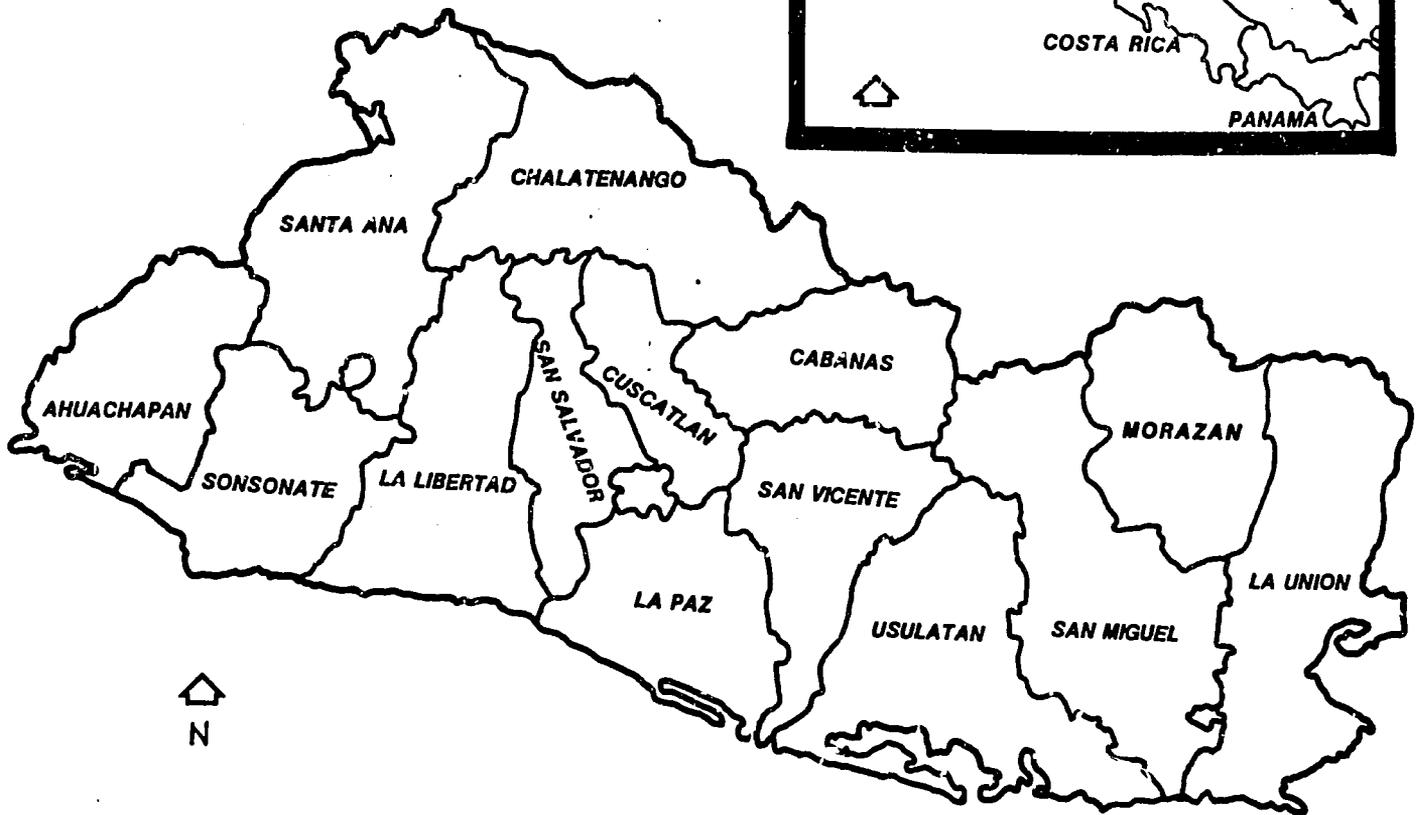


SOCIO-ECONOMIC FACTORS ASSOCIATED WITH UNDERNOURISHED CHILDREN, EL SALVADOR RURAL POOR SURVEY, JUNE 1977 - MAY 1978

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Prepared for
United States Department of Agriculture,
Office of International Cooperation and Development,
Nutrition Economics Group in cooperation with
United States Agency for International Development,
Bureau of Science and Technology, Office of Nutrition

RSSA BST-1171-R-HG-3125-01

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**April, 1983
Revised July, 1983**

TABLE OF CONTENTS

	<u>Page</u>
Discussion of Principal Findings	i
Acknowledgements	v
List of Maps	vii
List of Figures	ix
List of Tables in the Paper	x
List of Tables in the Appendix	xi
L Introduction	1
II Policy Focus of Rural Poor Survey	2
III The Sample for El Salvador Rural Poor Survey	5
IV Definition of Malnutrition	7
V Characteristics of the Malnourished	34
VI Causes of Malnutrition	44
VII Discussion of Policy Implication	54
VIII A Multifactor Approach to Malnutrition	55
IX Future Research for Nutritional Surveillance	56
X Bibliography	63
Appendix I - Tables	65
Appendix II - Operationalization of Level of Living Index	135
Appendix III - Operationalization of Land Reform Variables	136

11

DISCUSSION OF PRINCIPAL FINDINGS

AID endorses a multi-sectoral approach to nutrition policy in LDCs. In order for host agricultural, health, educational, and family planners to effectively implement administer and coordinate nutritionally related activities of a very complex nature, policy analyses must 1) focus on linkages between these various sectors and undernutrition; 2) be made useful to decision-makers and field workers administering nutrition projects and programs; 3) take into account programming constraints in meeting the nutritional needs of a population; and 4) contain monitoring or evaluation components which are cost-effective. The Rural Poor Survey provides a unique opportunity to explore these issues at the household level.

With these aims in mind a functional classification system is developed to identify vulnerable groups for the entire El Salvadorean population. Factors associated with households at risk of producing malnourished children are: 1) low income, 2) lack of basic services—water, electricity, and sewage, 3) agricultural employment, 4) landholdings (for farm families) of 1-5 hectares, 5) female children, 6) unemployed adult females, 7) illiteracy, and 8) elderly heads, especially elderly female heads, of household. These results suggest that systems of functional classification to identify the relationship between a single factor and undernutrition are useful in the initial stages of program development, but that multifactor models must be developed if host country decision-makers are to coordinate policy between sectors and/or monitor impacts of sectoral programs on nutritional status.

A multivariate method is developed in this report to attempt to elaborate the linkages between factors that constrain and facilitate improvements in nutritional status. The method has important implications for programming since potentially an unlimited number of factors related to malnutrition can be incorporated into its structure. The most valuable feature of this method is that the mix of factors and models suggested in

111

a recent strategy paper (USAID, 1983) can be explored by this method with available data bases. Models incorporating various mixes of "causes" can be used to diagnose and monitor the "correct mix of policies and programs" appropriate to a country, regions, or target groups at risk of undernourishment.

A preliminary model is presented in this report. Our results show that the impact of several socio-economic factors on nutrition varies greatly by urban and rural residency. Total family income (low) appears to be an important predictor of urban households with undernourished children, while income is of little use in explaining malnutrition in rural households. Rather, environmental factors (availability of services—e.g. potable water) are more important in predicting malnourishment in rural El Salvador. These results raise some interesting questions about the relationship between poverty and malnutrition and indicate that the multivariate approach using household level data may be a more effective way to target those groups at risk and to design appropriate backstop activities. A recent article (Wolfe and Behrman, 1983) questions also the adequacy of income in determining nutrition. In addition, since the causes of malnutrition seem to differ for urban and rural households, the solutions to alleviating these problems are likely to differ. Projects designed to meet the needs of urban households, if applied in the rural countryside, may in fact have negative impacts.

Although initial models applied in this report use a different technique, multivariate functional classification systems can best be obtained through a statistical technique called discriminant analysis, whose purpose is to distinguish maximally between two or more groups (Cooley and Lohnes, 1971). The output from the discriminant analysis will be useful at both planning and implementation stages and can be used directly by agricultural and health project officers to monitor and evaluate the nutritional impact of projects that are likely to affect health, food production or food consumption. The objective of the technique is to select a set of discriminating variables (social, economic, agricultural) and mathematically combine them in such a way so that one



can distinguish between normal vs. underweight children or normal vs. acutely or chronically malnourished children. The techniques provide several statistical tests to evaluate the effectiveness with which the classification systems 1) discriminates between nutritionally at risk groups and 2) identify the factors that contribute most to malnourishment. As a classification technique, discriminant analysis can also be used to predict the new cases (e.g. whether a household is likely to produce malnourished children) and it is therefore especially applicable to monitoring on-going programs and projects whose purpose is to reduce malnutrition. Once the classification has been produced for El Salvador, this technique could also be a useful monitoring device for other host LDCs. Factors that constrain and propel improvements in nutritional status and their associated weights can be identified by discriminant analysis. Once the model is developed and these factors are known, the technique will permit researchers to provide a work sheet for use by agency planners and field workers in charge of program evaluation. This sheet can give host countries a mechanism for monitoring the impact of agricultural assistance programs and other development activities on nutrition for individual families and for local and regional areas.

The problems with documenting nutritional impact have been discussed extensively. A major issue involved in evaluating nutritional impact is the appropriate unit of analysis. Although the collection of survey data at the household level is costly for host countries with very limited resources, these are precisely the type of data that are necessary for monitoring purposes. Primary health care programs, family planning programs and agricultural programs focus either directly or indirectly on the household unit, and the use of demographic indicators to monitor impact of these programs may result in costly inferential errors.

The findings of this report suggest that a number of issues remain unresolved with regard to malnutrition in LCDs. We are in agreement with AID and with Sahn and Pestronk (1981) that there is a dearth of "successful" and "verifiable" impact



evaluations. A common theme is that "successful analysis of impact is not only rare but methodologically suspect in most instances" (Sahn and Pestronk, 1981). We, therefore, suggest the following mechanisms to overcome these problems:

- development of predictive models of nutritional status that include both tradeoffs and complementarities prior to planning and implementation;
- development of multivariate systems of classification to target vulnerable groups;
- examination of the applicability of demographic and aggregate data for monitoring purposes.

ACKNOWLEDGEMENTS

Many persons have assisted in this project. Inevitably someone, who has made a major contribution to the study, will be inadvertently omitted from the acknowledgements. We apologize for these omissions and for any errors in the manuscript or interpretations of the research results.

We are especially indebted to Dr. Roberta Van Haeften, Leader of the Nutrition Economics Group of United States Department of Agriculture (USDA), Office of International Cooperation and Development (OICD), who made substantive suggestions on the data analysis and provided funding for the nutritional analysis through AID's nutrition economics Resource Support Service Agreement (RSSA) with the USDA. Dwight Steen, Assistant Agricultural Development Officer, Bureau for Latin America and the Caribbean, Office of Development Resources, Rural Development Division, AID, initiated the El Salvador Rural Poor Survey and suggested developing a system of functional nutritional classification from the survey data. The International Statistical Program Center for the U. S. Bureau of Census provided major assistance: Maria Elena Dubort, interviewer training; Dr. William Duncan, questionnaire construction; Dr. Henry Woltman, sample design; Steve Tourkin, questionnaire format; and Dr. Robert J. Magnani, computations of the sampling errors. Dr. Samuel Daines, a private consultant, and Dr. James T. Riordan, AID, Latin American Bureau also assisted in the project design and Catherine Gleason, Data Management, constructed the data file. The Salvadorean Ministry of Agriculture pre-tested the questionnaire and provided suggestions on the content of the questionnaire. Calderone Inc., a Salvadorean social science research firm, conducted the interviews and collected the socio-economic household data. The Central America Research Station (CARS), associated with the Center for Disease Control in Atlanta, administered the anthropometric measurements with supervision from Calderon Inc. and Elena Brineman, USAID/El Salvador. The suggestions of Dr. Gary

Vii

Smith and Dr. Charlotte Miller, OICD, concerning the policy relevance of the study also need acknowledgement. A special thanks is due Gloria Gardner, Christine Larsen, and Pamela Brown for their patience and word processing skills in the preparation of the data tables and to John Bielefeldt for editorial assistance.

LIST OF MAPS

	<u>Page</u>
Map 1: Density of Total Population (Persons per Square Mile) by Department, El Salvador, 1968.	17
Map 2: Percentage of Total Population Classified As Urban, by Department, El Salvador, 1968.	18
Map 3: Percentage of All Households with Children 6 to 59 Months Classified Underweight (Gomez Method) by Department, El Salvador, 1978	20
Map 4: Percentage of Urban Households with Children 6 to 59 Months Who Are Classified Underweight (Gomez Method) by Department, El Salvador, 1978	21
Map 5: Percentage of Rural Households with Children 6 to 59 Months Who are Classified Underweight (Gomez Method) by Department, El Salvador, 1978	22
Map 6: Percentage of All Households with Children 6 to 59 Months Who Are Classified Underweight (First Degree, Gomez Method) by Department, El Salvador, 1978.	24
Map 7: Percentage of Urban Households with Children 6 to 59 Months Who Are Classified Underweight (First Degree, Gomez Method) by Department, El Salvador, 1978.	25
Map 8: Percentage of Rural Households with Children 6 to 59 Months Who are Classified Underweight (First Degree, Gomez Method) by Department, El Salvador, 1978.	26
Map 9: Percentage of All Households with Children 6 to 59 Months Who are Classified Underweight (2nd and 3rd Degree, Gomez Method) by Department, El Salvador, 1978.	27
Map 10: Percentage of Urban Households with Children 6 to 59 Months Who are Classified Underweight (2nd and 3rd Degree, Gomez Method) by Department, El Salvador, 1978.	28

17

Map 11: Percentage of Rural Households with Children 6 to 59 Months Who Are Classified Underweight (2nd and 3rd Degree, Gomez Method) by Department, El Salvador, 1978.	29
Map 12: Percentage of All Households with Children 6 to 59 Months Who Are Classified Acute and Chronic (Waterlow Method) by Department, El Salvador, 1978.	31
Map 13: Percentage of Urban Households with Children 6 to 59 Months Who Are Classified Acute and Chronic (Waterlow Method) by Department, El Salvador, 1978.	32
Map 14: Percentage of Rural Households with Children 6 to 59 Months Who Are Classified Acute and Chronic (Waterlow Method) by Department, El Salvador, 1978.	33

+

LIST OF FIGURES

Figure		Page
I	Relation Between Social Structure and Other Factors that Affect Nutritional Status	57

xi

**LIST OF TABLES
(PAPER)**

<u>TABLE</u>		<u>Page</u>
I.	Combined Weight-for-Height, Height-for-Age and Weight-for Age Indices	10
II.	Undernutrition According to Gomez and Waterlow Indices, El Salvador, 1978	11
III.	Percentage of Families with Two or More Malnourished Children Ages 6 to 59 Months using Weight-for-Age, Height-for-Age and Weight-for-Height Criteria, El Salvador, 1978.	13
IV.	Incidence of Undernourishment According to Gomex Index of Children 6 to 59 Months among El Salvadorean Families, 1978, Excluding San Salvador.	36
V.	Incidence of 2nd and 3rd Degree Undernourishment only According to Gomez Index among Children 6 to 59 Months of Age in El Salvadorean Families, 1978, Excluding San Salvador.	39
VI.	Incidence of Acute and Chronic Undernourishment According to Waterlow Index of Children 6 to 59 Months of Age in El Salvadorean Families, 1978, Excluding San Salvador. . .	42
VII.	Logistic Regression Models Predicting Malnourishment Among Families with Children Age 6 to 59 Months, El Salvador, 1978	52

XIII

**LIST OF TABLES
(APPENDIX)**

<u>Table</u>	<u>Page</u>
1. Age and Sex of Household Head by Families with Undernourished Children Classified by Gomez and Waterlow Indices, El Salvador, 1978	65
2. Age and Sex of Household Head by Families with Undernourished Children Classified by Gomez and Waterlow Indices, El Salvador, 1978	66
3. Families with Undernourished Children Classified by Gomez and Waterlow Indices by Age and Sex of Household Head, El Salvador, 1978	67
4. Families with Undernourished Children Classified by Gomez and Waterlow Indices by Age and Sex by Head of Household, El Salvador, 1978	68
5. Mean and Median Family Size by Families with Undernourished Children Classified by Gomez and Waterlow Indices, El Salvador, 1978	69
6. Sex and Literacy of Head of Household of Families with Undernourished Children Classified by Gomez and Waterlow Indices, El Salvador, 1978	70
7. Education Level of Head of Household and Sex by Families with Undernourished Children Classified by Gomez and Waterlow Indices, El Salvador, 1978	71
8. Families with undernourished Children Classified by Gomez and Waterlow Indices by Sex and Literacy of Head of Household, El Salvador, 1978	72
9. Families with Undernourished Children Classified by Gomez and Waterlow Indices by Education Level of Head of Household and Sex, El Salvador, 1978	73
10. Mean and Median Years of Education of Significant Female in the Household by Families with Undernourished Children Classified by Gomez and Waterlow Indices, El Salvador, 1978	74
11. Mean Number of Times Visited Doctor Per Household by Family Members During the Last Year with Children Classified by Gomez and Waterlow Indices, El Salvador, 1978	75
12. Type of Dwelling by Families with Undernourished Children Classified by Gomez and Waterlow Indices, El Salvador, 1978	76
13. Families with Undernourished Children Classified by Gomez and Waterlow Indices by Type of Dwelling, El Salvador, 1978	77

14.	Tenure Status of Home by Families with Undernourished Children Classified by Gomez and Waterlow Indices, El Salvador, 1978	78
15.	Families with Undernourished Children Classified by Gomez and Waterlow Indices by Tenure Status of Home, El Salvador, 1978	79
16.	Access to Electricity by Families with Undernourished Children Classified by Gomez and Waterlow Indices, El Salvador, 1978	80
17.	Families with Undernourished Children Classified by Gomez and Waterlow Indices by Access to Electricity, El Salvador, 1978	81
18.	Access to Sanitary Facilities by Families with Undernourished Children Classified by Gomez and Waterlow Indices, El Salvador, 1978	82
19.	Families with Undernourished Children Classified by Gomez and Waterlow Indices by Access to Sanitary Facilities, El Salvador, 1978	83
20.	Access to Potable Water by Families with Undernourished Children Classified by Gomez and Waterlow Indices, El Salvador, 1978	84
21.	Families with Undernourished Children Classified by Gomez and Waterlow Indices by Access to Potable Water, El Salvador, 1978	85
22.	Type of Access to Water by Families with Undernourished Children Classified by Gomez and Waterlow Indices, El Salvador, 1978	86
23.	Families with Undernourished Children Classified by Gomez and Waterlow Indices by Type of Access to Water, El Salvador, 1978	87
24.	Mean and Median Distance (in Meters) by Families with Undernourished Children Classified by Gomez and Waterlow Indices, El Salvador, 1978	88
25.	Level of Living Index by Families with Undernourished Children Classified by Gomez and Waterlow Indices, El Salvador, 1978	89
26.	Families with Undernourished Children Classified by Gomez and Waterlow Indices by Level of Living Index, El Salvador, 1978	90
27.	Type of Roof by Families with Undernourished Children Classified by Gomez and Waterlow Indices, El Salvador, 1978	91
28.	Type of Roof by Families with Undernourished Children Classified by Gomez and Waterlow Indices, El Salvador, 1978	92
29.	Type of Floor by Families with Undernourished Children Classified by Gomez and Waterlow Indices, El Salvador, 1978	93

XIV

<u>Table</u>	<u>Page</u>
30. Families with Undernourished Children Classified by Gomez and Waterlow Indices by Type of Floor, El Salvador, 1978	94
31. Rural and Urban Location and Department of Families with Undernourished Children Classified by Gomez and Waterlow Indices, El Salvador, 1978	95
32. Families with Undernourished Children Classified by Gomez and Waterlow Indices by Rural and Urban Location and Department, El Salvador, 1978	96
33. Access to Farm Land by Families with Undernourished Children Classified by Gomez and Waterlow Indices, El Salvador, 1978	97
34. Families with Undernourished Children Classified by Gomez and Waterlow Indices by Access to Farm Land, El Salvador, 1978	98
35. Farm Families with Livestock and Type of Access to Land with Undernourished Children Classified by Gomez and Waterlow Indices, El Salvador, 1978	99
36. Households with Land According to Farm Size Category by Families with Undernourished Children Classified by Gomez and Waterlow Indices, El Salvador, 1978	100
37. Families with Undernourished Children Classified by Gomez and Waterlow Indices Households with Land According to Farm Size Category, El Salvador, 1978	101
38. Types of Crops Grown in Hectares and Livestock for Farm Families by Families with Undernourished Children Classified by Gomez and Waterlow Indices, El Salvador, 1978	102
39. Median and Mean Number of Hectares in Crops Grown and Livestock for Farm Families by Families with Undernourished Children Classified by Gomez and Waterlow Indices, El Salvador, 1978	103
40. Livestock for Farm Families by Families with Undernourished Children Classified by Gomez and Waterlow Indices, El Salvador, 1978	104
41. Mean and Median Number of Hectares in Crops Grown and Livestock for Farm Families by Families with Undernourished Children Classified by Gomez and Waterlow Indices, El Salvador, 1978	105
42. Crops Grown by Region and by Families with Undernourished Children Classified by Gomez and Waterlow Indices, El Salvador, 1978	106
43. Mean and Median Family Income in Colones by Families with Undernourished Children Classified by Gomez and Waterlow Indices, El Salvador, 1978	107

XV

Table

	<u>Page</u>
44. Per Capital Income, in Colones, by Families with Undernourished Children Classified by Gomez and Waterlow Indices, El Salvador, 1978	107
45. Poverty and Non-Poverty Status by Families with Undernourished Children Classified by Gomez and Waterlow Indices, El Salvador, 1978	108
46. Poverty and Non-Poverty Status by Families with Undernourished Children Classified by Gomez and Waterlow Indices, El Salvador, 1978	109
47. Median, Mean and Per Capita Non-Farm Income of Farm Families with Undernourished Children Classified by Gomez and Waterlow Indices, El Salvador, 1978	110
48. Net Farm Income Per Capita and Net Farm Income Per Hectare in Colones by Families with Undernourished Children Classified by Gomez and Waterlow Indices, El Salvador, 1978	111
49. Net Non-Farm Income Per Capita in Colones by Families with Undernourished Children Classified by Gomez and Waterlow Indices, El Salvador, 1978	112
50. Per Capita Income, Mean and Median Family Income by Households with Women Employed and by Families with Undernourished Children Classified by Gomez and Waterlow Indices, El Salvador, 1978	113
51. Per Capita Income, Mean and Median Family Income by Sex of Head of Household and Families with Undernourished Children Classified by Gomez and Waterlow Indices, El Salvador, 1978	114
52. Source of Employment for Households by Families with Normal, Underweight, Acute Undernourished Children, El Salvador, 1978	115
53. Families with Normal, Underweight, Acute Undernourished Children by Source of Employment for Households, El Salvador, 1978	116
54. Type of Employment of Heads of Household and Sex by Families with Undernourished Children Classified by Gomez and Waterlow Indices, El Salvador, 1978	117
55. Families with Undernourished Children Classified by Gomez and Waterlow Indices by Type of Employment of Heads of Household and Sex, El Salvador, 1978	119
56. Type of Employment of All Household Members (14 and over) by Families with Undernourished Children Classified by Gomez and Waterlow Indices, El Salvador, 1978	121
57. Families with Undernourished Children Classified by Gomez and Waterlow Indices 14 years or older by Type of Employment of All Household Members, El Salvador, 1978	123

121

<u>Table</u>	<u>Page</u>
58. Mean Number of Members Employed Above and Below Median Family Size by Families with Undernourished Children Classified by Gomez and Waterlow Indices, El Salvador, 1978	125
59. Classification of Families Potentially Affected and Non-Affected by Phase of the Agrarian Reform by Families with Undernourished Children Classified by Gomez and Waterlow Indices, El Salvador, 1978	126
60. Families with Undernourished Children Classified by Gomez and Waterlow Indices by Classification of Families Potentially Affected and Non-Affected by Phase I of the Agrarian Reform, El Salvador, 1978	127
61. Owners, Renters, Land-to-Till and Mixed Forms by Families with Undernourished Children Classified by Gomez and Waterlow Indices, El Salvador, 1978	128
62. Families with Undernourished Children Classified by Gomez and Waterlow Indices by Owners, Renters, Land-to-Tiller and Mixed Forms, El Salvador, 1978	129
63. Frequency of Diarrhea by Children 6 to 59 months Classified by Gomez and Waterlow Indices of Undernutrition, El Salvador, 1978	130
64. Children 6 to 59 Months Classified by the Gomez and Waterlow Indices of Undernutrition, El Salvador, 1978	131
65. Sex of Children Age 6 to 59 Months Classified by the Gomez and Waterlow Indices of Undernutrition, El Salvador, 1978	132

11

INTRODUCTION

Today's world faces a food crisis of mammoth proportions and unprecedented duration. Despite millions of dollars in financial and food aid, large-scale technological breakthroughs in agricultural production, and diverse nutrition intervention schemes, the irony remains: more people face problems of nutritional deprivation now than in any other time in history (Caliendo, 1979:1).

The development agenda of the sixties has fallen on hard times. Although many policy makers and scientists had forecast that industrialization would eventually improve the lives and nutrition of the rural poor in the developing world, the transformation simply has not occurred. As Caliendo indicates, the problems of famine, starvation, malnutrition and the "world food crisis" remain despite efforts to the contrary.

Experience over the past two decades has taught us, says Winikoff (1978), that the most successful nutritional plans are those that are part of a country's comprehensive agenda for development. All too often, however, the health and nutritional needs of populations (especially rural populations) have been seen as welfare issues by world planning organizations and indigenous development strategists, and have therefore been ranked relatively low among developmental priorities. Developing countries must establish an explicit planning process to develop programs and policies in the area of nutrition.

Despite the accumulation of data that document its direct and indirect effects on human capital, malnutrition remains a largely invisible problem compared to unemployment and poverty in development schemas (see Caliendo, 1979). As Berg (1973) notes, malnutrition does not draw the attention of international and national media in the same way that famine does, although malnutrition in fact accounts for more deaths and disease. Berg also argues that health issues are neglected in developing countries because of the "isolation of the power structure from its effects." Malnutrition, he says, unlike most diseases, is indeed class bounded.

Most nutritional programs have not put nutrition in a broader socio-economic context. Delivery of services is mostly a "catch as catch can" process; intervention is usually crisis oriented rather than part of a well thought out program that addresses the variety of needs among families where malnourishment is a problem.

The many developmental needs of developing countries and the limited resources at their disposal mean that any nutritional program must begin with a diagnosis of the nature and extent of the nutritional problem. Austin and Zeitlin (1981) have outlined the diagnostic steps for addressing the causes of malnutrition and assessing the impact of nutritional programs on target populations. This report uses their framework to examine malnutrition in El Salvador and tries to answer six questions:

- What type of nutritional deficiency exists?
- How severe is the deficiency?
- Who are the malnourished?
- Where are the target groups located?
- What are the causes of malnutrition?
- What policy will be most successful in reaching these target populations?

Policy Focus of the Rural Poor Survey

The design of this project closely follows policy priorities outlined by A.I.D in a recent paper (USAID, 1982). The objective of this policy is to maximize the impact of development assistance programs on the "nutritional well being of poor people in LDCs." To accomplish this goal AID and others have argued that analyses of the nutrition problem are a key to providing the necessary tools for designing effective strategies, programs and projects. Policy recommendations, as stated by AID, are as follows:

- 1) identifying projects based on analysis of the nutrition problem;
- 2) designing projects to overcome constraints to meeting nutritional needs;
- 3) targeting projects to nutritionally at-risk groups;

- 4) monitoring and evaluating impacts of projects on nutrition and food consumption;
- 5) providing technically strong nutrition programs to (a) backstop activities in all development sectors, (b) supplement sectoral efforts to ensure effectiveness in meeting nutritional goals and (c) complement sectoral programs with specific nutrition project activities to enhance nutrition impact;
- 6) increasing the indigenous capacity in LDCs to analyze and overcome nutrition problems through promotion of multisectoral nutrition planning and appropriate national policies (USAID 1982: 2)

This report focuses primarily on factors 1, 2, and 3 of this policy. Elsewhere in this paper we suggest various other strategies to help AID effectively implement factors 4, 5, and 6.

The multisectoral approach to the problem of malnutrition has long been the "backbone of technical nutrition support" (USAID, 1982: 10) provided by the Nutrition Economic Group of USDA and AID. This report places nutrition directly in this context by examining the linkages between various sectors (education, health, agriculture, etc.) and undernutrition at both the national and local levels. The Rural Poor Survey provides a unique opportunity to explore demographic, socio-economic, agricultural and health factors simultaneously.

This report directly links undernutrition to the family unit. This method for targeting nutritionally at-risk groups is especially helpful when the focus of programs, such as agricultural assistance, is either directly or indirectly on the household, community or region. Teller et al. (1979) have noted that the family unit is most appropriate for nutritional analysis since the household is most often "the producer and distributor of natural resources, as well as the socializer of health and food habits and beliefs" (p. 26). In addition, the household serves as a reference point for building a

system of "functional classifications" now called for by AID and INCAP for setting program priorities, designing projects and selecting target groups in sectoral programs.¹ This report develops general functional classification systems to target groups that differ in their degree of nutritional risk. We use two methods to identify undernutrition and several different criteria to establish the size and severity of malnutrition among Salvadorean children.

To maximize coordination and the impact of sector-related programs on nutrition, it is necessary to provide supplemental information on intra- and inter-household social and economic activities. Evidence is beginning to emerge, both from practical experience in implementing projects and from evaluation and monitoring of on-going projects, that diverse constraints impede the satisfaction of nutritional needs. As AID has noted: "understanding the social cultural and institutional context in which projects are to be implemented can help a project designer avoid potentially negative impacts and maximize positive effects of development activities" (USAID, 1982: 10). The intent of this report is to provide the planner, as well as community and government outreach workers, with contextual data for better decision-making.

AID and INCAP have suggested that a cost effective way to measure nutritional impacts is to carry out small-scale surveys of nutritional status and link them to larger data bases already available. These data can provide an indirect monitoring system of variables most likely to impact on the nutritional status of the poor in LDCs. The Rural Poor Survey shows the benefits of applying such a strategy in both planning and implementation stages. From a methodological point of view the Rural Poor Survey provides superior data since it avoids the problems associated with the ecological fallacy², an error in logic which occurs when one makes inferences from geographical data (census data) about the household unit.

Sample for El Salvador Rural Poor Survey

The sample households selected for the Rural Poor Survey were chosen from the sampling frame established for the Multi-purpose Household Survey (MPHS), a stratified multi-stage cluster design developed in conjunction with the Government of El Salvador, USAID and the United States Bureau of The Census. (See Woltman et al., n.d., for a complete description of the sample design for the Multi-Purpose Household Survey.) This survey was designed to produce estimates for the nation as a whole, urban and rural classifications, regions, and each of the fourteen Departamentos (the equivalent of states in the US), with a design objective of obtaining coefficients of variation (CVs) of 10 and 5 percent for regional and national estimates, respectively, for estimates of demographic characteristics. Sample selection was performed such that the sample was self-weighting within urban and rural classifications, with all urban living quarters having a probability of selection of 1/60 and all rural living quarters a probability of 1/80.

The universe for the study was El Salvador less the metropolitan area of San Salvador. It excludes the following municipios: Nueva San Salvador and Antiguo Cuscatlan in the Departamento La Libertad; and San Salvador, Mejicanos, Soyapango, Ciudad Delgado, Cuscatancingo, Ayutuxtepeque, Ilopango, and San Marcos in the Departamento San Salvador. The Rural Poor Survey used the segments selected for the Multi-purpose Household Survey as a sampling frame. The full frame consisted of 1,149 sample segments. The exclusion of the 224 segments located in metropolitan San Salvador resulted in a sampling frame of 925 segments for the survey. From this frame, a sample of 173 segments (57 urban and 116 rural) with an average of 8.4 households was chosen for the Rural Poor Survey.

The sample of segments was chosen in such a way that all households selected for the Rural Poor Survey had an equal probability of selection. Sample selection was performed by selecting entire weekly samples from the Multi-purpose Household Survey

- 6 -

sample. Segments in the first three weekly samples were selected from the urban MPHS sample and segments from the first four weekly samples were chosen for the Rural Poor Survey so that the sample would be self-weighting.

In July and August of 1978 each of the households was visited by interviewers. Fifty-one households were not occupied and twelve households refused to be interviewed. Twelve other households were occupied but no one was present during three attempts to contact them. Two families were traveling during the interview period. Six completed questionnaires were lost. Completed interviews available for analysis numbered 1366, or approximately 98 percent of the occupied houses in the sample. Of the 1366 completed interviews, 442 were urban households and 924 were rural households. Since 1950 El Salvador has used administrative criteria for defining urban areas. As a result, the 1971 Census of Population considers to be urban those areas where municipal authorities are located (the county seats), with the limits of the municipality determined by those authorities. Rural areas are those formed by the cantones (townships) of the municipio (county).

Completed interviews of the household survey did not contain any information on anthropometric measurements of children under 60 months of age; thus a separate questionnaire was prepared by Elena Brineman and administered during September and October of 1978 to those families that had children 6 to 59 months of age. This latter survey obtained data on 1109 children 6 to 59 months of age who were related to the household head from 711 families—286 children from 193 urban families and 823 children from 518 rural families. An additional fifteen children, 6 to 59 months of age lived in a survey household but were not related to household head and were excluded from the analysis of families. These were children of maids or household guests.

Because there was a one-month lag between the first survey and the nutritional survey, some children died, and some children left the household to live with relatives. Moreover, some families moved out of the area and some new ones moved into the

sample households. The following analysis deals with 687 families with children aged 6 to 59 months living in the households in both interview periods. This design is representative of El Salvador, excluding the area of San Salvador, at the time of the household survey, but because some households changed occupants, twenty-four families or 2 percent of the sample's households had changed by time two of the nutritional survey.

A major advantage of the Multi-Purpose Household Survey Rural Poor Sampling frame is that a substantial body of data already exists on the same households that responded to the nutritional survey. For example, information on agricultural regions, cropping patterns, income, occupations, employment histories and household characteristics is available. Such information allows increased understanding of the factors associated with childhood malnutrition, since this report is concerned not only with the levels of malnutrition, but also with the characteristics of families with malnourished children.

DEFINITION OF MALNUTRITION

A wide range of standards can be used to assess the nutritional status of a population. The selection of one standard over another seriously affects one's findings concerning the extent of malnutrition among a population. In addition, once a standard has been selected the cut-off points one chooses to classify groups is a somewhat arbitrary ingredient in assessing nutrition program inputs (Sahn and Pestronk, 1981). Given the validity problem involved in defining and measuring malnutrition we present two anthropometric measures. Although there is little agreement on proper cut-off points we have attempted to maximize reliability by using cut-offs consistent with other research being carried out in El Salvador.

The most prevalent form of malnutrition among El Salvadorean children is known as Protein-Calorie Malnutrition (PCM). Because the physical growth of young children

is commonly threatened by a combination of infectious diseases and dietary deficiencies, body measurements of children between 6 months and 5 years of age constitute the principle means of measuring the extent of PCM. The risk of PCM is lower in children below 6 months of age because of the high proportion who breast feed and also lower in those over 5 years of age because of their greater resistance to infectious diseases and their more varied diets. When measurements are limited to this narrow range of ages, male and female differences in most body measurements are minimal and statistical analysis is easier.

Nutritional Measurements

Basic data on growth can be used in conjunction with norms to assess children's physical development in terms of percent of standard weight-for-age (W-A), height-for-age (H-A), and weight-for-height (W-H) ratios. Age is here calculated in decimal months, weight is measured to the nearest quarter kilogram, and height is measured to the nearest 0.1 cm.

1) Underweight

In the past, PCM has been most frequently assessed by using Gomez' classification (Gomez et al., 1956) of deficiencies in weight-for-age (W-A). In Gomez' scheme, children above 90 percent of standard W-A index are classified as normal, and third degree PCM corresponds to a W-A index of less than 60 percent. Children in the third degree category generally require hospitalization. Some organizations and clinics use a W-A index of 80 percent as the dividing line between malnourished and normal. This report, however, chooses to use the Gomez cutoff points of 90, 75 and 60 percent because previous research in El Salvador by the Central America Research Station (CDC) employed these cutoffs. By using the W-A index alone, however, it is impossible to determine whether a child with low weight-for-age is tall with recent weight loss, or stunted but well-proportioned.

Waterlow et al. (1977) have suggested that a combination of weight-for-height (W-H) and height-for-age (H-A) indices overcomes this problem.

2) Acute Undernutrition

Weight-for-height (W-H) is used to gain knowledge about acute or recent body wasting. During an acute period of nutritional deficiency, there is a rapid reduction in weight while height is much more slowly affected. If an adequate nutritional level is restored, the child may regain "normal" weight. Here, for consistency with studies by CDC and the Ministry of Health in El Salvador, a child weighing less than 85 percent of normal W-H will be classified as acutely malnourished.

3) Chronic Undernutrition

If prolonged mild to moderate or frequent acute periods of undernutrition are suffered, a child will fail to grow in stature. The result is chronic PCM and stunting. A child who measures less than 90 percent of his expected height-for-age (H-A) is usually classified as chronically undernourished.

Table I summarizes nutritional measurements with regard to the reference medians developed by Gomez et al. (1956) and Waterlow et al. (1977). For purposes of analysis we have chosen to present data for both types of undernutrition since there is no clear consensus regarding the most appropriate measure.

Table I. Combined Weight-for-Height, Height-for-Age and Weight-for-Age Indices

		<u>GOMEZ</u>
Nutritional Status		Weight-for-Age
1.	Normal	90% and over
2.	1st Degree	75 - 89.9%
3.	2nd and 3rd degree	less than 75%

		<u>WATERLOW</u>	
		Weight-for-Height	Height-for-Age
1.	Normal	Normal (>85%)	Normal (>90%)
2.	Stunting (chronic undernutrition)	Normal (>85%)	Low (<90%)
3.	Wasting (acute undernutrition)	Low (<85%)	Normal (>90%)
4.	Both Wasting and Stunting	Low (<85%)	Low (<90%)

Table II shows the urban-rural distribution of children age 6 months to 59 months in El Salvador classified by the Gomez and Waterlow indices for level of malnourishment.

Table II. Undernutrition According to Gomez and Waterlow Indices, El Salvador, 1978

Unit of Analysis	GOMEZ INDEX			
	N	2nd and 3rd (less than 75)	1st Degree (75-89.9)	Normal (90 and over)
Children¹				
El Salvador ²	1109	10.46	42.47	47.07
Rural	823	10.49	38.11	51.40
Urban	286	10.45	43.99	45.57
Families³				
El Salvador	687	14.6	46.9	38.6
Rural	501	15.0	49.4	35.6
Urban	186	13.4	44.8	46.8

Unit of Analysis	WATERLOW INDEX				
	N	Wasted and Stunted (Chronic and Acute)	Wasted (Acute)	Stunted (Chronic)	Normal
Children¹					
El Salvador ²	1109	.63	1.71	25.25	72.41
Rural	823	.73	2.19	25.88	71.20
Urban	286	.35	.71	23.43	75.87
Families³					
El Salvador	687	1.01	2.74	32.28	63.98
Rural	501	1.19	3.56	33.07	62.18
Urban	186	.53	.53	30.16	68.78

¹Includes only children who are related to household head

²Excludes the metropolitan area of San Salvador

³Family is classified as undernourished when one or more children in family is classified by Gomez and Waterlow Indices as undernourished

As Table II shows for El Salvador (minus San Salvador), 53 per cent of the children between 6 and 59 months of age were below normal weight (90 percent standard). The table also indicates that only 39 per cent of the families had one or more preschool children of normal weight. In fact, nearly 17 percent of families had two or more underweight children using the Gomez classification (see Table III). There was a pronounced difference between proportions of rural (64 percent) and urban (53 percent) families with one or more preschool children below the standard W-A (Table II).

In the panel of Table II that deals with the Waterlow index, 0.63 percent of the children between 6 and 59 months are concurrently stunted and wasted. These children are probably in need of immediate medical attention and run a very high risk of mortality. In terms of numbers affected, stunting (affecting 25 percent of the children and arising from chronic undernutrition) is by far the predominant problem. However, those children who are wasted (1.71 percent) are individually in a more critical situation, and in need of immediate attention.

Table II demonstrates that of the 687 sample families who had children 6 to 59 months, approximately 32 percent had one or more children with chronic undernutrition. Nearly 6 percent had two or more children with chronic undernutrition (see Table III).

Table III. Percentage of Families with Two or More Malnourished Children Ages 6 to 59 Months Using Weight for Age, Height for Age, Weight for Height Criteria, El Salvador, 1978.

Area	Weight for Age -90%md	Height for Age -90%md (stunted or chronic)	Weight for Height -85%md (wasted or acute)
El Salvador ¹	16.9	5.88	0.0
Rural	17.0	6.45	0.0
Urban	16.6	5.00	0.0

¹Excludes the metropolitan area of San Salvador.

In order to examine the socio-economic characteristics of families and the nutritional levels of their children aged 6 to 59 months, two indices were constructed to permit household comparisons. Utilizing the Waterlow index we constructed two family groups. Although the Waterlow index permits comparisons between various types of undernutrition (e.g. stunted and wasted) the distribution of malnutrition in the Salvadorean Rural Poor Survey is extremely skewed and permits only crude geographical comparisons. These two family groups are as follows:

- 1) Families with Normal Children — all families in which all children aged 6 months to 59 months were not classified as wasted and/or stunted by the Waterlow index.
- 2) Families with Stunted Children or Chronic Undernutrition and Families with Wasted and Stunted Children or Acute Undernutrition — all families with at least one child aged 6 months to 59 months classified as stunted by the Waterlow index and all families with at least one child 6 months to 59 months classified as either wasted or wasted and stunted by the Waterlow index. Thus, for the purpose of this analysis, wasted and stunted, stunted, and wasted children, were combined because of two considerations: first, the number of cases in separate categories did not permit meaningful statistical interpretation, and second, large percentages of children classed separately as either wasted and stunted or wasted were siblings and this circumstance further reduced (for statistical purposes) the number of families in these categories.

Utilizing the Gomez index, three family categories were constructed as follows:

- 1) Normal - all families with at least one child 6 months to 59 months with weight-for-age at least 90 percent of median.
- 2) 1st Degree Malnutrition - all families with at least one child 6 months to 59 months with weight-for-age between 75 percent and 89.9 percent of median.
- 3) 2nd and 3rd Degree Malnutrition - all families with at least one child 6 months to 59 months with weight-for-age less than 75 percent of median.

These percentages are shown in panel 2 of Table II. Obviously, some families may have two or more children 6 to 59 months of age. Table III shows the percentage of families with two or more malnourished children.

In assessing the type of nutritional deficiency most prevalent among families with children 6 to 59 months of age in El Salvador, we find a very high rate of families with both underweight and chronically malnourished children. These families are disproportionately represented in rural areas although a fairly substantial proportion is also located in urban areas. The prevalence of acute undernourishment, a reflection of a recent period of nutritional deficiency, is relatively low throughout El Salvador. The most critical group, those families with both wasted and stunted children, is also fairly low in proportional number. Chronic undernutrition among families is perhaps the most wide-spread kind of malnutrition in the country. This type of malnutrition reflects recurrent acute episodes or a prolonged period of mild to moderate nutritional deficiency.

Malnutrition is not evenly distributed throughout regions, departments and cantones in El Salvador; rather there are some very dramatic geographic differences. Certain regions, particularly the northern tier and the departments of Chalatenango, Cabanas, Cuscatlan and Morazon, have a majority of families with children experiencing some form of malnutrition.

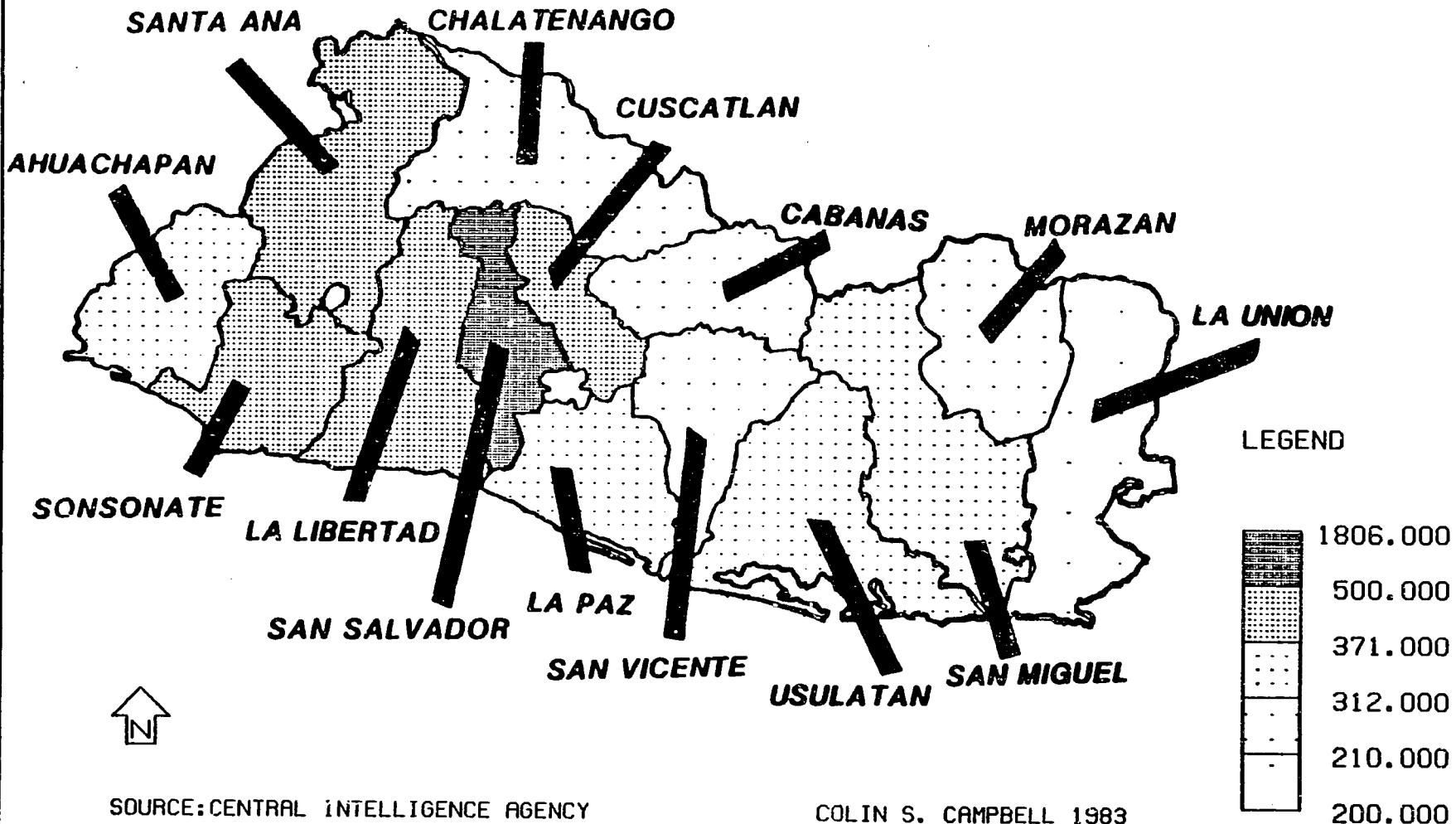
Map 1 shows the distribution of persons per square mile or density of population by department. Note that the highest density of population is in the department of San Salvador with somewhat lower densities in the departments of Santa Ana, Sonsonate, La Libertad and Cuscatlan. The lowest density of population is in the department of La Union, followed by Chalatenango, Cabanas, San Vicente and Morazon.

Map 2 shows the percentage of El Salvador classified as urban. Overall, the level of urbanization (percent of population classified as urban) is low throughout all departments in El Salvador except in San Salvador. Comparing Maps 1 and 2 we see that those departments which are the most densely populated are also the more urbanized. San Salvador, the most densely populated department, has the highest percentage of its population classified as urban. Similarly, the departments of Santa Ana, Sonsonate, and La Libertad with fairly high population densities have a high percentage of their populations classified as urban compared to other departments in El Salvador. The one exception here is the department of Cuscatlan, which has a population density between 371 and 500 persons per square mile, but whose households are primarily rural (not more than 28 percent can be classified as urban households). Again comparing Maps 1 and 2 we can see that generally the least densely populated departments are also the least urbanized. This is particularly true of those departments along the northern tier of El Salvador and the department of La Union.

In order to examine the geographic distribution of malnutrition and the relative concentration of malnutrition within households in certain regions and departments in

MAP ONE
EL SALVADOR 1968

DENSITY OF TOTAL POPULATION (PERSONS PER
SQUARE MILE) BY DEPARTMENT

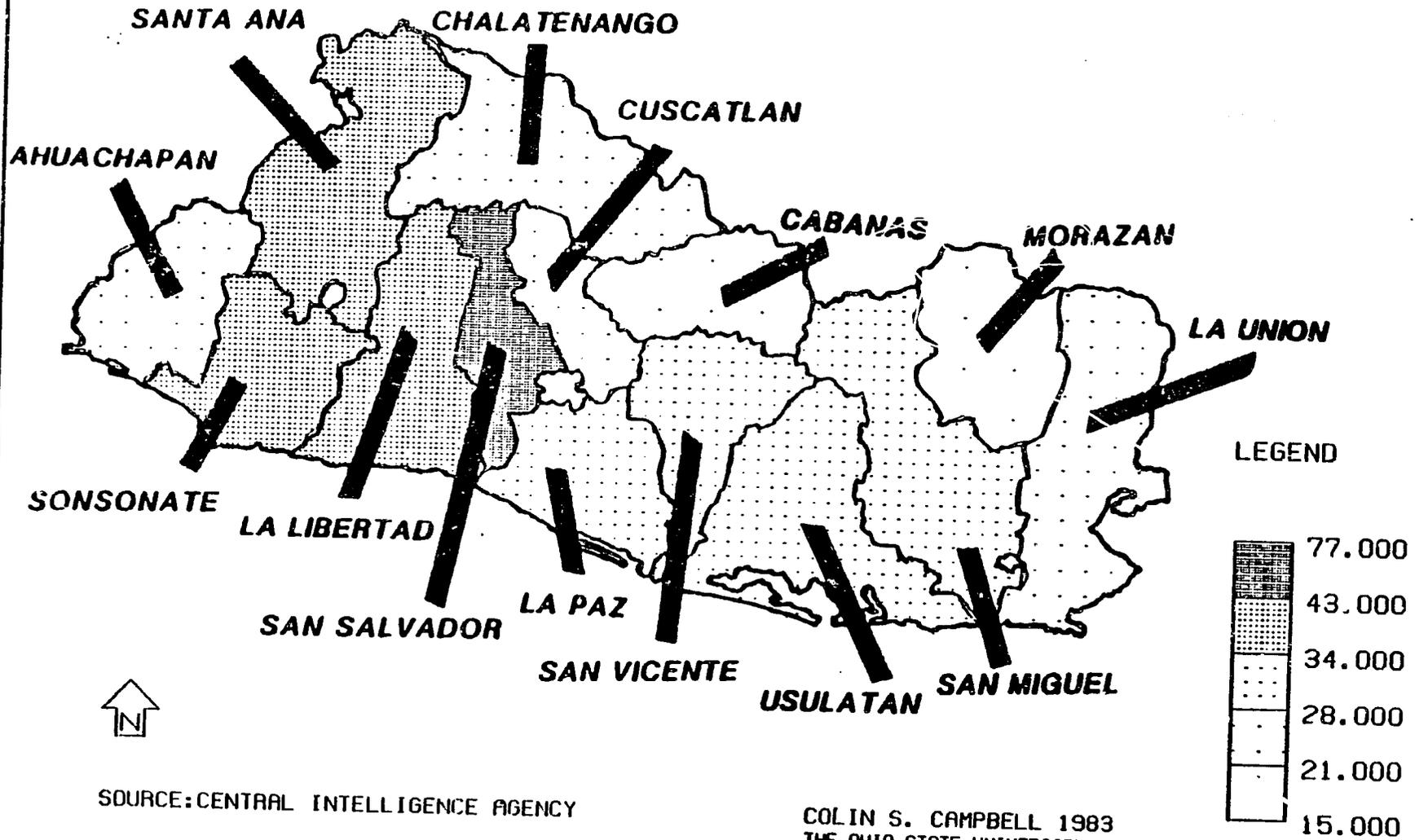


SOURCE: CENTRAL INTELLIGENCE AGENCY

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-17-

MAP TWO
 EL SALVADOR 1968
 PERCENTAGE OF TOTAL POPULATION CLASSIFIED
 AS URBAN BY DEPARTMENT



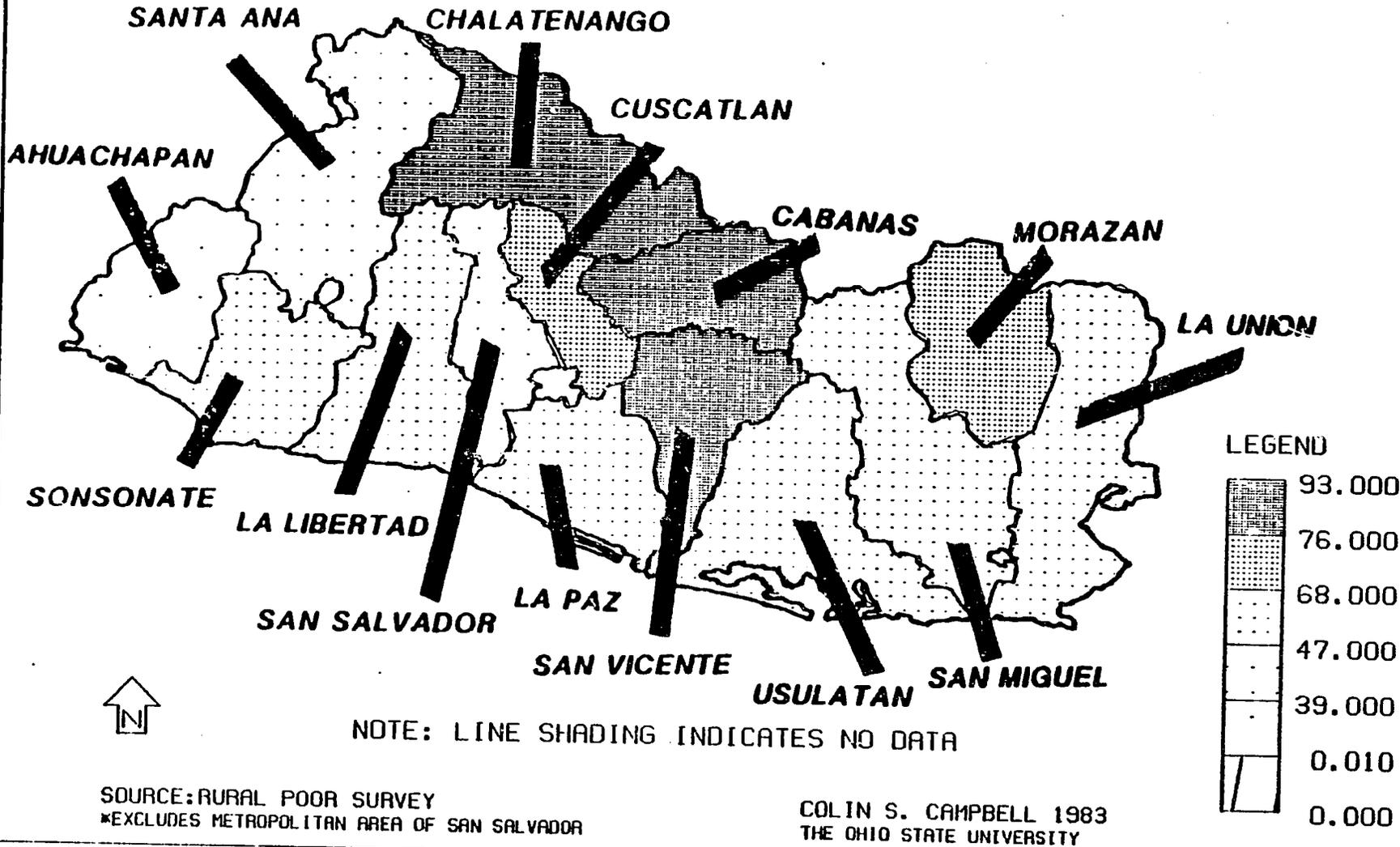
181

El Salvador, the percentages of households with children 6 to 59 months classified malnourished in one way or another by the Gomez and Waterlow methods are plotted by department on the following maps.

Map 3 shows the distribution of households with children 6 to 59 months classified malnourished by the Gomez method. Note that the highest concentration of malnutrition is along the northern tier of El Salvador. In the departments of Chalatenango, Cabanas, Cuscatlan, San Vicente and Morazan, more than 70 percent of households have malnourished children 6 to 59 months of age. It is precisely those regions that Maps 1 and 2 showed to be the most rural and (except Cuscatlan) least densely populated areas of El Salvador. Malnourished households in this region may, in fact, cluster in urban areas. Maps 4 and 5 attempt to pinpoint the location of these households. Examining the urban households (Map 4) we find that about 70 percent of them have underweight children 6 to 59 months in the departments of San Vicente and Cabanas. The rural distribution (Map 5) shows that the effects of rural malnutrition are dramatic to say the least. About 70 percent of rural households have undernourished children 6 to 59 months in the departments of Chalatenango, Cabanas, San Vicente, La Paz, Cuscatlan, Usulután and Morazan according to the Gomez index. About 50 percent of all rural households in all departments have undernourished children except in the departments of San Salvador and Ahuachapan (Map 5). Comparing Maps 4 and 5 we can see that in the department of San Vicente over 75 percent of the rural and over 75 percent of the urban households have malnourished children. Note that while Usulután and La Paz have fewer urban households experiencing malnutrition (Map 4), over 70 percent of households in the rural areas of these departments have children who are undernourished (Map 5).

MAP THREE
EL SALVADOR 1978

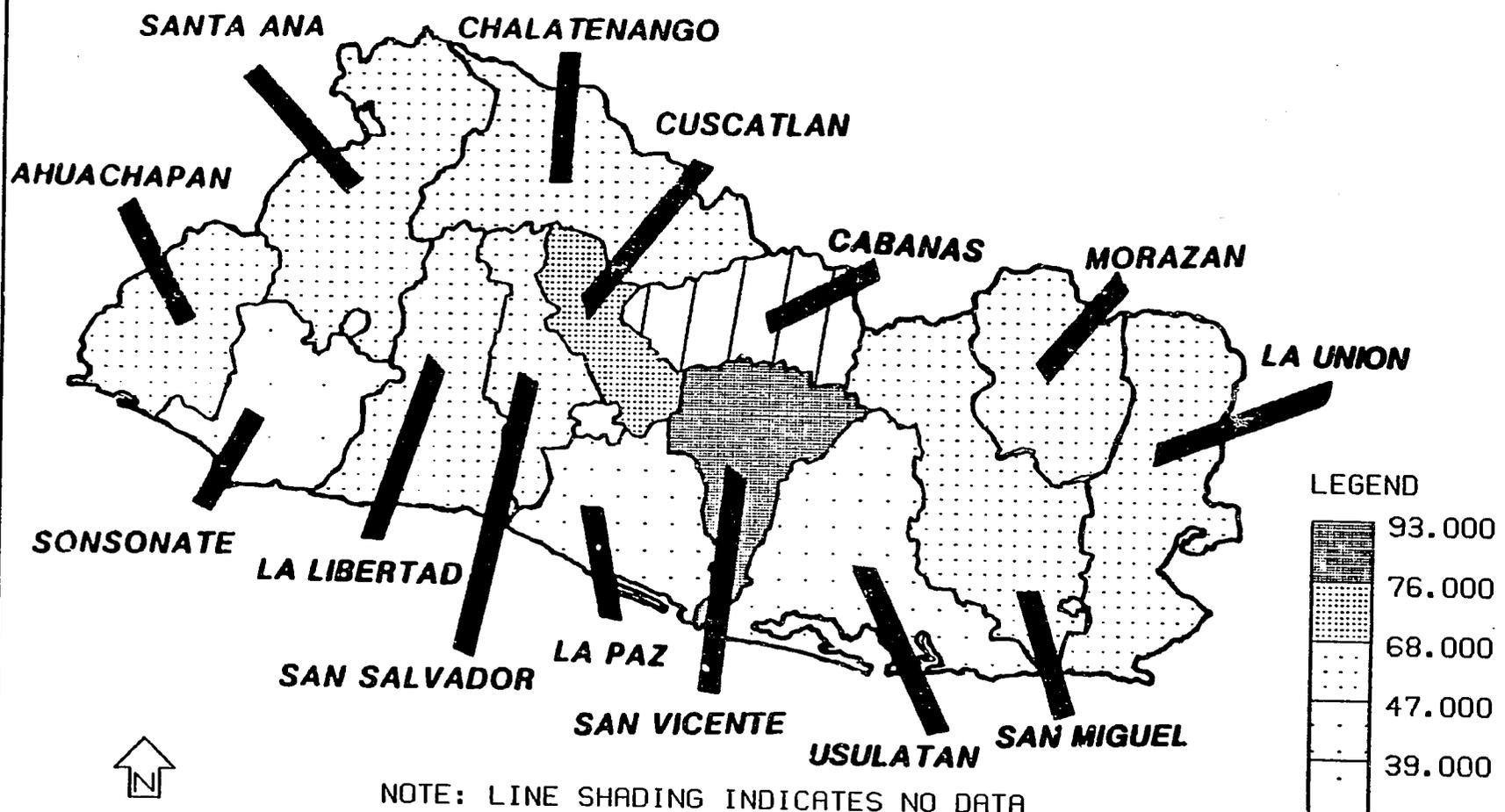
PERCENTAGE OF ALL HOUSEHOLDS WITH CHILDREN 6 TO 59 MONTHS
CLASSIFIED UNDERWEIGHT (GOMEZ METHOD)
BY DEPARTMENT



20-

MAP FOUR
EL SALVADOR 1978

PERCENTAGE OF URBAN HOUSEHOLDS WITH CHILDREN 6 TO 59 MONTHS
CLASSIFIED UNDERWEIGHT (GOMEZ METHOD)
BY DEPARTMENT

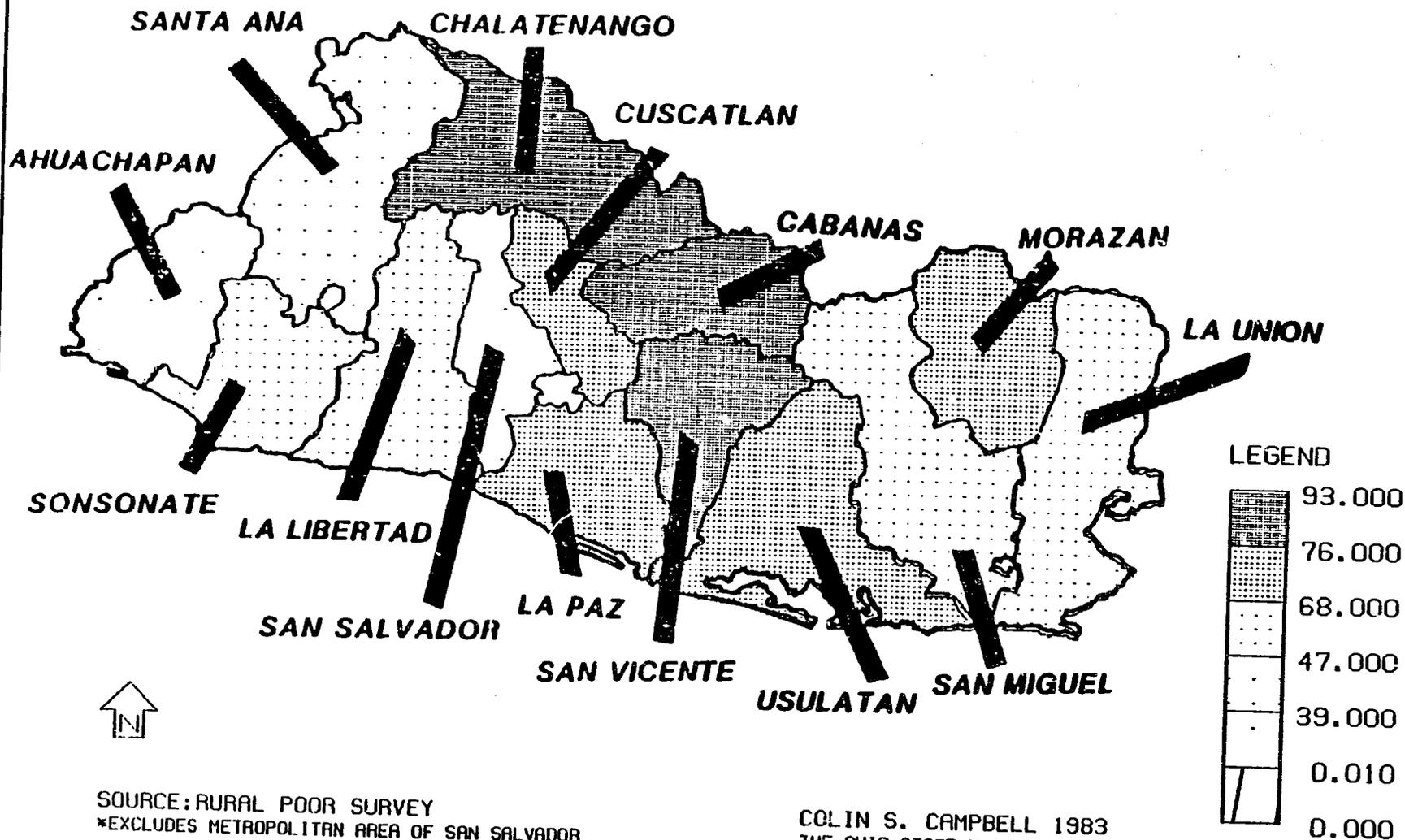


SOURCE: RURAL POOR SURVEY
*EXCLUDES METROPOLITAN AREA OF SAN SALVADOR

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MAP FIVE
EL SALVADOR 1978

PERCENTAGE OF RURAL HOUSEHOLDS WITH CHILDREN 6 TO 59 MONTHS
CLASSIFIED UNDERWEIGHT (GOMEZ METHOD)
BY DEPARTMENT

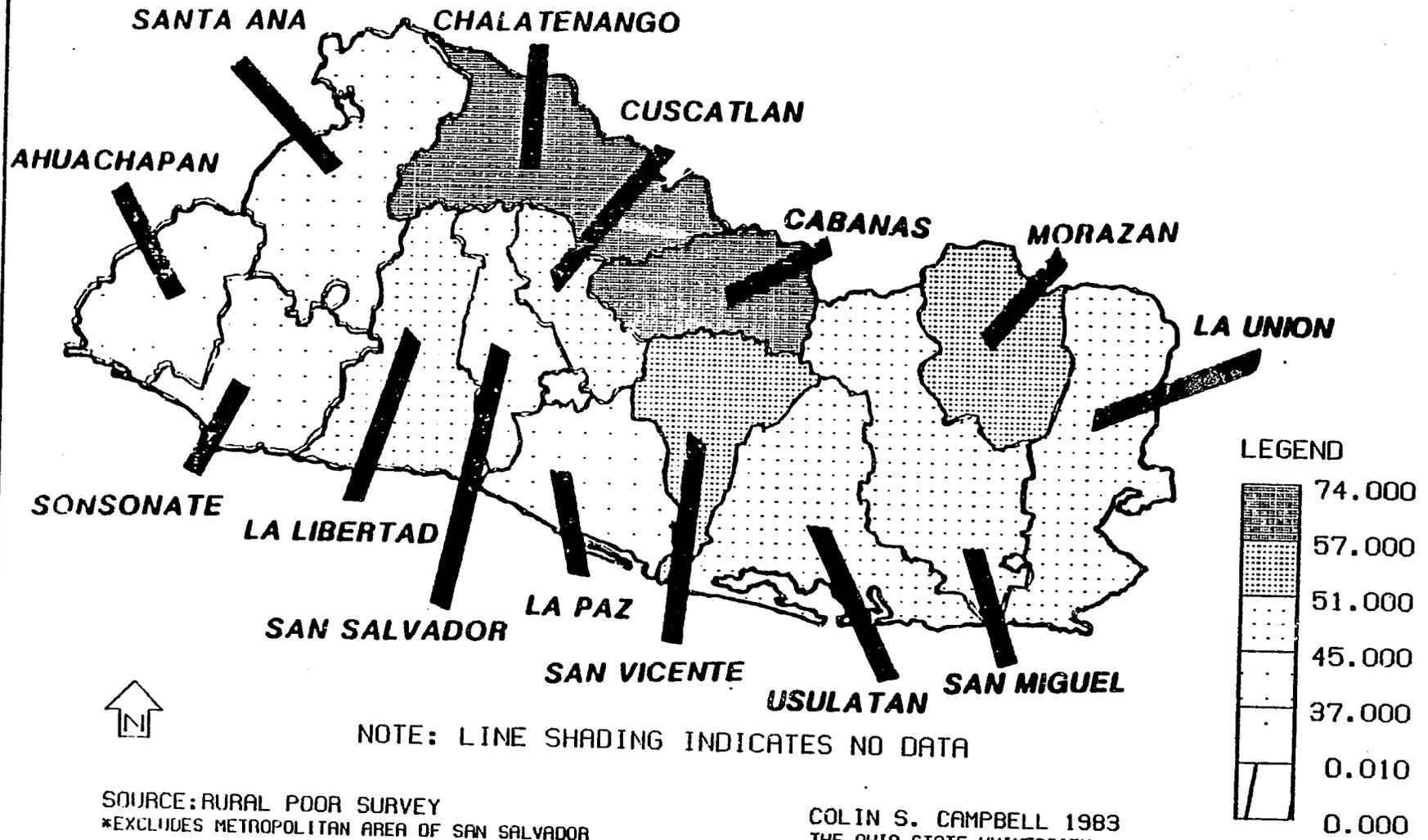


- 22 -

While Maps 3, 4, and 5 show the extent of malnutrition (underweight) by department, Maps 6 through 11 break down the underweight category and by second/third degree to allow one to look at the degree of undernutrition by department. In El Salvador the concentration of first degree malnutrition among all households with children 6 to 59 months is in the departments of Chalatenango and Cabanas (Map 6), while second and third degree malnutrition is most dominant in the departments of San Vicente and Cuscatlan (Map 9). First degree malnutrition is more prevalent along the northern tier of the country, while the 2nd and 3rd degree malnutrition are heavily concentrated in the interior). Other maps examine the clustering of malnourished households in rural and urban areas. The data show that over 50 percent of urban households in Chalatenango and San Vicente suffer first degree malnutrition (Map 7), while over 50 percent of rural households in Chalatenango, Cabanas, La Libertad, San Miguel and Morazan suffer first degree undernutrition (Map 8). The concentration of second and third degree malnutrition (those that are worst off) in urban households is highest in San Vicente and Cuscatlan (Map 10); second and third degree malnutrition among rural households is concentrated again in the departments of San Vicente and Cuscatlan, in addition in Usulután and La Libertad (Map 11). Comparing the distribution of first degree malnutrition in Maps 6, 7, and 8 we find that although first degree malnutrition is dominant among households in Chalatenango, Cabanas, Morazan and San Vicente the location of these households varies within departments. Over 50 percent of rural households have children 6 to 59 months of age who are undernourished (Map 8) in the departments of Sonsonate, La Libertad, Cabanas, and San Miguel, while less than 40 percent of urban households in these departments experience first degree malnutrition (Map 7).

MAP SIX
EL SALVADOR 1978

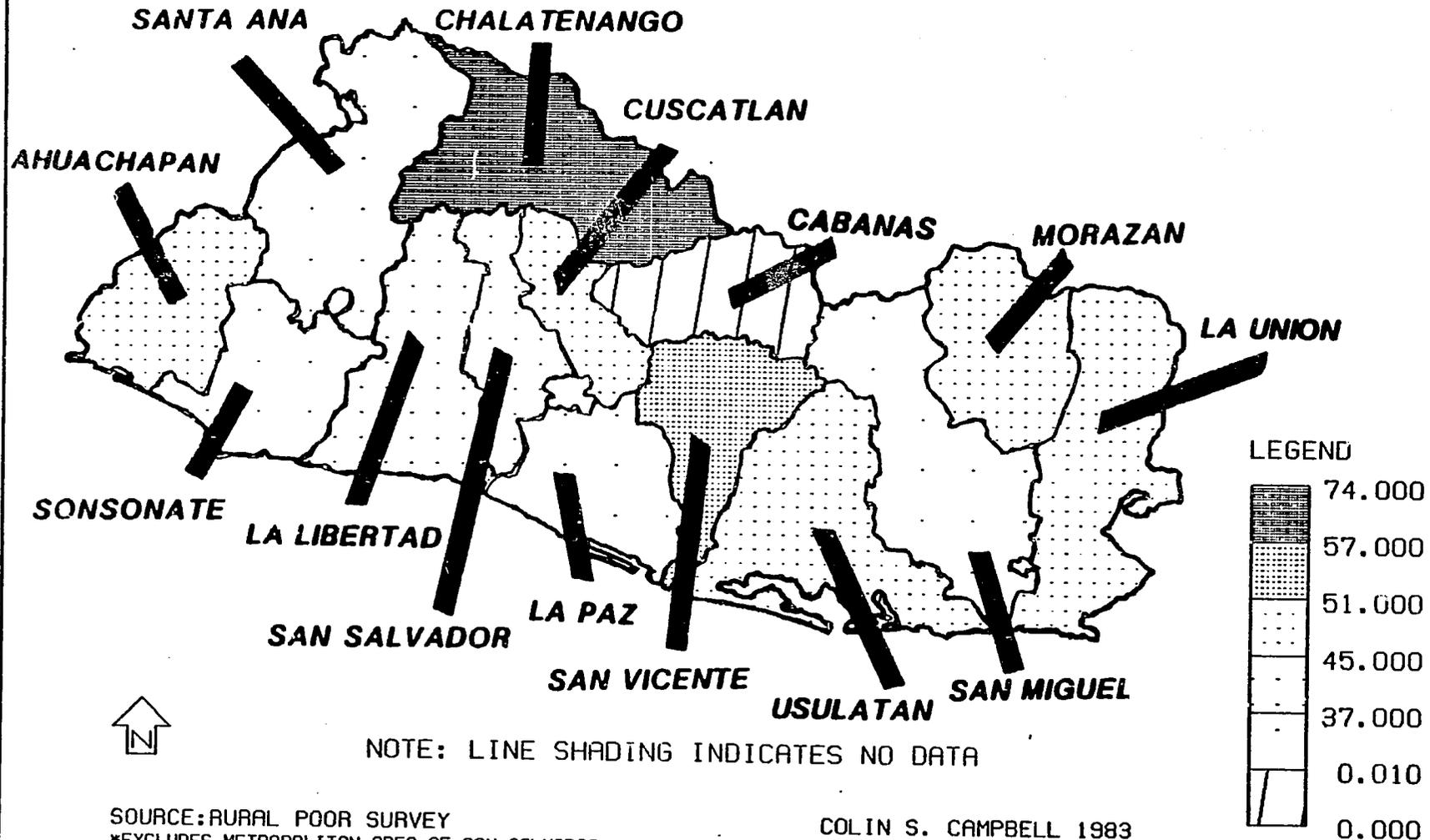
PERCENTAGE OF ALL HOUSEHOLDS WITH CHILDREN 6 TO 59 MONTHS
CLASSIFIED UNDERWEIGHT (FIRST DEGREE, GOMEZ METHOD)
BY DEPARTMENT



-24-

MAP SEVEN
EL SALVADOR 1978

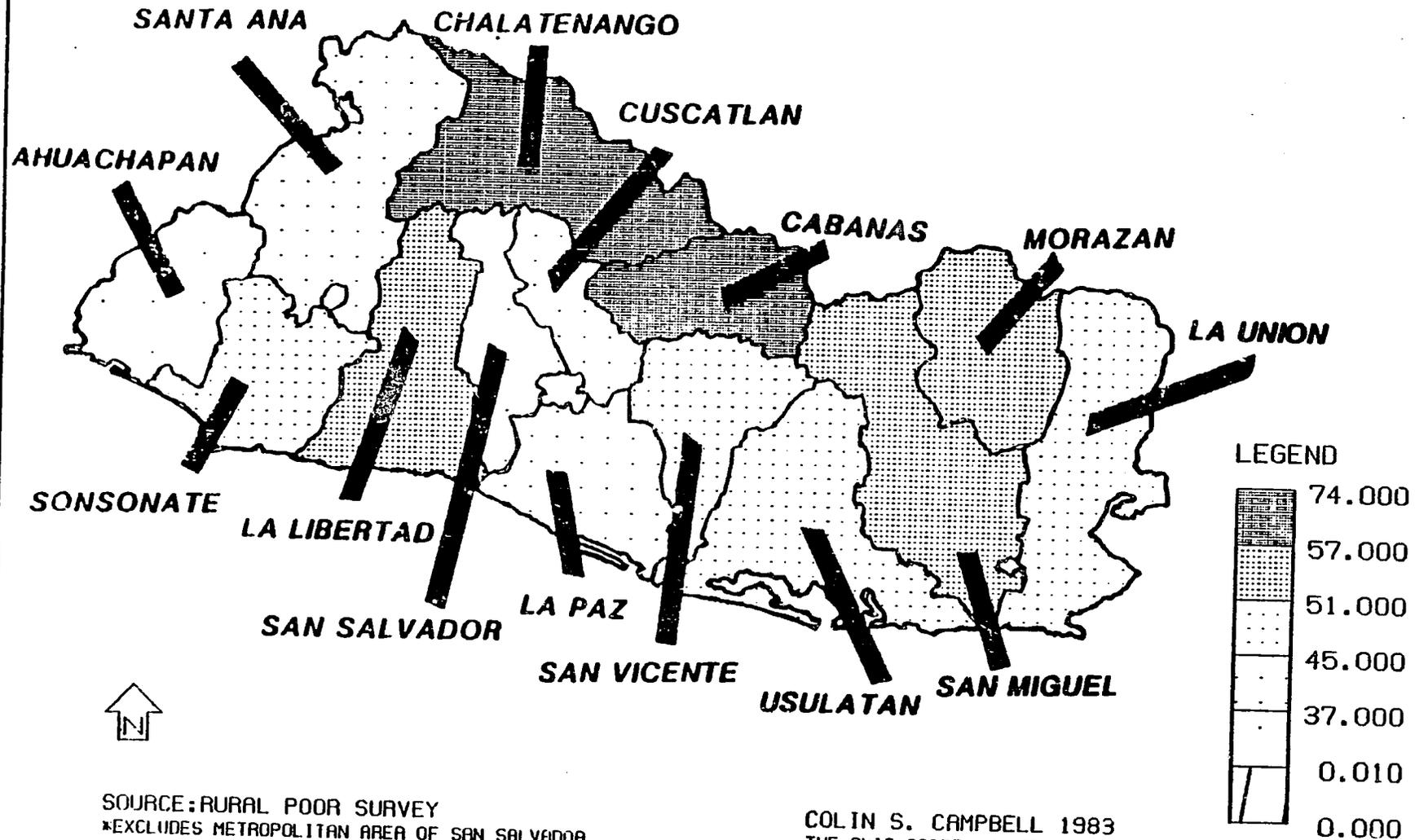
PERCENTAGE OF URBAN HOUSEHOLDS WITH CHILDREN 6 TO 59 MONTHS
CLASSIFIED UNDERWEIGHT (FIRST DEGREE, GOMEZ METHOD)
BY DEPARTMENT



125

MAP EIGHT
EL SALVADOR 1978

PERCENTAGE OF RURAL HOUSEHOLDS WITH CHILDREN 6 TO 59 MONTHS
CLASSIFIED UNDERWEIGHT (FIRST DEGREE, GOMEZ METHOD)
BY DEPARTMENT



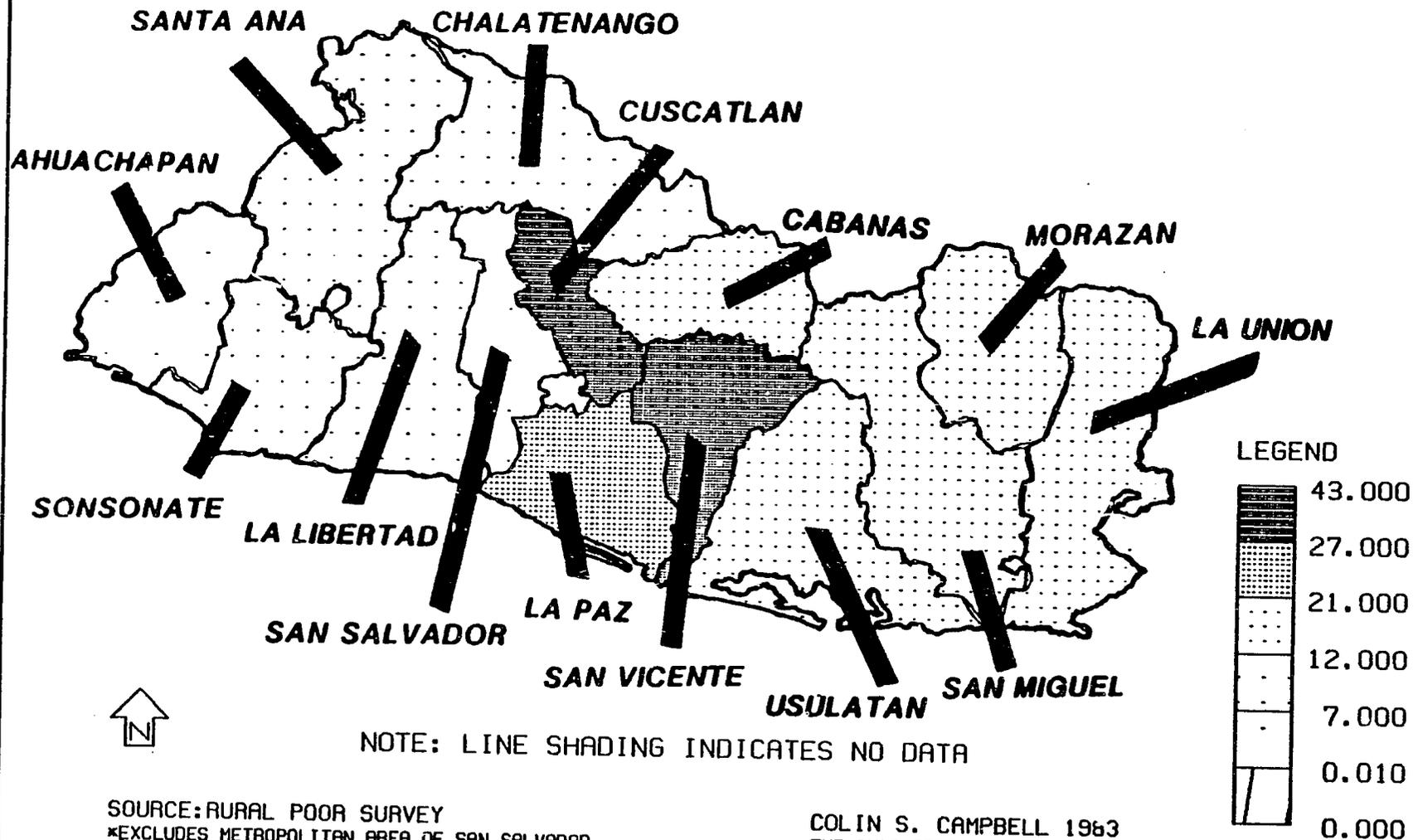
SOURCE: RURAL POOR SURVEY
*EXCLUDES METROPOLITAN AREA OF SAN SALVADOR

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26

MAP NINE
EL SALVADOR 1978

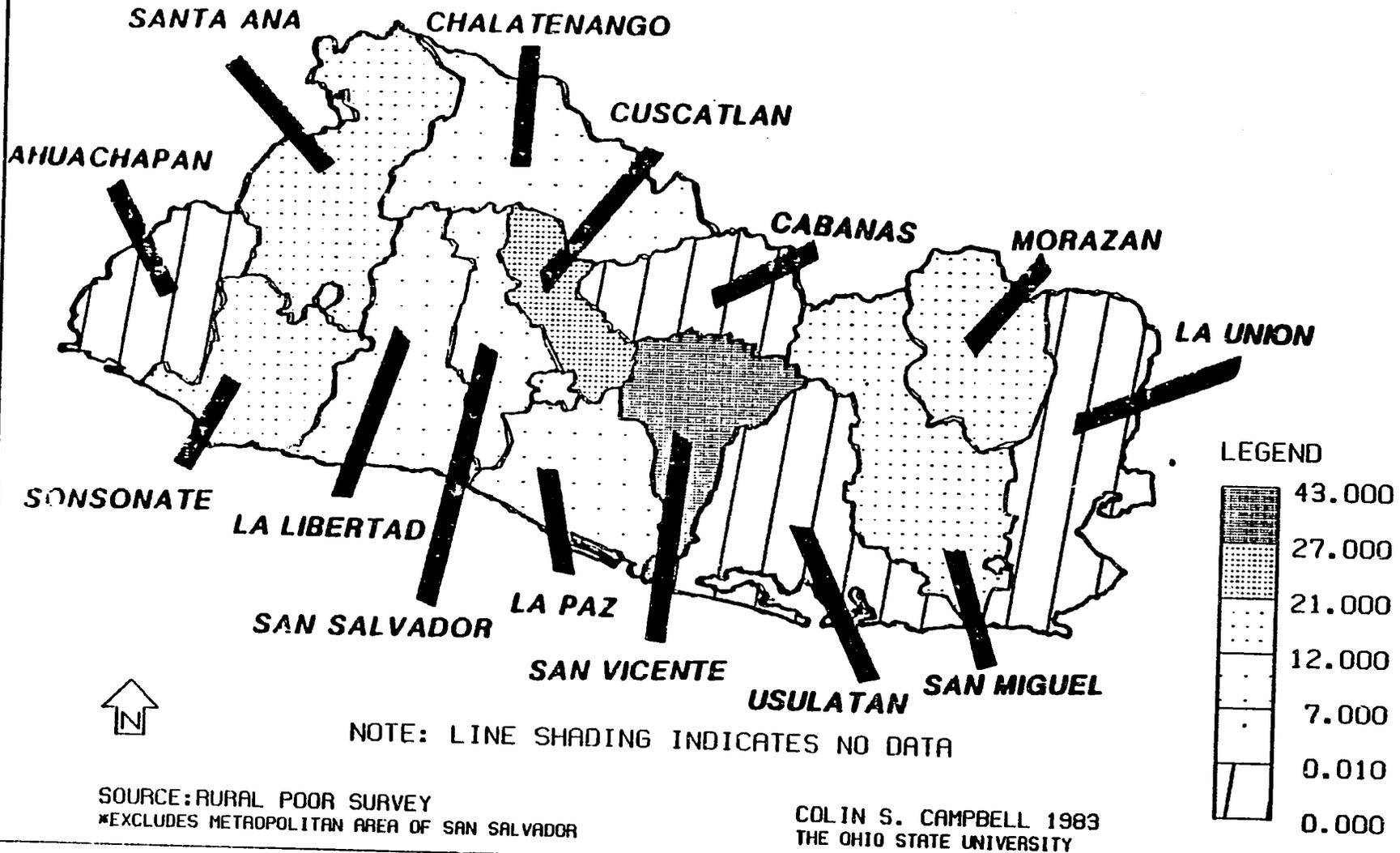
PERCENTAGE OF ALL HOUSEHOLDS WITH CHILDREN 6 TO 59 MONTHS
CLASSIFIED UNDERWEIGHT (SECOND & THIRD DEGREE, GOMEZ METHOD)
BY DEPARTMENT



- 27 -

MAP TEN
EL SALVADOR 1978

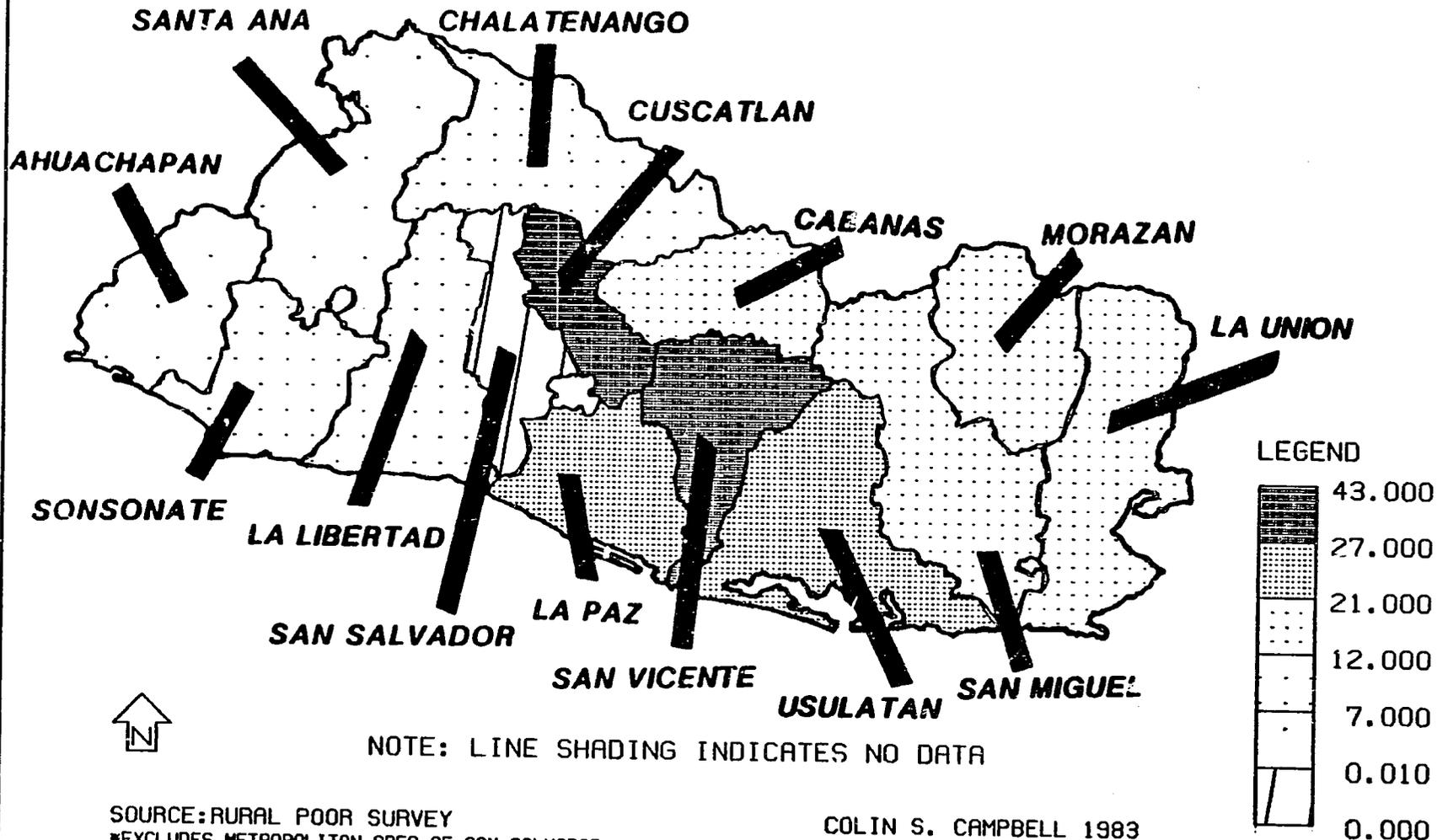
PERCENTAGE OF URBAN HOUSEHOLDS WITH CHILDREN 6 TO 59 MONTHS
CLASSIFIED UNDERWEIGHT (SECOND & THIRD DEGREE, GOMEZ METHOD)
BY DEPARTMENT



58-

MAP ELEVEN
EL SALVADOR 1978

PERCENTAGE OF RURAL HOUSEHOLDS WITH CHILDREN 6 TO 59 MONTHS
CLASSIFIED UNDERWEIGHT (SECOND & THIRD DEGREE, GOMEZ METHOD)
BY DEPARTMENT



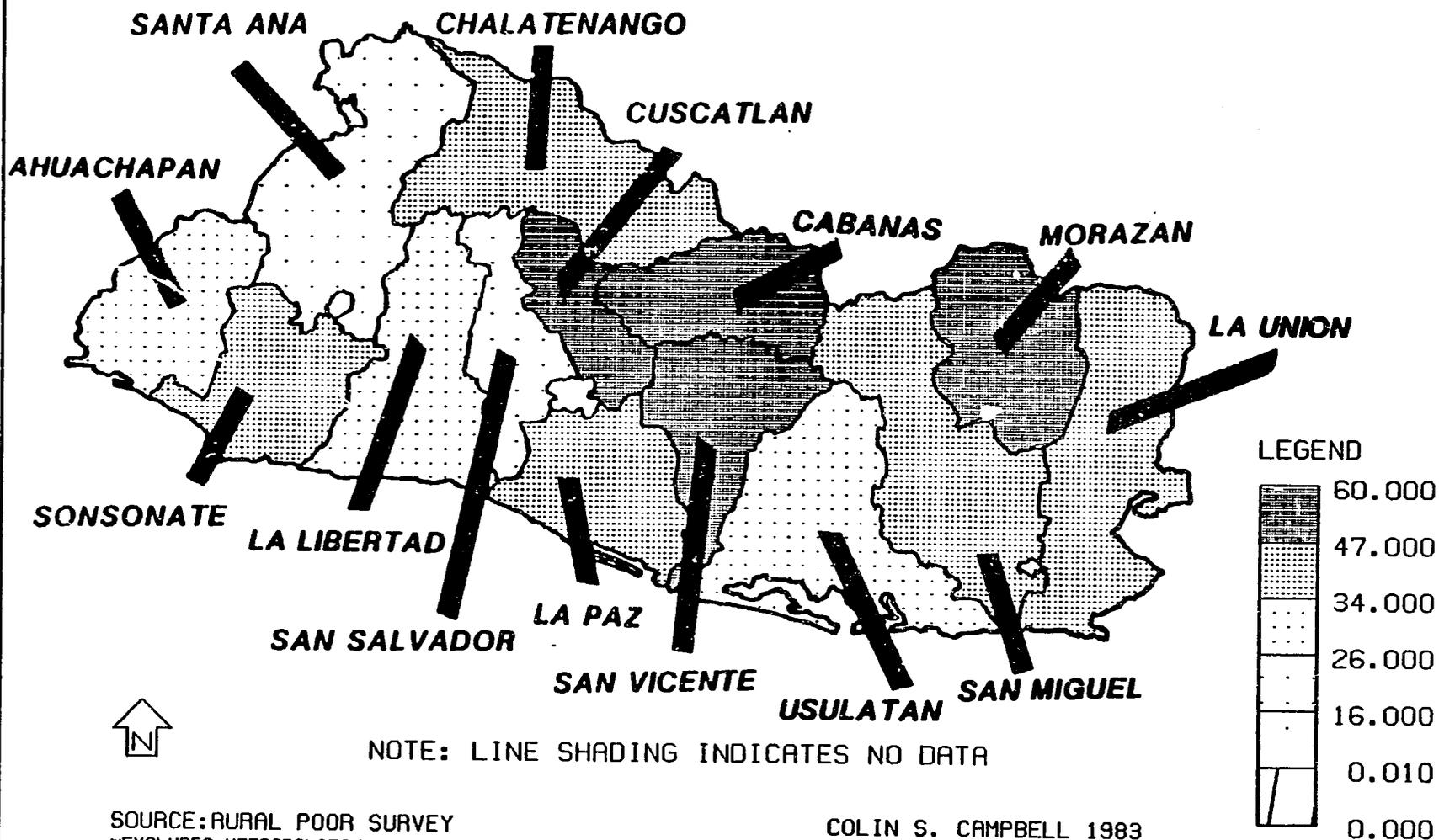
Map 9 shows that the highest percentage of households with children classified as second and third degree malnourished are located in the departments of San Vicente and Cuscatlan, departments where first degree malnutrition is also high. By breaking down Map 9 by urban and rural location (see Maps 10 and 11) we see that not only are households in these departments very poorly nourished, but also that the departments of La Paz and Usulután have a high concentration of second and third degree malnutrition in rural areas (Map 11).

Maps 12 through 14 show the distribution of acute and chronic malnutrition (Waterlow method) in households with children 6 to 59 months of age. These maps show a regional distribution of malnutrition similar to that in the maps for the Gomez method (Maps 3, 4, 5). Map 12 shows that the highest incidence of acute and chronic malnutrition is among the following departments: Cuscatlan, Cabanas, and Morazan (over 50 percent). Looking at urban households we find the highest incidence of acute and chronic malnutrition (over 50 percent) in Cuscatlan and Morazan (Map 13), while among rural households the greatest concentration of malnutrition is in the departments of San Vicente, Cuscatlan and Cabanas (Map 14). Although the levels of malnutrition using the Waterlow method (a more conservative measure) are somewhat lower overall than for the Gomez method, Map 12 again shows that malnutrition tends to be concentrated in the northern tier of El Salvador although Sonsonate and La Paz, too, have malnourished children in more than 45 percent of households. The concentration or clustering shown in Map 12 in the central region—Cabanas, Cuscatlan and San Vicente—is primarily a function of rural households. Notice that Map 14, which gives the percentage of rural households classified as chronic and acute, shows a similar pattern.

In conclusion, these data show that households with malnourished children 6 to 59 months of age are more highly concentrated in the rural regions of El Salvador; nevertheless we also find substantial urban pockets of undernutrition. The geographical

MAP TWELVE
EL SALVADOR 1978

PERCENTAGE OF ALL HOUSEHOLDS WITH CHILDREN 6 TO 59 MONTHS
CLASSIFIED ACUTE & CHRONIC (WATERLOW METHOD)
BY DEPARTMENT

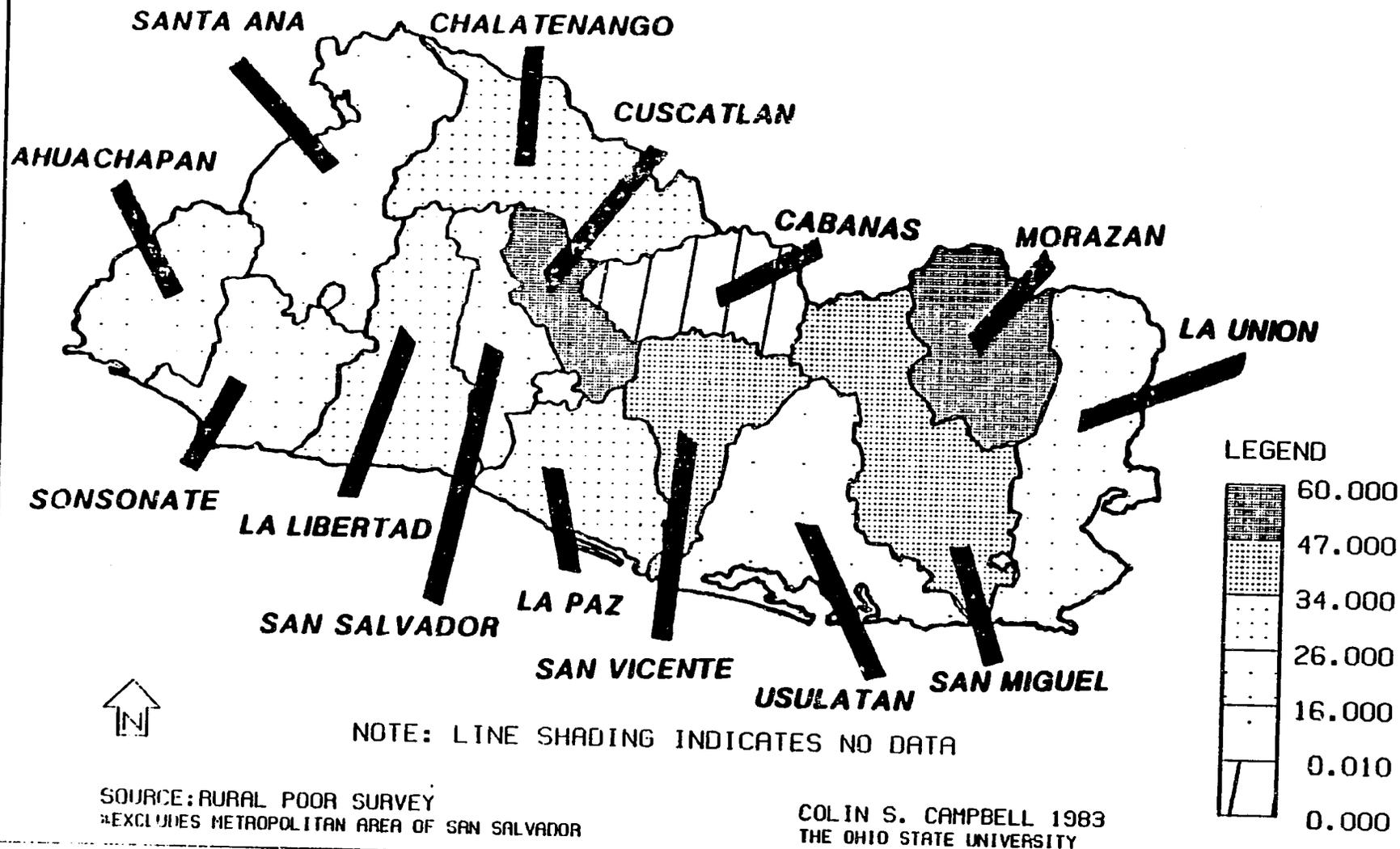


SOURCE: RURAL POOR SURVEY
*EXCLUDES METROPOLITAN AREA OF SAN SALVADOR

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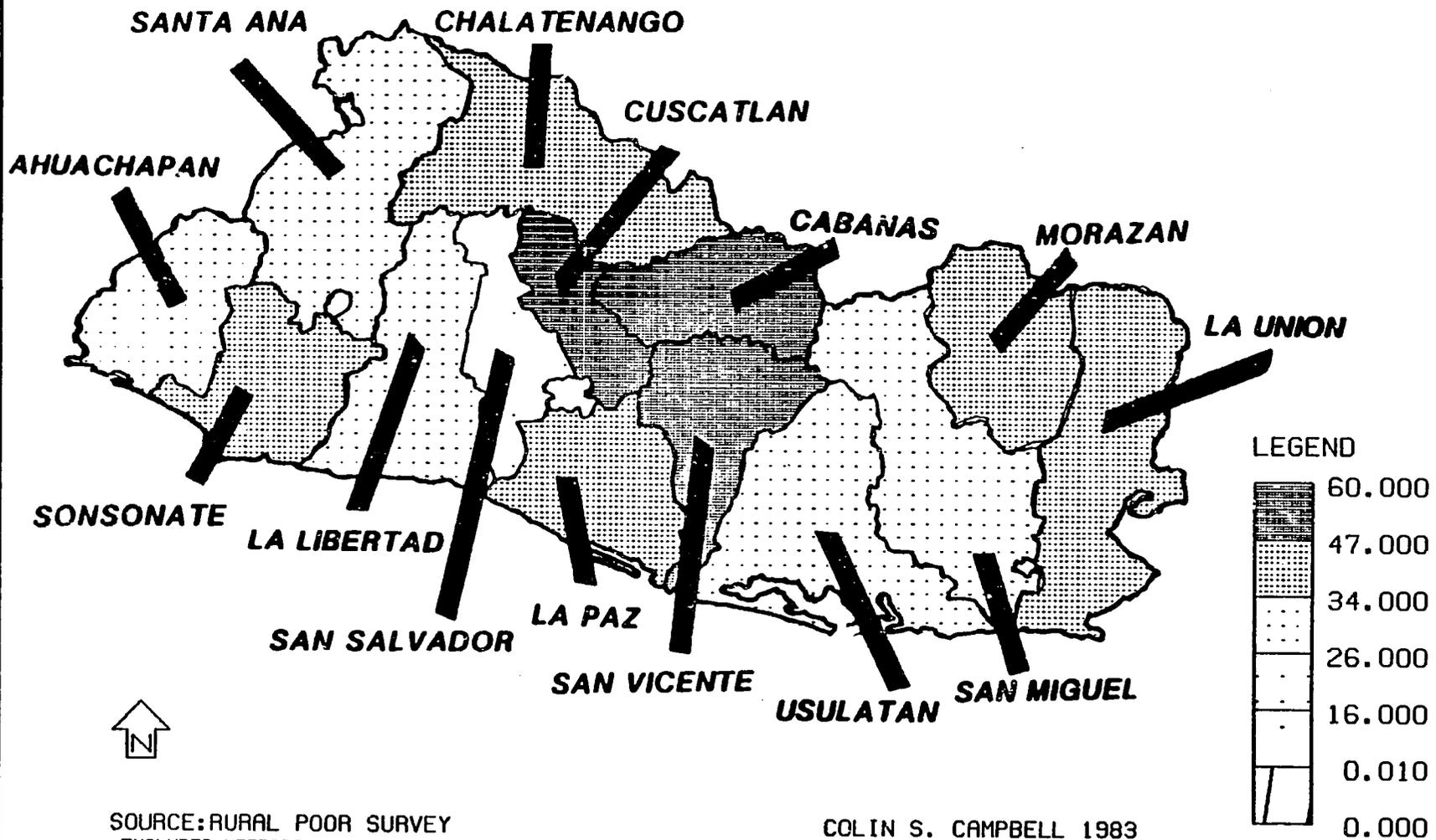
MAP THIRTEEN
EL SALVADOR 1978

PERCENTAGE OF URBAN HOUSEHOLDS WITH CHILDREN 6 TO 59 MONTHS
CLASSIFIED ACUTE & CHRONIC (WATERLOW METHOD)
BY DEPARTMENT



MAP FOURTEEN
EL SALVADOR 1978

PERCENTAGE OF RURAL HOUSEHOLDS WITH CHILDREN 6 TO 59 MONTHS
CLASSIFIED ACUTE & CHRONIC (WATERLOW METHOD)
BY DEPARTMENT



SOURCE: RURAL POOR SURVEY
*EXCLUDES METROPOLITAN AREA OF SAN SALVADOR

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location of these households by department and, more important, by urban and rural residency shows that targeting groups by using aggregate-level variations without taking into account rural-urban differences in departments will not impact on those groups most at risk.

Characteristics of the Malnourished

Malnutrition does not fall randomly on the El Salvadorean population. Generally young children suffer most from undernourishment. Pregnant and nursing mothers are the next most likely to be malnourished. This report deals only with children 6 to 59 months of age. Specifically, the data address families that have at least one child who does not have normal weight-for-age, height-for-age, and/or height-for-weight.

As previously noted, Table II indicates that 53 percent of the children in El Salvador who reside outside San Salvador do not have normal weight-for-age, and that 61 percent of families outside San Salvador had one or more underweight children. In many countries, there is considerable evidence that girls are less well nourished than boys (World Bank, 1980). This is especially true of South Asia, where newborn girls have a significantly smaller chance of surviving to age five. The data in Table IV indicate that this may also be the case in El Salvador: male children aged 6 to 59 months have 4.9 chances in 10 of being underweight while girls of the same age cohort have 5.6 chances in 10.

Numerous studies in developing and developed countries have shown that the highest incidence of malnutrition is found among those with the lowest purchasing power (see Caliendo, 1979). In El Salvador malnutrition is related to a similar set of variables. Because the incidence of poverty is higher among people who are more "distant" from the means of production, we would also expect rates of malnutrition to be higher among those households headed by elderly females, rural households that are landless or near landless, households in which females are not employed outside the home, and households

headed by small-scale farmers. Table IV confirms these expectations. The incidence of malnutrition among children aged 6 to 59 months increases significantly among households in these categories.

Poverty in El Salvador is sharply differentiated regionally in terms of urban/rural residency and the chances of malnutrition follow similar lines. Rural households have a 6.5 in 10 chance of having an underweight child. For households in which the major source of income is agriculture, the probability increases to 6.6 in 10. In contrast, households engaged in non-agricultural wage employment have only a 5.4 in 10 chance of having a malnourished child. The incidence of malnourished children in households is highest among those departments located in the three regions that contain the six departments—Chalatenango, Cuscatlan, Cabanas, San Miguel, Morazan and La Union—declared by the Ministry of Interior as the "poorest of the poor."

Table IV's data also show that households headed by those over 60 years of age, headed by women, or headed by those classified as illiterate have at minimum a 6.2 in 10 chance of having an undernourished child. Literate heads of households (those with more than four years of formal education) only have a 4.9 in 10 chance of having an undernourished child.

Just as factors related to access to productive resources are linked to poverty, so too is malnutrition. Rural landed households have a 6.6 in 10 chance of having malnourished children, while households that operate less than one hectare of land have a 6.4 in 10 chance and rural landless households a 6.2 in 10 chance of having undernourished children. This comparison suggests that some families with access to land may be selling produce from it at the expense of their family's nutrition. Factors that tend to reduce or ease the rate of malnutrition in households are employment of women outside the household (5.6 in 10) and employment in non-agricultural wage sectors (5.4 in 10).

Table IV Incidence of Undernourishment (1st, 2nd and 3rd Degree)
According to Gomez Index of Children 6 to 59 Months
Among El Salvadorean Families, Excluding
San Salvador, 1978

Characteristics of Children	
All children	5.3 in 10
Boys	4.9 in 10
Girls	5.6 in 10
Diarrhea less than four times a day	5.0 in 10
Diarrhea more than four times a day	6.2 in 10
Family Characteristics	
Families with child/children	6.1 in 10
Rural Families	6.5 in 10
Urban Families	5.3 in 10
Geographic Zone I	
Ahucachapan	4.5 in 10
Sonsonate	3.9 in 10
Santa Ana	4.6 in 10
	5.0 in 10
Geographic Zone II	
Chalatenango	7.0 in 10
La Libertad	7.9 in 10
San Salvador	6.0 in 10
Cuscatlan	4.3 in 10
	7.4 in 10
Geographic Zone III	
San Vicente	7.5 in 10
La Paz	8.7 in 10
Cabanas	6.2 in 10
	7.9 in 10
Geographic Zone IV	
Usulután	6.6 in 10
San Miguel	6.7 in 10
Morazan	6.2 in 10
La Union	6.9 in 10
	4.9 in 10
Poverty Households	
Non-poverty households	6.5 in 10
Households with Elderly Head	5.1 in 10
Households with Elderly Female Head	6.2 in 10
Households with Female Head	7.1 in 10
Illiterate Heads of Households	5.8 in 10
Literate Heads of Households	6.5 in 10
Household heads with seven years or more education	4.9 in 10
Illiterate Female Heads of Household	4.2 in 10
Rural Landless Households	6.6 in 10
Operators of Less than One Hectare of Farm Land	6.2 in 10
Rural Landed households	6.4 in 10
Operators of one to five Hectares of Farm Land	6.0 in 10
	6.6 in 10

Land Reform Issues—Phase I	
Household Potentially affected by Phase I Land Reform	4.5 in 10
Farm Families	6.7 in 10
Farm Families with Non-Farm Employment	5.5 in 10
Non-agricultural Families	4.8 in 10
Non Affected by Phase I Farm Wage Labor Families	7.4 in 10
 Land Reform Issues—Phase III	
Owners	6.2 in 10
Land-to-tiller	7.0 in 10
Renters	6.9 in 10
Mixed Tenure Farms	6.1 in 10
 Type of Employment of Household Head	
Agricultural Employment	6.6 in 10
Combination of Agricultural and Non-agricultural Employment	5.8 in 10
Non-agricultural Wage Employment	5.4 in 10
Family Business	4.7 in 10
Not Employed	6.5 in 10
 Households with Employed Females	 5.6 in 10
 Households with No Employed Females	 6.4 in 10
 Level of Living of Household	
Index—High Level of Living	4.0 in 10
No Access to Electricity	6.7 in 10
No Access to Sanitary Facilities	6.9 in 10
No Access to Potable Water	6.7 in 10
Dirt Floor	6.7 in 10
Thatch Palm Roof	6.7 in 10
Asbestos Roof	5.0 in 10

Nutritional problems are often complicated by poor living conditions, and Table IV indeed indicates that poor living conditions—especially sanitary conditions—are highly related to the incidence of undernourishment.

While the incidence of undernourishment (underweight) is important, severity is also important, especially if the more severe cases are unevenly distributed among the study population. Table V presents the incidence of second and third degree undernutrition among families with children 6 to 59 months of age. A comparison between Tables IV and V reveals some important information. For example, while the highest incidence of underweight children is in rural areas (rural 6.5 in 10, urban 5.3 in 10), the most severe cases seem to be in urban areas. Children in urban families have 2.5 chances in 10 while rural children have 2.3 chances in 10 of being acutely malnourished. Also, the children of a household head employed in a combination of agricultural and non-agricultural employment have a relatively lower chance (5.8 in 10) of undernourishment than children in the country as a whole (6.1 in 10) but children in these same households have the highest incidence of second and third degree undernourishment (3.6 in 10) among all types of employed household heads.

Table V. Incidence of 2nd and 3rd Degree
Undernourishment According to Gomez Index
Among Children 6 to 59 Months of Age
in El Salvadorean Families, 1978, Excluding San Salvador

Characteristics of Children	
All children	2.3 in 10
Boys	2.2 in 10
Girls	2.5 in 10
Diarrhea less than four times a day	2.0 in 10
Diarrhea more than four times a day	3.9 in 10
Family Characteristics	
Families with undernourished child/children	2.4 in 10
Rural Families	2.3 in 10
Urban Families	2.5 in 10
Geographic Zone I	
Achucachapan	2.1 in 10
Sonsonate	1.0 in 10
Santa Ana	2.3 in 10
	1.9 in 10
Geographic Zone II	
Chalatenango	2.0 in 10
La Libertad	1.2 in 10
San Salvador	1.6 in 10
Cuscatlan	1.0 in 10
	3.8 in 10
Geographic Zone III	
San Vicente	3.0 in 10
La Paz	4.0 in 10
Cabanas	3.5 in 10
	1.6 in 10
Geographic Zone IV	
Usulután	2.7 in 10
San Miguel	2.8 in 10
Morozañ	2.8 in 10
La Union	2.6 in 10
	2.5 in 10
Poverty Households	2.5 in 10
Non-Poverty Households	2.0 in 10
Households with Elderly head	1.3 in 10
Households with Elderly Female Head	4.5 in 10
Household with Female Head	1.6 in 10
Illiterate Heads of Households	2.5 in 10

Literate Heads of Households	1.8 in 10
Household Heads with seven or more years of Education	.9 in 10
Illiterate Female Heads of Households	1.6 in 10
Rural Landless Households	1.5 in 10
Rural Landed Households	1.5 in 10
Operators of less than one hectare	1.5 in 10
Operators of one to five hectares	1.3 in 10
Land Reform Issues—Phase I	
Household Potentially Affected by Phase I	2.8 in 10
Non-Affected by Phase I Farm Wage Labor Families	2.6 in 10
Farm Families	1.8 in 10
Farm Families with Non-Farm Employment	2.5 in 10
Non-Agricultural Families	2.3 in 10
Land Reform Issues—Phase III	
Owners	2.1 in 10
Land-to-Tiller	2.2 in 10
Renters	1.9 in 10
Mixed Farms	2.3 in 10
Type of Employment of Household Head	
Agricultural Employment	2.3 in 10
Combination of Agricultural and Non-Agricultural Employment	3.6 in 10
Non-Agricultural Wage Employment	2.6 in 10
Family Business	2.1 in 10
Not Employed	1.4 in 10
Households with Employed Females	1.2 in 10
Households with No Employed Females	1.6 in 10
Level of Living of Household	
Index—High Level of Living	1.6 in 10
No Access to Electricity	2.4 in 10
No Access to Sanitary Facilities	2.6 in 10
No Access to Potable Water	2.6 in 10
Dirt Floor	2.6 in 10
Thatch Palm Roof	2.3 in 10
Asbestos Roof	2.7 in 10

Table VI presents the data on the Waterlow index. The data tend to confirm the findings of the Gomez index. Households with elderly female heads (4.6 in 10), illiterate heads of households (4.0 in 10), rural landless households (5.8 in 10), agricultural employment (5.3 in 10), and a general lack of social services are related to undernutrition.

Tables IV, V, and VI provide a functional classification of households and individuals using different standards for assessing high risk groups. Risk of malnutrition is associated with geographical isolation (rural residence, particularly isolated regions in El Salvador), occupation (particularly agriculture), household composition (female-headed households and households headed by elderly individuals), low income (poverty), small landholdings (less than five hectares), low socioeconomic status (illiteracy and unemployment), and lack of basic services. In addition to inter-household maldistribution of food, there is evidence that women and children receive less or lower quality food than men or economically active male children, and that female children receive even less than women and children in general.

Table VI. Incidence of Acute and Chronic Undernourishment
According to Waterlow Index of
Children 6 to 59 Months of Age
in El Salvadorean Families, 1978, Excluding San Salvador

Characteristics of Children	
All children	4.1 in 10
Boys	4.2 in 10
Girls	4.0 in 10
Diarrhea less than four times a day	3.8 in 10
Diarrhea more than four times a day	5.4 in 10
Family Characteristics	
Families with undernourished child/children	3.6 in 10
Rural Families	3.8 in 10
Urban Families	3.1 in 10
Geographic Zone I	
Ahucachapan	3.0 in 10
Sonsonate	3.1 in 10
Santa Ana	3.4 in 10
	2.5 in 10
Geographic Zone II	
Chalatenango	4.0 in 10
La Libertad	4.0 in 10
San Salvador	2.0 in 10
Cuscatlan	1.7 in 10
	5.1 in 10
Geographic Zone III	
San Vicente	4.6 in 10
La Paz	4.8 in 10
Cabanas	4.1 in 10
	5.0 in 10
Geographic Zone IV	
Usulután	3.8 in 10
San Miguel	3.0 in 10
Morozañ	3.7 in 10
La Unión	4.7 in 10
	3.8 in 10
Poverty Households	3.9 in 10
Non-Poverty Households	2.7 in 10
Households with Elderly head	3.4 in 10
Households with Elderly Female Head	4.6 in 10
Households with Female Head	3.9 in 10
Illiterate heads of Households	4.0 in 10
Literate Heads of Households	.3 in 10

Households Heads with seven or more years of Education	1.6 in 10
Illiterate Female Heads of Households	4.3 in 10
Rural Landless Households	5.8 in 10
Rural Landed Households	3.9 in 10
Operators of less than one hectare	4.5 in 10
Operators of one to five hectares	2.9 in 10
Land Reform issues—Phase I	
Household Potentially Affected by Phase I	2.8 in 10
Non Affected by Phase I Farm Wage Labor Families	2.6 in 10
Farm Families	1.8 in 10
Farm Families with Non-Farm Employment	2.5 in 10
Non-Agricultural Families	2.3 in 10
Land Reform Issues—Phase III	
Owners	3.7 in 10
Land-to-Tiller	3.6 in 10
Renters	3.5 in 10
Mixed Farms	4.5 in 10
Type of Employment of Household Head	
Agricultural Employment	5.3 in 10
Combination of Agricultural and Non-Agricultural Employment	4.7 in 10
Non Agricultural Wage Employment	2.8 in 10
Family Business	2.8 in 10
Not Employed	4.2 in 10
Households with Employed Females	3.5 in 10
Households with No Employed Females	3.6 in 10
Level of Living of Household	
Index—High level of Living	1.9 in 10
No Access to Electricity	4.6 in 10
No Access to Sanitary Facilities	4.2 in 10
No Access to Potable Water	4.2 in 10
Dirt Floor	4.1 in 10
Thatch Palm Roof	5.1 in 10
Asbestos Roof	2.7 in 10

Causes of Malnutrition

The multiple etiology of malnutrition requires that various causes and effects be addressed simultaneously for clear understanding. Although it is frequently asserted that poverty or inadequate family income is the main cause of malnutrition, the attributes of poverty—long periods of unemployment, employment at low skill levels, higher rates of illness, poor sanitary conditions and limited social and cultural alternatives along with the lack of command over goods and services sufficient to meet minimum needs — must also be examined (Caliendo, 1979). In addition there are assertions that ignorance of nutritional practices and inequitable distribution of food within the family are also causes of malnutrition. Previous reports (Flinn et al., 1982) have shown the Salvadorean population to be homogeneously impoverished; however, the roots of poverty do vary between country and city. To develop meaningful typologies of nutritional deficiencies we must trace the relationship between malnutrition, income and the various resources available to households such as land, social services, and education.

Income and Land

It is often said that low income is the central cause of malnutrition (World Bank, 1980:61). This assertion is also applied to El Salvador (USAID, n.d.). The minimum balanced diet, not including meat, for an El Salvadorean family of five with three dependents under ten years of age, cost ₡6.62 per day in 1977 or ₡198.60 per month. The daily minimum wage was ₡7.00-₡7.20 in San Salvador but ranged between ₡5.50 and ₡9.25 in the rest of the country, the study area of this report. If the minimum cost of housing, clothing and other basic necessities at the level of the El Salvadorean working class is added, the monthly cost at July 1977 prices for a family of five is estimated to be ₡425.00. The monthly family income at minimum wage is between ₡165.00 and ₡277.50 if one member of the family works.

The median monthly family income regardless of the number of family members working for a family of six with one or more acutely undernourished children in our 1978 sample was ₡208. The median monthly family income regardless of the number of family members working for a family of six with one or more underweight children in our 1978 sample was ₡201, while for the "normal" family the median monthly family income was ₡223. Although these income differences do not seem to be great, the differences in nutritional levels of children in families above and below the poverty level (per capita annual income of ₡668) does have major influence. The incidence of undernourishment among those in poverty is 6.5 in 10 while it is 5.1 in 10 among those above the poverty line (see Table IV). Seventy-four per cent of the families studied in this report had annual incomes below the poverty level of ₡668 colones or \$267 US per capita in 1978.

Rural poverty is often said to be rooted in the concentration of land among a few large owners and the low productivity of those families that have some access to land. In addition, agricultural technologies introduced in El Salvador during the sixties and seventies as part of an overall development plan are said to have further concentrated economic returns in the hands of a few and to have displaced the rural poor from their jobs and their land, even though these programs did increase agricultural output "making food physically available in a region," but "not economically available to the poor" because of price increases caused by mechanization (Caliendo, 1979:157). Many of these policies stressed production of agricultural exports, particularly coffee.

The evidence in this report in regard to relations between access to land and malnutrition, as measured by the Gomez index (see Table IV), is checkered. The rural landless households have about 6.2 chances in 10 of having one or more underweight children using the Gomez index, slightly higher than the average for El Salvador as a whole (6.1). Yet rural landed households have an even higher chance — 6.6 in 10 — of having one or more undernourished children. Moreover, operators of farms of less than

one hectare also had a slightly lower chance (6.4 in 10) of having one or more underweigh children than operators of farms of one to five hectares (6.6 in 10). Tenure pattern of the farm operators, however, make a difference. Renters and possible recipient of under land-to-the-tiller programs have the highest chances of undernourishment, 6.1 and 7.0 in 10, respectively, under the Gomez index. If, on the other hand, the Waterlow index is used to assess malnutrition, a different picture emerges. The rural landless households exhibit a much higher chance than the general population (5.8 vs 3.6 in 10) of having undernourished children (see Table VI). In addition, the farm operators with one to five hectares have a lower probability of having undernourished children (2.5 in 10) than operators of less than one hectare (4.5 in 10). Tenure patterns show little effect on chances of undernourishment. Since the Gomez index tends to include a large number of children who are underweight but not stunted or wasted, it could be that the indices are measures of different things. Berg (1973) notes that when income increases are modest and start from a low base, there may be transitional periods of inverse correlation between income and nutrition. He believes that when a subsistence farmer switches from growing a variety of foods for his family's own consumption to cultivating a crop for the market, such items as ballpoint pens and radios temporarily compete with food costs. It has also been noted that as income rises, cereal diets are "upgraded" to other foods. For example, in El Salvador there is sufficient yellow corn to satisfy vitamin A needs, but El Salvadoreans prefer white corn. People may spend more money for food but their diets may not improve. Although our data do not treat this issue directly, Tables 43, 44, 46, and 47 in Appendix I demonstrate an interesting pattern for the results of the Gomez index: often the income for families with children with 1st degree undernourishment is lower than that for households with second and third degree undernourishment. Perhaps these "first degree households" lie in Berg's transition period. However, when the "hard core" undernourished are observed with the Waterlow index these relationships disappear, or are at least more difficult

to observe because of the small samples of families with acutely and chronically undernourished children. Perhaps the results with the Gomez method are statistical artifacts, but they bear future observation.

Although a number of income intervention strategies may be suggested by the above discussion, any strategy for increasing incomes of the rural poor must focus on the agrarian sector. Berg (1973) has indicated that a major factor in the failure of current health and nutrition policies is the disassociation between programs concerned with agricultural planning and programs for the distribution of outputs to lower-income groups. Clearly, agriculture plays a major role in El Salvador both in terms of domestic output and in terms of employment (over three-quarters of the population).

Table 33 in Appendix I shows that 62 per cent of the rural families with acutely and chronically undernourished children have usufruct rights to farm land, a percentage not much different from that of families with nutritionally normal children. However, 28 per cent of families with acutely and chronically undernourished children had no access to land, and rural families who had no access to farm land often had no garden or animals around their residences (42 per cent).

Although landlessness in rural areas is a major contributor to poverty and subsequent malnutrition, the amount of available land is most important in judging the correlates of malnutrition. Tables 36 and 37 in Appendix I show a breakdown of malnutrition by farm size. Families with acutely and chronically undernourished children are more likely to have smaller land holdings; 63.9 per cent of these families have less than one hectare.

On March 6, 1980 the government announced Decree 153, which called for the immediate expropriation of certain agricultural lands and provided guidelines (but no implementing regulations) for seizure, compensation and operation. This was followed on April 28, 1980 by Decree 207, the land-to-the-tiller program. Together, the decrees were said to be the most sweeping agrarian reform to be initiated in Latin America,

and are supposed to confront the problems of underutilization of land on large properties, expand employment, and raise incomes of small farmers.

The first phase, immediate expropriation of farms larger than 500 hectares and their reorganization under joint control of rural peasants, is said to have been completed. Tables 59 to 62 in Appendix I show the possible effects of this legislation on families with malnourished children. According to our figures, only about 5 per cent of such families are potentially affected by Phase I. In 1978, approximately 45 per cent of potentially affected workers were from families with undernourished children (Gomez index); however, non-affected families comprise a much larger number of those that have undernourished children.

Tables 61 and 62 in Appendix I present data for potential benefactors of the land-to-the-tiller program. Coverage of families with malnourished children is potentially much higher under this legislation.

Education

A commonly espoused belief is that malnutrition is attributable primarily to ignorance instead of poverty. Several studies have found that better-educated parents have better-nourished children; that this reflects more than the higher incomes of educated parents is suggested by the fact that the mother's education is more important than the father's (World Bank, 1980:61). In our study the incidence of undernourished children (using the Gomez index—see Table IV) occurring in households with illiterate heads is greater than that in households with literate heads (6.5 vs 4.9 in 10). Households with family heads who had seven years or more of education had an incidence of undernourishment of only 4.2 in 10. The data in Table 10 in Appendix I show that females (usually mothers) with the highest mean and median levels of education were those whose households held nutritionally normal children. These results concur with those of previous studies.

Fertility

Agricultural policy must directly address the issues of population and food availability. Declines in fertility rates have been recorded in El Salvador; however, the country still has one of the highest birth rates in Latin America. Table 5 in Appendix I presents some data on malnutrition and fertility. Households with undernourished children have somewhat larger families (6.7) than do households with nutritionally normal children (6.3). Preliminary results not reported here also indicate that malnutrition is significantly greater among subsequent children than among first-borns (see Brineman et al. (1981).

Region

A higher incidence of undernutrition is found in the country's mountainous and agriculturally marginal regions of the northern tier, in the departments of Chalatenango (7.9 in 10), Cabanas (7.9 in 10), and Morazan (6.9 in 10). In addition, San Vicente (8.7 in 10), Usulután (6.7 in 10) and Cuscatlán (7.4 in 10), areas with many small farmers, also have a high incidence of malnutrition (see Table IV, and also Table 31 in Appendix I).

Disease and Sanitation

Malnutrition and disease are closely connected, each increasing the likelihood and severity of the other. The data in Table 63 in Appendix I demonstrate this relationship. Children with diarrhea (more than four times a day) are much more prone to undernutrition than are those not suffering from diarrhea. Inavailability of health facilities for the poor is a major problem in the diagnosis and treatment of malnutrition. The establishment of such services is costly, but data in Table 11 and Table 64 in Appendix I indicate the need for health facilities for those most acutely malnourished. The mean number of visits to a doctor did not vary significantly between families with nutritionally normal children and those with chronically undernourished children, yet families with acutely and chronically undernourished children on the Waterlow index,

as well as second and third degree malnourishment of children on the Gomez index made significantly fewer visits to doctors and are most in need of care.

Improvement in the quality of life of a country's population is usually given a major goal of development policy. Tables 16 to 30 in Appendix I give data on housing, services, sanitation, and water availability. As a whole these services are deficient among those families with children classified as undernourished. Households that have undernourished children (Gomez index) are likely to rent rather than own their homes (61 percent), have makeshift roofs (67 percent), have dirt floors (67 percent), have no access to electricity (74 percent), have no access to sanitary facilities (61 percent), and have no access to potable water (66 percent). Some 45 percent of the households with undernourished children have access to water only through rain or river water.

Tables 25 and 26 in Appendix I give an overall view of the level of living in sample households. The following factors were included in this index: quality of roof, walls and floors; type of bath and toilet facilities; source and distance of water supply, and provision of lighting. Each of these eight factors was scored 0 for low quality or absence and 1 for high quality or presence (see Appendix II for a discussion of scoring procedures and reliability procedures). Fifty-five percent of families with undernourished children had a score of 3 or less. Only about 40 percent of families with nutritionally normal children scored less than 3 and about 17 percent of them had the maximum score of 3, while only about 7 percent of families with undernourished children had the maximum score. The need for public services is evident.

In El Salvador the causes of malnutrition are complex and this cursory analysis cannot do these relationships justice. Malnutrition's relationship to poverty is clear, but development of meaningful nutritional programs will require predictive models that point out the configuration of causative factors in different target groups. Our data indicate that poverty and income have significantly different impacts on malnutrition

in the countryside and in the city. Different mechanisms to deal effectively and efficiently with rural, urban, and other malnourished groups must be distinguished if lasting changes in the overall health of the poor in El Salvador is to result.

Predictive Models of Malnutrition

Table VII presents results for three simplified models for predicting malnutrition, one for El Salvador as a whole, one for urban areas, and one for rural areas.

To explore factors that may contribute to malnutrition, we estimate logistic regression equations. Since the dependent variable in this study is categorical, conventional regression techniques are not appropriate. Multiple logistic analysis is used to examine the dichotomized outcomes of behavior patterns. Given multiple causal factors, say x_i for $i = 1, 2, \dots, k$, one can explain the propensity to be malnourished by the following model:

$$p = (1 + \exp (-a - \sum b_i x_i))^{-1}$$

where p is the probability of being malnourished; \exp is the base of the natural logarithm; and a and b_i are the parameters to be estimated.

This technique is more realistic than multiple regression although the two approaches have similar objectives. Logistic analysis makes less stringent assumptions: it does not require relations to be linear or error terms to be distributed normally, and instead uses a maximum likelihood technique to estimate the following equation:

$$L = \prod p_j^{y_i} (1 - p_j)^{1 - y_i}$$

where y_i equals one or zero depending on whether the j th individual has experienced malnutrition or not and \prod is the product sign. In this analysis, maximum likelihood estimates are computed by the Newton-Raphson method.

Output from this technique is similar to ordinary least squares regression. For the overall model and for each independent variable a D statistic is given. The values (standardized between zero and one) are R^2 in the normal setting (SAS, 1980) and provide a measure of the goodness of fit.

Table VII: Logistic Regression Models Predicting Malnourishment Among Families with Children Age 6 to 59 Months, El Salvador, 1978.

Independent Variables Predicting Malnutrition	El Salvador	Urban El Salvador	Rural El Salvador
<u>Economic Variables</u>			
Income	-0.02	-0.20	-0.02
Poverty	.10	.16	.06
<u>Demographic Variables</u>			
Household head over 65 years of age	.20	.20	.23
Family size	.05	.15	.06
<u>Agricultural Variables</u>			
# of hectares in export crops	.01	-0.20	.44
# of hectares in subsistence crops	-0.09	.07	-0.20
<u>Availability of Services</u>			
Level of Living Index	-0.10	-0.15	-0.30
Access to water	.14	.09	.21
D*	12 %	42 %	35 %

*Only 1 variable from each group of independent variables was included in the equation because of the high collinearity between the two variables. D, therefore, constitutes an average of the amount of variance explained in the models.

Our results suggest that a number of models should be explored further. First, the model predicting malnutrition among all households in El Salvador does not explain much about the factors associated with malnutrition; the amount of variance explained using four independent variables in the model (D in the final row of Table VII, column 1) is only 12 per cent. Notice, however, that the same model used separately for urban and rural areas raises the amount of variance explained to 42 per cent and 35 per cent, respectively. Urban/rural differentiations with regard to malnutrition are significant.

POLICY IMPLICATIONS

The results of the predictive, multifactor model presented in this report are informative in the context of program development and have major implications for program monitoring. Our analysis suggests 1) specific program applications in terms of substantive findings and 2) a method for developing a nutrition surveillance system.

Program Applications

Agricultural and rural development aid comprise the bulk of assistance to LCDs. Although the goal of these programs has been to increase income, food supplies, employment and the economic base in these countries, the way in which these increases are translated into better nutritional status remains problematic. A number of studies (USAID, 1982), including this study, are beginning to demonstrate the complexity of the constraints on good nutrition. Some development programs may even operate to produce unintentional decreases in nutrition. Our results clearly suggest the need to identify these constraints before policy is implemented. Our results corroborate those of some recent studies in Kerala and in the Philippines—that children of working women are less likely to be malnourished than children of non-working women. There is evidence to indicate that who earns the income in a household is just as important as how much is earned and how these limited resources are allocated within the household. Although on-farm and off-farm employment for women should be part of any income

-producing project, plans must also take into account constraints (availability of child care, subsistence production, etc.) that may affect this aim (USAID, 1982: 3).

A Multifactor Approach to Malnutrition

Inadequate income is often suggested as the major cause of malnutrition in low income countries. Although other causes such as level of education or accessibility to adequate housing, water and medical facilities are sometimes pointed out, too, most research using a single factor approach comes to this conclusion. Our results support the position that lack of resources (income, land, employment) is tied to undernutrition, but there is clearly a much more complex relationship between income and nutritional status. Specifically, the income effect is significantly different and more pronounced for urban households than for rural households. Although part of the explanation may be that malnourished households in the rural countryside are more homogeneously impoverished than their urban counterparts, that does not account for the dramatic differences between the availability of basic services—water, electricity, etc.—to urban and rural households regardless of income level. Clearly, nutrition intervention strategies, whether they have as their aim increasing nutritional status through direct food transfers or increasing the purchasing power of low income groups, must be developed to take account of regional and/or urban/rural variations in the causes of undernutrition. Although low income in households is the root cause of undernourishment among children in El Salvador, our results suggest that programs to increase productivity in the rural countryside must be coupled with programs to increase sanitation and to provide basic services.

Both the numerical size and the sign of the coefficients of the independent variables in Table VII for urban and rural areas support the idea that the etiology of malnutrition may be different in rural and in urban areas. The coefficient for income is statistically significant and larger in urban areas while income seems not to make so much difference

in rural areas. Rather, the availability of services (water, electricity, etc.) are more important in predicting malnutrition in rural areas.

Additional evidence for different explanations for malnutrition in rural and urban areas comes from a preliminary analysis using the two methods of classifying malnutrition. Although the Gomez and Waterlow methods are attempts to operationalize what we understand to be malnutrition, our findings suggest that they measure two different types of malnutrition. The risk of being underweight (Gomez index) is more closely associated with rural location, while chronic and acute deficiencies (Waterlow index) are more closely associated with urban location.

A MODEL FOR NUTRITIONAL SURVEILLANCE

A major implication of this research has been "process evaluation" — a method for monitoring, indirectly, nutritional status in LDCs. This method takes into account that nutrition is an impact rather than a project and/or program and recognizes that a direct surveillance program is not within the capacities, administratively or monetarily, of the Government of El Salvador. This method also recognizes that AID in conjunction with host countries has sought long-range solutions to undernutrition through multi-sectoral policy changes on issues such as land use, food and agricultural prices, wage scales, employment, agricultural production, industrial, economic and community development and programs in health and education (USAID, 1983: 1). Finally, the method incorporates factors that both constrain and facilitate improvements in nutritional status.

The method uses a multivariate model whose components may vary depending upon the population group targeted. The components or variables in the model trace the causal progression and linkages between the social-economic environments of households at risk of malnutrition and the direct and indirect impacts of nutritional policy decision-making. Thus, the variables in the model serve as proxies for monitoring nutritional

-56-

status. Periodic monitoring of changes in these components can provide an effective system of nutritional surveillance.

The advantages of this method are three-fold. It employs available data sources, rather than costly new data, as input. In addition to its cost-effectiveness as a surveillance technique, the method has potential use as a diagnostic tool in predicting the impact of environmental and/or program changes on populations nutritionally at risk. Finally, the model takes into account both formal and informal linkages between sectors. Although AID's policy has been to effect a multisector approach to nutrition policy and planning, the extent of coordination and planning between sectors (health, education, agriculture, etc.) varies. Planning and/or coordination is an important variable in the model.

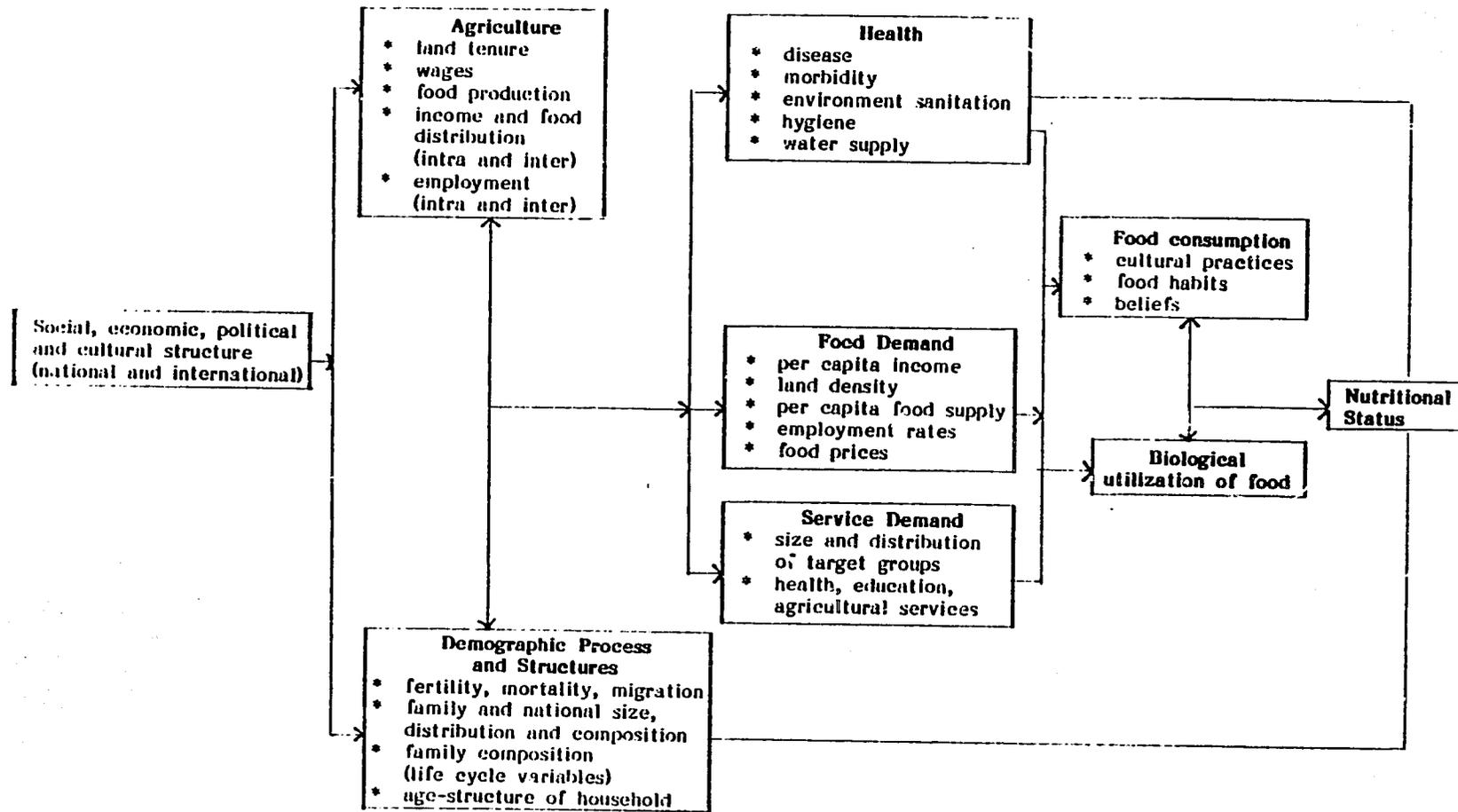
Future Research for Nutritional Surveillance

A number of issues remain unresolved with regard to evaluating and monitoring malnutrition in LCDs. We agree with AID and with Sahn and Pestronk (1981) that there is a dearth of "successful" and "verifiable" impact evaluations. We therefore suggest the following mechanisms to overcome these problems:

- development of predictive models of nutritional status that include constraints, trade-offs, and complementarities prior to planning and implementation;
- development of systems of classification that are multivariate in nature in order to target vulnerable groups; and
- examination of the applicability of demographic data to nutrition.

A multisectoral approach to nutritional status means that agricultural planners will require knowledge of the impact of national policies (food and agricultural) on the local level for groups nutritionally at risk. Knowledge of food supplies and food consumption patterns in local groups is especially needed. One possible model, suggested by Teller et al. (1979) and modified by us is shown in Figure I. A recent strategy paper released by AID suggests four models that may help to explain the causes of malnutrition; the

Figure L. Relation Between Social Structure and Other Factors which Affect Nutritional Status



Source: Adapted from Teller et al "Population and Nutrition Planning: The Usefulness of Demographic Discipline for Nutrition Policy in Latin America" bulletin of the Pan American Health Organization 713(1), 1979: 24.

mix of factors varies from country to country (USAID, 1983). Our impression is that the Teller model nicely incorporates these four models. Reliable data is needed to explore which factors and models are most appropriate in El Salvador since an understanding of the nature of the causes and underlying problems in each model helps shape the strategies for resolving the problems of malnutrition (USAID, 1983: 1).

Multivariate functional classification systems can best be obtained through a statistical technique called discriminant analysis, whose purpose is to distinguish maximally between two or more groups (Cooley and Lohnes, 1971). The output from discriminant analysis will be useful both at planning and implementation stages and can be used directly by agricultural and health project officers to monitor and evaluate the nutritional impact of projects that are likely to affect health, food production or food consumption. The objective of the technique is to select a set of discriminating variables (social, economic, agricultural) and mathematically combine them in a way that distinguishes between normal vs. underweight children or normal vs. acutely or chronically undernourished children. The technique allows several statistical tests to be used to evaluate the effectiveness with which the classification system discriminates nutritionally at-risk groups and identifies factors that contribute most to malnourishment. As a classification technique, discriminant analysis can also be used to predict new cases (e.g., whether a household is likely to produce malnourished children). It is therefore specifically applicable in monitoring on-going programs and projects whose purpose is to reduce malnutrition. In addition, various models can be generated for different target groups. Once the classification has been produced for El Salvador, this technique could also be a useful monitoring device for other LDCs. Factors that constrain and propel improvements in nutritional status and their associated weights can be provided by discriminant analysis. Once the model is developed and these factors are calculated, this technique will permit researchers to devise a work sheet for use by agency planners and field workers in charge of program evaluation. This

sheet can provide host countries with a mechanism for monitoring the impact of on-going agricultural assistance programs and other development activities on nutrition for individual families and for local and regional areas.³

Finally, the applicability of demographic data in monitoring nutrition or other development activities has not been demonstrated. Unfortunately, available national population and agriculture census data do not permit us to identify clearly the characteristics of families with undernourished children. Because of the diversity of the rural and urban population and the inability to match nutritional surveys with agricultural and population census data, the relationship between undernourishment and socio-economic characteristics cannot clearly be evaluated. Thus, while the census of population and the census of agriculture provide detailed information on income, employment and demographic characteristics of families and individuals, "undernourished" populations can only be inferred from them. Survey data like those collected in the present study provide the only sure method for identifying the malnourished and their characteristics. We propose, however, that profile matches should be made between household data, demographic data and nutrition data to determine how successfully demographic data might be used to monitor the nutritional status of a population over the long run. Matching the classification systems developed by INCAP for El Salvador with the classification systems developed from the household data from the El Salvador Rural Poor Survey will provide an answer to this question. With a successful match these data would provide a cost-effective mechanism to monitor the impact of development activities.

-60-

NOTES

¹The usual procedure for targeting high-risk groups for nutrition programs is to define them by age and sex. More recent research (Joy and Payne, 1975; Valverde et al., 1981; Teller et al., 1981) has shown the value of identifying specific "population subgroups in regions that are administratively, economically, and ecologically unified for purposes of program planning" (Teller et al., 1981: 29).

²Since Robinson's well-known article some thirty years ago (1950), sociologists have documented the methodological problems inherent in making inferences from aggregate data, so-called "ecological correlations," to individual behavior. Although these correlations are perfectly legitimate, they are also very easy to misinterpret. Because of the nature of their data, geographers and economists have commonly made this error. The classic example is the correlation between the proportion of Blacks in an area (census tract) and the proportion of illiterates. This correlation is legitimate but it would be incorrect to make the interpretation that Blacks are more likely to be illiterate. In fact, the correct interpretation of the relationship between race and literacy is that illiterate Whites are more likely to live in the same regions as Blacks. The same problem can emerge when demographic data (census data) are merged with nutritional surveys. Most functional classification systems used this method to match malnourished households in certain municipios, departments and/or regions with socio-economic data reported by geographical area. For example, suppose we identify malnourished children in the department La Union. We find that in La Union income, education and landownership are fairly low. It would be incorrect to conclude that malnourished children come from households with little income, little education and no land. This can only be demonstrated through the empirical analysis of household data.

³The contents of a possible work sheet that could be used by those monitoring the impact of program or contextual changes on the nutritional status of a hypothetical rural family in the department of San Vicente is presented below.

WORK SHEET FOR MONITORING NUTRITIONAL STATUS

RURAL FAMILIES
SAN VICENTE

FACTOR	(VARIABLE) FACTOR VALUE*	(CONSTANTS) FACTOR WEIGHTS**	FACTOR VALUE X WEIGHT
Agricultural Index	_____	+1.1512	_____
Health Index	_____	+3.3700	_____
Food Demand Index	_____	-1.1503	_____
Service Demand Index	_____	-2.2015	_____

*Data to be obtained from census/housing/
agricultural surveys

Household
Total
Score

**Standardized discriminant function coefficients

$$\text{Nutrition Impact Score} = C^{***} + \text{Household Total Score}$$

C*** = a constant variable adjusted for urban/rural location and equipment

MODEL FOR INTERPRETING IMPACT SCORES

- If Nutrition Impact Score = + Increase in nutritional status
 = 0 No change in nutritional status
 - Decrease in nutritional status

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APPENDIX I

DATA TABLES

Table 1: Age and Sex of Household Head by Families with Undernourished Children Classified by Gomez and Waterlow Indices, El Salvador, 1978¹

Age	<u>GOMEZ</u>																					
	<u>Grand Total</u>		<u>Total</u>				<u>Normal (90 and above)</u>				<u>Subtotal Undernutrition (less than 90)</u>				<u>1st Degree (75-89.9)</u>		<u>2nd and 3rd Degree (less than 75)</u>					
	N	%	Male N	Female N	Male %	Female %	Male N	Female N	Male %	Female %	Male N	Female N	Male %	Female %	Male N	Female N	Male %	Female %				
Total ²	681	100.0	567	114	100.0	114	100.0	215	48	100.0	100.0	352	68	100.0	265	55	100.0	87	11	100.0	100.0	
14-59 Years ³	583	85.6	497	86	87.7	75.4	186	40	86.5	83.3	311	46	88.4	69.7	231	36	87.2	65.4	80	10	92.0	90.9
60 and Older	98	14.4	70	28	12.3	24.5	29	8	13.5	16.7	41	20	11.6	30.3	34	19	12.8	34.6	7	1	8.0	9.1

Age	<u>WATERLOW</u>							
	<u>Normal</u>				<u>Acute and Chronic</u>			
	Male N	Female N	Male %	Female %	Male N	Female N	Male %	Female %
Total ²	368	69	100.0	100.0	199	45	100.0	100.0
14-59 Years ³	318	54	86.4	78.3	179	32	90.0	71.1
60 and Older	50	15	13.6	21.7	20	13	10.0	28.9

¹ Excludes the metropolitan area of San Salvador.

² This table is percentaged down.

³ Six heads of household did not indicate their age.

Table 2: Age and Sex by Head of Household by Families with Undernourished Children Classified by Gomez and Waterlow Indices, El Salvador, 1978¹

<u>GOMEZ</u>																						
<u>Age</u>	<u>Grand Total²</u>		<u>Total³</u>				<u>Normal (90 and above)</u>				<u>Subtotal Undernutrition (less than 90)</u>				<u>1st Degree (75-89.9)</u>				<u>2nd and 3rd Degree (less than 75)</u>			
	N	%	Male N	Female N	Male %	Female %	Male N	Female N	Male %	Female %	Male N	Female N	Male %	Female %	Male N	Female N	Male %	Female %	Male N	Female N	Male %	Female %
Total	681	100.0	567	114	100.0	114	100.0	215	48	100.0	352	66	100.0	265	55	100.0	87	11	100.0	11	9.1	
14-19	1	.1	1	-	.2	-	1	.5	-	-	352	66	100.0	265	55	100.0	87	100.0	11	100.0	11	9.1
20-29	123	18.1	111	12	19.6	10.5	46	5	21.4	10.4	65	7	10.6	48	6	10.9	17	1	19.5	1	9.1	
30-39	222	32.6	198	24	34.9	21.0	74	13	34.4	27.1	124	11	16.7	95	8	14.6	29	3	33.3	3	27.3	
40-49	141	20.7	118	23	20.8	20.2	42	12	19.5	25.0	76	11	16.7	57	8	14.6	19	3	21.8	3	27.3	
50-59	96	14.1	69	27	12.2	23.7	23	10	10.7	20.8	46	17	25.8	31	14	25.4	15	3	17.2	3	27.3	
60 and Older	98	14.1	70	28	12.3	24.6	29	8	13.5	16.7	41	20	30.3	34	19	34.6	7	1	8.0	1	9.1	

<u>WATERLOW</u>								
<u>Age</u>	<u>Normal</u>				<u>Acute and Chronic</u>			
	Male N	Female N	Male %	Female %	Male N	Female N	Male %	Female %
Total	368	69	100.0	100.0	199	45	100.0	100.0
14-19	1	-	.3	-	-	-	-	-
20-29	72	7	19.6	10.1	39	5	19.6	11.1
30-39	118	15	32.1	21.7	80	9	40.2	20.0
40-49	82	16	22.3	23.2	36	7	18.1	15.6
50-59	45	16	12.2	23.2	24	11	12.1	24.4
60 and Older	50	15	13.6	21.7	20	13	10.1	28.9

¹ Excludes the metropolitan area of San Salvador.

² This table is percentaged down.

³ Six heads of household did not report their age.

Table 3: Families with Undernourished Children Classified by Gomez and Waterlow Indices by Age and Sex of Household Head, El Salvador, 1978¹

<u>GOMEZ</u>																						
<u>Age</u>	<u>Grand Total</u>		<u>Total</u>				<u>Normal (90 and above)</u>				<u>Subtotal Undernutrition (less than 90)</u>				<u>1st Degree (75-89.9)</u>		<u>2nd and 3rd Degree (less than 75)</u>					
	N	%	Male		Female		Male		Female		Male		Female		Male	Female	Male	Female				
			N	%	N	%	N	%	N	%	N	%	N	%					N	%		
Age Total ²	681	100.0	567	83.3	114	16.7	215	81.8	48	18.2	352	84.2	66	15.8	265	82.8	55	17.2	87	88.8	11	11.2
14-59 Years	583	100.0	497	85.2	86	14.8	186	82.3	40	17.7	311	87.4	46	12.6	231	86.5	36	13.5	80	88.9	10	11.1
60 and Older	98	100.0	70	71.4	28	28.6	29	78.4	8	21.6	41	67.2	20	32.8	34	64.2	19	35.8	7	87.5	1	12.5

<u>WATERLOW</u>									
<u>Age</u>	<u>Normal</u>				<u>Acute and Chronic</u>				
	Male		Female		Male		Female		
	N	%	N	%	N	%	N	%	
Age Total ²	368	84.2	69	15.8	199	81.6	45	18.4	
14-59 Years	318	85.5	54	14.5	179	84.8	32	15.2	
60 and Older	50	76.9	15	23.1	20	60.6	13	39.4	

- ¹ Excludes the metropolitan area of San Salvador.
- ² This table is percentaged across within separate categories.
- ³ Six heads of household did not indicate their age.

Table 4: Families with Undernourished Children Classified by Gomez and Waterlow Indices by Age and Sex by Head of Household, El Salvador, 1978¹

<u>GOMEZ</u>																						
<u>Age</u>	<u>Grand Total²</u>		<u>Total³</u>				<u>Normal (90 and above)</u>				<u>Subtotal Undernutrition (less than 90)</u>				<u>1st Degree (75-89.9)</u>		<u>2nd and 3rd Degree (less than 75)</u>					
	N	%	Male N	Female N	Male %	Female %	Male N	Female N	Male %	Female %	Male N	Female N	Male %	Female %	Male N	Female N	Male %	Female %				
14-19	1	100.0	1	-	100.0	-	1	-	100.0	-	-	65	7	90.3	9.7	-	-	-	-			
20-29	113	100.0	111	12	90.2	8.8	46	5	90.2	9.8	124	11	91.8	8.2	48	6	88.9	11.1	17	1	94.4	5.6
30-39	222	100.0	198	24	89.2	10.8	74	13	85.1	14.9	76	11	87.4	12.6	95	8	92.2	7.8	29	3	90.6	9.4
40-49	141	100.0	118	23	83.7	16.3	42	12	77.8	22.2	46	17	73.0	27.0	57	8	87.7	12.3	19	3	86.4	13.6
50-59	96	100.0	69	27	71.9	28.1	23	10	69.7	30.3	41	20	67.2	32.8	31	14	68.9	31.1	15	3	83.3	16.7
60 and Older	98	100.0	70	28	71.4	28.6	29	8	78.4	21.6	41	20	67.2	32.8	34	19	64.2	35.8	7	1	87.5	12.5

<u>WATERLOW</u>								
<u>Age</u>	<u>Normal</u>				<u>Acute and Chronic</u>			
	Male N	Female N	Male %	Female %	Male N	Female N	Male %	Female %
14-19	1	-	100.0	-	-	-	-	-
20-29	72	7	91.1	8.9	39	5	88.6	11.4
30-39	118	15	88.7	11.3	80	9	89.9	10.1
40-49	82	16	83.7	16.3	36	7	83.7	16.3
50-59	45	16	73.8	26.2	24	11	68.6	31.4
60 and Older	50	15	76.9	23.1	20	13	60.6	39.4

¹ Excludes the metropolitan area of San Salvador.

² This table is percentaged across with a separate category for undernourished comprised of 1st degree, 2nd and 3rd degree.

³ Six heads of household did not report their age.

Table 5: Mean and Median Family Size by Families with Undernourished Children Classified by Gomez and Waterlow Indices, El Salvador, 1978¹

<u>GOMEZ</u>				
<u>Family Size</u>	<u>Normal</u> (90 and above)	<u>Subtotal Undernutrition²</u> (less than 90)	<u>1st Degree</u> (75-89.9)	<u>2nd and 3rd Degree</u> (less than 75)
Mean	6.3	6.7	6.7	6.8
Median	6.0	6.0	6.0	6.0
N	265	422	322	100

<u>WATERLOW</u>		
<u>Family Size</u>	<u>Normal</u>	<u>Acute and Chronic</u>
Mean	6.5	6.7
Median	6.0	6.0
N	440	247

¹ Excludes the metropolitan area of San Salvador.

² Undernutrition is a separate category comprised of 1st degree and 2nd and 3rd degree.

Table 6: Sex and Literacy of Head of Household of Families with Undernourished Children Classified by Gomez and Waterlow Indices, El Salvador, 1978¹

<u>Literacy</u> ²	<u>Grand Total</u>		<u>Total</u>		<u>Normal (90 and above)</u>				<u>Subtotal Undernutrition (less than 90)</u>				<u>1st Degree (75-89.9)</u>				<u>2nd and 3rd Degree (less than 75)</u>					
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%		
																					Male	Female
Total	687	100.0	572	100.0	114	100.0	217	100.0	48	100.0	355	100.0	67	100.0	266	100.0	56	100.0	89	100.0	11	100.0
Illiterate ³	516	75.1	415	72.6	101	87.8	140	64.5	38	79.2	275	77.5	63	94.0	200	75.2	53	94.1	75	84.3	10	90.9
Literate	171	24.9	157	27.4	14	12.1	77	35.5	10	20.8	80	22.5	4	6.0	66	24.8	3	5.4	14	15.7	1	9.09

WATERLOW

<u>Literacy</u> ²	<u>Normal</u>				<u>Acute and Chronic</u>			
	Male	Female	Male	Female	Male	Female	Male	Female
	N	%	N	%	N	%	N	%
Total	370	100.0	70	100.0	202	100.0	45	100.0
Illiterate ³	253	68.4	58	82.9	162	80.2	43	95.6
Literate	117	31.6	12	17.1	40	19.8	2	4.4

¹ Excludes the metropolitan area of San Salvador.

² This table is percentaged down.

³ Individuals with four years or less of education were considered to be functionally illiterate.

Table 7: Education Level of Head of Household and Sex by Families with Undernourished Children Classified by Gomez and Waterlow Indices, El Salvador, 1978¹

<u>Educational Level</u> ²	<u>GOMEZ</u>																					
	<u>Grand Total</u>		<u>Total</u>				<u>Normal</u>				<u>Subtotal Undernutrition</u>				<u>1st Degree</u>		<u>2nd and 3rd Degree</u>					
			Male		Female		(90 and above)		Male		Female		(less than 90)		Male		(75-89.9)		Male		(less than 75)	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Total	677	100.0	563	100.0	114	100.0	214	100.0	47	100.0	349	100.0	67	100.0	266	100.0	56	100.0	87	100.0	11	100.0
0-2 Years	441	65.0	349	62.0	92	80.7	115	53.7	33	70.2	234	67.0	59	88.1	173	66.0	49	87.5	61	70.1	10	90.9
3-4 Years	98	14.5	86	15.3	12	10.5	31	14.5	6	12.8	55	15.8	6	9.0	38	14.5	5	8.9	17	19.5	1	9.1
5-6 Years	88	13.1	80	14.2	8	7.0	41	19.2	6	12.8	39	11.2	2	3.0	32	12.2	2	3.6	7	8.1	-	-
7 or More Years	50	7.4	48	8.5	2	1.8	27	12.6	2	4.3	21	6.0	0	0	19	7.2	-	-	2	2.3	-	-

<u>Educational Level</u> ²	<u>WATERLOW</u>							
	<u>Normal</u>				<u>Acute and Chronic</u>			
	Male		Female		Male		Female	
	N	%	N	%	N	%	N	%
Total	365	100.0	69	100.0	198	100.0	45	100.0
0-2 Years	213	58.4	52	75.4	136	68.7	40	88.9
3-4 Years	54	14.8	7	10.1	32	16.2	5	11.1
5-6 Years	58	15.9	8	11.6	22	11.1	-	-
7 or More Years	40	11.0	2	2.9	8	4.0	-	-

¹ Excludes the metropolitan area of San Salvador.

² This table is percentaged down.

Table 8: Families with Undernourished Children Classified by Gomez and Waterlow Indices by Sex and Literacy of Head of Household, El Salvador, 1978¹

Literacy ²	Grand Total		Total		Normal (90 and above)				Subtotal Undernutrition (less than 90)				GOMEZ 1st Degree (75-89.9)				2nd and 3rd Degree (less than 90)					
	N	%	Male		Female		Male		Female		Male		Female		Male		Female					
			N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%				
Illiterate ³	516	100.0	415	80.4	101	19.6	140	78.6	38	21.4	275	81.6	63	18.4	200	79.0	53	21.0	75	88.2	10	11.8
Literate	171	100.0	157	91.8	14	8.2	77	88.5	10	11.5	80	95.2	4	4.8	66	95.6	3	4.4	14	93.3	1	6.7

Literacy ²	WATERLOW							
	Normal				Acute and Chronic			
	Male		Female		Male		Female	
	N	%	N	%	N	%	N	%
Illiterate ³	253	81.4	58	18.6	162	79.0	43	21.0
Literate	117	90.7	12	9.3	40	95.2	2	4.8

¹ Excludes the metropolitan area of San Salvador.

² This table is percentaged across within separate categories of undernourished.

³ Individuals with four years or less of education were considered to be functionally illiterate.

Table 9: Families with Undernourished Children Classified by Gomez and Waterlow Indices by Education Level of Head of Household and Sex, El Salvador, 1978¹

<u>Educational Level²</u>	<u>Grand Total</u>		<u>Total</u>		<u>Normal</u>				<u>GOMEZ Subtotal Undernutrition</u>				<u>1st Degree</u>				<u>2nd and 3rd Degree</u>					
					(90 and above)				(less than 90)				(75-89.9)				(less than 75)					
			Male		Female		Male		Female		Male		Female		Male		Female		Male		Female	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
0-2	441	100.0	349	79.1	92	20.9	115	77.7	33	22.3	234	79.9	59	20.1	173	77.9	49	22.1	61	85.9	10	14.1
3-4 Years	98	100.0	86	87.8	12	12.2	31	83.8	6	16.2	55	90.2	6	9.8	38	88.4	5	11.6	17	94.4	1	5.6
5-6 Years	88	100.0	80	90.9	8	9.1	41	87.2	6	12.8	39	95.1	2	4.9	32	94.1	2	5.9	7	100.0	-	-
7 or More Years	50	100.0	48	96.0	2	4.0	27	93.1	2	6.9	21	100.0	-	-	19	100.0	-	-	2	100.0	-	-

<u>Educational Level²</u>	<u>WATERLOW</u>							
	<u>Normal</u>				<u>Acute and Chronic</u>			
	Male		Female		Male		Female	
	N	%	N	%	N	%	N	%
0-2	213	80.4	52	19.6	136	77.3	40	22.7
3-4 Years	54	88.5	7	11.5	32	86.5	5	13.5
5-6 Years	58	87.9	8	12.1	22	100.0	-	-
7 or More Years	40	95.2	2	4.8	8	100.0	-	-

¹ Excludes the metropolitan area of San Salvador.

² This table is percentaged across within separate categories of undernourished.

Table 10: Mean and Median Years of Education of Significant Female in the Household by Families with Undernourished Children Classified by Gomez and Waterlow Indices, El Salvador, 1978¹

<u>Years of Education of Significant Female²</u>	<u>GOMEZ</u>			
	<u>Normal</u> (90 or above)	<u>Subtotal Undernutrition</u> (less than 90)	<u>1st Degree</u> (75-89.9)	<u>2nd and 3rd Degree</u> (less than 75)
Mean	2.6	2.0	2.0	1.3
Median	2.0	1.0	1.0	0
N	234	420	288	92

<u>Years of Education of Significant Female²</u>	<u>WATERLOW</u>	
	<u>Normal</u>	<u>Acute and Chronic</u>
Mean	2.4	1.7
Median	2.0	.5
N	394	220

¹ Excludes the metropolitan area of San Salvador.

² In most instances the significant female was the mother; where the mother was not present the significant female was defined as any female over 14 years of age. Some households did not have a significant female present.

Table 11: Mean Number of Times Visited Doctor Per Household by Family Members During the Last Year with Children Classified by Gomez and Waterlow Indices, El Salvador, 1978¹

	<u>GOMEZ</u>			
	<u>Normal</u> (90 or above)	<u>Subtotal</u> <u>Undernutrition</u> (less than 90)	<u>1st Degree</u> (75-89.9)	<u>2nd and 3rd Degree</u> (less than 75)
Mean Number of Times Visited Doctor Per Household Member	.87	.86	.91	.69
N	1662	2811	2130	681

	<u>WATERLOW</u>	
	<u>Normal</u>	<u>Acute and Chronic</u>
Mean Number of Times Visited Doctor Per Household Member	.91	.76
N	2819	1654

¹ Excludes the metropolitan area of San Salvador.

Table 12: Type of Dwelling by Families with Undernourished Children Classified by Gomez and Waterlow Indices, El Salvador, 1978¹

<u>Type of Dwelling</u> ²	<u>GOMEZ</u>									
	<u>Total</u>		<u>Normal (90 and above)</u>		<u>Subtotal Undernutrition (less than 90)</u>		<u>1st Degree (75-89.9)</u>		<u>2nd and 3rd Degree (less than 75)</u>	
	N	%	N	%	N	%	N	%	N	%
Total	686	100.0	264	100.0	422	100.0	322	100.0	100	100.0
Private Home	512	74.6	205	77.6	307	72.7	237	73.6	70	70.0
Apartment	2	.3	2	.8	-	-	-	-	-	-
Hotel-Room in Boarding House	19	2.8	6	2.3	13	3.1	10	3.1	3	3.0
Improvised Home ³	47	6.8	23	8.7	24	5.7	19	5.9	5	5.0
Rancho (Hut)	12	1.7	4	1.5	8	1.9	4	1.2	4	4.0
Other ⁴	94	13.7	24	9.1	70	16.6	52	16.2	18	18.0

<u>Type of Dwelling</u>	<u>WATERLOW</u>			
	<u>Normal</u>		<u>Acute and Chronic</u>	
	N	%	N	%
Total	439	100.0	247	100.0
Private Home	334	78.8	178	72.0
Apartment	2	.4	-	-
Hotel-Room in Boarding House	14	3.2	5	2.0
Improvised Home ³	36	8.4	11	4.4
Rancho (Hut)	5	1.1	7	2.8
Other ⁴	48	11.1	46	18.8

¹ Excludes residents of metropolitan San Salvador.

² This table is percentaged down.

³ Improvised housing includes huts and temporary cottages.

⁴ Collective or farm not included in the above possibilities.

Table 13: Families with Undernourished Children Classified by Gomez and Waterlow Indices by Type of Dwelling, El Salvador, 1978¹

<u>Type of Dwelling²</u>	<u>GOMEZ</u>									
	<u>Total</u>		<u>Normal</u> (90 or above)		<u>Subtotal</u> <u>Undernutrition</u> (less than 90)		<u>1st Degree</u> (75-89.9)		<u>2nd and 3rd Degree</u> (less than 75)	
	N	%	N	%	N	%	N	%	N	%
Total	686	100.0	264	38.5	422	61.5	322	46.9	100	14.6
Private Home	512	100.0	205	40.0	307	60.0	237	46.3	70	13.7
Apartment	2	100.0	2	100.0	-	-	-	-	-	-
Hotel Room in Boarding House	19	100.0	6	31.6	13	68.4	10	52.6	3	15.8
Improvised Home ³	47	100.0	23	48.9	24	51.1	19	40.4	5	10.6
Rancho (Hut)	12	100.0	4	33.3	8	66.7	4	33.3	4	33.3
Other ⁴	94	100.0	24	25.5	70	74.5	52	55.3	18	19.2

<u>Type of Dwelling²</u>	<u>WATERLOW</u>			
	<u>Normal</u>		<u>Acute and Chronic</u>	
	N	%	N	%
Total	439	63.9	247	36.1
Private Home	334	65.1	178	34.9
Apartment	2	100.0	-	-
Hotel Room in Boarding House	14	73.7	5	26.3
Improvised Home ³	36	77.1	11	27.8
Rancho (Hut)	5	41.7	7	58.3
Other ⁴	48	51.0	46	49.0

¹ Excludes residents of metropolitan San Salvador.

² This table is percentaged across.

³ Improvised housing includes huts and temporary cottages.

⁴ Collective or form not included in the above possibilities.

Table 14: Tenure Status of Home by Families with Undernourished Children Classified by Gomez and Waterlow Indices, El Salvador, 1978¹

Type of Tenure ²	GOMEZ									
	Total		Normal (90 and above)		Subtotal Undernutrition (less than 90)		1st Degree (75-89.9)		2nd and 3rd Degree (less than 75)	
	N	%	N	%	N	%	N	%	N	%
Total	687	100.0	265	100.0	422	100.0	322	100.0	100	100.0
Owner	414	60.3	146	55.1	268	63.5	207	64.3	61	61.0
Mortgaged Owner	27	3.9	13	4.9	14	3.3	10	3.1	4	4.0
Renter	100	14.6	52	19.6	48	11.4	37	11.5	11	11.00
Colono ⁴	103	15.0	41	15.5	62	14.7	46	14.3	16	16.00
Free Occupancy	37	5.4	12	4.5	25	5.9	19	5.9	6	6.0
Other	6	.9	1	.4	5	1.2	3	.9	2	2.0

Type of Tenure ²	WATERLOW			
	Normal		Acute and Chronic	
	N	%	N	%
Total	440	100.0	247	100.0
Owner	261	59.2	153	61.6
Mortgaged Owner	18	4.0	9	3.6
Renter	73	16.7	27	10.8
Colono ⁴	61	14.0	42	17.2
Free Occupancy	24	5.4	13	5.6
Other	3	.7	3	1.2

¹ Excludes the metropolitan area of San Salvador.

² Household tenure refers to the residential dwelling unit and the immediate surrounding area, i.e., garden, but not farm proper.

³ This table is percentaged down.

⁴ The household is given rights to live on and use property in exchange for caring for property and performing work for the owner.

Table 15: Families with Undernourished Children Classified by Gomez and Waterlow Indices by Tenure Status of Home, El Salvador, 1978¹

<u>Type of Dwelling</u> ²	<u>GOMEZ</u>									
	<u>Total</u> ³		<u>Normal (90 and above)</u>		<u>Subtotal Undernutrition (less than 90)</u>		<u>1st Degree (75-89.9)</u>		<u>2nd and 3rd Degree (less than 75)</u>	
	N	%	N	%	N	%	N	%	N	%
Total	687	100.0	265	38.5	422	61.4	322	46.9	100	14.6
Owner	414	100.0	146	35.3	268	64.7	207	50.0	61	14.7
Mortgaged Owner	27	100.0	13	48.2	14	51.8	10	37.0	4	14.8
Renter	100	100.0	52	52.0	48	48.0	37	37.0	11	11.0
Colono ⁴	103	100.0	41	39.8	62	60.2	46	44.7	16	15.5
Free Occupancy	37	100.0	12	32.4	25	67.6	19	51.4	6	16.2
Other	6	100.0	1	16.7	5	83.3	3	50.0	2	33.3

<u>Type of Dwelling</u>	<u>WATERLOW</u>			
	<u>Normal</u>		<u>Acute and Chronic</u>	
	N	%	N	%
Total	440	64.0	247	36.0
Owner	261	63.1	153	36.9
Mortgaged Owner	18	66.7	9	33.3
Renter	73	73.3	27	26.7
Colono ⁴	61	59.1	42	40.9
Free Occupancy	24	63.2	13	36.8
Other	3	50.0	3	50.0

¹ Excludes the metropolitan area of San Salvador.

² Household tenure refers to the residential dwelling unit and the immediate surrounding area, i.e., garden, but not farm proper.

³ This table is percentaged across.

⁴ The household is given rights to live on and use property in exchange for caring for property and performing work for the owner.

Table 16: Access to Electricity by Families with Undernourished Children Classified by Gomez and Waterlow Indices, El Salvador, 1978¹

Availability of Electricity ²	GOMEZ									
	Total		Normal (90 and above)		Subtotal Undernutrition (less than 10)		1st Degree (75-89.9)		2nd and 3rd Degree (less than 75)	
	N	%	N	%	N	%	N	%	N	%
Total	687	100.0	265	100.0	422	100.0	322	100.0	100	100.0
Access to Electricity	217	31.6	108	40.8	109	25.8	84	26.1	25	25.00
No Access to Electricity	470	68.4	157	59.2	313	74.2	238	73.9	75	75.00

Availability of Electricity ²	WATERLOW			
	Normal		Acute and Chronic	
	N	%	N	%
Total	440	100.0	247	100.0
Access to Electricity	161	36.6	56	22.7
No Access to Electricity	279	63.4	191	77.3

¹ Excludes residents of metropolitan San Salvador.

² This table is percentaged down.

Table 17: Families with Undernourished Children Classified by Gomez and Waterlow Indices by Access to Electricity, El Salvador, 1978¹

<u>Availability of Electricity²</u>	<u>GOMEZ</u>									
	<u>Total</u>		<u>Normal (90 and above)</u>		<u>Subtotal Undernutrition (less than 90)</u>		<u>1st Degree (75-89.9)</u>		<u>2nd and 3rd Degree (less than 75)</u>	
	N	%	N	%	N	%	N	%	N	%
Total	687	100.0	265	38.6	422	61.4	322	46.9	100	14.6
Access to Electricity	217	100.0	108	49.8	109	50.2	84	38.7	25	11.5
No Access to Electricity	470	100.0	157	33.4	313	66.6	238	50.6	75	16.0

<u>Availability of Electricity²</u>	<u>WATERLOW</u>			
	<u>Normal</u>		<u>Acute and Chronic</u>	
	N	%	N	%
Total	440	64.0	247	36.0
Access to Electricity	161	74.2	56	25.8
No Access to Electricity	279	59.4	191	40.6

¹ Excludes residents of metropolitan San Salvador.

² This table is percentaged across.

Table 18: Access to Sanitary Facilities by Families with Undernourished Children Classified by Gomez and Waterlow Indices, El Salvador, 1978¹

<u>Sanitary Facilities</u> ²	<u>GOMEZ</u>									
	<u>Total</u>		<u>Normal (90 and above)</u>		<u>Subtotal Undernutrition (less than 90)</u>		<u>1st Degree (75-89.9)</u>		<u>2nd and 3rd Degree (less than 75)</u>	
	N	%	N	%	N	%	N	%	N	%
Total ³	686	100.0	264	100.0	422	100.0	322	100.0	100	100.0
Access to Sanitary Facilities Indoors	153	22.3	77	29.2	76	18.0	61	18.9	15	15.0
Access to Outdoor Facilities	162	23.6	73	27.6	89	21.1	72	22.4	17	17.0
No Access to Sanitary Facilities	371	54.1	114	43.2	257	60.9	189	58.7	68	68.0

<u>Sanitary Facilities</u> ²	<u>WATERLOW</u>			
	<u>Normal</u>		<u>Acute and Chronic</u>	
	N	%	N	%
Total ³	439	100.0	247	100.0
Access to Sanitary Facilities Indoors	109	24.8	44	2.3
Access to Outdoor Facilities	116	26.4	46	18.6
No Access to Sanitary Facilities	214	48.7	157	63.6

¹ Excludes the metropolitan area of San Salvador.

² This table is percentaged down.

³ One household did not indicate whether they had sanitary facilities or not.

Table 19: Families with Undernourished Children Classified by Gomez and Waterlow Indices by Access to Sanitary Facilities, El Salvador, 1978¹

<u>Sanitary Facilities</u> ²	<u>GOMEZ</u>									
	<u>Total</u>		<u>Normal (90 and above)</u>		<u>Subtotal Undernutrition (less than 90)</u>		<u>1st Degree (75-89.9)</u>		<u>2nd and 3rd Degree (less than 75)</u>	
	N	%	N	%	N	%	N	%	N	%
Total ³	686	100.0	264	38.5	422	61.5	322	46.9	100	14.6
Access to Sanitary Facilities Indoors	153	100.0	77	50.3	76	49.7	61	39.9	15	9.8
Access to Outdoor Facilities	162	100.0	73	45.1	89	54.9	72	44.4	17	10.5
No Access to Sanitary Facilities	371	100.0	114	30.7	257	69.3	189	50.9	68	18.3

<u>Sanitary Facilities</u> ²	<u>WATERLOW</u>			
	<u>Normal</u>		<u>Acute and Chronic</u>	
	N	%	N	%
Total ³	439	64.0	247	36.0
Access to Sanitary Facilities Indoors	109	71.2	44	28.8
Access to Outdoor Facilities	116	71.6	46	28.4
No Access to Sanitary Facilities	214	57.7	157	42.3

¹ Excludes the metropolitan area of San Salvador.

² This table is percentaged across.

³ One household did not indicate whether they had sanitary facilities or not.

Table 20: Access to Potable Water by Families with Undernourished Children Classified by Gomez and Waterlow Indices, El Salvador, 1978¹

<u>Water Availability</u> ²	<u>GOMEZ</u>									
	<u>Total</u>		<u>Normal (90 and above)</u>		<u>Subtotal Undernutrition (less than 90)</u>		<u>1st Degree (75-89.9)</u>		<u>2nd and 3rd Degree (less than 75)</u>	
	N	%	N	%	N	%	N	%	N	%
Total	687	100.0	265	100.0	422	100.0	322	100.0	100	100.0
Access to Potable Water	274	39.9	129	48.7	145	34.4	118	36.6	27	27.0
No Access to Potable Water	413	60.1	136	51.3	277	65.6	204	63.4	73	73.0

<u>Water Availability</u> ²	<u>WATERLOW</u>			
	<u>Normal</u>		<u>Acute and Chronic</u>	
	N	%	N	%
Total	440	100.0	247	100.0
Access to Potable Water	199	45.2	75	30.4
No Access to Potable Water	241	54.8	172	69.6

¹ Excludes the metropolitan area of San Salvador.

² This table is percentaged down.

Table 21: Families with Unnourished Children Classified by Gomez and Waterlow Indices by Access to Potable Water, El Salvador, 1978¹

GOMEZ

<u>Water Availability</u> ²	<u>Total</u>		<u>Normal (90 and above)</u>		<u>Subtotal Undernutrition (less than 90)</u>		<u>1st Degree (75-89.9)</u>		<u>2nd and 3rd Degree (less than 75)</u>	
	N	%	N	%	N	%	N	%	N	%
Total	687	100.0	265	38.6	422	61.4	322	46.9	100	14.6
Access to Potable Water	274	100.0	129	47.1	145	52.9	118	43.1	27	9.8
No Access to Potable Water	413	100.0	136	32.9	277	67.1	204	49.4	73	17.7

WATERLOW

<u>Water Availability</u>	<u>Normal</u>		<u>Acute and Chronic</u>	
	N	%	N	%
Total	440	64.0	247	36.0
Access to Potable Water	199	72.6	75	27.4
No Access to Potable Water	241	58.4	172	41.6

Excludes the metropolitan area of San Salvador.

This table is percentaged across.

Table 22: Type of Access to Water by Families with Undernourished Children Classified by Gomez and Waterlow Indices, El Salvador, 1978¹

GOMEZ

<u>Type of Access To Water²</u>	<u>Total</u>		<u>Normal (90 and above)</u>		<u>Subtotal Undernutrition (less than 90)</u>		<u>1st Degree (75-89.9)</u>		<u>2nd and 3rd Degree (less than 75)</u>	
	N	%	N	%	N	%	N	%	N	%
Total	687	100.0	265	100.0	422	100.0	322	100.0	100	100.0
Private Faucet in House	108	15.7	61	23.0	47	11.1	40	12.4	7	7.0
Communal Faucet in House	43	6.3	22	8.3	21	5.0	15	4.7	6	6.0
Private Well	54	7.9	9	3.4	45	10.7	29	9.0	16	16.0
Private Cistern	1	.1	1	.4	-	-	-	-	-	-
Public Faucet	123	17.9	46	17.4	77	18.2	63	19.6	14	14.0
Communal Well	97	14.1	40	15.1	57	13.5	42	13.0	15	15.0
Other: River, Rain Water	261	38.0	86	32.4	175	41.5	133	41.3	42	42.0

WATERLOW

<u>Type of Access To Water²</u>	<u>Normal</u>		<u>Acute and Chronic</u>	
	N	%	N	%
Total	440	100.0	247	100.0
Private Faucet in House	82	18.5	26	10.8
Communal Faucet in House	36	8.3	7	2.8
Private Well	32	7.2	22	9.2
Private Cistern	1	.2	-	-
Public Faucet	80	18.5	43	17.2
Communal Well	62	14.0	35	14.4
Other: River, Rain Water	147	33.3	114	45.6

¹ Excludes the metropolitan area of San Salvador.

² This table is percentaged down.

Table 23: Families with Undernourished Children Classified by Gomez and Waterlow Indices by Type of Access to Water, El Salvador, 1978¹

<u>Type of Access To Water²</u>	<u>GOMEZ</u>									
	<u>Total</u>		<u>Normal (90 and above)</u>		<u>Subtotal Undernutrition (less than 90)</u>		<u>1st Degree (75-89.9)</u>		<u>2nd and 3rd Degree (less than 75)</u>	
	N	%	N	%	N	%	N	%	N	%
Total	687	100.0	265	38.6	422	61.4	322	46.9	100	14.6
Private Faucet in House	108	100.0	61	56.5	47	43.5	40	37.0	7	6.5
Communal Faucet in House	43	100.0	22	51.2	21	48.8	15	34.9	6	14.0
Private Well	54	100.0	9	16.7	45	83.3	29	53.7	16	29.6
Private Cistern	1	100.0	1	100.0	-	-	-	-	-	-
Public Faucet	123	100.0	46	37.4	77	62.6	63	51.2	14	11.4
Communal Well	97	100.0	40	41.2	57	58.8	42	43.3	15	15.5
Other: River, Rain Water	261	100.0	86	33.0	175	67.0	133	51.0	42	16.1

<u>Type of Access To Water²</u>	<u>WATERLOW</u>			
	<u>Normal</u>		<u>Acute and Chronic</u>	
	N	%	N	%
Total	440	64.0	247	36.0
Private Faucet in House	82	75.2	26	24.8
Communal Faucet in House	36	84.1	7	15.9
Private Well	32	58.2	22	41.8
Private Cistern	1	100.0	-	-
Public Faucet	80	65.6	43	34.4
Communal Well	62	63.3	35	36.7
Other: River, Rain Water	147	56.5	114	43.5

¹ Excludes the metropolitan area of San Salvador.

² This table is percentaged across.

Table 24: Mean and Median Distance to Water (in Meters) by Families with Undernourished Children Classified by Gomez and Waterlow Indices, El Salvador, 1978¹

<u>Distance to Water²</u>	<u>GOMEZ</u>			
	<u>Normal</u> (90 and above)	<u>Subtotal</u> <u>Undernutrition</u> (less than 90)	<u>1st Degree</u> (75-89.9)	<u>2nd & 3rd Degree</u> (less than 75)
Mean	2.7	2.7	2.7	2.8
Median	3.0	3.0	3.0	3.0
N	161	225	225	71

<u>Distance to Water²</u>	<u>WATERLOW</u>	
	<u>Normal</u>	<u>Acute and Chronic</u>
Mean	2.9	2.7
Median	3.0	3.0
N	271	186

¹ Excludes the metropolitan area of San Salvador.

² Includes only those families who had access to water and the water source was outdoors.

Table 25: Level of Living Index by Families with Undernourished Children Classified by Gomez and Waterlow Indices, El Salvador, 1978¹

Level of Living Index Score ²	GOMEZ									
	Total		Normal (90 and above)		Subtotal Undernutrition (less than 90)		1st Degree (75-89.9)		2nd and 3rd Degree (less than 75)	
	N	%	N	%	N	%	N	%	N	%
Total	659	100.0	251	100.0	408	100.0	322	100.0	100	100.0
0 Lowest	11	1.7	5	2.0	6	1.5	3	1.0	3	3.0
1	54	8.2	21	8.4	33	8.1	26	8.4	7	7.0
2	101	15.3	27	10.8	74	18.1	54	17.5	20	20.0
3	163	24.7	51	20.3	112	27.4	82	26.6	30	30.0
4	102	15.5	27	10.8	75	18.4	57	18.5	18	18.0
5	59	9.0	25	10.0	34	8.3	25	8.1	9	9.0
6	48	7.3	31	12.4	17	4.2	14	4.6	3	3.0
7	47	7.1	20	8.0	27	6.6	22	7.1	5	5.0
8 Highest	74	11.2	44	17.5	30	7.4	25	8.1	5	5.0

Level of Living Index Score ²	WATERLOW			
	Normal		Acute and Chronic	
	N	%	N	%
Total	418	63.4	241	36.6
0 Lowest	4	36.6	7	63.6
1	30	56.4	24	43.6
2	52	52.0	49	48.0
3	98	59.8	65	40.2
4	62	60.2	40	39.8
5	38	64.4	21	35.6
6	41	85.4	7	14.6
7	33	68.8	14	31.2
8 Highest	60	81.5	14	18.4

¹ Excludes the metropolitan area of San Salvador.

² Twenty-eight households did not give information about one or more services. See Appendix II for an explanation of values. A value of 8 indicates the highest level of living value; 0 represents the lowest level of living value.

³ This table is percentaged down.

Table 26: Families with Undernourished Children Classified by Gomez and Waterlow Indices by Level of Living Index, El Salvador, 1978¹

Level of Living Index Score ²	GOMEZ									
	Total		Normal (90 and above)		Subtotal Undernutrition (less than 90)		1st Degree (75-89.9)		2nd and 3rd Degree (less than 75)	
	N	%	N	%	N	%	N	%	N	%
Total	659	100.0	251	38.1	408	61.9	322	46.9	100	15.2
0 Lowest	11	100.0	5	45.4	6	54.6	3	27.3	3	27.3
1	54	100.0	21	38.9	33	61.1	26	45.2	7	13.0
2	101	100.0	27	26.7	74	73.3	54	53.5	20	19.8
3	163	100.0	51	31.3	112	68.7	82	50.3	30	18.4
4	102	100.0	27	26.5	75	73.5	57	55.9	18	17.6
5	59	100.0	25	42.4	34	57.6	25	42.4	9	15.2
6	48	100.0	31	64.6	17	35.4	14	29.2	3	6.2
7	47	100.0	20	42.6	27	57.4	22	46.8	5	10.6
8 Highest	74	100.0	44	59.5	30	40.5	25	33.8	5	6.8

Level of Living Index Score ²	WATERLOW			
	Normal		Acute and Chronic	
	N	%	N	%
Total	418	100.0	241	100.0
0 Lowest	4	.9	7	2.9
1	30	7.4	24	9.8
2	52	12.6	49	20.1
3	98	23.2	65	27.1
4	62	14.7	40	16.8
5	38	9.0	21	8.6
6	41	9.7	7	2.9
7	33	7.8	14	6.2
8 Highest	60	14.7	14	5.7

¹ Excludes the metropolitan area of San Salvador.

² Twenty-eight households did not give information about one or more services. See Appendix I for an explanation of values. A value of 8 indicates the highest level of living value; 0 represents the lowest level of living value.

³ This table is percentaged across.

Table 27: Type of Roof by Families with Undernourished Children Classified by Gomez and Waterlow Indices, El Salvador, 1978¹

Type of Roof ²	<u>GOMEZ</u>									
	<u>Total</u>		<u>Normal (90 and above)</u>		<u>Subtotal Undernutrition (less than 90)</u>		<u>1st Degree (75-89.9)</u>		<u>2nd and 3rd Degree (less than 75)</u>	
	N	%	N	%	N	%	N	%	N	%
Total	687	100.0	265	100.0	422	100.0	322	100.0	100	100.0
Concrete Block	1	.2	1	0.4	-	-	-	-	-	-
Cement or Brick	509	74.1	194	73.2	315	74.6	240	74.5	75	75.0
Asbestos	22	3.2	11	4.2	11	2.6	8	2.5	3	3.0
Metal	82	11.9	33	12.4	49	11.6	38	11.8	11	11.0
Palm	69	10.0	23	8.7	46	10.9	35	10.9	11	11.0
Other ³	4	.6	3	1.1	1	.2	1	.3	-	-

Type of Roof ²	<u>WATERLOW</u>			
	<u>Normal</u>		<u>Acute and Chronic</u>	
	N	%	N	%
Total	440	100.0	247	100.0
Concrete Block	1	.2	-	-
Cement or Brick	331	75.4	178	71.6
Asbestos	16	3.6	6	2.4
metal	54	12.2	28	11.6
Palm	34	7.7	35	14.4
Other ³	4	.9	-	-

¹ Excludes the metropolitan area of San Salvador.

² This table is percentaged down.

³ Cardboard, used boards, scrap metal and recycled materials—not a permanent attached roof.

Table 28: Type of Roof by Families with Undernourished Children Classified by Gomez and Waterlow Indices, El Salvador, 1978¹

<u>Type of Roof</u> ²	<u>GOMEZ</u>									
	<u>Total</u>		<u>Normal (90 and above)</u>		<u>Subtotal Undernutrition (less than 90)</u>		<u>1st Degree (75-89.9)</u>		<u>2nd and 3rd Degree (less than 75)</u>	
	N	% ²	N	%	N	%	N	%	N	%
Total	687	100.0	265	38.6	422	61.4	322	46.9	100	14.5
Concrete Block	1	100.0	1	100.0	-	-	-	-	-	-
Cement or Brick	509	100.0	194	38.1	315	61.9	240	74.5	75	1.47
Asbestos	22	100.0	11	50.0	11	50.0	8	2.5	3	13.6
Metal	82	100.0	33	40.2	49	59.8	38	11.8	11	13.4
Palm	69	100.0	23	33.3	46	66.7	35	10.9	11	15.9
Other ³	4	100.0	3	75.0	1	25.0	1	.3	-	-

<u>Type of Roof</u> ²	<u>WATERLOW</u>			
	<u>Normal</u>		<u>Acute and Chronic</u>	
	N	%	N	%
Total	440	64.0	247	36.0
Concrete Block	1	100.0	-	-
Cement or Brick	331	65.2	178	34.8
Asbestos	16	72.7	6	27.3
Metal	54	65.1	28	34.9
Palm	34	48.6	35	51.4
Other ³	4	100.0	-	-

¹ Excludes the metropolitan area of San Salvador.

² This table is percentaged across.

³ Cardboard, used boards, scrap metal and recycled materials--not a permanent attached roof.

Table 29: Type of Floor by Families with Undernourished Children Classified by Gomez and Waterlow Indices, El Salvador, 1978¹

Type of Floor ²	GOMEZ									
	Total		Normal (90 and above)		Subtotal Undernutrition (less than 90)		1st Degree (75-89.9)		2nd and 3rd Degree (less than 75)	
	N	% ²	N	%	N	%	N	%	N	%
Total	687	100.0	265	100.0	422	100.0	322	100.0	100	100.0
Concrete Block	114	16.6	70	26.4	44	10.4	38	11.8	6	6.0
Brick	44	6.4	16	6.0	28	6.6	21	6.5	7	7.0
Cement	28	4.1	14	5.3	14	3.3	13	4.0	1	1.0
Wood	1	.2	-	-	1	.2	1	.3	-	-
Dirt	499	72.6	164	61.9	335	79.4	249	77.3	86	86.0
Other ³	1	.2	1	.4	-	-	-	-	-	-

Type of Floor ²	WATERLOW			
	Normal		Acute and Chronic	
	N	%	N	%
Total	440	100.0	247	100.0
Concrete Block	91	20.7	23	9.6
Brick	26	5.9	18	7.2
Cement	27	6.1	1	.8
Wood	1	.2	-	-
Dirt	294	66.9	205	82.4
Other ³	1	.2	-	-

¹ Excludes the metropolitan area of San Salvador.

² This table is percentaged down.

³ Uncut stone, and scrap materials.

Table 30: Families with Undernourished Children by Type of Floor Classified by Gomez and Waterlow Indices, El Salvador, 1978¹

<u>Type of Floor²</u>	<u>GOMEZ</u>									
	<u>Total</u>		<u>Normal (90 and above)</u>		<u>Subtotal Undernutrition (less than 90)</u>		<u>1st Degree (75-89.9)</u>		<u>2nd and 3rd Degree (less than 75)</u>	
	N	% ²	N	%	N	%	N	%	N	%
Cement Block	114	100.0	70	61.4	44	38.6	38	33.3	6	5.3
Brick	44	100.0	16	36.4	28	63.6	21	47.7	7	15.9
Cement	28	100.0	14	50.0	14	50.0	13	46.4	1	3.6
Wood	1	100.0	-	-	1	100.0	1	100.0	-	-
Dirt	499	100.0	164	32.9	335	67.1	249	49.9	86	17.2
Other ³	1	100.0	1	100.0	-	-	-	-	-	-

<u>Type of Floor²</u>	<u>WATERLOW</u>			
	<u>Normal</u>		<u>Acute and Chronic</u>	
	N	%	N	%
Cement Block	91	79.3	23	20.7
Brick	26	59.1	18	40.9
Cement	27	93.1	1	.8
Wood	1	100.0	-	-
Dirt	294	59.1	205	40.9
Other ³	1	100.0	-	-

¹ Excludes the metropolitan area of San Salvador.

² This table is percentaged across.

³ Uncut stone and scrap materials.

Table 31: Rural and Urban Location and Department of Families with Undernourished Children Classified by Gomez and Waterlow Indices, El Salvador, 1978¹

<u>GOMEZ</u>																				
<u>Department</u> <u>Total</u> ³	<u>Total</u>				<u>Normal</u> (90 and above)				<u>Subtotal</u> <u>Undernutrition</u> (less than 90)				<u>1st Degree</u> (75-89.9)				<u>2nd and 3rd Degree</u> (less than 75)			
	<u>Urban</u>		<u>Rural</u>		<u>Urban</u> ²		<u>Rural</u>		<u>Urban</u>		<u>Rural</u>		<u>Urban</u>		<u>Rural</u>		<u>Urban</u>		<u>Rural</u>	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Total	186	100.0	501	100.0	87	100.0	178	100.0	99	100.0	323	100.0	74	100.0	248	100.0	25	100.0	75	100.0
Ahuachapán	4	2.1	45	9.0	2	2.3	28	15.7	2	2.0	17	5.3	2	2.7	15	6.1	-	-	2	2.7
Santa Ana	17	9.1	50	10.0	9	10.3	27	15.2	8	8.1	23	7.1	5	6.8	20	8.1	3	12.0	3	4.0
Sonsonate	30	16.1	46	9.2	20	23.0	18	10.1	10	10.1	28	8.7	6	8.1	23	9.3	4	16.0	5	6.7
Chalatenango	12	6.4	40	8.0	4	4.6	7	3.9	8	8.1	33	10.2	7	9.5	29	11.7	1	4.0	4	5.3
La Libertad	18	9.7	32	6.4	8	9.2	12	6.7	10	10.1	20	6.2	8	10.8	17	6.8	2	8.0	3	4.0
San Salvador	9	4.8	14	2.8	4	4.6	9	5.1	5	5.1	5	1.5	4	5.4	5	2.0	1	4.0	-	-
Cuscatlán	8	4.3	27	5.4	2	2.3	7	3.9	6	6.1	20	6.2	4	5.4	12	4.8	2	8.0	8	10.7
La Paz	9	4.8	23	4.6	5	5.8	7	3.9	4	4.0	16	5.0	3	4.1	10	4.0	1	4.0	6	8.0
Cabañas	-	-	24	4.8	-	-	5	2.8	-	-	19	5.9	-	-	16	6.4	-	-	3	4.0
San Vicente	11	5.9	12	2.4	2	2.3	1	.6	9	9.1	11	3.4	6	8.1	6	2.4	3	12.0	5	6.7
Usulután	13	7.0	51	10.2	7	8.1	14	7.9	6	6.1	37	11.4	6	8.1	25	10.1	-	-	12	16.0
San Miguel	24	12.9	51	10.2	11	12.6	17	9.6	13	13.1	34	10.5	8	10.8	27	10.9	5	20.0	7	9.3
Morazón	17	9.1	36	7.2	6	6.9	9	5.1	11	11.1	27	8.4	8	10.8	20	8.1	3	12.0	7	9.3
La Unión	14	7.5	50	10.0	7	8.1	17	9.6	7	7.1	33	10.2	7	9.5	23	9.3	-	-	10	13.0

<u>WATERLOW</u>								
<u>Department</u> <u>Total</u> ³	<u>Normal</u>				<u>Acute and Chronic</u>			
	<u>Urban</u>		<u>Rural</u>		<u>Urban</u>		<u>Rural</u>	
	N	%	N	%	N	%	N	%
Total	128	100.0	312	100.0	58	100.0	189	100.0
Ahuachapán	3	2.3	31	10.2	1	1.7	14	7.3
Santa Ana	15	11.5	35	11.2	2	5.2	15	7.8
Sonsonate	23	17.7	27	8.6	7	11.9	19	10.5
Chalatenango	8	6.2	23	7.3	4	6.8	17	9.4
La Libertad	13	10.0	23	7.3	5	8.5	9	4.7
San Salvador	7	6.2	12	3.8	2	3.4	2	1.1
Cuscatlán	4	3.1	13	4.1	4	6.8	14	7.3
La Paz	6	4.6	13	4.1	3	5.1	10	5.2
Cabañas	-	-	13	4.1	-	-	12	6.3
San Vicente	7	5.4	5	1.6	4	6.8	7	3.7
Usulután	11	8.5	34	10.8	2	3.4	17	8.9
San Miguel	13	10.8	34	10.8	11	18.6	17	8.9
Morazón	7	5.4	21	6.7	10	17.0	15	7.8
La Unión	11	8.5	29	9.2	3	5.1	21	11.0

¹ Excludes the metropolitan area of San Salvador.

² Since 1950, El Salvador has adopted an administrative criteria for defining urban areas. The area where the municipal authorities are located (county seat) is defined as urban and the cantones (townships) of municipios (county) are rural.

³ This table is percentaged down.

Table 32: Families with Undernourished Children Classified by Gomez and Waterlow Indices by Rural and Urban Location and Department, El Salvador, 1978¹

Department ³	GOMEZ																			
	Total		Normal (90 and above)				Subtotal Undernutrition (less than 90)		1st Degree (75-89.9)		2nd and 3rd Degree (less than 75)									
	Urban N %	Rural N %	Urban N %	Rural N %	Urban N %	Rural N %	Urban N %	Rural N %	Urban N %	Rural N %	Urban N %	Rural N %								
Total	186	100.0	501	100.0	87	32.8	178	67.2	99	23.5	323	76.5	74	23.0	248	77.0	25	25.0	75	75.0
Ahuachapan	4	100.0	45	100.0	2	6.7	23	93.3	2	10.5	17	89.5	2	4.8	15	88.2	-	-	2	100.0
Santa Ana	17	100.0	50	100.0	9	25.0	27	75.0	8	25.8	23	74.2	5	20.0	20	80.0	3	50.0	3	50.0
Sonsonate	30	100.0	46	100.0	20	52.6	18	47.4	10	26.3	28	73.7	6	20.7	23	79.3	4	44.4	5	55.6
Chalatenango	12	100.0	10	100.0	4	36.4	7	63.6	8	19.5	33	80.5	7	19.4	29	80.6	1	20.0	4	80.0
La Libertad	18	100.0	32	100.0	8	40.0	12	60.0	10	33.3	20	66.7	8	32.0	17	68.0	2	40.0	3	60.0
San Salvador	9	100.0	14	100.0	4	30.8	9	19.2	5	50.0	5	50.0	4	44.4	5	55.6	1	100.0	-	-
Cuscatlan	8	100.0	27	100.0	2	22.2	7	77.8	6	23.1	20	76.9	4	25.0	12	75.0	2	20.0	8	80.0
La Paz	9	100.0	23	100.0	5	41.7	7	58.3	4	20.0	16	80.0	3	23.1	10	76.9	1	14.3	6	85.7
Cabanas	-	-	24	100.0	-	-	5	100.0	-	-	19	100.0	-	-	16	100.0	-	-	3	100.0
San Vicente	11	100.0	12	100.0	2	66.7	1	33.3	9	45.00	11	55.0	6	50.0	6	50.0	3	37.5	5	62.5
Usulután	13	100.0	51	100.0	7	33.3	14	66.7	6	14.00	37	86.0	6	19.4	25	80.6	-	-	-	-
San Miguel	24	100.0	51	100.0	11	39.3	17	60.7	13	27.7	34	72.3	8	22.9	27	77.1	5	41.7	7	58.3
Morazón	17	100.0	36	100.0	6	40.6	9	60.0	11	28.9	27	71.1	8	28.6	20	71.4	3	30.0	7	70.00
La Unión	14	100.0	50	100.0	7	29.2	17	70.8	7	50.0	33	66.0	7	23.3	23	76.7	-	-	10	100.0

Department ³	WATERLOW			
	Normal		Acute and Chronic	
Urban N %	Rural N %	Urban N %	Rural N %	
Total	28	29.3	312	70.7
Ahuachapan	3	8.6	31	91.4
Santa Ana	15	30.0	35	70.0
Sonsonate	23	46.0	27	54.0
Chalatenango	8	25.8	23	74.2
La Libertad	13	36.1	23	63.9
San Salvador	7	40.0	12	60.0
Cuscatlan	4	25.5	13	76.5
La Paz	6	31.6	13	68.4
Cabanas	-	-	13	100.0
San Vicente	7	58.3	5	41.7
Usulután	11	24.4	34	75.6
San Miguel	13	29.2	34	70.8
Morazón	7	25.0	21	75.0
La Unión	11	27.5	29	72.5

¹ Excludes the metropolitan area of San Salvador.

² Since 1950, El Salvador has adopted an administrative criteria for defining urban areas. The area where the municipal authorities are located (county seat) is defined as urban and the cantones (townships) of municipios are rural.

³ This table is percentaged across within separate categories.

Table 33: Access to Farm Land by Families with Undernourished Children Classified by Gomez and Waterlow Indices, El Salvador, 1978¹

<u>GOMEZ</u>																				
<u>Land Rights</u> ²	<u>Total</u>				<u>Normal (90 and above)</u>				<u>Subtotal Undernutrition (less than 90)</u>				<u>1st Degree (75-89.9)</u>				<u>2nd and 3rd Degree (less than 75)</u>			
	Urban		Rural		Urban		Rural		Urban		Rural		Urban		Rural		Urban		Rural	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Total	186	100.0	501	100.0	87	100.0	178	100.0	99	100.0	321	100.0	74	100.0	246	100.0	25	100.0	75	100.0
No Usufruct Rights ³	138	74.2	197	39.3	67	37.6	75	42.1	71	71.7	122	38.0	49	66.2	93	37.8	22	88.0	29	38.7
Garden, Fruit Trees or Animals	100	53.8	84	16.8	52	29.2	31	17.4	48	48.5	53	16.5	36	48.6	38	15.4	12	48.0	15	20.0
No Land and No Household Garden	38	20.4	113	22.6	15	17.2	44	56.4	23	23.2	69	21.5	13	17.6	55	22.4	10	40.0	14	18.7
Usufruct Rights	48	25.8	304	60.7	20	23.0	103	57.9	28	28.3	201	62.6	25	33.8	155	63.0	3	12.0	46	61.3

<u>WATERLOW</u>								
<u>Land Rights</u> ²	<u>Normal</u>				<u>Acute and Chronic</u>			
	Urban		Rural		Urban		Rural	
	N	%	N	%	N	%	N	%
Total	128	100.0	312	100.0	57	100.0	190	100.0
No Usufruct Rights ³	97	75.4	125	40.1	41	72.9	72	37.7
Garden, Fruit Trees or Animals	24	18.5	72	22.9	15	27.1	42	22.0
No Land and No Household Garden	73	56.9	53	17.2	26	45.8	30	15.7
Usufruct Rights	31	24.6	187	59.9	16	27.1	118	62.3

¹ Excludes the metropolitan area of San Salvador.

² This table is percentaged down.

³ Usufruct is defined as the legal right of using and enjoying fruits and/or profits of property.

Table 34: Families with Undernourished Children Classified by Gomez and Waterlow Indices by Access to Farm Land, El Salvador, 1978¹

<u>Land Rights</u> ²	<u>GOMEZ</u>									
	<u>Total</u>		<u>Normal</u> (90 and above)		<u>Subtotal</u> <u>Undernutrition</u> (less than 90)		<u>1st Degree</u> (75-89.9)		<u>2nd and 3rd Degree</u> (less than 75)	
	N	%	N	%	N	%	N	%	N	%
<u>Total</u>	687	100.0	265	38.6	422	61.4	322	46.6	100	14.6
<u>No Usufruct</u> ³	335	100.0	142	41.1	193	58.9	142	41.1	51	8.8
<u>Rights</u>										
Garden, Fruit Trees or Animals	160	100.0	59	39.1	101	60.9	68	45.0	24	15.9
No Land and No Household Garden	175	100.0	83	45.1	92	54.9	74	40.2	27	14.7
<u>Usufruct</u> <u>Rights</u>	352	100.0	123	34.9	229	65.1	180	51.1	49	13.9

<u>Land Rights</u> ²	<u>WATERLOW</u>			
	<u>Normal</u>		<u>Acute and Chronic</u>	
	N	%	N	%
<u>Total</u>	440	64.0	247	36.0
<u>No Usufruct</u> ³	222	66.3	113	33.7
<u>Rights</u>				
Garden, Fruit Trees or Animals	96	62.7	57	37.3
No Land and No Household Garden	126	69.2	56	30.8
<u>Usufruct</u> <u>Rights</u>	218	61.9	134	38.1

¹ Excludes the metropolitan area of San Salvador.

² This table is percentaged across.

³ Usufruct, rights are defined as the legal right of using and enjoying fruits and/or profits of property.

Table 35: Farm Families with Livestock and Type of Access to Land with Undernourished Children Classified by Gomez and Waterlow Indices, El Salvador, 1978¹

Families with Livestock	<u>GOMEZ</u>									
	<u>Total</u>		<u>Normal (90 and above)</u>		<u>Subtotal Undernutrition (less than 90)</u>		<u>1st Degree (75-89.9)</u>		<u>2nd and 3rd Degree (less than 75)</u>	
	N	%	N	%	N	%	N	%	N	%
Have access to land usufruct rights	316	100.0	102	32.3	214	73.5	167	52.9	47	14.9
No farmland but have trees and/or animals ²	117	100.0	40	34.2	77	66.8	57	48.7	20	17.1

Families with Livestock	<u>WATERLOW</u>			
	<u>Normal</u>		<u>Acute and Chronic</u>	
	N	%	N	%
Have access to land usufruct rights	200	63.3	116	36.7
No farmland but have trees and/or animals ²	69	59.0	48	41.0

¹ Excludes the metropolitan area of San Salvador.

² These families do not have access to any farm land (including colono, renter, owner, co-operative or free use) but have animals and trees on their residence.

³ This table is percentaged across.

Table 36: Households with Land According to Farm Size Category by Families with Undernourished Children Classified by Gomez and Waterlow Indices, El Salvador, 1978¹

Land Size ³ (Hectares)	GOMEZ									
	Total		Normal ² (90 and above)		Subtotal Undernutrition (less than 90)		1st Degree (75-89.9)		2nd and 3rd Degree (less than 75)	
	N	%	N	%	N	%	N	%	N	%
Total	349	100.0	121	100.0	228	100.0	179	100.0	49	100.0
0 - .99	185	53.0	66	54.6	119	52.0	92	51.4	27	55.1
1 - 4.99	149	42.7	51	42.2	98	42.8	79	44.1	19	38.8
5 - 9.99	10	2.9	3	2.5	7	3.1	5	2.8	2	4.1
10 or More	5	1.4	1	.8	4	1.7	3	1.7	1	2.0

Land Size ³ (Hectares)	WATERLOW			
	Normal		Acute and Chronic	
	N	%	N	%
Total	218	100.0	131	100.0
0 - .99	101	46.1	84	63.9
1 - 4.99	106	48.4	44	33.8
5 - 9.99	8	3.6	2	1.5
10 or More	4	1.8	1	.8

¹ Excludes the metropolitan area of San Salvador.

² This table is percentaged down.

³ This table includes only those households with access to land--i.e. renter, owner, colono etc.

Table 37: Families with Undernourished Children Classified by Gomez and Waterlow Indices by Households with Land According to Farm Size Category, El Salvador, 1978¹

Land Size ³ (Hectares)	<u>GOMEZ</u>									
	<u>Total</u>		<u>Normal²</u> (90 and above)		<u>Subtotal</u> <u>Undernutrition</u> (less than 90)		<u>1st Degree</u> (75-89.9)		<u>2nd and 3rd Degree</u> (less than 75)	
	N	%	N	%	N	%	N	%	N	%
Total	349	100.0	121	34.7	228	65.3	179	51.3	49	14.0
0 - .99	185	100.0	66	35.7	119	64.3	92	49.7	27	14.6
1 - 4.99	149	100.0	51	34.2	98	65.8	79	53.0	19	12.8
5 - 9.99	10	100.0	3	30.0	7	70.0	5	50.0	2	20.0
10 or More	5	100.0	1	20.0	4	80.0	3	60.0	1	20.00

Land Size ³ (Hectares)	<u>WATERLOW</u>			
	<u>Normal</u>		<u>Acute and Chronic</u>	
	N	%	N	%
Total	218	62.2	131	37.8
0 - .99	101	54.3	84	45.7
1 - 4.99	106	70.2	44	29.8
5 - 9.99	8	80.0	2	20.0
10 or More	4	80.0	1	20.0

¹ Excludes the metropolitan area of San Salvador.

² This table is percentaged across.

³ This table includes only those households with access to land.

Table 33: Types of Crops Grown in Hectares and Livestock for Farm Families by Families with Undernourished Children Classified by Gomez and Waterlow Indices, El Salvador, 1978¹

Types of Crops and Livestock	<u>GOMEZ</u>							
	<u>Normal</u> (90 and over)		<u>Subtotal</u> <u>Undernutrition</u> (less than 90)		<u>1st Degree</u> (75-89.9)		<u>2nd and 3rd Degree</u> (less than 75)	
	Number of families	Hectares	Number of families	Hectares	Number of families	Hectares	Number of families	Hectares
Basic Grains ²	69	104.2	126	206.3	96	177.38	30	28.9
Coffee	19	13.7	15	11.1	10	6.82	5	4.3
Cotton	-	-	1	4.9	1	4.9	-	-
Sugar Cane	1	32.9	3	6.3	3	6.3	-	-
Other Cash Crops ³	5	1.4	15	30.9	9	11.07	6	19.9
Other Crop ⁴	9	18.4	19	10.0	15	7.84	4	2.2
Livestock ⁵	142	174	291	3915	224	3101	67	814

WATERLOW

Types of Crops and Livestock	<u>Normal</u>		<u>Acute and Chronic</u>	
	Number of families	Hectares	Number of families	Hectares
Basic Grains ²	126	221.7	65	63.0
Coffee	24	16.5	10	8.3
Cotton	-*	-*	-*	-*
Sugar Cane	4	39.2	-*	-*
Other Cash Crops ³	9	6.9	11	25.6
Other Crop ⁴	17	23.6	11	4.9
Livestock ⁵	271	3753	167	1962

* N's too small for accurate estimation.

¹ Excludes the metropolitan area of San Salvador.

² Basic crops include 1) hybrid corn, open pollinated corn, beans, rice, millet 2) Interplanted crops such as corn and beans, corn and millet corn, and other crops.

³ Other cash crops include peppers, peanuts, henequen, kenaf, tobacco, yucca, watermelons, melons and tomatoes.

⁴ Other crops include oranges, bananas, pineapple, papaya, maranon, coconut palm, balsamero, mango and avocado.

⁵ Refers to the number of livestock including heifers, milkcows, bulls, beefcows, sheep, goats and hogs.

Table 39: Median and Mean Number of Hectares in Crops Grown and Livestock for Farm Families by Families with Undernourished Children Classified by Gomez and Waterlow Indices, El Salvador, 1978¹

Types of Crops and Livestock	GOMEZ						WATERLOW			
	Normal (90 and above)		Undernutrition				Normal		Acute and Chronic	
	Md.	Mean	1st Degree (75-89.9)		2nd and 3rd Degree (less than 75)		Md.	Mean	Md.	Mean
Basic Grains ²	.70	1.50	.77	1.85	.70	.96	.9	1.8	.7	1.0
Coffee	.53	.72	.40	.68	.70	.86	.4	.7	.6	.8
Cotton	---	---	---	---	---	---	---	---	---	---
Sugar Cane	---	---	1.4	2.10	---	---	2.8	9.8	---	---
Other Cash Crops ³	.14	.28	.35	1.23	.42	3.32	.2	.8	.7	2.3
Other Crops ⁴	.35	2.00	.35	.52	.56	.55	.5	1.4	.3	.6
Livestock ⁵	10.0	12.28	10.0	13.80	10.0	12.1	10.0	13.8	10.0	11.7

* N is too small for accurate estimation.

¹ Excludes the metropolitan area of San Salvador.

² Basic crops include 1) hybrid corn, open pollinated corn, beans, rice, millet 2) Interplanted crops such as corn and beans, corn and millet corn, and other crops.

³ Other cash crops include peppers, peanuts, henequen, kenaf, tobacco, yucca, watermelons, melons and tomatoes.

⁴ Other crops include oranges, bananas, pineapple, papaya, maranon, coconut palm, balsamero, mango and avocado.

⁵ Refers to the number of livestock including heifers, milkcows, bulls, beefcows, sheep, goats and hogs.

Table 40: Livestock for Farm Families by Families with Undernourished Children by Gomez and Waterlow Indices, El Salvador, 1978¹

Livestock	GOMEZ								
	Normal			Undernutrition					
	(90 and above)			1st Degree (75-89.9)			2nd and 3rd Degree (less than 75)		
	N*	N ²	Md.	N*	N ²	Md.	N*	N ²	Md.
Small Animals and Poultry ³	134	1485	8.0	215	2672	9.0	65	710	8.0
Sheep	4	17	3.0	-	-	-	1	2	2.0
Goats	3	5	2.0	4	5	1.0	4	7	1.5
Hogs	3	174	2.0	105	305	2.0	32	78	2.0
Chickens	122	1289	8.0	202	2362	8.0	61	623	8.0
Large Animals ⁴	54	259	3.0	82	429	3.0	25	104	2.0

Livestock	WATERLOW					
	Normal			Acute and Chronic		
	N*	N ²	Md.	N*	N ²	Md.
Small Animals and Poultry ³	257	3134	8	161	1781	8
Sheep	3	13	2	2	6	3
Goats	4	7	2	7	10	1
Hogs	118	328	2	80	236	2
Chickens	235	2786	8	154	1529	8
Large Animals ⁴	114	619	3	50	181	3

* Refers to the number of families; N's for small animals do not always total since categories are not mutually exclusive.

¹ Excludes the metropolitan area of San Salvador.

² Refers to the number of livestock.

³ Refers to the number of sheep, goats, hogs and chickens.

⁴ Refers to the number of heifers, milkcows, bulls, beefcows and oxen.

Table 41: Mean and Median Number of Hectares in Crops Grown and Livestock for Farm Families by Families with Undernourished Children Classified by Gomez and Waterlow Indices, El Salvador, 1978¹

Types of Crops and Livestock	Normal (90 and above)			GOMEZ 1st Degree (75-89.9)			2nd and 3rd Degree (less than 75)		
	N	Md.	Mean	N	Md.	Mean	N	Md.	Mean
Basic Grains other than Rice	68	.7	1.4	94	.9	1.7	29	.7	1.0
Rice	5	.7	1.2	8	.4	2.5	1	.3	.3
Basic Grains in Combination With Cash Crops	1	.1	.1	7	1.4	4.3	5	1.4	5.1
Other Crops	4	1.1	4.4	6	4.1	8.3	4	1.5	1.3
Livestock and Grain ²	56	11.0	13.4	86	12	16.0	28	9.5	14.3
Other Cash Crops ² in Combination With Livestock	4	40.5	38.0	9	25.0	22.4	6	13	17.0
Livestock Only ²	69	8.0	10.7	124	8.0	11.8	35	10.0	10.6

WATERLOW

Types of Crops and Livestock	Normal			Acute and Chronic		
	N	Md.	Mean	N	Md.	Mean
Basic Grains other than Rice	126	.9	1.8	65	.7	1.0
Rice	10	.4	1.1	4	.4	1.1
Basic Grains in Combination With Cash Crops	6	1.2	4.0	7	1.4	4.5
Other Crops	9	1.4	7.3	5	1.4	1.4
Livestock and Grain ²	112	11.5	16.3	58	10.0	12.1
Other Cash Crops ² in Combination With Livestock	9	30.0	32.4	10	13.0	16.2
Livestock Only ²	135	7.0	11.5	93	10.0	11.1

¹ Excludes the metropolitan area of San Salvador.

² Refers to the number of livestock.

Table 42: Crops Grown by Region and by Families with Undernourished Children Classified by Gomez and Waterlow Indices, El Salvador, 1978¹

Region ²	Normal (90 and above)								GOMEZ 1st Degree (75-89.9)				2nd and 3rd Degree (less than 75)											
	I		II		III		IV		I		II		III		IV									
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%								
Grain	24	23.1	14	26.4	7	85.0	23	23.5	15	21.1	21	24.4	20	48.8	38	30.6	2	11.8	6	28.6	38.9	14	31.8	
Rice	-	-	-	-	1	.05	4	.04	-	-	1	1.0	6	14.6	1.8	-	-	1	4.8	-	-	-	-	
Cash Crops	1	.01	-	-	-	-	4	.04	-	-	2	2.0	4	9.8	3	2.4	5.9	2	9.6	-	-	3	6.8	
Other Crops	3	.03	2	.04	-	-	4	.04	3	.04	1.1	2.4	10	8.1	-	-	-	-	4.8	-	-	3	6.8	
Livestock	44	42.3	33	62.2	17	85.0	48	49.0	40	56.3	71	82.6	29	70.7	84	67.7	13	76.8	17	80.9	12	66.7	23	56.8
N	104		53		20		98		71		86		41		124		17		21		18		44	

Region ²	WATERLOW																	
	Normal				Acute and Chronic													
	I		II		III		IV		I		II		III		IV			
N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	
Grain	29	21.6	26	25.2	19	39.6	52	32.5	12	20.7	15	26.3	15	41.7	23	24.0		
Rice	-	-	1	.9	5	10.4	4	2.5	-	-	1	1.8	2	5.6	1	1.1		
Cash Crops	1	.7	2	1.9	2	4.2	4	2.5	1	1.7	2	3.5	2	5.6	5	5.2		
Other Crops	3	2.2	3	2.9	1	2.1	10	6.2	3	5.2	1	1.8	-	-	7	7.3		
Livestock	60	44.8	76	73.8	34	70.8	99	61.9	37	63.8	45	78.9	24	66.7	58	60.4		
N	134		103		48		160		58		57		36		96			

¹ Excludes the metropolitan area of San Salvador.

² The Regions of El Salvador include the following departments:
 Region I - Ahuachapan, Santa Ana, Sonsonate
 Region II - Chalatenango, La Libertad, San Salvador, Cuscatlan
 Region III - La Paz, Cabanas, San Vicente
 Region IV - Usulután, San Miguel, Morazan, La Union

Table 43: Mean and Median Family Income in Colonos by Families with Undernourished Children Classified by Gomez and Waterlow Indices, El Salvador, 1978¹ (2.5 Colonos = \$1.00 U.S. Dollar)

Measure	GOMEZ		
	Normal (90 and above)	1st Degree (75-89.9)	2nd and 3rd Degree (less than 75)
Mean	¢4342	¢3825	¢4131
Median	¢2736	¢2412	¢2497
N	265	322	100

Measure	WATERLOW	
	Normal	Acute and Chronic
Mean	¢4497	¢3288
Median	¢2712	¢2088
N	440	247

¹ Excludes the metropolitan area of San Salvador.

Table 44: Per Capita Income, in Colonos, by Families with Undernourished Children Classified by Gomez and Waterlow Indices, El Salvador, 1978¹

	GOMEZ		
	Normal (90 and above)	1st Degree (75-89.9)	2nd and 3rd Degree (less than 75)
Per Capita Income ²	¢687	¢571	¢603
N	265	322	100

	WATERLOW	
	Normal	Acute and Chronic
Per Capita Income ²	¢694	¢488
N	440	247

¹ Excludes the metropolitan area of San Salvador.

² 2.5 Colonos = \$1.00 U.S. Dollar.

Table 45: Poverty and Non-Poverty Status by Families with Undernourished Children Classified by Gomez and Waterlow Indices, El Salvador, 1978¹

<u>Poverty Status</u> ²	<u>GOMEZ</u>																			
	<u>Total</u>				<u>Normal</u> (90 and above)				<u>Subtotal</u> <u>Undernutrition</u> (less than 90)				<u>1st Degree</u> (75-89.9)				<u>2nd and 3rd Degree</u> (less than 75)			
	<u>Urban</u>		<u>Rural</u>		<u>Urban</u>		<u>Rural</u>		<u>Urban</u>		<u>Rural</u>		<u>Urban</u>		<u>Rural</u>		<u>Urban</u>		<u>Rural</u>	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Total	186	100.0	501	100.0	87	100.0	178	100.0	99	100.0	321	100.0	74	100.0	246	100.0	25	100.0	75	100.0
Poverty	105	56.5	404	80.6	42	48.3	135	76.4	63	63.6	267	83.2	42	58.3	206	83.7	21	84.0	61	81.3
Non-Poverty	81	43.5	97	19.4	45	51.7	43	23.6	36	36.4	54	16.8	32	43.2	40	16.3	4	16.0	14	18.7

<u>Poverty Status</u> ²	<u>WATERLOW</u>			
	<u>Normal</u>		<u>Acute and Chronic</u>	
	N	%	N	%
Total	440	100.0	447	100.0
Poverty	310	70.5	199	80.4
Non-Poverty	130	29.5	48	19.6

¹ Excludes the metropolitan area of San Salvador.

² Poverty is defined as a per capita income of \$150 U.S. dollars in 1969 or 668 colones in 1978 (\$267 U.S.).

³ This table is percentaged down.

Table 46: Poverty and Non-Poverty Status by Families with Undernourished Children Classified by Gomez and Waterlow, El Salvador, 1978¹

<u>Poverty Status</u> ²	<u>GOMEZ</u>									
	<u>Total</u>		<u>Normal</u> ³ (90 and above)		<u>Subtotal Undernutrition</u> (less than 90)		<u>1st Degree</u> (75-89.9)		<u>2nd and 3rd Degree</u> (less than 75)	
	N	%	N	%	N	%	N	%	N	%
Total	687	100.0	265	38.6	422	61.4	322	46.9	100	14.6
Poverty	509	100.0	177	34.8	332	65.2	250	49.1	82	16.1
Non-Poverty	178	100.0	88	49.4	90	51.6	72	40.4	18	10.1

<u>Poverty Status</u> ²	<u>WATERLOW</u>			
	<u>Normal</u>		<u>Acute and Chronic</u>	
	N	%	N	%
Total	440	64.0	447	36.0
Poverty	310	60.9	199	39.1
Non-Poverty	130	72.8	49	27.2

¹ Excludes the metropolitan area of San Salvador.

² Poverty is defined as a per capita income of \$150 U.S. in 1969 or 668 colones in 1978 (\$267 U.S.).

³ This table is percentaged across.

Table 47: Median, Mean and Per Capita Non-Farm Income of Farm Families with Undernourished Children Classified by Gomez and Waterlow Indices, El Salvador, 1978¹

GOMEZ

Measures	<u>Normal</u> (90 and above)	<u>1st Degree</u> (75-89.9)	<u>2nd and 3rd Degree</u> (less than 75)
Mean	¢3311	¢2357	¢2341
Median	¢2300	¢1545	¢1758
Per Capita	¢ 537	¢ 323	¢ 303
N	265	322	100

WATERLOW

	<u>Normal</u>	<u>Acute and</u> <u>Chronic</u>
Mean	¢3076	¢2092
Median	¢1986	¢1542
Per Capita	¢477	¢308
N	440	247

Table 48: Net Farm Income Per Capita and Net Farm Income Per Hectare in Colonias by Families with Children Classified by Gomez and Waterlow Indices, El Salvador, 1978¹

	<u>GOMEZ</u>		
	<u>Normal</u> (90 and above)	<u>1st Degree</u> (75-89.9)	<u>2nd and 3rd Degree</u> (less than 75)
Net Farm Income Per Capita ²	¢329	¢367	¢532
Net Farm Income Per Hectare ²	¢1033	¢895	¢956
N ³	121	178	48

	<u>WATERLOW</u>	
	<u>Normal</u>	<u>Acute and Chronic</u>
Net Farm Income Per Capita ²	¢414	¢318
Net Farm Income Per Hectare ²	¢875	¢1132
N ³	217	130

¹ Excludes the metropolitan area of San Salvador.

² (¢2.5 = \$1.00 U.S.).

³ Table includes only those families who received farm income.

Table 49: Net Non-Farm Income Per Capita in Colones by Families with Undernourished Children Classified by Gomez and Waterlow Indices, El Salvador, 1978¹

	<u>GOMEZ</u>			<u>WATERLOW</u>	
	<u>Normal</u> (90 and above)	<u>1st Degree</u> (75-89.9)	<u>2nd and 3rd Degree</u> (less than 75)	<u>Normal</u>	<u>Acute and Chronic</u>
Net Non-Farm Income Per Capita ²	¢524	¢352	¢342	¢477	¢308
N ³	123	180	49	218	134

¹ Excludes the metropolitan area of San Salvador.

² (¢2.5 colones = \$1.00 U.S. dollar).

³ Includes all families with children 6 to 59 months. Non-Farm equals total family income minus farm income.

Table 50: Per Capita Income, Mean and Median Family Income by Households With Women Employed and By Families with Undernourished Children Classified by Gomez and Waterlow, El Salvador, 1978¹

	<u>Normal</u> (90 and over)		<u>GOMEZ</u> <u>1st Degree</u> (75 - 89.9)		<u>2nd & 3rd Degree</u> (less than 75)	
	No Women Employed	Women Employed	No Women Employed	Women Employed	No Women Employed	Women Employed
	Per Capita Income ²	¢530	¢947	¢487	¢703	¢491
Mean	¢3400	¢5887	¢3196	¢4972	¢3223	¢6354
Median	¢2315	¢4275	¢2014	¢3389	¢2039	¢3196
N	163	102	219	102	71	29

WATERLOW

	<u>Normal</u>		<u>Acute and Chronic</u>	
	No Women Employed	Women Employed	No Women Employed	Women Employed
Per Capital Income ²	¢560	¢912	¢408	¢656
Mean	¢3584	6122	2731	¢4482
Median	¢2362	¢4200	¢1832	¢3124
N	288	151	165	82

¹ Excludes the metropolitan area of San Salvador.

² ¢2.5 colones = \$1.00 U.S. dollar.

Table 51: Per Capita Income, Mean and Median Family Income by Sex of Head of Household and Families with Undernourished Children Classified by Gomez and Waterlow Indices, El Salvador, 1978¹

	<u>Normal</u> (90 and over)		<u>GOMEZ</u> <u>1st Degree</u> (75 - 89.9)		<u>2nd & 3rd Degree</u> (less than 75)	
	Male HH	Female HH	Male HH	Female HH	Male HH	Female HH
Per Capita Income ²	¢691	¢670	¢528	¢723	¢616	¢504
Mean	¢4493	¢3741	¢3602	¢4506	¢4222	¢2542
Median	¢2816	¢2646	¢2508	¢2124	¢3392	¢1461
N	217	48	265	56	89	11

WATERLOW

	<u>Normal</u>		<u>Acute and Chronic</u>	
	Male HH	Female HH	Male HH	Female HH
Per Capita Income ²	¢659	¢844	¢501	¢446
Mean	¢4378	¢4873	¢3416	¢2847
Median	¢2786	¢2628	¢2265	¢1867
N	369	70	202	45

¹ Excludes the metropolitan area of San Salvador.

² ¢2.5 colones = \$1.00 U.S. dollar.

Table 52: Source of Employment for Households by Families with Normal, Underweight, Acute Undernourished Children, El Salvador, 1978¹

<u>Source of Employment</u> ³	<u>Total</u> ²		<u>Normal</u>		<u>Underweight</u>		<u>Acute Undernutrition</u>	
	N	%	N	%	N	%	N	%
Total	687	100.0	265	100.0	422	100.0	100.0	100.0
Agricultural Workers	244	35.4	76	28.7	168	39.8	44	44.0
Farm Families	148	21.5	48	18.1	100	23.7	18	18.0
Farm Families with Non-Agricultural Employment	164	23.8	73	27.5	91	21.6	23	23.0
Non-Agricultural Families	131	19.0	68	25.7	63	14.9	15	15.0

¹ Excludes the metropolitan area of San Salvador.

² Table is percentaged down.

³ Principal source of employment was assigned to each household by determining the percentage contribution to income from agricultural labor, family and non-agricultural employment.

Table 53: Families with Normal, Underweight, Acute Undernourished Children by Source of Employment for Households, El Salvador, 1978¹

<u>Source of Employment</u> ³	<u>Total</u> ²		<u>Normal</u>		<u>Underweight</u>		<u>Acute Undernutrition</u>	
	N	%	N	%	N	%	N	%
Agricultural Workers	244	100.0	76	31.2	168	68.8	44	18.0
Farm Families	148	100.0	48	32.4	100	67.6	18	12.2
Farm Families with Non-Agricultural Employment	164	100.0	73	44.5	91	55.5	23	14.0
Non Agricultural Families	131	100.0	68	51.9	63	48.1	15	11.5

¹ Excludes the metropolitan area of San Salvador.

² Table is percentaged across.

³ Principal source of employment was assigned to each household by determining the percentage contribution to income from agricultural labor, family and non-agricultural employment.

Table 54: Type of Employment of Heads of Household and Sex by Families with Undernourished Children Classified by Gomez and Waterlow Indices, El Salvador, 1978¹

Type of Employment ²	Total				GOMEZ Subtotal															
	Male		Female		Normal (90 and above)				Undernutrition (less than 90)				1st Degree (75-89.9)		2nd & 3rd Degree (less than 75)					
	HH	N %	HH	N %	Male HH	Female HH	Male HH	Female HH	Male HH	Female HH	Male HH	Female HH	Male HH	Female HH	Male HH	Female HH				
Agricultural Employment (Farmers & Farm Employees)	239	49.9	15	13.0	114	52.5	7	14.6	225	49.0	8	11.9	171	64.3	7	12.5	54	60.7	1	9.1
Combination of Agricultural and Non-Agricultural Employment/Family Business	40	8.4	5	4.3	12	5.5	3	6.2	28	11.0	2	3.0	18	6.8	1	1.8	10	11.2	1	9.1
Non-Agricultural Wage Employment	123	25.7	5	4.3	57	26.3	2	4.2	66	25.9	3	4.5	49	18.4	2	3.6	17	19.1	1	9.1
Family Business	44	9.2	34	29.6	19	8.8	22	45.8	25	9.8	12	17.9	20	7.5	9	16.1	5	9.1	3	27.3
Combination of Non-Agricultural Wage Employment and Family Business	3	.6	-	-	1	.5	-	-	2	.8	-	-	1	.4	-	-	1	1.1	-	-
Not Employed	23	4.8	56	48.7	14	6.4	14	29.2	9	3.5	42	62.7	7	2.6	37	66.1	2	2.2	5	45.4
Total	472	100.0	115	100.0	217	100.0	48	100.0	255	100.0	67	100.0	266	82.6	56	17.4	89	100.0	11	100.0

¹ Excludes the metropolitan area of San Salvador.

² This table is percentaged down.

Table 54 (continued): Type of Employment of Heads of Household and Sex by Families with Undernourished Children Classified by Gomez and Waterlow Indices, El Salvador, 1978¹

Type of Employment ²	WATERLOW							
	Normal				Acute and Chronic			
	Male HH		Female HH		Male HH		Female HH	
	N	%	N	%	N	%	N	%
Agricultural Employment (Farmers & Farm Employees)	210	56.8	10	14.3	129	63.9	5	11.1
Combination of Agricultural and Non-Agricultural Employment/Family Business	21	5.7	3	4.3	19	9.4	2	4.4
Non-Agricultural Wage Employment	90	24.3	2	2.9	33	16.3	3	6.7
Family Business	31	8.4	25	35.7	13	6.4	9	20.0
Combination of Non-Agricultural Wage Employment and Family Business	2	.5	--	--	1	.5	--	--
Not Employed	16	4.3	30	42.9	7	3.5	26	57.8
Total	376	100.0	70	100.0	202	100.0	45	100.0

¹Excludes the metropolitan area of San Salvador.

²This table is percentaged down.

Table 55: Families with Undernourished Children Classified by Gomez and Waterlow Indices by Type of Employment of Heads of Household and Sex, El Salvador, 1978¹

Type of Employment ²	Total				Normal (90 and above)				GOMEZ Subtotal Undernutrition (less than 90)				1st Degree (75-89.9)				2nd and 3rd Degree (less than 75)			
	Male HH		Female HH		Male HH		Female HH		Male HH		Female HH		Male HH		Female HH		Male HH		Female HH	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Agricultural Employment (Farmers & Farm Employees)	239	100.0	15	100.0	114	33.6	7	5.8	225	66.4	8	6.0	171	96.1	7	3.9	54	15.9	1	1.8
Combination of Agricultural and Non-Agricultural Employment/Family Business	40	100.0	5	100.0	12	80.0	3	20.0	28	93.3	2	6.7	18	94.7	1	5.3	10	90.9	1	9.1
Non-Agricultural Wage Employment	123	100.0	5	100.0	57	26.3	2	8.8	66	95.6	3	4.3	49	96.1	2	3.9	17	94.4	1	5.6
Family Business	44	100.0	34	100.0	19	46.3	22	53.7	25	67.6	12	32.4	20	69.0	9	31.0	5	62.5	3	37.5
Combination of Non-Agricultural Wage Employment and Family Business	3	100.0	-	-	1	100.0	-	-	2	100.0	-	-	1	100.0	-	-	1	100.0	-	-
Not Employed	23	100.0	56	100.0	14	50.0	14	50.0	9	17.6	42	82.4	7	15.9	37	84.1	2	28.6	5	71.4
Total	472	100.0	115	100.0	217	37.9	48	18.1	355	79.2	67	20.8	266	82.6	56	17.4	89	15.6	11	1.9

¹ Excludes the metropolitan area of San Salvador.

² This table is percentaged across within separate categories of undernourishment.

Table 55 (continued): Families with Undernourished Children Classified by Gomez and Waterlow Indices by Type of Employment of Heads of Household and Sex, El Salvador, 1978¹

<u>Type of Employment</u> ²	<u>WATERLOW</u>							
	<u>Normal</u>				<u>Acute and Chronic</u>			
	<u>Male</u>		<u>Female</u>		<u>Male</u>		<u>Female</u>	
	<u>HH</u>	<u>HH</u>	<u>HH</u>	<u>HH</u>	<u>HH</u>	<u>HH</u>	<u>HH</u>	<u>HH</u>
<u>N</u>	<u>%</u>	<u>N</u>	<u>%</u>	<u>N</u>	<u>%</u>	<u>N</u>	<u>%</u>	
Agricultural Employment (Farmers & Farm Employees)	210	95.4	10	4.6	129	96.3	5	3.7
Combination of Agricultural and Non-Agricultural Employment/Family Business	21	87.5	3	12.5	19	90.5	2	9.5
Non-Agricultural Wage Employment	90	97.8	2	2.2	33	91.7	3	8.3
Family Business	31	55.4	25	44.6	13	59.1	9	40.9
Combination of Non-Agricultural Wage Employment and Family Business	2	.5	-	-	1	.2	-	-
Not Employed	16	34.8	30	65.2	7	21.2	26	78.8
Total	370	84.1	70	15.9	202	81.8	45	18.2

¹Excludes the metropolitan area of San Salvador.

²This table is percentaged across within separate categories of undernourishment.

Table 56: Type of Employment of All Household Members (14 and over) by Families with Undernourished Children Classified by Gomez and Waterlow Indices, El Salvador, 1978¹

Type of Employment ²	Total		Normal ² (90 and above)		GOMEZ Subtotal Undernutrition (less than 90)		1st Degree (75-89.9)		2nd and 3rd Degree (less than 75)	
	N	%	N	%	N	%	N	%	N	%
Agricultural Employment (Farmers & Farm Employees)	659	30.5	231	27.1	428	32.7	326	32.7	102	32.6
Combination of Agricul- tural and Non-Agricul- tural Employment/ Family Business	58	2.7	16	1.9	42	3.2	27	2.7	15	4.8
Non-Agricultural Wage Employment	275	12.7	138	16.2	137	10.5	105	10.5	32	10.2
Family Business	200	9.3	90	10.6	110	8.4	79	7.9	31	9.9
Combination of Non- Agricultural Wage Employment and Family Business	7	.3	4	.5	3	.2	1	.1	2	.6
Not Employed	961	44.5	372	43.7	589	45.0	458	46.0	131	41.9
Total	2160	100.0	851	100.0	1309	100.0	966	100.0	313	100.0

¹Excludes the metropolitan area of San Salvador.

²This table is percentaged down.

Table 56 (continued): Type of Employment of all Household Members (14 and over) by Families with Undernourished Children Classified by Gomez and Waterlow Indices, El Salvador, 1978¹

Type of Employment ²	WATERLOW			
	Normal N	%	Acute and Chronic N	%
Agricultural Employment (Farmers & Farm Employees)	410	28.9	249	33.6
Combination of Agricul- tural and Non-Agricul- tural Employment/				
Family Business	27	1.9	31	4.2
Non-Agricultural Wage Employment	206	14.5	69	9.3
Family Business	129	9.1	71	9.6
Combination of Non- Agricultural Wage Employment and				
Family Business	5	.4	2	.3
Not Employed	641	45.2	320	43.1
Total	1418	100.0	742	100.0

¹ Excludes the metropolitan area of San Salvador.

² This table is percentaged down.

Table 57: Families with Undernourished Children Classified by Gomez and Waterlow Indices 14 years or older by Type of Employment of All Household Members, El Salvador, 1978¹

Type of Employment ²	Total		Normal (90 and above)		GOMEZ Subtotal Undernutrition (less than 90)		1st Degree (75-89.9)		2nd and 3rd Degree (less than 75)	
	N	%	N	%	N	%	N	%	N	%
Agricultural Employment (Farmers & Farm Employees)	659	100.0	231	35.0	428	65.0	326	49.5	102	15.5
Combination of Agricul- tural and Non-Agricul- tural Employment/ Family Business	58	100.0	16	27.6	42	72.4	27	46.5	15	25.9
Non-Agricultural Wage Employment	275	100.0	138	50.2	137	49.8	105	38.2	32	11.6
Family Business	200	100.0	90	45.0	110	55.0	79	39.5	31	15.5
Combination of Non- Agricultural Wage Employment and Family Business	7	100.0	4	57.1	3	42.9	1	14.3	2	28.6
Not Employed	961	100.0	372	38.7	589	61.3	458	46.7	131	13.6
Total	2160	100.0	851	39.4	1309	60.6	996	46.1	313	14.5

¹Excludes the metropolitan area of San Salvador.

² This table is percentaged across.

Table 57 (continued): Families with Undernourished Children Classified by Gomez and Waterlow Indices 14 years or older by Type of Employment of All Household Members, El Salvador, 1978¹

Type of Employment ²	WATERLOW			
	Normal N	%	Acute and Chronic N	%
Agricultural Employment (Farmers & Farm Employees)	410	62.2	249	37.8
Combination of Agricul- tural and Non-Agricul- tural Employment/ Family Business	27	46.6	31	53.4
Non-Agricultural Wage Employment	206	74.9	69	25.1
Family Business Combination of Non- Agricultural Wage Employment and	129	64.5	71	35.5
Family Business	5	71.4	2	28.6
Not Employed	641	66.7	320	33.3
Total	1418	65.6	742	34.4

¹ Excludes the metropolitan area of San Salvador.

² This table is percentaged across.

Table 58: Mean Number of Family Members Employed Above and Below Median Family Size by Families with Undernourished Children Classified by Gomez and Waterlow Indices, El Salvador, 1978¹

	<u>GOMEZ</u>			<u>WATERLOW</u>	
	<u>Normal</u> (90 and above)	<u>1st Degree</u> (75-89.9)	<u>2nd and 3rd Degree</u> (less than 75)	<u>Normal</u>	<u>Acute and Chronic</u>
Mean Number of Family Members Employed in Families That Have More Than 6.0 Members	2.1	3.5	4.3	2.8	2.5
Mean Number of Family Members Employed in Families That Have Less Than 6.0 Members	2.2	2.0	2.3	1.6	1.7
N	255	315	99	238	190

¹ Excludes the metropolitan area of San Salvador.

Table 59: Classification of Families Potentially Affected and Non-Affected by Phase I of the Agrarian Reform by Families with Undernourished Children Classified by Gomez and Waterlow Indices, El Salvador, 1978¹

	<u>Total</u>		<u>Normal²</u> (90 or above)		<u>GOMEZ Subtotal</u> <u>Undernutrition</u> (less than 90)		<u>1st Degree</u> (75 -89.9)		<u>2nd and 3rd Degree</u> (less than 75)	
	N	%	N	%	N	%	N	%	N	%
	Total	687	100.0	265	100.0	422	100.0	322	100.0	100
Potentially Affected ³	45	6.6	24	9.1	21	5.0	15	4.7	6	6.0
Non-Affected ⁴	199	29.0	52	19.6	147	34.8	109	33.8	38	38.0
Farm Families ⁵	148	21.5	48	18.1	100	23.7	82	25.5	18	18.0
Farm Families with Non-Farm Employment ⁶	164	23.9	73	27.5	91	21.6	68	21.1	23	23.0
Non-Agricultural Families ⁷	131	19.1	68	25.7	63	14.9	48	14.9	15	15.0

¹ Excludes the metropolitan area of San Salvador.

² This table is percentaged down.

³ Potentially Affected Phase I Families - If at least one family member works on an expropriated farm then the family is defined as a potentially affected Phase I household.

⁴ Families Who Are Agricultural Workers But Not Affected by Phase I - No family member worked on an expropriated farm or intervened farm and at least one family member worked as an agricultural employee.

⁵ Families Who Are Full-Time Farmers - At least one family member identified himself/herself as a farmer and identified no other employment and other family members did not identify employment outside farming.

⁶ Farm Families With Non-Farm Employment - If any family member identified self as farmer and also identified other type of employment (wage or family business) or one family member identified self as farmer and other family members identified non-farm wage or family employment.

⁷ Families With Non-Farm Employment and/or Small Family Business - All family members identified themselves as wage employees and/or owners of a family business. This category does not contain anyone with agricultural employment either an owner of a farm or as a worker on a farm.

Table 60: Families with Undernourished Children Classified by Gomez and Waterlow Indices by Classification of Families Potentially Affected and Non-Affected by Phase I of the Agrarian Reform, El Salvador, 1978¹

Potentially Affected ³	Total ²		Normal (90 or above)		GOMEZ Subtotal Undernutrition (less than 90)		1st Degree (75-89.9)		2nd and 3rd Degree (less than 75)	
	N	%	N	%	N	%	N	%	N	%
Potentially Affected ³	45	100.0	24	55.3	21	44.7	15	33.3	6	13.3
Non-Affected ⁴	199	100.0	52	26.1	147	73.9	109	54.8	38	19.1
Farm Families ⁵	148	100.0	48	32.4	100	67.6	82	55.4	18	12.2
Farm Families with Non-Farm Employment ⁶	164	100.0	73	44.5	91	55.5	68	41.5	23	14.0
Non-Agricultural Families ⁷	131	100.0	68	52.0	63	48.0	48	36.6	15	11.4

¹ Excludes the metropolitan area of San Salvador.

² This table is percentaged across.

³ Potentially Affected Phase I Families - If at least one family member works on an expropriated farm then the family is defined as a potentially affected Phase I household.

⁴ Families Who Are Agricultural Workers But Not Affected by Phase I - No family member worked on an expropriated farm or intervened farm and at least one family member worked as an agricultural employee.

⁵ Families Who Are Full-Time Farmers - At least one family member identified himself/herself as a farmer and identified no other employment and other family members did not identify employment outside farming.

⁶ Farm Families With Non-Farm Employment - If any family member identified self as farmer and also identified other type of employment (wage or family business) or one family member identified self as farmer and other family members identified non-farm wage or family employment.

⁷ Families With Non-Farm Employment and/or Small Family Business - All family members identified themselves as wage employees and/or owners of a family business. This category does not contain anyone with agricultural employment either an owner of a farm or as a worker on a farm.

Table 61: Owners, Renters, Land-to-Tiller and Mixed Forms by Families with Undernourished Children Classified by Gomez and Waterlow Indices, El Salvador, 1978¹

<u>Tenure Category</u> ²	<u>Total</u>		<u>Normal (90 and above)</u>		<u>GOMEZ Subtotal Undernutrition (less than 90)</u>		<u>1st Degree (75-89.9)</u>		<u>2nd and 3rd Degree (less than 75)</u>	
	N	%	N	%	N	%	N	%	N	%
Total ³	345	100.0	119	100.0	226	100.0	179	100.0	49	100.0
Owners	146	42.3	55	46.2	91	40.2	72	40.2	19	38.8
Land-to-Tiller	150	43.5	45	37.8	105	46.5	82	45.8	23	46.9
Renters	127	36.8	39	32.7	88	38.9	71	39.7	17	34.7
Mixed Forms ⁴	49	14.1	19	16.0	30	13.2	23	12.8	7	14.3

WATERLOW

<u>Tenure Category</u> ²	<u>Normal</u>		<u>Acute and Chronic</u>	
	N	%	N	%
Total ³	215	100.0	130	100.0
Owners	92	42.2	54	41.7
Land-to-Tiller	96	44.5	54	41.7
Renters	83	39.8	44	33.3
Mixed Forms ⁴	27	13.3	22	16.7

¹ Excludes the metropolitan area of San Salvador.

² See Appendix III for a description of the composition of these categories.

³ This table is percentaged down.

⁴ This category is not mutually exclusive.

Table 62: Families with Undernourished Children Classified by Gomez and Waterlow Indices by Owners, Renters, Land-to-Tiller and Mixed Forms, El Salvador, 1978¹

<u>Tenure Category</u> ²	<u>Total</u>		<u>Normal</u> ³ (90 and above)		<u>GOMEZ Subtotal</u> <u>Undernutrition</u> (less than 90)		<u>1st Degree</u> (75-89.9)		<u>2nd and 3rd Degree</u> (less than 75)	
	N	%	N	%	N	%	N	%	N	%
Total	345	100.0	119	34.5	226	65.5	179	51.6	49	14.2
Owners	146	100.0	55	37.7	91	62.3	72	49.3	19	13.0
Land-to-Tiller	150	100.0	45	30.0	105	70.0	82	54.7	23	15.3
Renters	127	100.0	39	30.7	88	69.3	71	55.9	17	13.4
Mixed Forms ⁴	49	100.0	19	38.8	30	61.2	23	46.9	7	14.3

<u>Tenure Category</u> ²	<u>WATERLOW</u>			
	<u>Normal</u>		<u>Acute and Chronic</u>	
	N	%	N	%
Total	215	62.3	130	37.7
Owners	92	62.6	54	37.4
Land-to-Tiller	96	63.8	54	36.2
Renters	83	65.9	44	34.1
Mixed Forms ⁴	27	56.9	22	43.1

¹ Excludes the metropolitan area of San Salvador.

² See Appendix III for a description of the composition of these categories.

³ This table is percentaged across.

⁴ This category is not mutually exclusive.

Table 63: Frequency of Diarrhea by Children 6 to 59 months Classified By Gomez and Waterlow Indices of Undernutrition, El Salvador, 1978¹

	<u>GOMEZ</u>									
	<u>Total</u>		<u>Normal</u> (90 and above)		<u>Subtotal</u> <u>Undernutrition</u> (less than 90)		<u>1st Degree</u> (75-89.9)		<u>2nd and 3rd Degree</u> (less than 75)	
	N ³	%	N	%	N	%	N	%	N	%
Total ²	1101	100.0	525	100.0	576	100.0	437	100.0	139	100.0
Less than 4 times a day	896	81.4	444	84.6	452	78.5	362	40.4	90	64.7
More than 4 times a day	185	16.8	71	13.4	114	20.0	69	37.0	45	32.4
Don't know	20	1.8	10	2.0	10	1.5	6	30.0	4	2.9

	<u>WATERLOW</u>			
	<u>Normal</u>		<u>Acute and Chronic</u>	
	N	%	N	%
Total ²	654	100.0	447	100.0
Less than 4 times a day	558	85.3	338	75.6
More than 4 times a day	86	13.1	99	22.1
Don't know	10	6.1	10	2.2

¹ Excludes the metropolitan area of San Salvador.

² Six households did not report the frequency of diarrhea (one classified as normal, three as chronic and 2 as acute).

³ Children of maids and servants excluded for this analysis.

Table 64: Children 6 to 59 Months Classified by the Gomez and Waterlow Indices of Undernutrition, El Salvador, 1978¹

	<u>GOMEZ</u>									
	<u>Total</u> ²		<u>Normal</u> (90 and above)		<u>Subtotal</u> <u>Undernutrition</u> (less than 90)		<u>1st Degree</u> (75-89.9)		<u>2nd and 3rd Degree</u> (less than 75)	
	N ³	%	N	%	N	%	N	%	N	%
Total	1101	100.0	525	47.7	576	52.3	437	39.7	139	12.6
Less than 4 times a day	896	100.0	444	49.6	452	50.4	362	40.4	90	10.0
More than 4 times a day	185	100.0	71	38.1	114	61.9	69	37.0	45	24.9
Don't know	20	100.0	10	50.0	10	50.0	6	30.0	4	20.0

	<u>WATERLOW</u>			
	<u>Normal</u>		<u>Acute and Chronic</u>	
	N	%	N	%
Total	654	59.4	447	40.6
Less than 4 times a day	558	62.3	338	37.7
More than 4 times a day	86	46.5	99	53.5
Don't know	10	50.0	10	50.0

* This table is percentaged across.

¹ Excludes the metropolitan area of San Salvador.

² Six households did not report the frequency of diarrhea.

³ Children of maids and servants excluded from this analysis.

Table 65: Sex of Children Age 6 Months to 59 Months Classified by the Gomez and Waterlow Indices of Undernutrition, El Salvador, 1978¹

<u>Sex</u>	<u>GOMEZ</u>									
	<u>Total</u> ²		<u>Normal</u> (90 and above)		<u>Subtotal Undernutrition</u> (less than 90)		<u>1st Degree</u> (75-89.9)		<u>2nd and 3rd Degree</u> (less than 75)	
	<u>N</u> ³	<u>%</u>	<u>N</u>	<u>%</u>	<u>N</u>	<u>%</u>	<u>N</u>	<u>%</u>	<u>N</u>	<u>%</u>
Total	1127	100.0	535	100.0	592	100.0	454	40.3	138	100.0
Male	556	49.3	243	43.7	313	56.3	236	42.4	77	13.8
Female	571	50.7	292	51.1	279	48.9	218	38.2	61	10.7

<u>Sex</u>	<u>WATERLOW</u>			
	<u>Normal</u>		<u>Acute and Chronic</u>	
	<u>N</u>	<u>%</u>	<u>N</u>	<u>%</u>
Total	669	100.0	458	100.0
Male	324	48.4	232	50.6
Female	345	51.6	226	49.4

¹ Excludes the metropolitan area of San Salvador.

² This table is percentaged down.

³ Children of maids and servants are included in this analysis.

APPENDIX II

OPERATIONALIZATION OF LEVEL OF LIVING INDEX

A number of studies in the so-called "developed" countries have demonstrated that housing quality is closely tied to the socioeconomic status of the household (see Edmonston 1975 for a review of these studies). There appears, however, to be little consensus on the appropriate measures that adequately characterize a household as being above or below some minimal standard of living. Certain regularities do appear throughout the literature, however. That is, any operationalization of level of living should contain at the minimum: 1) certain structural features of the house and 2) the availability of some minimal level of basic services.

The rural Poor Survey provides information on both of these categories. A number of questions examine the materials from which walls, floor covering and roofs were constructed. Walls, floors and roofs were judged to be substandard if they were made from palms or earth, and were scored as 0; concrete, cement, metal, wood or clay were judged to be adequate and were scored 1 (see questionnaire page 2). Data on basic services are drawn from information in the survey on water supply, bath and toilet facilities and availability of electricity in the household. Bath and toilet facilities were judged to be adequate if service was available (private or communal--indoor or outdoor) and scored 1. Households without bath or toilet service were scored 0. Availability of water was measured by two indicators: the location of the water supply (inside or outside the household) and the distance from which the water must be carried to the household. Availability of water was scored 0 if the water source was outside the household and more than 1,000 meters (.57 miles) from the home, 1 if the water source was outside the household but within 1,000 meters (.57 miles) of the household, and 2 if the water source was water that must be carried to the household. Availability of water was scored 0 if the water source was outside the household and more than 1,000 meters (.57 miles) from the home, 1 if the water source was outside the household but within 1,000 meter (.57 miles) of the household, and 2 if the water source was within the household whether it was private or communal.

A Likert-type summation scale was developed such that scores on each of the seven indicators were added with equal weight to provide an index of the level of living. A high level of living was indicated by a high score on the index, with the maximum score being 8. Although a Likert-type scale does not have cumulative-type properties, an examination of the 1,366 households used to construct the Level of Living Index suggests that households who had electricity or bath and toilet facilities were likely to have other structural features that were adequate. Similarly, those households with substandard structural features (i.e., palm walls, floors and roof) are likely not to have minimal services.

From a statistical point of view the scale can be judged acceptable. The coefficient of reliability alpha was quite high (.978) indicating that the index was not bound to this specific sample. Although the number of items on the scale is small statistically, the index adequately characterizes the level of living in El Salvador.

APPENDIX III
OPERATIONALIZATION OF LAND REFORM VARIABLES

1. OWNERS - Contains 314 households. Includes families who indicated that they own land and hold land under no other tenure arrangement. This is a pure category developed to provide a base for comparison of those that potentially are affected by Land Reform, Phase III.

2. RENTERS - Contains 215 households. Includes families who either indicated that they rent land or rent with the option to buy and hold no other land in other tenure arrangement. This is a pure category and constitutes households that potentially may be affected by Phase III. These households are also included in the Land-to-the-Tiller category but the Land-to-the-Tiller category may include households who in addition to being renters may also hold other land in some other tenure arrangement. USAID requested that renter be included in this analysis as a pure category as well as in the Phase III category, Land-to-the-Tiller.

3. "LAND-TO-TILLER" - Contains 259 households. Includes families who either rent and/or rent with option to buy. In addition to households who are only renters this category contains those that rent land and simultaneously hold land under other tenure arrangements (colono, free use, other form and own if less than seven hectare). This category is the major focus of the analysis and is comprised of those who would potentially benefit from the Land Reform, Phase III. Although those households potentially affected by Phase III must be renters the legislation does not exclude households who hold less than seven hectares of land in other forms—hence the "Land-to-the-Tiller" category.

4. OTHER OR MIXED FORMS - Contains 83 households or families. This sub-category includes a variety of land tenure arrangements and represents a fairly heterogeneous group. The households included on this category are as follows: households who hold land in colono status, have free use of land or have land in some other form (i.e., cooperative). Also included are families who hold land in multiple forms except for those which rent or rent with option to buy (These families have been included in Land-to-Tiller Group). This category is mutually exclusive of all other categories, but includes some households who would be eligible for Phase I of the Agrarian Reform. (See Table I)