	Y	RANGE
			ECONOMICS SECTOR INDEX (Y)			ECONOMICS SECTOR INDEX (Y) RANKED FROM GREATER TO LESS POVERTY		
1	1	1	Sn. Pedro Sctpqz.	1.210	22	Sn. Antonio Sctpqz	1.756	1
1	1	2	Sn. Juan Sctpqz.	1.189	6	Comalapa	1.711	2
1	3	3	Sumpango	1.616	3	Sumpango	1.616	3
1	3	4	Ciudad Vieja	1.295	5	Chimaltenango	1.608	4
1	4	5	Chimaltenango	1.608	20	Aguacatan	1.604	5
1	4	6	Comalapa	1.711	18	Sn. Juan Ostncic.	1.603	6
1	4	7	Tecpan	1.481	11	Sta. Lucia Uttln.	1.595	7
1	4	8	Zaragoza	1.448	25	Esquipulas Palo Gordo	1.582	8
1	4	9	Sta. Cruz Balanya	1.407	12	Nahuala	1.519	9
1	7	10	Solola	1.256	27	Totonicapan	1.499	10
1	7	11	Sta. Lucia Uttln.	1.595	7	Tecpan	1.481	11
1	7	12	Nahuala	1.519	8	Zaragoza	1.448	12
1	7	13	Panajachel	1.338	21	Chiantla	1.444	13
1	7	14	Sn. Andres Semetabaj	1.410	17	Sn. Martin Sctpqz.	1.414	14
2	9	15	Sn. Carlos Sija	1.142	14	Sn. Andres Semetabaj	1.410	15
1	9	16	Palestina	1.178	9	Sta. Cruz Balanya	1.407	16
1	9	17	Sn. Martin Sctpqz.	1.414	13	Panajachel	1.338	17
1	9	18	Sn. Juan Ostncic.	1.603	29	Chichicastenango	1.322	18
2	9	19	Sibilia	1.143	28	Sn. Cristobal Ttncpn.	1.316	19
1	13	20	Aguacatan	1.604	4	Ciudad Vieja	1.295	20
1	13	21	Chiantla	1.444	30	Sta. Cruz del Quiche	1.268	21
1	12	22	Sn. Antonio Sctpqz	1.756	10	Solola	1.256	22
1	12	23	Sn. Pedro Sctpqz-SM	1.209	26	Momostenango	1.232	23
2	12	24	Tejutla	1.133	1	Sn. Pedro Sctpqz.	1.210	24
1	12	25	Esquipulas Palo Gordo	1.582	23	Sn. Pedro Sctpqz-SM	1.209	25
1	8	26	Momostenango	1.232	2	Sn. Juan Sctpqz.	1.189	26
1	8	27	Totonicapan	1.499	16	Palestina	1.178	27
1	8	28	Sn. Cristobal Ttncpn.	1.316	19	Sibilia	1.143	28
1	14	29	Chichicastenango	1.322	15	Sn. Carlos Sija	1.142	29
1	14	30	Sta. Cruz del Quiche	1.268	24	Tejutla	1.133	30

GRAPH 63
ECONOMICS INDEX RANGES



8.2.3 Education

Chart 76

EDUCATION SECTOR INDEX (E)

WEIGHT W 1

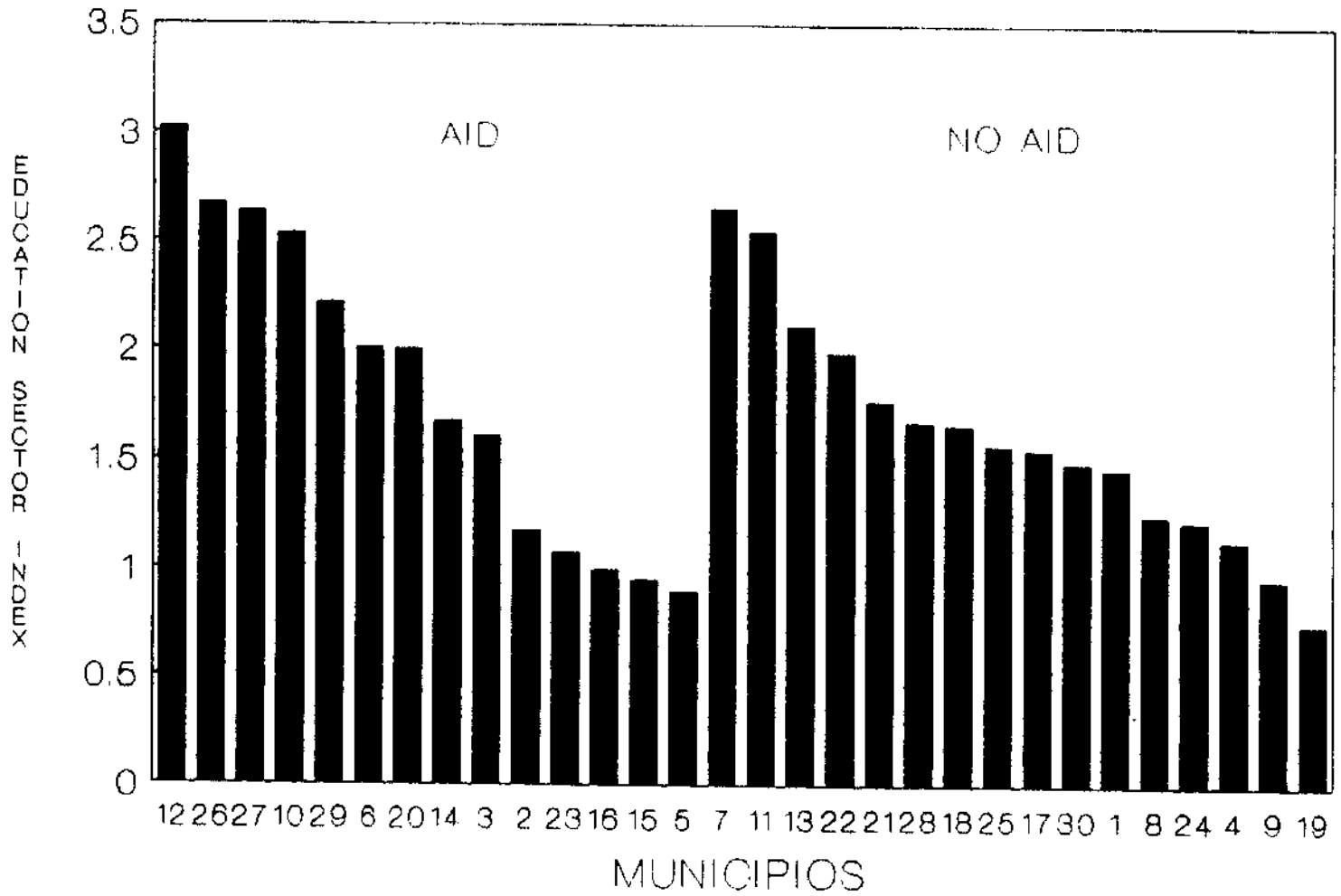
AID EDUC	DEPTM	CODE	AREA	E
1	1	1	Sn. Pedro Sctpqz.	1.460
2	1	2	Sn. Juan Sctpqz.	1.176
2	3	3	Sumpango	1.607
1	3	4	Ciudad Vieja	1.137
2	4	5	Chimaltenango	0.898
2	4	6	Comalapa	2.008
1	4	7	Tecpan	2.653
1	4	8	Zaragoza	1.247
1	4	9	Sta. Cruz Balanya	0.956
2	7	10	Solola	2.534
1	7	11	Sta. Lucia Uttln.	2.543
2	7	12	Nahuala	3.023
1	7	13	Panajachel	2.105
2	7	14	Sn. Andres Semetabaj	1.675
2	9	15	Sn. Carlos Sija	0.949
2	9	16	Palestina	0.994
1	9	17	Sn. Martin Sctpqz.	1.546
1	9	18	Sn. Juan Ostncic.	1.660
1	9	19	Sibilia	0.746
2	13	20	Aguacatan	1.996
1	13	21	Chiantla	1.768
1	12	22	Sn. Antonio Sctpqz	1.987
2	12	23	Sn. Pedro Sctpqz-SM	1.073
1	12	24	Tejutla	1.224
1	12	25	Esquipulas Palo Gordo	1.564
2	8	26	Momostenango	2.673
2	8	27	Totonicapan	2.634
1	8	28	Sn. Cristobal Ttncpn.	1.674
2	14	29	Chichicastenango	2.211
1	14	30	Sta. Cruz del Quiche	1.489

EDUCATION SECTOR INDEX (E)
RANKED FROM GRATER TO LESS POVERTY
AND BY GROUND AID (2) AND NON-AID (1)

AID EDUC	CODE	AREA	E	RANGE
2	12	Nahuala	3.023	1
1	26	Momostenango	2.673	2
2	7	Tecpan	2.653	3
1	27	Totonicapan	2.634	4
2	11	Sta. Lucia Uttln.	2.543	5
2	10	Solola	2.534	6
1	29	Chichicastenango	2.211	7
2	13	Panajachel	2.105	8
2	6	Comalapa	2.008	9
1	20	Aguacatan	1.996	10
1	22	Sn. Antonio Sctpqz	1.987	11
1	21	Chiantla	1.768	12
2	14	Sn. Andres Semetabaj	1.675	13
1	28	Sn. Cristobal Ttncpn.	1.674	14
1	18	Sn. Juan Ostncic.	1.660	15
2	3	Sumpango	1.607	16
1	25	Esquipulas Palo Gordo	1.564	17
1	17	Sn. Martin Sctpqz.	1.546	18
1	30	Sta. Cruz del Quiche	1.489	19
2	1	Sn. Pedro Sctpqz.	1.460	20
2	8	Zaragoza	1.247	21
1	24	Tejutla	1.224	22
2	2	Sn. Juan Sctpqz.	1.176	23
2	4	Ciudad Vieja	1.137	24
1	23	Sn. Pedro Sctpqz-SM	1.073	25
1	16	Palestina	0.994	26
2	9	Sta. Cruz Balanya	0.956	27
1	15	Sn. Carlos Sija	0.949	28
2	5	Chimaltenango	0.898	29
1	19	Sibilia	0.746	30

GRAPH 64

EDUCATION INDEX RANGES



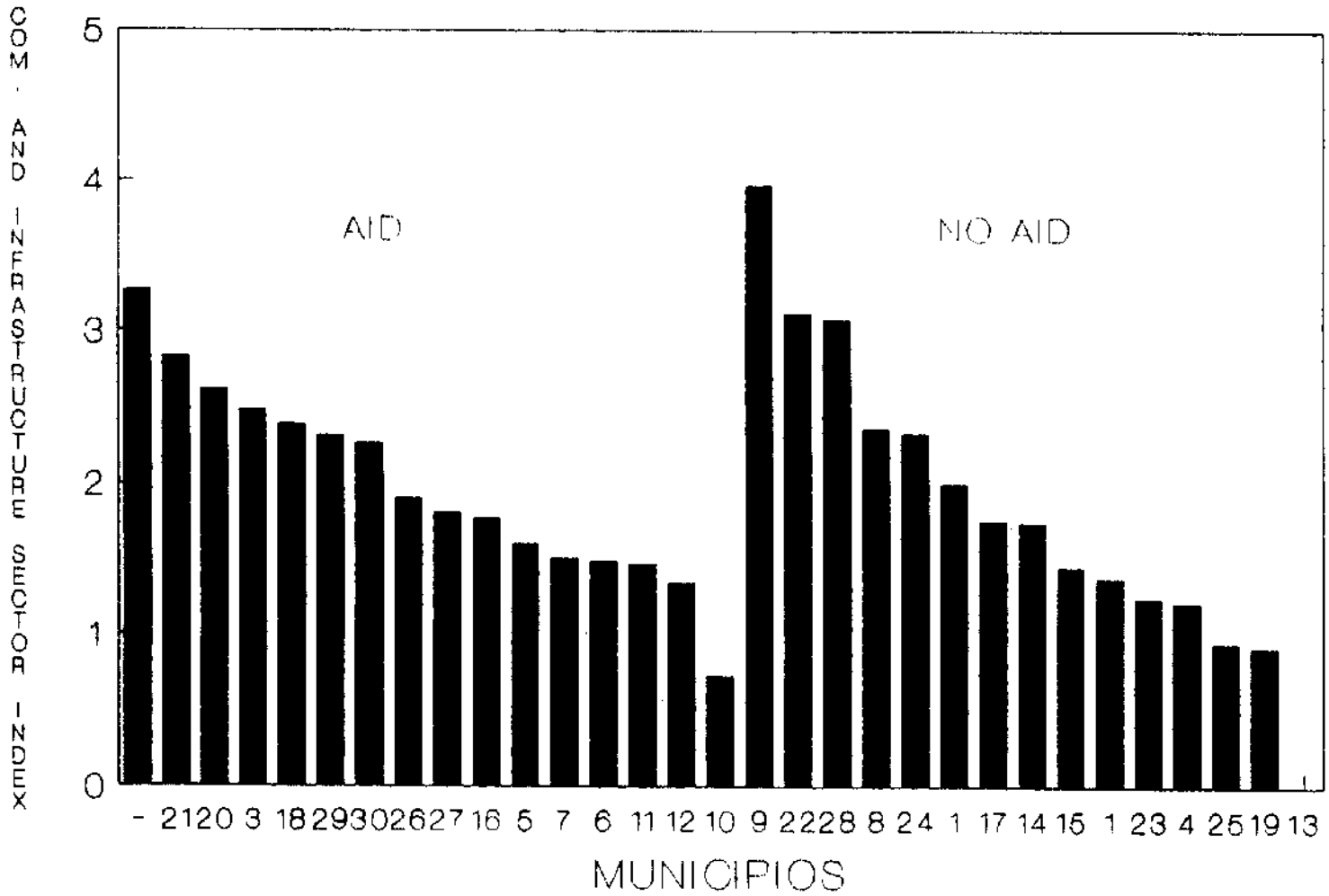
8.2.4 Community and infrastructure

Chart 77

COMMUNITY AND INFRASTRUCTURE SECTOR INDEX (C)				COMMUNITY AND INFRASTRUCTURE SECTOR INDEX (C) RANKED FROM GRATER TO LESS POVERTY			
			WEIGHT W 1				
DEPTM	CODE	AREA	C	AID INFRA	CODE	AREA	C	RANGE
1	1	Sn. Pedro Sctpqz.	2.332	1	22	Sn. Antonio Sctpqz	3.965	1
1	2	Sn. Juan Sctpqz.	1.450	2	21	Chiantla	3.269	2
3	3	Sumpango	2.616	1	28	Sn. Cristobal Ttncpn.	3.110	3
3	4	Ciudad Vieja	1.236	1	8	Zaragoza	3.079	4
4	5	Chimaltenango	1.769	2	20	Aguacatan	2.831	5
4	6	Comalapa	1.510	2	3	Sumpango	2.616	6
4	7	Tecpan	1.597	2	18	Sn. Juan Ostncic.	2.489	7
4	8	Zaragoza	3.079	2	29	Chichicastenango	2.392	8
4	9	Sta. Cruz Balanya	0.731	1	24	Tejutla	2.364	9
7	10	Solola	1.341	1	1	Sn. Pedro Sctpqz.	2.332	10
7	11	Sta. Lucia Uttln.	1.483	2	30	Sta. Cruz del Quiche	2.316	11
7	12	Nahuala	1.466	2	26	Momostenango	2.268	12
7	13	Panajachel	0.915	1	17	Sn. Martin Sctpqz.	1.997	13
7	14	Sn. Andres Semetabaj	1.755	2	27	Totonicapan	1.905	14
9	15	Sn. Carlos Sija	1.748	2	16	Palestina	1.811	15
9	16	Palestina	1.811	2	5	Chimaltenango	1.769	16
9	17	Sn. Martin Sctpqz.	1.997	1	14	Sn. Andres Semetabaj	1.755	17
9	18	Sn. Juan Ostncic.	2.489	1	15	Sn. Carlos Sija	1.748	18
9	19	Sibilia	0.946	2	7	Tecpan	1.597	19
13	20	Aguacatan	2.831	2	6	Comalapa	1.510	20
13	21	Chiantla	3.269	2	11	Sta. Lucia Uttln.	1.483	21
12	22	Sn. Antonio Sctpqz	3.965	2	12	Nahuala	1.466	22
12	23	Sn. Pedro Sctpqz-SM	1.373	1	2	Sn. Juan Sctpqz.	1.450	23
12	24	Tejutla	2.364	1	23	Sn. Pedro Sctpqz-SM	1.373	24
12	25	Esquipulas Palo Gordo	1.210	2	10	Solola	1.341	25
8	26	Momostenango	2.268	1	4	Ciudad Vieja	1.236	26
8	27	Totonicapan	1.905	1	25	Esquipulas Palo Gordo	1.210	27
8	28	Sn. Cristobal Ttncpn.	3.110	1	19	Sibilia	0.946	28
14	29	Chichicastenango	2.392	1	13	Panajachel	0.915	29
14	30	Sta. Cruz del Quiche	2.316	2	9	Sta. Cruz Balanya	0.731	30

GRAPH 65

COM. AND INFRASTRUCTURE INDEX RANGES



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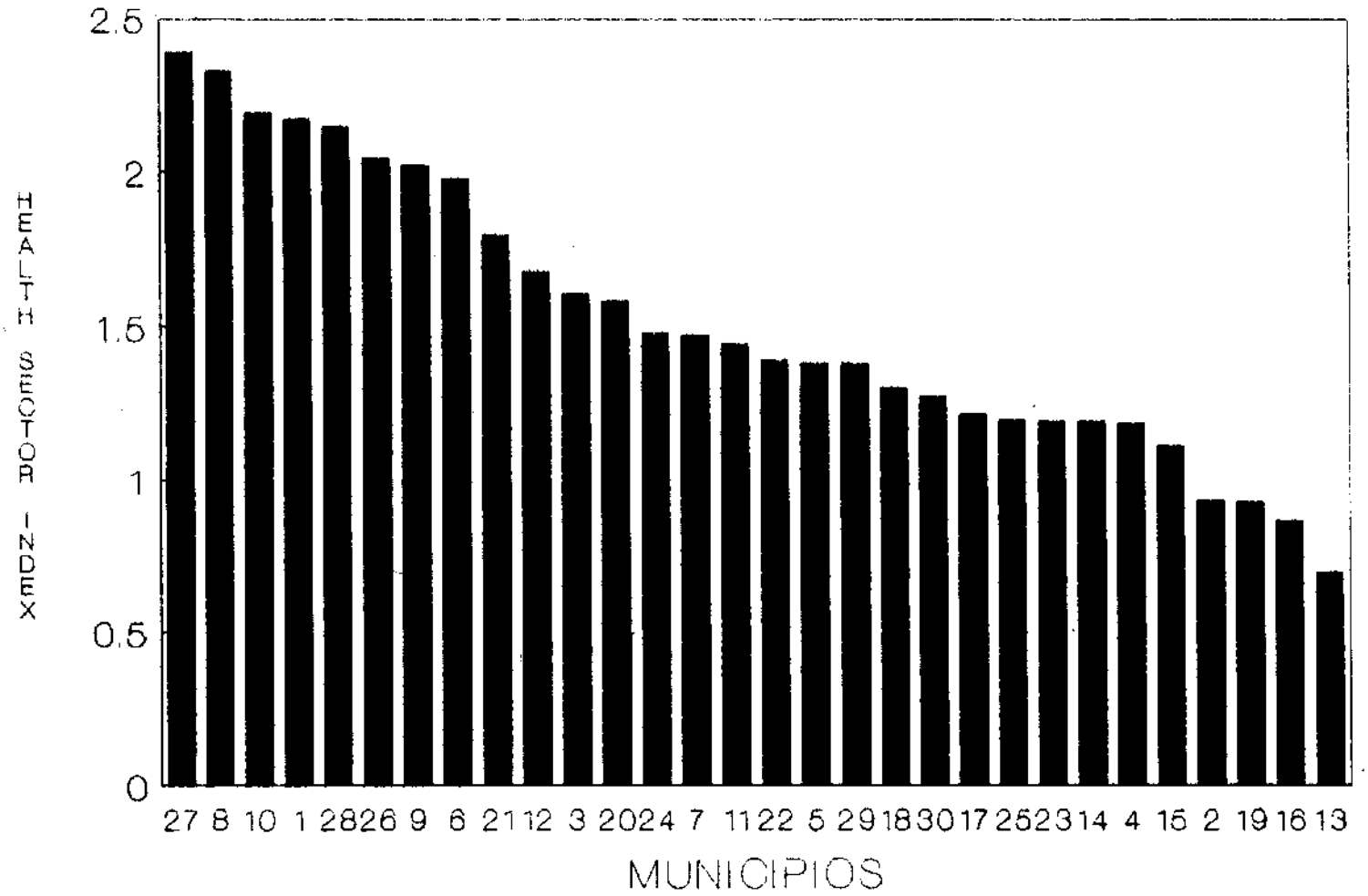
8.2.5 Health

Chart 78

HEALTH SECTOR INDEX (H)					HEALTH SECTOR INDEX (H) RANKED FROM GREATER TO LESS POVERTY		
AID SALUD	DEPTM	CODE	AREA	WEIGHT w 1 H	CODE	AREA	H	RANGE
1	1	1	Sn. Pedro Sctpqz.	2.173	27	Totonicapan	2.392	1
1	1	2	Sn. Juan Sctpqz.	0.933	8	Zaragoza	2.331	2
1	3	3	Sumpango	1.609	10	Solola	2.195	3
1	3	4	Ciudad Vieja	1.193	1	Sn. Pedro Sctpqz.	2.173	4
1	4	5	Chimaltenango	1.386	28	Sn. Cristobal Ttncpn.	2.152	5
1	4	6	Comalapa	1.978	26	Momostenango	2.045	6
1	4	7	Tecpan	1.477	9	Sta. Cruz Balanya	2.024	7
1	4	8	Zaragoza	2.331	6	Comalapa	1.978	8
1	4	9	Sta. Cruz Balanya	2.024	21	Chiantla	1.799	9
1	7	10	Solola	2.195	12	Nahuala	1.682	10
1	7	11	Sta. Lucia Uttln.	1.446	3	Sumpango	1.609	11
1	7	12	Nahuala	1.682	20	Aguacatan	1.586	12
1	7	13	Panajachel	0.696	24	Tejutla	1.483	13
1	7	14	Sn. Andres Semetabaj	1.194	7	Tecpan	1.477	14
1	9	15	Sn. Carlos Sija	1.117	11	Sta. Lucia Uttln.	1.446	15
1	9	16	Palestina	0.866	22	Sn. Antonio Sctpqz	1.394	16
1	9	17	Sn. Martin Sctpqz.	1.217	5	Chimaltenango	1.386	17
1	9	18	Sn. Juan Ostncic.	1.306	29	Chichicastenango	1.383	18
1	9	19	Sibilia	0.930	18	Sn. Juan Ostncic.	1.306	19
1	13	20	Aguacatan	1.586	30	Sta. Cruz del Quiche	1.275	20
1	13	21	Chiantla	1.799	17	Sn. Martin Sctpqz.	1.217	21
1	12	22	Sn. Antonio Sctpqz	1.394	25	Esquipulas Palo Gordo	1.198	22
1	12	23	Sn. Pedro Sctpqz-SM	1.197	23	Sn. Pedro Sctpqz-SM	1.197	23
2	12	24	Tejutla	1.483	14	Sn. Andres Semetabaj	1.194	24
1	12	25	Esquipulas Palo Gordo	1.198	4	Ciudad Vieja	1.193	25
2	8	26	Momostenango	2.045	15	Sn. Carlos Sija	1.117	26
1	8	27	Totonicapan	2.392	2	Sn. Juan Sctpqz.	0.933	27
1	8	28	Sn. Cristobal Ttncpn.	2.152	19	Sibilia	0.930	28
1	14	29	Chichicastenango	1.383	16	Palestina	0.866	29
1	14	30	Sta. Cruz del Quiche	1.275	13	Panajachel	0.696	30

GRAPH 66

HEALTH INDEX RANGES



8.3 Sector Indices weight 0.2 each and Overall Index

Chart 29

SECTOR INDICES
AND GLOBAL INDEX

			WEIGHTS						OVERALL WEIGHED INDEX RANKED FROM GRATER TO LESS			
			wa	wy	we	wc	wh					
			0.2	0.2	0.2	0.2	0.2					
DEPTM	CODE	AREA	wA	wY	wE	wC	wH	F	CODE	AREA	F	Range
1	1	Sn. Pedro Sctpqz.	0.457	0.242	0.292	0.466	0.435	1.692	22	Sn. Antonio Sctpqz	1.532	1
1	2	Sn. Juan Sctpqz.	0.334	0.238	0.235	0.490	0.167	1.203	1	Sumpango	1.530	2
1	3	Sumpango	0.641	0.323	0.321	0.523	0.122	1.530	20	Aguacatan	1.471	3
1	4	Ciudad Vieja	0.458	0.259	0.227	0.247	0.239	1.430	21	Chiantla	1.467	4
4	5	Chimaltenango	0.211	0.322	0.180	0.354	0.277	1.343	28	Sn. Cristobal Ttncpn.	1.960	5
4	6	Comalapa	0.260	0.342	0.402	0.302	0.196	1.701	2	Sn. Pedro Sctpqz.	1.692	6
4	7	Tecpan	0.199	0.296	0.531	0.319	0.195	1.540	8	Zaragoza	1.546	7
4	8	Zaragoza	0.225	0.290	0.249	0.616	0.460	1.846	18	Sn. Juan Ostncic.	1.314	8
4	9	Sta. Cruz Balanya	0.595	0.281	0.191	0.146	0.405	1.419	29	Chichicastenango	1.736	9
7	10	Solola	0.196	0.251	0.507	0.268	0.459	1.683	26	Momostenango	1.774	10
7	11	Sta. Lucia Uttlm.	0.271	0.319	0.509	0.297	0.189	1.585	27	Totonicapan	1.756	11
7	12	Nahuala	0.180	0.304	0.605	0.293	0.336	1.717	24	Tejutla	1.753	12
7	13	Panajachel	0.405	0.268	0.421	0.183	0.139	1.416	17	Sn. Martin Sctpqz.	1.724	13
7	14	Sn. Andres Semetabaj	0.205	0.282	0.335	0.351	0.239	1.411	12	Nanuala	1.717	14
9	15	Sn. Carlos Sija	0.281	0.228	0.190	0.350	0.223	1.272	6	Comalapa	1.701	15
9	16	Palestina	0.452	0.236	0.199	0.262	0.173	1.422	30	Sta. Cruz del Quiche	1.589	16
9	17	Sn. Martin Sctpqz.	0.489	0.283	0.309	0.399	0.243	1.724	11	Sta. Lucia Uttlm.	1.585	17
9	18	Sn. Juan Ostncic.	0.403	0.321	0.332	0.498	0.261	1.814	25	Esquipulas Palo Gorda	1.573	18
9	19	Sibilia	0.411	0.229	0.149	0.189	0.166	1.164	13	Solola	1.683	19
13	20	Aguacatan	0.368	0.321	0.399	0.566	0.317	1.971	7	Tecpan	1.540	20
13	21	Chiantla	0.311	0.239	0.354	0.654	0.368	1.967	4	Ciudad Vieja	1.430	21
12	22	Sn. Antonio Sctpqz	0.511	0.351	0.397	0.793	0.279	2.332	16	Palestina	1.422	22
12	23	Sn. Pedro Sctpqz-SM	0.280	0.242	0.215	0.275	0.239	1.250	9	Sta. Cruz Balanya	1.419	23
12	24	Tejutla	0.512	0.227	0.245	0.473	0.297	1.753	13	Panajachel	1.416	24
12	25	Esquipulas Palo Gord	0.566	0.316	0.313	0.242	0.240	1.678	14	Sn. Andres Semetabaj	1.411	25
8	26	Momostenango	0.130	0.246	0.535	0.454	0.409	1.774	5	Chimaltenango	1.343	26
8	27	Totonicapan	0.380	0.380	0.527	0.381	0.479	1.756	15	Sn. Carlos Sija	1.272	27
8	28	Sn. Cristobal Ttncpn	0.310	0.263	0.335	0.622	0.430	1.960	23	Sn. Pedro Sctpqz-SM	1.250	28
14	29	Chichicastenango	0.326	0.264	0.442	0.478	0.277	1.788	3	Sn. Juan Sctpqz.	1.203	29
14	30	Sta. Cruz del Quiche	0.420	0.254	0.298	0.463	0.255	1.689	19	Sibilia	1.164	30

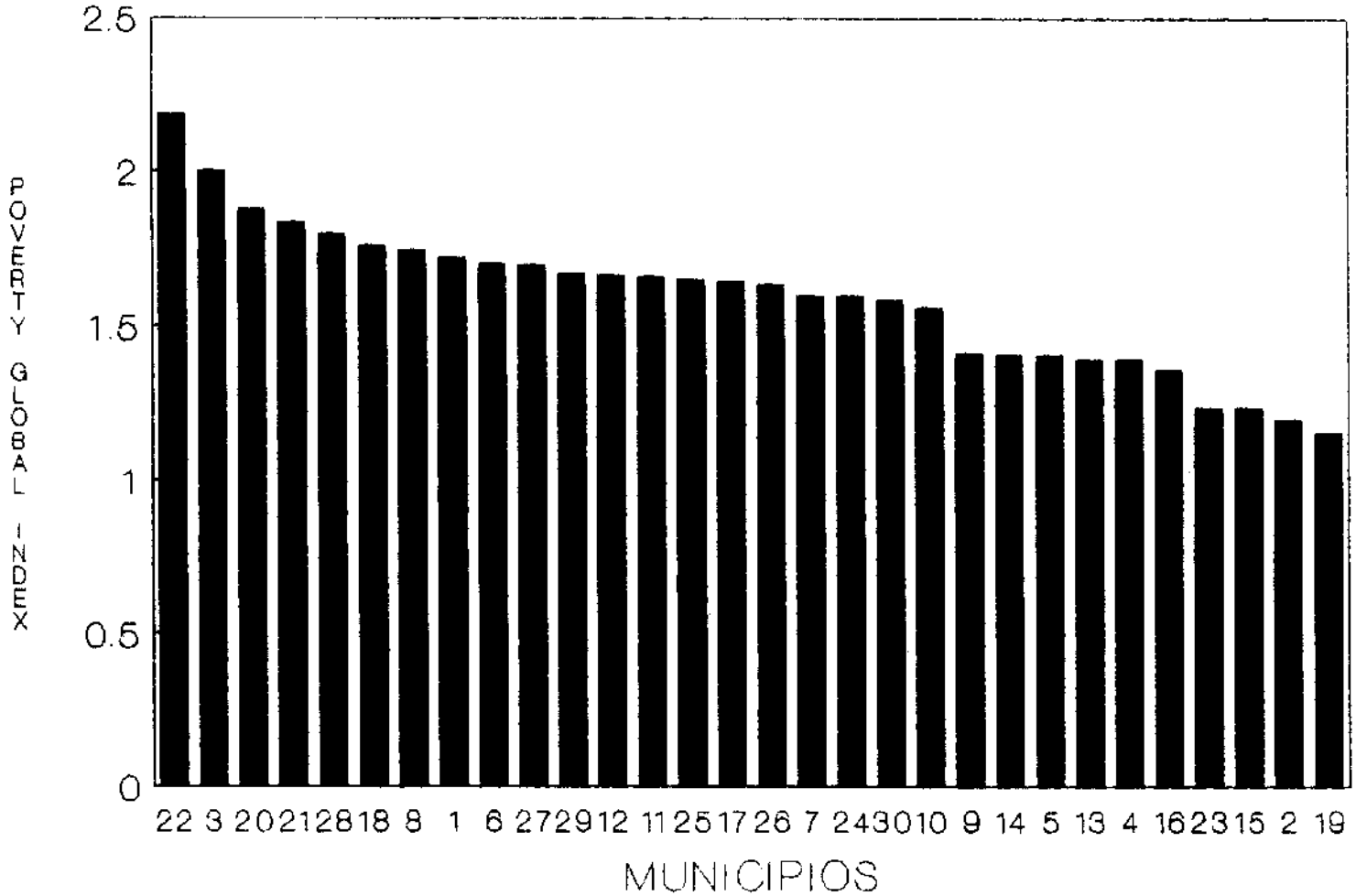
Notas:

wa=Weight of the Agriculture Sector
wy=Weight of the Economic Sector
we=Weight of the Education Sector
wc=Weight of the Communication and infrastructure sector
wh=Weight of the Health Sector

wA=Weighted General Index of the Agriculture Sector
wY=Weighted General Index of the Economics Sector
wE=Weighted General Index of the Education Sector
wC=Weighted General Index of the Communication and infrastructure sector
wH=Weighted General Index of the Health Sector
P=Weighted General Index

GRAPH 67

POVERTY GLOBAL INDEX RANGES



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ANNEX IX

PIO/T No. 520-0000.1-
Attachment No. 1

SCOPE OF WORK

BACKGROUND

By most traditional definitions of the term, "poverty" is widespread in Guatemala and shows signs of increasing. Per capita money incomes among the 75% of people living in rural areas may be as low as $80 per year; with rural households averaging more than six persons, this translates into approximately $500 per household per year. Farms, especially in the densely populated Indigenous western highlands, have been diminishing in size for many years as a consequence of Guatemala's nearly 3% annual population growth rate and continual fragmentation of individual farm plots. In some areas, for example Totonicapán, Sololá, and San Marcos, average farm sizes are less than one-half to one hectare! Farming on this scale requires increasingly sophisticated irrigation, soil conservation practices, and systemic diversification into commercially valuable crops if it is to support six-member households profitably enough to insure health, good educations, and a minimum of social amenities. The Guatemalan government, USAID and other donors have been concentrating a wide range of technical assistance and food aid activities in the Western highlands for a long time. Yet Guatemala suffers one of the highest rate of chronic child malnutrition in the Caribbean area, rivaling Haiti for this dubious distinction.*

Poverty is usually measured in terms of income and health/nutrition status of people. Conventional wisdom holds that as household real incomes rise, more will be spent on food and health services, and the family will be healthier. Yet there is evidence that, except for isolated cases, this may not always be true. Cultural attitudes about how to spend money, what constitutes good health practices, and what kinds of food are considered acceptable play strong roles in determining what a family actually does with its income. Guatemala is a profoundly multi-cultural country. More than half of its population is comprised of indigenous descendants of the country's original Mayan inhabitants. These people, heavily concentrated

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* Interview with Isabel Nieves, Nutritionist with the Nutrition Institute of Central America and Panama (INCAP). February, 1990.

in the nine central and western highlands areas, retain many customs, traditions, and religious beliefs about work, health, and food. They were virtually ignored by Guatemala's non-Indigenous ruling elites throughout most of the country's history, and only during the past thirty years have they increasingly become the focus of development assistance efforts.

USAID/Guatemala programs have concentrated upon improving small-farm commercial agriculture, strengthening basic health and education services, and augmenting rural road and electric power networks. Recent studies --including a major cross-cutting evaluation of all USAID activities undertaken in 1989-- suggest that permanent impacts have been tangible, at least in the USAID project areas. Incomes have risen, more people are availing themselves of health services, more primary school age children are remaining in school, farm-to-market commercial flows have increased. Yet overall income and nutrition indicators remain very low, as burgeoning population threatens to undercut development efforts.

Greater intensity of donor efforts, greater attention to prioritizing those efforts within coherent strategies, and --above all-- improved <u>information</u> about the impacts of those efforts are clearly indicated. Information about <u>where</u> poverty exists, <u>who</u> is poor, <u>what</u> the determinants of poverty really are, and the <u>relative degree</u> of poverty in different places is very poor in Guatemala. USAID/G has been increasingly concerned over the lack of this kind of information during the 1980s as the Mission portfolio has grown and diversified in response to heightened Agency attention to the Caribbean and Central American regions. The issue has become especially acute during the past year as hitherto sizeable USAID budgets for Central America have begun to diminish. More than ever before there is a need to prioritize efforts and to improve the quality and focus of individual programs.

An essential early step is to define more precisely what is meant by the concept of "poverty" (or its obverse, "well-being") and to devise workable means of measuring it in USAID focus areas. Rather than defining "poverty" narrowly as a lack of resources, incomes, and/or health, the Mission has tentatively elected to define it in terms of <u>lack of choice</u>. Knowledge about how to <u>earn</u> higher incomes does not necessarily imply knowledge about how to <u>use</u> higher incomes to improve well-being. Poor educations may contribute to a continuation of poor family health and malnutrition in spite of increases in earning power. Unavailability of public services, social discrimination, and inappropriate cultural attitudes may similarly limit poor families' ranges of choice.

Thus, many factors --incomes, educational and health status, social and cultural tradition-- contribute to poverty by limiting individuals' freedom of choice governing their own lives. These collectively define the kinds of measures needed to assess poverty levels in a manner relevant to USAID/Guatemala's program portfolio and intended strategies.

BROAD OBJECTIVES

The tasks outlined in this PIO/T have three broad objectives:

-- Assess relative levels of poverty --as defined above-- among USAID project areas in agriculture, health, and education in comparison with "control areas" not having received comparable assistance

-- Test selected sector-related indicators for accuracy and consistency as useful measures of factors contributing to overall poverty levels.

-- Develop recommendations for improvement in USAID's program impact information system in areas relating to poverty and well-being of project target groups.

Successful attainment of these objectives will enable the Mission to prioritize its interventions more meaningfully and to monitor the impacts of those interventions more frequently and accurately.

BROAD SUMMARY OF TASKS TO BE PERFORMED

The tasks to be performed are as follows:

1. Refine the indicators tentatively proposed by the Mission as measures of poverty

2. Design a survey to obtain values for those indicators in areas of Guatemala presently receiving USAID/G assistance and in similar areas not receiving such assistance

3. Undertake the survey and necessary post-survey data editing

4. Convert the indicator values to index values according to specific quantitative reference standards and/or targets

5. Weight the indices and combine them to achieve composite indices by (a) sector, (b) location, (c) region, and (d) target group; test the indicator/index system for robustness by varying the pattern of weights according to alternative policy focus

6. Prepare a final report for the USAID Director, PRM and PDSO.

These tasks are outlined in greater detail below.

ARTICLE I - TITLE

USAID/Guatemala Assessment of Poverty in the Central and Western Highlands

ARTICLE II - OBJECTIVE

To assess relative levels of poverty among the regions and groups having received USAID/G sponsored assistance in the Central and Western Highlands; compare with values obtained from areas not having received such assistance; based on the results, rank regions and groups by relative overall poverty indices; determine the most appropriate variables and weights in concordance with Agency and Mission portfolio objectives, and recommend ways of incorporating the Poverty indicator/index system into the Mission's existing management information system.

ARTICLE III - STATEMENT OF WORK

Tasks relating to the Poverty Assessment will include, but not necessarily be restricted to the following:

1. Review of indicators and indices already proposed by the Mission and recommendations for modification and/or inclusion of additional indicators; review of existing data/information relating to poverty; preparation of a list including approximately 3 to 5 indicators for each of the following categories:

-- Agriculture
-- Education
-- Health
-- Economics

-- Infrastructure
-- Environment/climate

2. Design and execution of a survey to obtain data for the selected indicators among key USAID/Guatemala project areas and comparable areas not receiving or having received development assistance; this activity will include the following features:

-- Preparation of an appropriate questionnaire

-- Design of a survey of approximately 2,000 households within an area encompassing the Departments of San Marcos, Huehuetenango, El Quiché, Quetzaltenango, Totonicapán, Sololá, Chimaltenango, Sacatepéquez, and Baja Verapaz

-- Contracting approximately 20 interviewers

-- Undertaking the survey over a span of 6 working weeks.

-- Editing the resulting information and organization of the indicators by sector, by region/department, by target group, and by gender (where applicable)

3. Analysis of survey data, including:

-- Selection of reference standards/targets for each indicator, and conversion of each indicator into an index such that the higher the value of the index, the greater its contribution to the related groups' poverty.

-- Identification of alternative systems of weighting the indices and ranking regions/departments according to each weighting system.

-- For each weighting system, test for significance of differences between USAID-assisted areas and those not having received assistance.

-- As feasible, test for significance of differences according to gender, age, occupation, traditional vs non-traditional farming, and other relevant population characteristics.

-- Based upon the above, preparation of "poverty profiles" of key development assistance target groups relevant for USAID's present portfolio and Agency policy objectives, including estimated absolute "poverty lines" for each.

4. Preparation of a final report including:

-- Summary of the principal findings of the survey and analysis

-- Implications of the findings for USAID's present portfolio, priorities, and strategies.

-- Recommendations concerning appropriate poverty measures, specific indicators and indices, and means for integrating poverty measurement into present Mission information/indicator systems, in general and by sector.

-- Recommendations concerning improvement of Mission in-house capabilities for measuring and monitoring project/program impacts upon poverty and/or well-being in the future

ARTICLE IV - COMPOSITION AND RESPONSIBILITIES OF THE IQC ASSESSMENT TEAM

1. Composition of the Team

The team will consist of a specialist in socioeconomic analysis who will serve as Chief of Party; a specialist in statistical analysis; a specialist with experience in the design and execution of sample surveys, especially in the areas of economics, agronomics, and/or the social sciences. The team's work will be augmented by approximately twenty trained and experienced survey interviewers organized into at least five sub-teams each headed by a local supervisor who will obtain the necessary survey data; and overall survey field coordinator. The selected Guatemalan IQC firm will have had significant prior experience in survey work and analysis in the field of socioeconomic development, especially in connection with USAID projects.

In addition, a U.S. specialist in socioeconomic survey data analysis will be contracted for a period of two weeks during the post-survey analysis phase (see p. 9) to work with

the local team to assess the statistical validity of the indicator values obtained during the survey.

2. Responsibilities of the Team

The team will work closely with designated members of the USAID/G Program Office and Project Support and Development Office. As appropriate, the team, PRM, and PDSO will consult with appropriate members of the Mission's technical divisions, including the Office of Rural Development (ORD), the Office of Human Resources Development (OHRD), the Office of Private Enterprise Development (OPED), and others as deemed necessary during the course of the assessment.

3. Qualifications of Assessment Team Members

a. Specialist in Socioeconomic Analysis (Chief of Party)

-- Post graduate degree in economics, anthropology, sociology, or related areas

-- At least five years' experience in socioeconomic analysis of groups, especially in rural areas, in Guatemala and/or other Latin American countries

-- Grasp of the principles of data analysis for socioeconomic fields

-- Understanding of cross-cutting development strategies involving agriculture, education, health, infrastructure, nutrition, the role of women, and concepts relating to poverty

-- Good communication skills, including working knowledge of English and Spanish

b. Specialist in Statistical Analysis

-- Post graduate degree in field relating to general statistics, econometrics, and/or other areas of statistical analysis in social scientific areas

-- Grasp of, and experience with systems of data processing relating to socioeconomic analysis of field data

-- At least five years' experience in the areas of data processing utilizing appropriate micro-computing systems and software in the area of socioeconomic analysis

-- Good communication skills, including working knowledge of English and Spanish

c. Specialist in Design and Execution of Sample Surveys

-- Post graduate degree in field relating to quantitative statistical analysis of survey data (e.g., economics, social sciences)

-- At least five years' experience in conducting socioeconomic field research, including sample surveys, in Guatemala and/or other Latin American countries

-- Familiarity with the multi-cultural social environment in Guatemala

-- Good communications skills, knowledge of Spanish and (preferably) English

d. Survey interviewers - Approximately 20 (including 5 supervisors)

The qualifications of the survey interviewers can be expected to vary, subject to time constraints affecting contracting. At the minimum, they should be expected to have the following:

-- Prior experience as survey interviewers, preferably in the rural areas of Guatemala

-- Demonstrated capacity to obtain data in an accurate, timely manner

-- Ability (and licensed) to drive a car

-- Demonstrated communications skills

-- Familiarity with areas in which they will be working

Ideally, at least some of the interviewers should be able to speak at least one of the Mayan dialects (e.g. Cack-

chiquel, Quiché, Mam), but time constraints and availability may rule this out. It may be necessary to employ interpreters in some areas, especially those where few women speak Spanish.

4. Qualifications of Consultant in Socioeconomic Interpretation of Survey Data

   a. Masters degree in data processing, information analysis, quantitative and qualitative analysis of social scientific data, or related field.

   b. Minimum of five years' experience with quantitative and qualitative analysis of survey data, including survey design, coding, and data editing, preferably in developing countries.

   c. Good communications and writing skills; Spanish levels 3/3.

ARTICLE V - TIMEFRAME OF THE SURVEY AND ANALYSIS

The duration of the assessment will be 13 weeks, beginning April 9, 1990 and terminating July 6, 1990. This time should be allocated approximately as follows:

-- Preparation for surveys (development of questionnaire, contracting for interviewers, training for interviewers and supervisors), review of existing information about poverty in Guatemala: Four weeks

-- Interviewer training: One week

-- Survey: Six weeks

-- Post survey analysis and final report: Two weeks

Six-day work weeks (including Saturdays) are authorized.

ARTICLE V - REPORTING REQUIREMENTS

The team will provide a workplan for review and approval by the USAID Mission within three days of activity initiation date (i.e., by April 5). This will highlight specific activities to be undertaken at specific dates and assigned tasks for team members.

Throughout the course of the assessment, the team leader will provide the Chief of USAID's Program Office with a brief summary of work undertaken by week to be submitted the Monday following the designated week. The Chief of USAID's Program Office and his staff will use these status reports as a basis for consulting with the team leader and advising the USAID Director and other interested Mission staff of the progress of the assessment.

An initial draft of the final report will be submitted to USAID by June 22, 1990. The team will submit a final draft report one month after receiving any changes in the draft document from the Mission, but in any case no later than July 27, 1990.

During the week of June 25-29, 1990, meetings to discuss key findings of the assessment will be scheduled with the USAID Director, PRM, PDSO, ORD, OHRD, OPED and other interested staff.

The draft and final report will contain an executive summary, table of contents, a purpose statement, and the body of the report covering key findings and recommendations as indicated under ARTICLE III Section 4. Technical details including methods used, detailed description of the survey, and data tables will be included among the appendices. While the precise structure of the narrative section of the report is left to the discretion of the team leader, the following format is suggested:

-- Brief summary of the known poverty situation in Guatemala and justification for the present assessment

-- Brief discussion of the specific indicators selected for the assessment and the basis for the reference standards and weighting systems used

-- Discussions of the principal findings, including the effects of varying weighting systems upon the ranking of the areas/groups surveyed

-- Recommendations concerning appropriate poverty measures and how these can lead to improvement of present Mission objectives, priorities, and information systems.

Five copies of interim and final drafts will be submitted in English and five copies in Spanish.

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