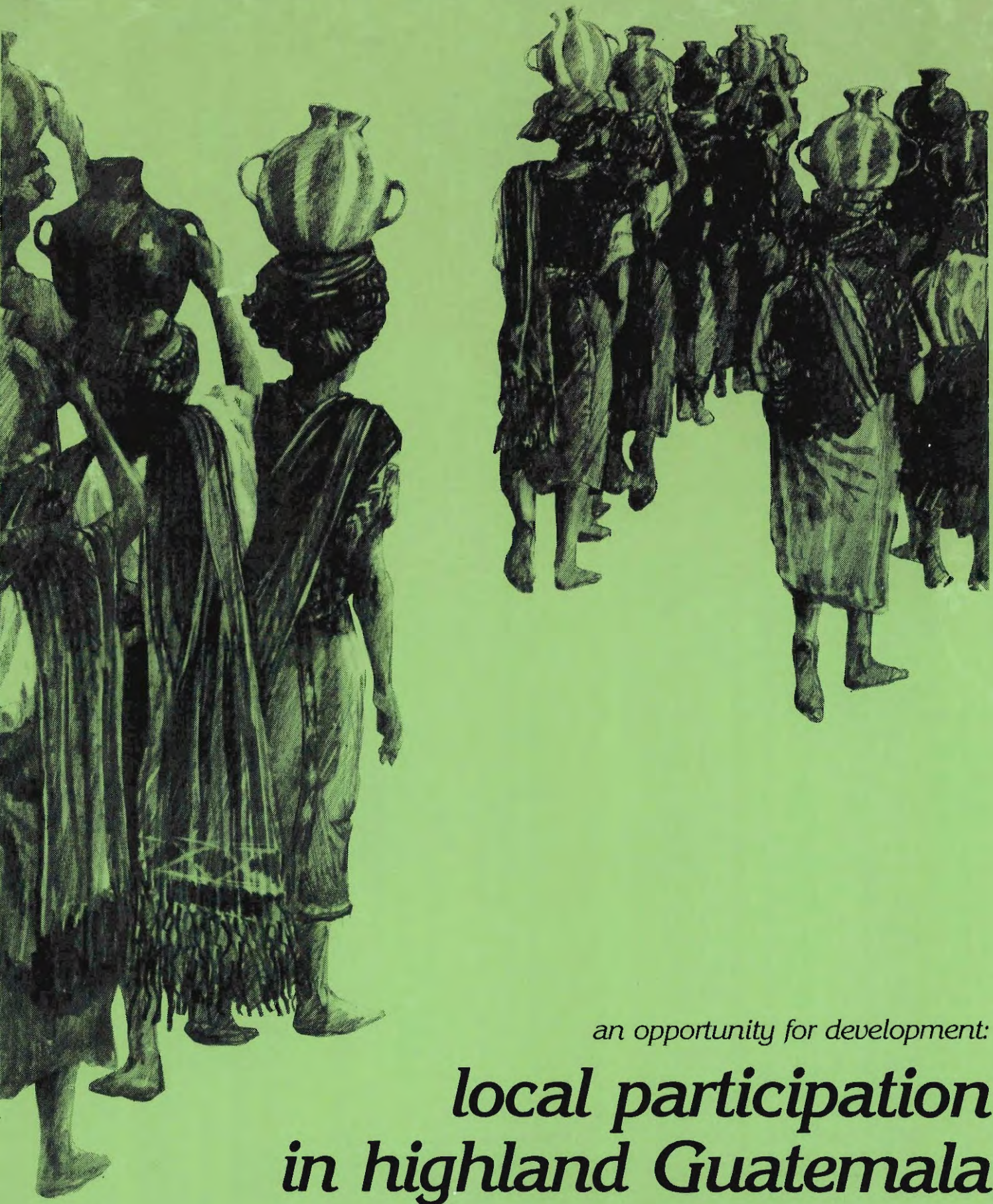

an opportunity for development:

local participation in highland Guatemala

Kay L. Carey and Stephen E. Carey

The cover illustration by David Pavlik of the Iowa State University Media Graphics Department depicts a group of women fetching drinking water for their families, a common sight in the Guatemalan countryside. This daily task occupies a large part of the working time of poor rural women. The water they collect is often impure, causing high levels of waterborne diseases. A potable water supply is the community need most frequently expressed by rural people and community leaders throughout highland Guatemala.

AN OPPORTUNITY FOR DEVELOPMENT: A STUDY OF LOCAL PARTICIPATION IN HIGHLAND GUATEMALA

by

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ABSTRACT

Two regional surveys and a case study reveal that rural people and their community leaders express overwhelming agreement that the basic needs of their communities are potable water, health care, roads, schools and electrical service. Until communities have obtained the infrastructure and services necessary to meet these five basic needs, there is little interest in other infrastructure and services. Ad hoc groups of community leaders (consisting of such people as mayors or assistant mayors, school teachers, public health nurses, leaders of community improvement committees, etc.) are found to very accurately report the people's expressed needs for community infrastructure and services.

The findings indicate that local people, working primarily through community organizations, are very active in all stages of community development projects in rural highland Guatemala. Agencies sponsoring development projects to bring the five basic services to communities in this area can expect a great deal of cooperation from the local people. This situation, if wisely exploited, affords an excellent, cost-effective opportunity to bring about rapid and widespread improvement in the quality of life of the rural poor in the Guatemalan highlands.

FOREWORD

We would like to use this foreword to discuss our work as local participation advisors for the Integrated Area Development Studies project from a somewhat personal perspective before proceeding with our formal report. We were employed jointly to fill the position of Local Participation Advisor, with responsibility for providing technical assistance to the Guatemalan team assigned to carry out the local participation study, referred to in the contract as Activity One. Our work was divided into two stages. The first consisted of the design of the local participation study and data gathering, and took place in Guatemala from October 15, 1979 to September 15, 1980. The second stage comprised the data analysis and report writing, and took place in Iowa between November 1, 1980 and September 30, 1981.

We arrived in Guatemala with our two year old daughter Sarah in October of 1979. After familiarizing ourselves with our new environment and establishing working relationships with our Guatemalan colleagues, we set about the task of designing a study to investigate local participation as outlined in the project grant agreement.

During the early part of our work in Guatemala, we endeavored to familiarize ourselves with the general cultural,

social, economic and political situation in the country. We read the Guatemalan daily newspapers as well as a number of books and articles recommended by Guatemalan friends and colleagues in order to better understand the current Guatemalan sociopolitical situation in historical perspective. We talked with a number of professionals knowledgeable about the role of local participation in past and current development efforts in Guatemala. We tried to become as informed as possible about the history and current situation of the area in which the study was to be conducted.

It soon became apparent that due to financial limitations and the sociopolitical situation, the original plan to conduct a series of experiments in local participation in twenty or more rural highland communities was not feasible.

Therefore, our first task was to refocus and redesign the local participation study. Our work was hampered by the fact that we did not have a Guatemalan counterpart to work with us until April, 1980. Thus, during the time decisions were being made about the new directions of Activity One and while the study was being designed, we functioned not as technical advisors but as the persons responsible for carrying out the tasks necessary to get Activity One underway.

Specific tasks we completed during this period included deciding on the new direction Activity One should take (with much consultation with Guatemalan and North American colleagues); designing the local participation field studies;

and writing sets of survey questions concerning local participation to be included in an infrastructure survey, an agricultural production survey, and a transportation survey, all of which were components of the Integrated Area Development Study project. During this period we also wrote the codebook for the infrastructure survey, trained the coders in coding procedures and use of the codebook, and helped set up the data entry system. We also spent some time consulting with agricultural production survey personnel about data gathering and recording procedures which would facilitate computer-assisted statistical analysis of the data.

In April, 1980, we began to work with our Guatemalan counterpart who had been assigned responsibility for directing the local participation study. We collaborated with him on the final form of research instruments for the case studies and on the selection of specific projects to study. He was responsible for the actual data gathering phase of all three field studies, although we actively participated in the first two studies and the agency survey that preceded them.

By September, 1980, fieldwork for the first two case studies had been completed, and data from other sources were being gathered or processed. Our Guatemalan counterpart had assumed responsibility for carrying out the third field study while we designed and carried out the analysis of Activity One data gathered from the several surveys and the

field studies. It was at this point that we returned to Iowa State University, where the data analysis and report writing were carried out.

At this time we would like to thank a number of persons without whose help this study could not have been completed. We would like to acknowledge, first of all, our debt to our Guatemalan counterpart and the rest of the Activity One team. Also, we want to thank the entire Guatemalan staff of this project for their cooperation and friendship during the time we worked with them. The coordinators of the three surveys were most cooperative in allowing us to incorporate local participation questions into their interview schedules. We would like to thank our Iowa State colleagues who have worked on the project in various capacities. They provided helpful advice throughout this study. We also want to thank the friends and neighbors who helped make our time in Guatemala enjoyable and rewarding.

We want to express special appreciation to a few friends and colleagues who assisted in the preparation of this manuscript. Earl Morris, Mike Whiteford, Mary Winter and Jerry Knox critiqued this paper in its initial stages and made a number of suggestions that greatly improved the finished report. Needless to say, the errors that remain are ours. We want to thank Julia Alesii, who translated the report into Spanish, and Teresa de Ibanez, who typed the Spanish version for the exceptionally good job they both did.

Finally we want to express our thanks to the rural people of highland Guatemala who graciously gave of their time and energy to answer the many questions we asked them. We hope that this report will contribute to the project objective of improving the quality of their lives.

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PART III -- ANALYSIS OF PARTICIPATION PATTERNS

PART V -- CONCLUSION

PART I

AN INTRODUCTION TO THE LOCAL PARTICIPATION STUDY

Chapter 1

AN OVERVIEW OF THE LOCAL PARTICIPATION STUDY

This paper is our final report as local participation advisors for the Integrated Area Development Studies project delineated in the Project Grant Agreement for Project #520-0249, as signed by the government of Guatemala and the United States Agency for International Development. The technical assistance for the project was contracted to Iowa State University, under whose auspices we were employed. The contractual objective of the Integrated Area Development Studies project was

> the development and execution of a systematic planning methodology, at the level of the municipality and its subdivisions, [which] will be used to determine needs and assign priorities for economic and social infrastructure and services. The results of the project will contribute to improving the quality of life and increasing the incomes of the rural poor through improvements in planning of public investments in infrastructure and services. (Project Grant Agreement, pp. 1-2)

To meet this objective, the project grant agreement called for:

1. Study One, an inventory of available infrastructure and services, and definition of a rural/urban hierarchy in a study area comprised of 206 municipalities in highland Guatemala.

2. Study Two, an inventory of the natural resource base and a determination of its agricultural potential for each location in the study area.
3. Study Three, a survey of the patterns of access, travel, and the movement of goods for households in three subregions of the study area.
4. Activity One, a study of local participation in development projects within the study area.
5. Activity Two, establishment of an information center or data bank consisting of the materials compiled during the project and development of a planning methodology to determine investment priorities for infrastructure and services in highland Guatemala.

The General Secretariat of the National Economic Planning Council of Guatemala was responsible for direction of the overall project and the administrative arrangements for its implementation. Specific responsibility for carrying out Studies One and Three and Activity One was given to the Institute of Municipal Development (INFOM), while the Ministry of Agriculture was responsible for Study Two. The National Planning Council, with the participation of INFOM and the Ministry of Agriculture, was responsible for preparing a planning methodology based upon the data gathered in the project and for consolidating those data in a data bank (i.e., Activity Two). Iowa State University was to provide technical assistance to the Guatemalan agencies responsible for each study and activity.

1.1 THE ORIGINAL FOCUS

The project grant agreement for the Integrated Area Development Studies project required that a local participation component be included in the project. The ultimate goal of the local participation activity was to determine ways in which local participation could be effectively incorporated by Guatemalan and international agencies in rural development projects in the Guatemalan highlands. This local participation component (Activity One) was originally defined in the contract as a series of experiments in local participation which would evaluate the relative effectiveness and efficiency of different methods of incorporating local participation in the development process.

1.2 REDEFINING THE FOCUS

A number of factors contributed to a decision to change the focus of Activity One from that originally presented in the Contract.

1. The sociopolitical situation in Guatemala was very tense, and political violence was increasing throughout the country. Given the potential danger to reasearchers and informants, it seemed a poor time to "experiment" with so politically sensitive a topic as local participation in the Guatemalan countryside.
2. Although the project grant agreement mentioned twenty or more local participation experiments to be con-

ducted throughout the study area, in fact, when we arrived in Guatemala we found that no teams of researchers had been hired to conduct these studies, nor were there plans to allocate project resources in this way.

3. Finally, the Integrated Area Development Studies project was to produce a data bank and a planning methodology that would assist planners in the selection of future development projects in Guatemala, but no specific development projects were to be undertaken in conjunction with the study. Thus, it would be impractical to attempt "experiments" with different ways of eliciting and facilitating local participation in development projects, as no projects were to be carried out.

It was decided that conducting a series of experiments in local participation was not feasible at that time. Thus, it became necessary to design a new approach that would meet the objectives of Activity One as outlined in the contract:

1. "Elicit in a sensitive manner the expressions of the population regarding their preferences, needs and priorities."
2. "Test the relative effectiveness and efficiency of alternative methods of soliciting local participation."

3. "Compare the expressions of local perceptions and planning proposals based on technical criteria."
4. "Synthesize community preferences and technical planning recommendations into a common set of feasible and desirable investments ranked by priority."
5. "Educate the community so that their expressions of felt needs are constrained to the general realm of feasibility." (Taken from Annex to Project Grant Agreement for Project #520-0249, pg. 18.)

In order to meet these objectives, a framework was developed which included both regional (macro-level) surveys and in-depth (micro-level) case studies. Regional survey data, collected at the community level, were organized so that they could be aggregated and disaggregated for analysis of participatory phenomena at the municipal, departmental or regional level, or other sub-regional levels as determined by the needs of the user. Case study data organized as case histories were to provide an in-depth look at the local participation process within specific development projects.

1.2.1 REGIONAL SURVEY DATA

The surveys proposed to gather data for Studies One and Three of this project offered an opportunity to gather macro-level data relevant to the objectives of the local participation study and within the existing structure of the overall project. Local participation questions were incor-

porated into the interview schedules for the leaders survey (Study One) and the individuals survey (Study Three). Two different sets of macro-level analyses were developed to study: 1) patterns of community needs and priorities as perceived by local people, and 2) patterns of participation in development projects.

1.2.1.1 COMMUNITY NEEDS AND PRIORITIES

Community needs and priorities were obtained by asking respondents of the leaders survey (Study One) and the individuals survey (Study Three) to name their communities' three most urgent needs. Reported needs were examined in light of actual levels of access to infrastructure and services available in the communities (as determined in the leaders survey). This analysis is presented in Part II of this report.

1.2.1.2 PATTERNS OF PARTICIPATION

To study patterns of participation respondents in both the leaders and individuals surveys were asked which functional categories of potential participants (both from within and from outside the community) had participated in different phases of recent community development projects. These respondents were also asked which categories of potential participants should participate in different phases of development projects.

Six functional categories of potential participants were identified.

1. Community leaders
2. Community organizations
3. Community members (i.e., residents of the community who were neither leaders nor affiliated with organized groups)
4. The municipal government
5. Guatemalan government institutions
6. Non-profit organizations (both Guatemalan private agencies and international organizations)

The first three categories were classified as groups from within the community; the last three, as groups from outside the community.

Four distinct phases of project development in which participation might occur were identified.

1. Selection
2. Planning
3. Execution
4. Evaluation

The study of participation patterns investigated 1) which categories of potential participants took part in each phase of development projects, and 2) which categories of participants should ideally take part in each phase of projects. These patterns of actual and ideal participation are discussed in Part III.

1.3 CASE STUDY DATA

Three field studies to examine the process of local participation within specific development projects were carried out by Activity One personnel. The nature of the participation process was studied and factors that might influence participation were identified. The research instruments designed for the field studies incorporated many ideas developed by John Cohen and Norman Uphoff of the Rural Development Committee of Cornell University in Rural Development Participation: Concepts and Measures for Project Design, Implementation and Evaluation (1977). A case history based on the first of these three field studies is presented in Part IV.

1.4 THE DATA SOURCES FOR ACTIVITY ONE

This section presents a description of the four local participation data sources.

1.4.1 SURVEY OF LOCAL LEADERS

The primary data gathering instrument for Study One was an interview schedule designed to inventory available infrastructure and services and to collect data necessary to define a rural/urban hierarchy in highland Guatemala. Interviews were conducted with ad hoc groups of local leaders and officials in 1987 communities. These groups consisted of such people as mayors or assistant mayors, school teach-

ers, public health nurses, leaders of community improvement committees, etc. The sample of communities included 100 percent of all communities in the study area with a population of 500 or more, and 15 percent of all communities with a population under 500.

Community leaders were administered a lengthy questionnaire that sought information about goods and services available in their communities, and where community residents acquired those goods and services not available locally. Appended to the interview schedule was a section of questions concerning local participation. Information was sought about the following topics: 1) community development projects that had been carried out in the community in the past two years, and the type and level of local participation in these projects; 2) the leaders' priorities for future development projects needed by their communities; 3) the leaders' opinions concerning the role local participation should play within development projects; 4) an assessment of the benefits and problems of local participation within projects carried out in the officials' communities.

1.4.2 AGRICULTURAL PRODUCTION SURVEY

Study Two incorporated a number of different activities designed to gather information about land use patterns and potentialities in the study region. Among these activities was a survey of 398 farmers with small and medium-sized land

holdings in 26 municipalities. The informants in this survey were questioned about agricultural productivity and agricultural practices. A small section of questions relevant to Activity One was appended to this questionnaire.

In the local participation section informants were asked a series of questions requesting basic socioeconomic and demographic information: age, sex, occupation, literacy, etc. They were also asked if they had participated in an agricultural project during the past two years. Those who had participated in projects were asked for more information about their participation history, including how they became involved in the project, the nature of their participation, and benefits received.

1.4.3 SURVEY OF INDIVIDUALS

Study Three was based on interviews with a stratified random sample of individuals from 314 households from 94 communities in three subregions of the altiplano to investigate access, travel and movement of goods. The ninety-four communities are a subsample of the communities surveyed in Study One. The local participation questions appended to the Study One interview schedule were repeated in the Study Three interview schedule. That is, each respondent was asked about: 1) development projects that had been carried out in the community in the past two years, and the type and level of local participation in these projects; 2) the re-

spondents' priorities for future infrastructure projects needed by their communities; 3) the respondents' opinions concerning the role local participation should play within development projects; 4) an assessment of the benefits and problems of local participation within projects carried out in the respondents' communities.

An additional set of questions requested the respondents' personal participation history. The informants were asked if they or any member of their households had participated in a community development project or in an agricultural development project within the last two years. Those respondents who answered in the affirmative were asked how they became involved in the project, the nature of their participation, and the benefits received from the project.

1.4.4 THE FIELD STUDIES

To complement the broad-based, macro-level survey data collected in Studies One, Two, and Three, field studies were conducted of three specific development projects. The field studies were designed to gather in-depth, micro-level data concerning the local participation process at the community level. The projects were selected based on geographic, ethnic and participatory criteria, using data obtained in a series of interviews with personnel from approximately 25 Guatemalan and international development agencies.

In each of the 25 agency interviews, information was gathered on the following topics: 1) an outline of the bureaucratic organization of the agency; 2) general types of development projects which the agency sponsors; 3) specific projects currently in process or completed within the last two years; 4) the normal agency procedure followed in the selection, planning, execution and evaluation of projects; 5) the role of local participation in agency policy. (A report based on the agency interviews is being prepared in Guatemala.)

The procedure for studying each selected project involved 1) visits to the sponsoring agencies to interview administrative and field personnel involved in the project, and 2) visits to the project site to interview local leaders and private citizens, including a sample of project participants. The case history based on these interviews focuses on the participation process in the project.

1.5 COMPATIBILITY OF THE DATA

Throughout the planning of Activity One and the designing of the various sets of questions, a strong effort was made to insure that information coming from different data sources would be compatible so that direct comparisons could be made. The local participation questions that were asked of community leaders were also asked of individuals in order to measure the degree of correspondence between local leaders'

and private citizens' views of 1) community needs and priorities, and 2) the role of local participation in development projects. Two comparative analyses of information obtained from the two surveys appear in Parts II and III of this report.

The individual participation history in agricultural development projects requested of the farmers interviewed in the agricultural production survey was also obtained for the respondents in the individuals survey. The project participants and the agency personnel interviewed in the three field studies were asked the community needs and priorities question as well as the actual and ideal participation questions. Demographic and socioeconomic data were obtained from all individuals interviewed. Thus a number of comparisons could be made between different subsamples of informants within Activity One in any further analysis of the data that might be carried out.

1.6 THE ORGANIZATION OF THIS REPORT

This report presents the findings of several data analyses conducted to satisfy the five contractual objectives of Activity One. The purpose of this section is to present the format of this report.

The report is divided into five parts. Part I (Chapter 1) gives an overview of the local participation study. The objectives of the study are presented and the development of

a framework for meeting these objectives is discussed. The data sources for the local participation study are described.

Part II (Chapters 2, 3, and 4) presents analyses of community needs and priorities as reported by local people. First, data from the survey of local leaders are analyzed, followed by an analysis of data from the survey of individual households. Finally, the findings from the leaders and individuals surveys are compared.

Part III (Chapters 5, 6, and 7) presents an analysis designed to study patterns of local participation in development projects. First, data from a survey of community leaders are analyzed. Second, data from a survey of individual households are analyzed. Finally, the findings from the leaders and individuals surveys are compared.

Part IV (Chapters 8 through 11) describes and presents the results of a case study of a small farm irrigation project sponsored jointly by an agency of the Guatemalan government and an international development agency. The resulting case history focuses on the process of local participation within the project.

Part V (Chapter 12) presents a review of the major findings and interpretations of the local participation study, undertaken to meet the five contractual objectives of Activity One. Each objective is presented, followed by the analyses undertaken to meet that objective, and a discussion of

the significant findings of these analyses as they relate to each objective.

PART II

COMMUNITY NEEDS AND PRIORITIES

The analysis of patterns of community needs and priorities presented in the following chapters is designed primarily to meet the first objective of the local participation study as outlined in the contract, that is, to elicit the preferences, needs, and priorities of local populations for infrastructure and services. However, findings from these analyses also relate to the other four contractual objectives.

Part II is organized as follows. Chapter 2 presents an analysis of perceptions of community needs as reported by groups of community leaders (Study One). As part of the analysis the communities are disaggregated by a community development scale so that the needs of communities at different levels of development can be examined. Chapter 3 replicates this analysis using individuals' reported perceptions of community needs (Study Three). Chapter 4 compares the findings of the two analyses and examines the issue of how well community leaders reflect the opinions of the people concerning community needs and priorities.

Chapter 2

COMMUNITY NEEDS AND PRIORITIES AS REPORTED BY COMMUNITY LEADERS

This chapter presents an analysis of community needs and priorities as reported by respondents in the leaders survey. For a description of this survey, see pages 7-8.

Table 1 is constructed from the responses to a question which asked local leaders to list the three most urgent needs of their communities. These community needs are listed in the column titled "Community Need" in decreasing order of occurrence. The number to the left in the "Communities" column is the percentage of communities whose leaders mentioned each specific community need. The total of percentages in this column exceeds 100% because each had the opportunity to list three needs. The total number of responses for each community need is given in parentheses in the "Communities" column.

The gamma reported in the right hand column describes the correlation between the dependent variable and the independent variable. The possible values range from -1.0 to +1.0. The sign (+ or -) indicates the direction of the correlation and the number indicates the strength of the correlation. A value of -1.0 indicates a perfect negative correlation. A value of 0.0 indicates that the correlation between the

TABLE 1

Community Needs as Perceived by Leaders

Community Need	Communities %	Communities #	Gamma*
1. Potable Water	63.7	(1261)	-0.75069
2. Health Care	56.8	(1126)	-0.86372
3. Roads	54.3	(1078)	-0.66792
4. Schools	30.7	(608)	-0.73515
5. Electricity	28.8	(570)	-0.60524
6. Community Hall	8.0	(158)	-0.47892
7. Drains	7.7	(153)	
8. Market	6.9	(136)	+0.41397
9. Streets	5.1	(102)	
10. Telephone	5.0	(99)	
11. Public Lighting	4.0	(80)	-0.29629
12. Latrines	3.9	(77)	
13. Municipal Building	3.2	(63)	+0.58132
14. Slaughter House	2.9	(57)	+0.81139
15. Sewers	2.8	(55)	+0.38307
16. Bridges	2.4	(47)	
17. Parks	1.2	(23)	
18. Others	4.3	(86)	
Number of communities		1982**	

*The data required to calculate the gamma were not available for all items in the table.

**The total number of communities in this table differs from the total sample due to missing data.

variables is completely random. A value of +1.0 indicates a perfect positive relationship.

In the crosstabulations executed to obtain the gammas reported in this table, the dependent variables are the community needs (as reported by community leaders) and the independent variables are measures of access to these same needs. If a particular service or infrastructure was present in a community, then the residents of that community were judged to have access to that service or infrastructure. For example, access to health care was determined by whether or not a community had a hospital, health center or health post.

2.1 COMMUNITY NEEDS

The table reveals that leaders in over half of the communities listed potable water, health care and roads as among their communities' three most urgent needs, while schools and electricity were mentioned for 30.7 percent and 28.8 percent respectively. After these top five, the frequency of responses drops drastically to 8.0 percent for a community hall, and trails off gradually to 1.2 percent for parks. Community needs other than the seventeen listed in the table were recorded for 4.3 percent of the communities, but none of these "other" needs was mentioned by as much as one percent of the communities.

The gammas reported for the top five community needs are all strongly negative (-0.6 or less). This indicates that leaders in communities which lack one of these five basic services are much more likely to consider that service an urgent community need than are leaders in communities which aleady have that service. However, below the top five, the pattern of the gammas reported becomes less consistent. Some are negative and some are positive. For slaughter houses, the gamma of +0.81 indicates that leaders in communities which already have one are much more likely to list slaughter house as one of their top priorities than are leaders where no slaughter house exists.

2.2 DEVELOPMENTAL LEVEL SCALE

The community leaders' striking concentration of concern with water, health care, roads, schools, and electricity suggests that these community needs should be examined more closely. To this end, a community development scale was constructed in which each community was assigned a development scale score based on the community's access to each of the five basic services. One development scale point was assigned for each basic service which was determined to be available for a community. The minimum score was zero for a community with access to none of the basic services, and the maximum score was five for a community with access to all five of the basic services. Thus, a community which had po-

table water and a school, but lacked health care, a paved or all weather road, and electricity would be assigned a developmental level score of two, and so forth. Once each community was assigned a developmental level score, the information presented in Table 1 was disaggregated by community developmental level. This disaggregated information is reported in the next section.

2.3 COMMUNITY NEEDS DISAGGREGATED BY DEVELOPMENTAL LEVEL

In Table 2, the community needs are listed in the "Community Need" column in decreasing order of occurrence, as in Table 1. The information reported in the next six columns (titled Developmental Level, 0 through 5) is the same as is reported in Table 1, but disaggregated by level of community development. Thus, among communities which have neither potable water, health care, roads, schools nor electricity (developmental level zero) 72.1 percent list water as one of their three most urgent community needs, while 58.8 percent list health care, 60.0 percent list roads, 66.7 percent list schools, 16.4 percent list electricity, 1.2 percent list a community hall, etc. The number of communities at each developmental level, along with the relative and cumulative frequencies of those communities in the total sample, are given in the bottom three rows of the table.

In discussing Table 2, the pattern of reported community needs will be examined for communities at each of the six

TABLE 2

Community Needs by Developmental Level: Community Leaders

Community Need	Developmental Level Score 0	1	2	3	4	5
1. Potable Water	72.1	81.7	64.8	52.5	41.0	40.5
2. Health Care	58.8	65.6	68.0	60.0	47.0	9.5
3. Roads	60.0	70.3	54.8	38.4	37.7	43.1
4. Schools	66.7	30.4	27.2	29.6	22.4	20.9
5. Electricity	16.4	23.0	36.6	47.5	32.2	5.9
6. Community Hall	1.2	4.2	8.4	9.7	13.7	15.0
7. Drains	0.0	0.3	2.2	8.2	17.5	37.3
8. Market	1.2	3.2	4.4	6.3	14.8	20.9
9. Streets	1.8	0.3	0.4	3.5	10.4	29.5
10. Telephone	0.0	1.7	3.8	6.6	10.4	13.6
11. Public Lighting	0.0	2.9	3.6	6.9	9.8	2.3
12. Latrines	2.4	2.7	5.4	4.7	7.1	0.9
13. Municipal Bldg	2.4	1.2	2.4	4.4	6.6	6.4
14. Slaughter House	0.0	0.5	0.8	3.1	3.8	15.0
15. Sewers	0.0	0.5	2.0	2.8	3.3	12.3
16. Bridges	1.2	2.9	2.2	3.1	1.6	1.8
17. Parks	0.0	0.2	0.2	0.6	3.3	5.9
18. Others	2.4	1.5	3.4	5.7	9.3	9.5
N of communities	166	597	500	319	185	220
Relative percentage	8.4	30.0	25.2	16.1	9.3	11.1
Cumulative percentage	8.4	38.4	63.6	79.6	88.9	100.0

developmental levels in turn, followed by an examination of the overall pattern presented in the table.

2.3.1 DEVELOPMENTAL LEVEL ZERO

One hundred sixty-six communities (8.4 percent of the sample) received a developmental level score of zero. These communities lacked all five basic services (i.e., water, health care, roads, schools and electricity). Among these communities, the five most frequently reported needs (in order of occurrence) are water (mentioned for 72.1% of the communities), schools (66.7%), roads (60.0%), health care (58.8%), and finally electricity (16.4%). No other community need is mentioned for as many as three percent of the communities. It is obvious that among leaders of communities which lack all basic services, water, schools, roads, and health care are by far the greatest concerns. Electrical service is a weak fifth, and nothing else receives serious consideration.

2.3.2 DEVELOPMENTAL LEVEL ONE

Five hundred ninety-seven communities (30% of the sample) received a developmental level score of one. These communities have access to one of the five basic services. Among these communities, the five most frequently reported needs (in order of occurrence) are water (81.7%), roads (70.3%), health care (65.6%), schools (30.4%), and electric-

ity (23.0%). The next most frequently mentioned need, a community hall, is mentioned for only 4.2 percent of the communities.

The most obvious difference between this response pattern and the pattern observed in the group with a developmental level of zero is the dramatic decrease in the concern expressed with schools (from 66.7% to 30.4%). The likely explanation for this is that many of the communities with a developmental level of one probably have a school and are thus less concerned about this service. The strong negative gamma associated with schools (-0.74, see Table 1) tends to support this explanation. The decreased concern with schools seems to have been replaced by an increased concern with the four other basic needs, each of which registers a substantial increase. At this developmental level, there is still very little concern evident for services other than the basic five.

2.3.3 DEVELOPMENTAL LEVEL TWO

Five hundred communities (25.2 percent of the sample) received a developmental level score of two. These communities have access to two of the five basic services. Among these communities the five most frequently reported needs (in order of occurrence) are health care (68.0%), water (64.8%), roads (54.8%), electricity (36.6%) and schools (27.2%). The next most frequently mentioned needs are a community hall (8.4%) and latrines (5.4%).

The most obvious differences between this response pattern and the pattern observed in the group with a developmental level of one are the declines in concern with water and roads, which make health care the top priority at this developmental level. The likely explanation for this is that some of the communities with a developmental level of two have obtained water and/or roads and are thus less concerned about these services. The strong negative gammas associated with water (-0.75) and roads (-0.67) tend to support this explanation. The decreased concern with water and roads seems to have been replaced by 1) an increased concerned with electricity, which is reported as one of the three top needs more often than schools at this developmental level; and 2) modest increases in the concern with a number of community needs other than the five basic needs. However, at this level, no need other than one of the first five was mentioned for as many as ten percent of the communities.

2.3.4 DEVELOPMENTAL LEVEL THREE

Three hundred nineteen communities (16.1 percent of the sample) received a developmental level score of three. These communities have access to three of the five basic services. Among these communities, the five most frequently reported needs (in order of importance) are health care (60.0%), water (52.5%), electricity (47.5%), roads (38.4%)

and schools (29.6%). The next most frequently mentioned needs are a community hall (9.7%) and drains (8.2%).

The differences in the pattern of responses between the communities with developmental levels of two and three are characterized by a continued decline in the percentage of communities concerned with water and roads and some decline in concern with health services. These declines are presumably because more communities with a developmental level of three have obtained these services. There is a further increase in the percentage of communities concerned about electricity, and in the percentage of communities mentioning services other than the basic five. Still, at this level of development, no need other than one of the top five was mentioned for as many as ten percent of the communities.

2.3.5 DEVELOPMENTAL LEVEL FOUR

One hundred eighty-five communities (9.3% of the sample) received a developmental level score of four. These communities have access to four of the five basic services. Among these communities, the five most frequently reported needs (in order of occurrence) are health care (47.0%), water (41.0%), roads (37.7%), electricity (32.3%) and schools (22.4%). Five other community needs: drains (17.5%), a market (14.8%), a community hall (13.7%), streets (10.4%), and telephones (10.4%) were mentioned by leaders from over ten percent of the communities at this level.

The most striking difference between the pattern of responses of communities at developmental levels of three and four respectively is that the percentage of communities concerned with each of the five basic services declines while (with the exception of bridges) the percentage of communities concerned with each of the community needs other than the basic five increases. Communities at this developmental level are approaching the point of satisfying the basic needs of their people, and leaders are beginning to give serious consideration to a second echelon of community needs. However, at this level, all five of the basic needs are still of concern to more communities than is any of the other needs reported.

2.3.6 DEVELOPMENTAL LEVEL FIVE

Two hundred twenty communities (11.1% of the sample) received a developmental level score of five. These communities have access to all five basic services. Among these communities, the ten most frequently reported needs (in order of occurrence) are roads (43.1%), water (40.5%), drains (37.3%), streets (29.5%), schools (20.9%), markets (20.9%), community hall (15.0%), slaughter house (15.0%), telephones (13.6%) and sewers (12.3%).

Numerous changes occur between the patterns of developmental level four communities and those with a developmental level of five. Among the most obvious are that health care,

the number one concern among developmental level four communities, and electricity, the number four concern among those communities, are not listed among the top ten concerns for communities with a developmental level of five. For the first time, community needs such as drains and streets are reported more frequently than some of the five basic needs.

However, water, roads and schools remain among the most frequently reported needs, although communities at the highest developmental level by definition have access to these services. This results, no doubt, from the need to maintain, improve and expand these vital services. The decline in concern for health service and electricity would indicate that once these services exist, they cease to be of much concern to community leaders.

Chapter 3

COMMUNITY NEEDS AND PRIORITIES AS REPORTED BY INDIVIDUALS

This chapter presents an analysis of community needs and priorities as reported by respondents in the individuals survey. For a description of this survey, see page 9.

The question which asked respondents in the leaders survey to list the three most urgent needs of their community was also asked of respondents in the individuals survey. Table 3 replicates Table 1, but is based on data from the individuals survey. Community needs are listed in the column titled "Community Need" in the same order as in Table 1. The number to the left in the "Respondents" column is the percentage of individuals who mentioned a specific community need. The total percentages in this column exceed 100 percent because each individual had the opportunity to list three needs. The total number of responses for each community need is given in parentheses in the "Respondents" column.

The gamma reported in the right hand column describes the strength and direction of the relationship between specific community needs as reported by the individuals interviewed (the dependent variables) and the communities' access to the services and infrastructure necessary to meet those needs

TABLE 3

Community Needs as Perceived by Individuals

Community Need	Respondents %	#	Gamma*
1. Potable Water	51.8	(161)	-0.50000
2. Health Care	19.9	(62)	-0.56410
3. Roads	47.9	(149)	-0.66124
4. Schools	26.4	(82)	
5. Electricity	23.8	(74)	-0.59884
6. Community Hall	4.8	(15)	
7. Drains	20.9	(65)	
8. Market	17.7	(55)	-0.35922
9. Streets	31.8	(99)	
10. Telephone	4.8	(15)	
11. Public Lighting	9.3	(29)	
12. Latrines	5.1	(16)	
13. Municipal Building	1.9	(6)	
14. Slaughter House	4.2	(13)	
15. Sewers	1.9	(6)	
16. Bridges	2.6	(8)	
17. Parks	5.1	(16)	
18. Others	7.4	(23)	
Number of communities		94	
Number of Respondents		311**	

*The data required to calculate the gamma were not available for all items in the table.

**The total number of communities in this table differs from the total sample because of missing data.

(the independent variables). Communities with services or infrastructure present were judged to have access to those services or infrastructure. For example, access to roads was determined by whether or not an all weather or paved road reached the community.

3.1 COMMUNITY NEEDS

The table reveals that approximately half of the individuals surveyed listed potable water and roads as among their communities' three most urgent needs. Other community needs listed by more than ten percent of the individuals were streets (31.8%), schools (26.4%), electricity (23.8%), drains (20.9%), health care (19.9%), and markets (17.7%). Community needs other than the seventeen listed in the table were recorded for 7.4 percent of the respondents.

3.2 DEVELOPMENTAL LEVEL SCALE

To further examine the information presented in Table 3, the information was disaggregated by the developmental level score of the informants' home communities. This was possible because all respondents in the individuals survey were from communities included in the sample for the leaders survey. Each community was assigned a developmental level score based on its access to potable water, health care, paved or all season roads, schools and electrical service as determined in the leaders survey. Scores ranged from zero

through five. (For a more complete discussion of the developmental scale, see page 19.)

3.3 COMMUNITY NEEDS DISAGGREGATED BY DEVELOPMENTAL LEVEL

In Table 4, the community needs are listed in the "Community Need" column in the same order as in Tables 1, 2, and 3. The information reported in the next six columns (titled Developmental Level, 0 through 5), is the same as that reported in Table 3, but disaggregated by level of community development. Thus, for example, among individuals from communities which have two of the five basic services (water, health care, roads, schools, and electricity), 93.5 percent list water as one of their community's three most urgent needs, 32.3 percent list health care, 48.4 percent list roads, 41.9 percent list schools, 48.4 percent list electricity, 3.2 percent list a community hall, etc.

In discussing Table 4 the pattern of reported community needs will be examined for communities at each of the six developmental levels in turn, followed by an examination of the overall pattern presented in the table.

TABLE 4

Community Needs by Developmental Level: Individuals

Community Need	Developmental Level Score 0	1	2	3	4	5
1. Potable Water	83.3	83.3	93.5	58.6	33.3	41.9
2. Health Care	75.0	72.2	32.3	27.6	6.7	10.5
3. Roads	33.3	77.8	48.4	51.7	63.3	42.9
4. Schools	33.3	22.2	41.9	24.1	33.3	23.0
5. Electricity	41.7	33.3	48.4	51.7	26.7	13.1
6. Community Hall	0.0	0.0	3.2	6.9	16.7	3.7
7. Drains	0.0	0.0	3.2	0.0	6.7	32.5
8. Market	8.3	0.0	25.8	6.9	26.7	18.8
9. Streets	8.3	0.0	3.2	10.3	23.3	45.5
10. Telephone	0.0	5.6	0.0	0.0	0.0	7.3
11. Public Lighting	8.3	0.0	0.0	17.2	23.3	8.4
12. Latrines	8.3	0.0	0.0	6.9	3.3	6.3
13. Municipal Bldg	0.0	0.0	0.0	3.4	0.0	2.6
14. Slaughter House	0.0	0.0	0.0	0.0	6.7	5.8
15. Sewers	0.0	0.0	0.0	3.4	3.3	2.1
16. Bridges	0.0	5.6	0.0	10.3	3.3	1.6
17. Parks	0.0	0.0	0.0	6.9	3.3	6.8
18. Others	0.0	0.0	0.0	6.9	10.0	9.4
N of communities	1	8	12	12	11	50
Relative percentage	1.1	8.5	12.8	12.8	11.7	53.1
N of individuals	12	18	31	29	30	191
Relative percentage	3.9	5.8	10.0	9.3	9.6	61.4

3.3.1 DEVELOPMENTAL LEVEL ZERO

Twelve individual respondents (3.9 percent of the sample) came from the single community that received a developmental level score of zero. This community lacks all five basic services. Among respondents from this community, the five most frequently reported needs (in order of occurrence) are water (mentioned by 83.3% of the respondents), health care (75.0%), electricity (41.7%), roads (33.3%), and schools (33.3%). Four other community needs are mentioned by 8.3 percent of the respondents, i.e., by one individual each.

3.3.2 DEVELOPMENTAL LEVEL ONE

Eighteen respondents (5.8 percent of the sample) came from eight communities that received a developmental level score of one. These communities have access to one of the five basic services. Among respondents from these communities, the five most frequently reported needs (in order of occurrence) are water (83.3%), roads (77.8%), health care (72.2%), electricity (33.3%) and schools (22.2%). Two other community needs were mentioned by 5.6 percent of the respondents, i.e., by one individual each.

3.3.3 DEVELOPMENTAL LEVEL TWO

Thirty-one respondents (10.0 percent of the sample) came from twelve communities that received a developmental level score of two. These communities have access to two of the five basic services. Among respondents from these communities, the five most frequently reported needs (in order of occurrence) are water (93.5%), roads (48.4%), electricity (48.4%), schools (41.9%), and health care (32.3%). Markets were listed by 25.8 percent of the respondents.

3.3.4 DEVELOPMENTAL LEVEL THREE

Twenty-nine respondents (9.3 percent of the sample) came from twelve communities that received a developmental level score of three. These communities have access to three of the five basic services. Among respondents from these communities, the five most frequently reported needs (in order of occurrence) are water (58.6%), roads (51.7%), electricity (51.7%), health care (27.6%), and schools (24.1%). Other community needs mentioned by as many as ten percent of the respondents were street lights (17.2%), streets (10.3%), and a bridge (10.3%).

3.3.5 DEVELOPMENTAL LEVEL FOUR

Thirty respondents (9.6% of the sample) came from eleven communities that received a developmental level score of four. These communities have access to four of the five ba-

sic services. Among respondents from these communities, community needs mentioned by as many as ten percent of the respondents are (in order of occurrence) roads (63.3%), water (33.3%), schools (33.3%), electricity (26.7%), markets (26.7%), streets (23.3%), street lights (23.3%), and a community hall (16.7%).

3.3.6 DEVELOPMENTAL LEVEL FIVE

One hundred ninety-one respondents (61.4% of the sample) came from fifty communities that received a developmental level score of five. These communities have access to all five basic services. Among respondents from these communities, community needs mentioned by as many as ten percent of the respondents are (in order of occurrence) streets (45.5%), roads (42.9%), water (41.9%), drains (32.5%), schools (23.0%), markets (18.8%), electricity (13.1%), and health care (10.5%).

Chapter 4

COMPARATIVE ANALYSIS OF COMMUNITY NEEDS AND PRIORITIES

The purpose of this comparative analysis is to examine the similarities and differences between the patterns of community needs reported by leaders and those reported by individuals. Findings of the survey of individuals will be compared with findings of the survey of leaders to analyze the extent to which community leaders' opinions concerning the needs of their community are representative of the opinions of the people.

While comparing data from the two surveys in this analysis (Tables 2 and 4), several limitations of the Study Three sample must be considered.

1. The sample of 311 is small relative to the sample of 1982 groups of leaders who responded to this question in Study One (see Table 2, page 21).
2. The sample of 311 respondents is drawn from only 94 communities, as opposed to the 1982 communities represented in Table 2.
3. The nature of the question by which this data was gathered (i.e., what are the three most urgent needs of your community) is such that it is strongly affected by the services and infrastructure which exist in the respondents' home communities.

4. The sample is strongly skewed towards the upper end of the development scale. Over half of the communities (containing over sixty percent of the respondents) are classified at the highest developmental level, while fewer than ten percent of the towns (containing fewer than ten percent of the respondents) are classified at the two lowest developmental levels combined. This results in a situation in which the five lower developmental levels are represented by very small samples representing very few communities.

Due to these limitations, it was determined that to directly compare Tables 2 and 4 would be of questionable utility. In order to ameliorate the problems discussed above and allow a useful comparison of community needs as reported by individuals with those reported by leaders, Table 5 was created.

In Table 5, the first column (Community Need) lists the community needs in the same order as in Tables 1 through 4. The second and third columns are based on responses of leaders and individuals respectively from communities which lacked at least one of the infrastructural items or services necessary to satisfy the five basic community needs (developmental levels zero through four). Column two reports the percentage of communities in the leaders survey which listed each specific need as one of the three most urgent for their community. Column three reports the percentage of in-

TABLE 5

Leaders and Individuals Needs and Priorities

Community Need	Developmental Level 4 or Less		Developmental Level 5	
	LEADERS	INDIVIDUALS	LEADERS	INDIVIDUALS
1. Potable Water	66.3	67.5	40.5	41.9
2. Health Care	62.5	35.0	9.5	10.5
3. Roads	55.6	55.8	43.1	42.9
4. Schools	31.8	31.7	20.9	23.0
5. Electricity	31.5	40.8	5.9	13.1
6. Community Hall	7.1	6.7	15.0	3.7
7. Drains	4.0	2.5	37.3	32.5
8. Market	5.1	15.8	20.9	18.8
9. Streets	2.1	10.0	29.5	45.5
10. Telephone	3.9	0.8	13.6	7.3
11. Public Lighting	4.2	10.8	2.3	8.4
12. Latrines	4.2	3.3	0.9	6.3
13. Municipal Bldg.	2.8	0.8	6.4	2.6
14. Slaughter House	1.4	1.7	15.0	5.8
15. Sewers	1.6	1.7	12.3	2.1
16. Bridges	2.4	4.2	1.8	1.6
17. Parks	0.6	2.5	5.9	6.8
18. Others	3.7	4.2	9.5	9.4
N of communities	1767	44	220	50
N of respondents	1767	120	220	191
Avg. Community Development Score	1.86	2.38	5.0	5.0

dividuals listing each specific need as one of the three most urgent for their community.

The fourth and fifth columns are based on responses of leaders and individuals respectively from communities which had the infrastructure necessary to provide for all five of the basic needs of their citizens (developmental level five). Column four reports the percentage of communities in which leaders listed each specific need as one of the three most urgent for their community. Column five reports the percentage of individuals listing each specific need as one of the three most urgent for their community. The bottom three rows give the number of communities represented, number of respondents, and the average development scale of the home communities of each of the four categories of respondents.

The comparative analysis based on Table 5 sacrifices some specificity over an analysis based on direct comparison of Tables 2 and 4. In Tables 2 and 4, six developmental levels are reported, while Table 5 reports the development scale as a dichotomous variable. However, this loss of specificity is balanced by an alleviation of the limitations of the Study Three data discussed above.

The smallest category in Table 5 has 120 respondents representing 44 communities, whereas Table 4 contains one category with only twelve respondents representing a single community. The problem of the sample of individuals being

skewed to the upper end of the development scale persists to some extent in that the individual respondents are from communities that have an average developmental level score about one half point higher than the communities represented in the survey of leaders.

In the following section, the five basic needs (water, health care, roads, schools, and electricity) will be discussed one by one. This will be followed by a brief discussion of the remaining twelve reported needs. Consideration is given to the issue of how well leaders represent the opinions of the people concerning community needs.

4.1 THE FIVE BASIC NEEDS

4.1.1 POTABLE WATER

In the less developed communities (those with a developmental level of four or less) 66.3% of the leaders and 67.5% of the individuals mentioned potable water as one of their community's three most urgent needs. The difference of 1.2 percent is insignificant. In the more developed communities (developmental level five), 40.5% of the leaders and 41.9% of the individuals mentioned potable water as one of their community's three most urgent needs. The difference of 1.4 percent is insignificant. Community leaders very accurately reflect the opinions of the people concerning the importance of potable water as a community need.

4.1.2 HEALTH CARE

In the less developed communities, 62.5% of the leaders mentioned health care as a community need, but only 35.0% of the individuals concur. The difference of 27.5% is obviously very significant. In more developed communities 9.5% of the leaders and 10.5% of the individuals mentioned health care as a community need. The difference of 1.0% is insignificant.

Based on Table 5 alone it would appear that leaders in more developed communities very accurately report their constituents' need for health care, while leaders in less developed communities grossly over-report the need for health care. However, reference to Tables 2 and 4 show that this latter interpretation is probably inaccurate. The steps leading to this conclusion are as follows:

1. In both Table 2 and Table 4, there is a high concern with health care in communities at the two lowest developmental levels.
2. In Table 2 (leaders survey) this concern remains high in communities with developmental levels of two, three, and four. However, in Table 4 (individuals survey) concern with health care falls off precipitously in communities at these three levels of development. This accounts for the discrepancy between leaders' and individuals' concern with health care as reported in Table 5.

3. The average developmental level for the less developed communities (developmental level zero through four) reported for individuals in Table 5 is one half point higher than that average reported for leaders in Table 5. This means that on the average the communities that the individuals came from have more services than the communities that the leaders came from.
4. It is reasonable to assume, based on Tables 2 and 4, that more of the less-developed communities from the individuals survey already have health care than is the case among the less-developed communities from the leaders' survey.
5. Obviously the respondents' opinions concerning the most urgent needs of their communities are strongly influenced by the existing infrastructure in those communities.

Therefore, it is probable that the discrepancy between the percentage of leaders and the percentage of individuals reporting health care as a primary concern was caused not by the failure of leaders to accurately report the people's needs, but rather by differences in the health care available in the communities sampled in the two surveys. This interpretation is supported by the strong negative gamma (-0.56) reported for health care in Table 3, which indicates that individuals from communities which lack health care are

much more likely to request health care than are individuals from communities which already have health care. Based on this interpretation, community leaders do accurately reflect the opinions of the people concerning the importance of health care as a community need.

4.1.3 ROADS

In the less developed communities, 55.6% of the leaders and 55.8% of the individuals mentioned roads as a community need. The difference of 0.2% is insignificant. In the more developed communities, 43.1% of the leaders and 43.9% of the individuals mentioned roads as a community need. The difference of 0.8% is insignificant. Community leaders very accurately reflect the opinions of the people concerning the importance of roads as a community need.

4.1.4 SCHOOLS

In the less developed communities 31.8% of the leaders and 31.7% of the individuals mentioned schools as a community need. The difference of 0.1% is insignificant. In the more developed communities, 20.9% of the leaders and 23.0% of the individuals mentioned schools as a community need. The difference of 2.1% is insignificant. Community leaders very accurately reflect the opinions of the people concerning the importance of schools as a community need.

4.1.5 ELECTRICITY

In the less developed communities 31.5% of the leaders and 40.8% of the individuals mentioned electrical service as a community need. The difference of 9.3% is significant. In the more developed communities, 5.9% of the leaders and 13.1% of the individuals mentioned electrical service as a community need. The difference of 7.2% is significant. Community leaders fairly accurately report their constituents' felt need for electrical service, although there seems to be a tendency for the leaders to under-report this need.

4.2 THE OTHER COMMUNITY NEEDS

4.2.1 THE LESS DEVELOPED COMMUNITIES

The twelve community needs other than the basic five were of little concern to either leaders or individuals from less developed communities (developmental level four or less). In no case was one of these needs mentioned by 10% of the leaders. Markets (15.8%), public lighting (10.8%) and streets (10.0%) were mentioned by a relatively large percentage of individuals from less developed communities, but interest in these three needs came predominantly from developmental level three and four communities, i.e., from those less-developed communities that were nearing the point of satisfying the five basic needs of their people. In general, it appears that leaders from less developed communities accurately report the people's opinion that until the five

basic developmental needs of a community are met, other developmental needs are of little concern.

4.2.2 THE MORE DEVELOPED COMMUNITIES

Examination of the response patterns of more developed communities (developmental level five) reveals that after the five basic needs have been met, leaders and individuals become quite concerned with three additional needs: streets, drains and markets. The response patterns of leaders and individuals concerning these three needs are as follows:

1. Streets are mentioned as a need by 29.5% of leaders and 45.5% of individuals. The difference of 16.0% is significant. While leaders accurately report the fact that streets are a major concern of the people, they seem to substantially under-report the strength of this concern.
2. Drains are mentioned as a need by 37.3% of the leaders and 32.5% of individuals. The difference of 4.8% is insignificant. Community leaders accurately reflect their constituents' felt need for drains.
3. Markets are mentioned as a need by 20.9% of leaders and 18.8% of individuals. The difference of 2.1% is insignificant. Community leaders accurately reflect their constituents' felt need for markets.

Of the remaining nine community needs, none was mentioned by more than 15.0% of the leaders or by 8.4% of the individuals. The degree to which leaders from developmental level five communities seem to represent their constituents' opinions on the nine other needs is summarized below. However, it must be kept in mind that the small number of responses concerning these needs makes this interpretation somewhat speculative.

1. Leaders are more concerned than their constituents about community halls, telephones, municipal buildings, slaughter houses and sewers.
2. Individuals are more concerned than their leaders about public lighting and latrines.
3. Leaders and individuals concur on the need for bridges and parks.

4.3 SUMMARY OF MAJOR FINDINGS FROM PART II

In the above analyses of community needs and priorities as reported by leaders and by individuals, a number of conclusions have been reached. The most important finding is the identification of five services and infrastructure items (potable water, health care, roads, schools, and electricity) as the basic community needs perceived by the populationn of rural highland Guatemala. Until these five basic needs are met, neither leaders nor individuals express much interest in other infrastructure or services for their com-

munities. Also of importance is the finding that leaders of highland Guatemalan communities concur with individuals in the needs of their communities, especially insofar as the five basic needs are concerned.

PART III

ANALYSIS OF PARTICIPATION PATTERNS

Part III presents analyses of actual and ideal patterns of participation in development projects as reported by leaders and individuals. These analyses contribute to an understanding of the participation process in highland Guatemala at the regional level. The analyses were designed primarily to provide participatory input necessary for meeting the fourth contract objective, i.e., the synthesis of community preferences with technical recommendations in determining regional investment priorities. The data presented also help to meet the second objective of testing different methods of eliciting local participation.

Part III is organized as follows. Chapter 5 presents an analysis of the participation patterns (actual and ideal) as reported by leaders. Chapter 6 replicates this analysis using data from individuals. Chapter 7 presents a comparison of the findings of the two analyses.

Chapter 5

PARTICIPATION PATTERNS AS REPORTED BY COMMUNITY LEADERS

This chapter presents an analysis of 1) actual participation patterns in development projects, and 2) ideal participation patterns as reported by community leaders.

Table 6 reports the results of two series of questions. The first series of twenty-four questions was designed to specify which of six categories of potential participants actually did participate in the selection, planning, execution and evaluation phases of reported development projects. The questions were of the following type: "Did leaders of the community participate in the selection of the project?" The results are reported in the four columns titled "actual". Of 1987 groups of community leaders surveyed, 680 (34%) reported that at least one development project that included local participation had taken place in their community from mid-1978 through mid-1980. Results reported represent percentages of respondents giving positive answers to each question.

The second series of twenty-four questions reported in Table 6 was designed to elicit the respondents' opinions concerning which of the six categories of participants should ideally participate in each of the four project phas-

TABLE 6

Participation Patterns: Community Leaders

	Selection			Planning			Execution			Evaluation		
	Actual	Ideal Yes	Ideal No	Actual	Ideal Yes	Ideal No	Actual	Ideal Yes	Ideal No	Actual	Ideal Yes	Ideal No
Community leaders	39.9	37.3	41.7	23.2	19.7	19.5	32.9	34.0	38.4	22.8	22.0	22.1
Community organizations	65.6	71.7	64.3	43.0	37.8	33.0	72.2	73.2	67.5	48.5	45.8	39.6
Community members	25.1	31.6	33.2	16.0	16.7	15.7	44.5	47.8	49.6	20.9	21.6	21.8
The municipality	22.5	52.8	53.8	28.1	64.6	70.2	34.1	67.9	67.4	34.1	64.0	65.6
Guatemalan government institutions	19.6	48.0	51.9	41.5	81.0	79.6	42.1	78.8	75.6	42.5	76.1	79.3
Non-profit institutions	12.8	27.2	26.4	21.6	42.3	35.7	21.0	44.2	39.1	21.4	43.1	38.0
	N=680	N=680	N=1307	N=680	N=680	N=1307	N=680	N=680	N=1307	N=680	N=680	N=1307

es. The questions were of the following type: "In an ideal development project, should leaders of the community participate in project selection?" The results are reported in the eight columns titled "ideal". The four "ideal-yes" columns report the responses of leaders in communities where projects were reported. This is the same subsample of 680 whose responses are reported in the "actual" column. The four "ideal-no" columns report the responses of leaders in the 1307 communities where no projects were reported. The following discussion is based on the information reported in Table 6.

5.1 ACTUAL PARTICIPATION PATTERNS

This section presents an analysis of actual participation patterns in development projects as reported by community leaders.

An idea of the degree of local (within the community) participation relative to outside participation can be obtained by combining the first three participant categories from Table 6 (leaders, organizations, and community members) to form a local component and the last three categories (the municipality, government institutions and non-profit institutions) to form an outside component. This information is represented in Table 7. Row and column totals do not sum to 100 because of the involvement of more than one participant category in each phase of the projects and the involvement

of the various participants in more than one phase of the projects.

TABLE 7

Actual Participation: Community Leaders

	SEL	PLAN	EXEC	EVAL	TOTAL
LOCAL COMPONENT	130.6	82.2	149.6	92.2	454.6
OUTSIDE COMPONENT	54.9	91.2	97.2	98.0	341.3
TOTAL	185.5	173.4	246.8	190.2	

The Table 7 row totals indicate that the local component is 33 percent more active over the course of the projects than is the outside component. The column totals indicate that the execution phase is the time of greatest overall involvement. The body of Table 7 reveals the following pattern. The selection phase is characterized by a high level of participation by the local component and a relatively low, though substantial, involvement of the outside component. During the planning phase, local participation subsides while outside involvement increases substantially, to a level slightly higher than that of the local component. Local participation rises to its highest level during the

execution phase of the project. Outside participation remains at approximately the same level as during the planning phase. During the evaluation phase, local participation falls off to a level slightly below that of the outside component which remains substantially the same throughout the planning, execution and evaluation phases.

The overall picture presented in Table 7 is one in which the local component, often with involvement from outside, selects the projects to be carried out. Once a project has been selected, the outside component becomes involved in most projects and works along with the local component to plan, execute and evaluate the project. The level of participation of the local component, high during the selection process, falls off during the planning phase, rises to its highest level during the execution phase and falls off once again during the evaluation phase.

The pattern discussed above suggests the following:

1. The local component is more intimately aware of and more interested in the needs of the specific community and thus more likely to be involved in deciding what projects should be carried out.
2. The local component is aware of the value of outside assistance in the form of expertise, materials, equipment, etc., and usually seeks and obtains such assistance during the selection or planning phase of the project.

3. Once the outside component has become involved in a project, usually during the selection or planning phase, it tends to maintain its participation through the execution and evaluation phases, i.e., it tends to see projects through to completion.
4. During the execution phase, when a great deal of manual labor is required to complete the project, the local component responds with the personnel necessary to do the work.
5. While both local and outside components are significantly involved during all phases of projects, the relative contributions of the local component are greatest during the selection and execution phases while those of the outside component are greatest during the planning and evaluation phases.

The general participation pattern revealed by Table 7 is further specified in Table 6. Examination of the four "actual" columns from Table 6 reveals the participation patterns of each subgroup within both the local and outside components. Community organizations played the most prominent role in all phases of development projects carried out within the study area from mid-1978 through mid-1980.

The most frequent participants in each phase of the projects are summarized below.

1. Community organizations helped to select 65.6 percent of the projects. Community leaders were involved in the selection of 39.9 percent of the projects.

2. Community organizations (43.0%) and governmental institutions (41.5%) were most active in planning the projects.
3. Community organizations (77.2%) were by far the most active during the execution phase of projects, with community members (44.5%) and government institutions (42.1%) lending considerable support.
4. Projects were evaluated primarily by community organizations (48.5%) and government institutions (42.5%).

5.2 IDEAL PARTICIPATION PATTERNS

This section presents an analysis of ideal participation patterns as reported by leaders. Reexamination of Table 6, including the ideal columns, reveals three strong patterns.

1. The pattern of responses in the "ideal-yes" columns and the "ideal-no" columns is very similar. In no case is the difference between adjacent cells greater than 7.4. This indicates that leaders in communities where a project had taken place did not differ significantly from leaders in communities where no project had taken place concerning which categories of potential participants should ideally be involved in which phases of projects. The experience of having a project involving local participation in their community does not seem to effect leaders' attitudes regarding local participation in development projects.

2. For the three potential participant categories making up the local component (the first three rows), the pattern of responses in the ideal columns is very similar to the pattern of responses in the actual columns. In no case is the difference between an ideal cell and its corresponding actual cell greater than 10.0. Community leaders held opinions concerning the manner in which the local component should be involved in development projects which closely correspond to the manner in which the local component actually has been involved in recent projects. The local leaders seem satisfied with the level of local participation in development projects.

3. For the three potential participant categories making up the outside component (the last three rows), the pattern of responses in the ideal columns is very different from the pattern of responses in the actual columns. In all cases, the scores in the ideal cells are greater than those in the corresponding actual cells. The smallest difference is 14.4, and these differences range up to 42.1. Community leaders hold opinions concerning the degree to which the outside component should be involved in development projects which diverge greatly from the degree to which the outside component actually has been involved in recent projects. This pattern is very general, cover-

ing all three categories of potential participants comprising the outside component and all four phases of development projects. Community leaders express the opinion that the outside component should be much more actively involved in all phases of development projects than has actually been the case.

The strength and consistency of the three patterns discussed above is demonstrated in Table 8. Table 8 is constructed from Table 6 by summing the six groups (of twelve cells each) reported in 1) the "actual" columns of the first three rows (local component); 2) the "ideal-yes" columns of the first three rows; 3) the "ideal-no" columns of the first three rows; 4) the "actual" columns of the last three rows (outside component); 5) the "ideal-yes" columns of the last three rows; 6) the "ideal-no" columns of the last three rows. The scores in the "actual" column of Table 8 are the same as the row totals for Table 7. The scores in the percentage difference columns of Table 8 represent the difference between the scores in the adjacent cells as a percentage of the score in the cell to the left.

The three patterns are:

1. The similarity of opinions concerning ideal participation held by leaders, regardless of whether or not their communities had had a recent project involving local participation. The percentage differences of -2.8 and -1.1 strongly support the conclusion that

TABLE 8

Differences in Participation: Community Leaders

	ACTUAL	% DIFF	IDEAL-YES	% DIFF	IDEAL-NO
LOCAL COMPONENT	454.6	+1.0	459.2	-2.8	446.4
OUTSIDE COMPONENT	341.3	+102.2	690.0	-1.1	682.6

having a project involving local participation in their community has little effect on leaders' attitudes concerning participation.

2. The similarity between the ideal participation of the local component expressed by community leaders and the actual participation of the local component in reported projects. The percentage difference of +1.0 (-1.8 if the "ideal-no" column were used) strongly supports the conclusion that local leaders seem generally satisfied with the level of local participation in development projects.
3. The striking dissimilarity between the ideal participation of the outside component expressed by community leaders and the actual participation of the outside component in reported projects. The percentage difference of +102.2 (+100.0 if the "ideal-no" column

were used) strongly supports the conclusion that local leaders feel that the outside component should be much more actively involved in community development projects.

Chapter 6

PARTICIPATION PATTERNS AS REPORTED BY INDIVIDUALS

This chapter presents an analysis of 1) actual participation patterns in development projects, and 2) ideal participation patterns as reported by individuals in the individuals survey.

Table 9 reports the same two series of questions as were reported in Table 6 (see page 54). The questions were asked of the 314 individuals interviewed in the individuals survey. The first series of questions was designed to specify which of six categories of potential participants actually did participate in the selection, planning, execution and evaluation phases of reported projects. These are reported in the four columns titled "actual." Of the 314 individuals surveyed, 104 (33%) reported that at least one development project had taken place in their community from the middle of 1978 through the middle of 1980. Results reported represent percentages of respondents giving positive answers to each question.

The second series of questions reported in Table 9 was designed to elicit the respondents' opinions concerning which of the categories of participants should ideally participate in each of the four project phases. These results

TABLE 9

Participation Patterns: Individuals

	Selection			Planning			Execution			Evaluation		
	Actual	Ideal Yes	Ideal No	Actual	Ideal Yes	Ideal No	Actual	Ideal Yes	Ideal No	Actual	Ideal Yes	Ideal No
Community leaders	34.6	30.8	13.8	20.2	15.4	7.6	34.6	28.8	13.3	21.2	18.3	3.3
Community organizations	56.7	75.0	42.2	42.3	36.5	22.4	78.8	78.8	54.3	45.2	45.2	25.7
Community members	26.9	32.7	15.2	21.2	11.5	4.8	66.3	56.7	38.1	34.6	23.1	6.2
The municipality	31.7	57.7	59.5	38.5	62.5	63.8	40.4	69.2	68.1	32.7	56.7	59.0
Guatemalan government institutions	10.6	42.3	58.6	32.7	78.8	71.4	35.6	79.8	71.4	23.1	51.0	57.1
Non-profit institutions	9.6	11.5	11.4	12.5	22.1	16.2	13.5	33.7	24.3	12.5	17.3	12.9
	N=104	N=104	N=210	N=104	N=104	N=210	N=104	N=104	N=210	N=104	N=104	N=210

are reported in the eight columns titled "ideal." The four "ideal-yes" columns report the responses of individuals who lived in communities where projects had occurred. This is the same subsample of 104 whose responses are reported in the "actual" column. The four "ideal-no" columns report the responses of the 210 respondents who lived in communities in which no project had taken place. The following discussion is based on the information reported in Table 9.

6.1 ACTUAL PARTICIPATION PATTERNS

This section presents an analysis of actual participation patterns in development projects as reported by individuals in the individuals survey.

An idea of the degree of local (within the community) participation relative to outside participation can be obtained by combining the first three categories from Table 9 (leaders, organizations and community members) to form a local component and the last three categories (the municipality, government institutions and non- profit institutions) to form an outside component. This information is represented in Table 10. Row and column totals do not sum to 100 because of the involvement of more than one participant category in each phase of the projects and the involvement of the various participants in more than one phase of the projects.

TABLE 10

Actual Participation: Individuals

	SEL	PLAN	EXEC	EVAL	TOTAL
LOCAL COMPONENT	118.2	83.7	179.7	101.0	482.6
OUTSIDE COMPONENT	51.9	83.7	89.5	68.3	293.4
TOTAL	170.1	167.4	269.2	169.3	

The Table 10 row totals indicate that the local component is 65 percent more active over the course of the projects than the outside component. The column totals indicate that the execution phase is the time of greatest overall involvement. The body of Table 10 reveals the following pattern. The selection phase is characterized by a high level of participation by the local component and a relatively low, though substantial, involvement of the outside component. During the planning phase, local participation subsides while outside involvement increases substantially, to the same level as that of the local component. Local participation rises to its highest level during the execution phase of the project. Outside participation remains at approximately the same level as during the planning phase. During the evaluation phase, local participation falls off consid-

erably but remains well above that of the outside component which tapers off somewhat from the execution phase.

The overall picture presented in Table 10 is one in which the local component, often with involvement from outside, selects the projects to be carried out. Once a project has been selected, the outside component becomes involved in most projects and works along with the local component to plan, execute and evaluate the project. The level of participation of the local component, high during the selection process, falls off during the planning phase, rises to its highest level during the execution phase, and falls off once again during the evaluation phase.

The pattern discussed above suggests the following:

1. The local component is more intimately aware of and more interested in the needs of the specific community and thus more likely to be involved in deciding what projects should be carried out.
2. The local component is aware of the value of outside assistance in the form of expertise, materials, equipment, etc., and usually seeks and obtains such assistance during the selection or planning phase of the project.
3. Once the outside component has become involved in a project, usually during the selection or planning phase, it tends to maintain its participation through the execution and evaluation phases, i.e., it tends to see projects through to completion.

4. During the execution phase, when a great deal of manual labor is required to complete the project, the local component responds with the personnel necessary to do the work.
5. While both local and outside components are significantly involved during all phases of projects, the local component is considerably more active in all but the planning phase. The contributions of the outside component are greatest during the planning and execution phases.

The general participation pattern revealed by Table 10 is further specified in Table 9. Examination of the four "actual" columns from Table 9 reveals the participation patterns of each subgroup within both the "local" and "outside" components. Community organizations played the most prominent role in all phases of development projects carried out within the study area from mid-1978 through mid-1980.

The most frequent participants in each phase of the projects are summarized below.

1. Community organizations helped to select 56.7 percent of the projects. Community leaders were involved in the selection of 34.6 percent of the projects, and the municipality helped to select 31.7 percent of the projects.
2. Community organizations (42.3%) the municipality (38.5%), and governmental institutions (32.7%) were most active in planning the projects.

3. Local organizations (78.8%) and community members (66.3%) were by far the most active during the execution phase of projects, with the municipality (40.4%), government institutions (35.6%), and community leaders (34.6%) lending considerable support.
4. Projects were evaluated primarily by community organizations (45.2%), community members (34.6%) and the municipality (32.7%).

6.2 IDEAL PARTICIPATION PATTERNS

This section presents an analysis of ideal participation patterns as reported by individuals in the household survey. An overview of the relationships between actual participation and ideal participation is presented in Table 11. Table 11 is constructed from Table 9 by summing the six groups (of twelve cells each) reported in 1) the "actual" columns of the first three rows (local component); 2) the "ideal-yes" columns of the first three rows; 3) the "ideal-no" columns of the first three rows; 4) the "actual" columns of the last three rows (outside component); 5) the "ideal-yes" columns of the last three rows; 6) the "ideal-no" columns of the last three rows. The scores in the "actual" column of Table 11 are the same as the row totals for Table 10. The scores in the percentage difference columns of Table 11 represent the difference between the scores in the adjacent cells as a percentage of the score in the cell to the left. Five patterns revealed in Table 11 are discussed.

TABLE 11

Differences in Participation: Individuals

	ACTUAL	% DIFF	IDEAL-YES	% DIFF	IDEAL-NO
LOCAL COMPONENT	482.6	-6.2	452.8	-45.5	246.9
OUTSIDE COMPONENT	293.4	+98.6	582.6	-1.5	573.7

In the top row (local component):

1. The score in the "actual" column is very similar to the score in the "ideal-yes" column. Individuals in communities where a project had taken place report an ideal level of local participation only 6.2 percent below the actual reported level of local participation;
2. The score in the "actual" column is quite different from the score in the "ideal-no" column. Individuals in communities where no project had taken place report an ideal level of local participation 48.8% lower than the actual level of participation in reported projects;
3. The score in the "ideal-yes" column is quite different from the score in the "ideal-no" column. Individuals in communities where no project had taken

place report an ideal level of local participation 45.5 percent below the level reported in communities where a project had taken place.

In the bottom row (outside component):

4. The score in the "actual" column is quite different from the scores in both the "ideal-yes" and the "ideal-no" columns. Individuals in communities where a project had taken place report an ideal level of outside participation 98.6 percent above the actual level of outside participation. Individuals in communities where no project had taken place report an ideal level of outside participation 95.5 percent above the actual level of outside participation in reported projects;
5. The score in the "ideal-yes" column is very similar to the score in the "ideal-no" column. Individuals in communities where no project had taken place report an ideal level of outside participation only 1.5 percent below the level reported in communities where a project had occurred.

The patterns discussed above suggest the following:

1. Individuals in communities were projects have taken place seem generally satisfied with the level of local participation which occurred in those projects.
2. The level of local participation reported as ideal by individuals in communities where no development pro-

ject has taken place is considerably below the level of local participation which actually occurs in such projects.

3. The experience of having a project involving local participation in their community seems to substantially increase the level of local participation that individuals consider ideal up to the same level considered ideal by leaders.
4. Regardless of whether or not a project has taken place in their community, individuals express the opinion that the outside component should be much more actively involved in development projects than has actually been the case.
5. The experience of having a project involving local participation in their community seems to have no effect on the level of outside participation which individuals consider ideal.

The five general patterns revealed by Table 11 are further specified in Table 9, and are discussed below in order.

1. The pattern of individuals being basically satisfied with the level of local participation reported for projects which occurred in their community generally holds true for all three categories of potential participants comprising the local component (first three rows) . In only two cases are the differences between adjacent "actual" and "ideal" cells greater

than 10.0. The two most notable deviations from this pattern are:

a) Organizations of the community should be more involved in project selection than is actually the case;

b) Community members should be less involved in planning, executing and evaluating projects than is the case.

2. The pattern of the reported ideal level of local participation in communities without development projects being considerably lower than the level of local participation usually found in such projects is consistent for all three categories of potential participants and for all four project phases. In all cases, the scores in the "actual" cells are greater than those in the corresponding "ideal-no" cell. The smallest difference is 11.3, and these differences range up to 28.4.

3. The pattern of the reported ideal level of local participation being raised by the experience of having had a project in the community holds true for all three categories of potential participants for all four project phases. In all cases, the scores in the "ideal-yes" cells are greater than those in the corresponding "ideal-no" cell. The smallest difference is 6.7 and the largest is 32.8.

4. The pattern of individuals believing that outside participation should be greater in development projects, regardless of the project history of their own community, holds true for all categories of potential participants for all project phases. The pattern is quite weak with regards to the participation of non-profit institutions in the selection, planning, and evaluation phases, but very strong for the municipality and government institutions during all project phases. In all cases, the scores in the "ideal" cells are greater than those in the corresponding "actual" cell. The smallest difference is 0.4, and the greatest difference is 46.1.

5. The pattern of the experience of having a project in their community having little effect on the level of outside participation which individuals consider ideal holds true for all categories of potential participants and all project phases with one exception. The difference between an "ideal-yes" cell and its corresponding "ideal-no" cell is less than 10.0, except in the case of the ideal participation of government institutions in project selection in which the difference is 16.3. Individuals from communities which have had projects want less involvement of government institutions in project selection than do individuals from communities where no project has taken place.

Chapter 7

COMPARATIVE ANALYSIS OF REPORTED PARTICIPATION PATTERNS

This comparative analysis of participation patterns as reported by leaders with those patterns reported by individuals is based on the findings reported in Chapters 5 and 6. The purpose of the analysis is 1) to assess the degree to which community leaders' perceptions of actual participation and their opinions concerning ideal participation are representative of those of individuals; and 2) to assess the effect of having a development project in a community upon what both leaders and individuals think should be the pattern of participation in development projects. The leaders survey data consist of responses of 1987 groups of community leaders representing 1987 communities. The individuals' data consist of responses of 314 individuals from 94 communities. These 94 communities represent a sub-sample of the 1987 communities sampled in the leaders survey. The presentation of the comparative analysis focuses on strong general patterns and is presented as follows:

1. Comparison of actual participation patterns reported by leaders with actual participation patterns reported by individuals.

2. Comparison of ideal participation patterns reported by leaders with ideal participation patterns reported by individuals.
3. Comparison of the effects of a project on opinions concerning ideal participation among leaders and individuals

7.1 COMPARISON OF ACTUAL PARTICIPATION PATTERNS

7.1.1 SIMILARITIES

Leaders and individuals agree on the following points.

1. The local component is very active in development projects, considerably more so than the outside component.
2. The local component is more than twice as active in selecting development projects as the outside component.
3. The local component is considerably more active during the execution of projects than the outside component.
4. The outside component has a relatively high level of involvement during the planning, execution and evaluation phases.
5. Community organizations play the most prominent role in all phases of development projects.
6. Community leaders are quite active in project selection.

7. Government institutions are quite active in project planning.
8. Community members are quite active in project execution.

These similarities are very strong and very important. They indicate that community leaders and their constituents are in basic agreement concerning the role of local participation in development projects. Perhaps the most important points which planners can learn from this analysis are:

1. A very high level of local participation already exists in development projects in the Guatemalan highlands.
2. Community organizations are the driving force in development projects in Guatemala.
3. Local communities select the projects which are completed in their communities.
4. Local people provide most of the work necessary to carry out development projects in the Guatemalan highlands.

7.1.2 DIFFERENCES

1. Individuals report considerably higher involvement of community members in project execution and evaluation than do leaders.
2. Individuals report a relatively high level of Municipal involvement and relatively low levels of govern-

mental and non-profit institutional involvement compared with leaders.

These differences seem fairly unimportant and probably result at least in part from the nature of the Study Three sample (see pp. 38-39

7.2 COMPARISON OF IDEAL PARTICIPATION PATTERNS

7.2.1 SIMILARITIES

1. Individuals and leaders generally concur on the ideal role of the municipality and government institutions.
2. Individuals from towns where a development project had taken place concur with leaders on the ideal role of the local component in development projects.
3. Leaders and individuals concur in expressing the opinions that the outside component should be much more actively involved in development projects regardless of whether or not a project had taken place in their community. The experience of having a project involving local participation in their community has no effect on the level of outside participation which leaders and individuals consider ideal.

7.2.2 DIFFERENCES

1. Individuals are less likely to include non-profit istitutions as ideal participants in all phases of development projects than are leaders.

2. Individuals are less likely to want government institutions to be involved in project evaluation than are leaders.
3. Individuals from towns where no development project had taken place are much less likely to want the local component to be involved in all project phases than are leaders and individuals from towns where a project had taken place.
4. Individuals from communities where no projects had taken place expressed an ideal level of local participation well below that reported for projects which had actually taken place in the study ares. However, leaders and individuals from communities where projects had taken place seem generally satisfied with the level of local participation reported for such projects. The experience of having a project take place in the community seems not to affect leaders' opinions concerning the ideal role of local participation. However, this same experience seems to have a marked effect on individuals, apparently making them aware of the advantages of participation and raising their opinion of the ideal level of local participation up to that held by community leaders.

7.3 SUMMARY OF MAJOR FINDINGS FROM PART III

The analyses of patterns of participations present a number of significant findings. The most important of these include:

1. In general, community leaders and individuals are satisfied with the amount of local participation that has taken place in development projects in their communities.
2. Local people feel that outside help for development projects should be much higher than it has been in practice.
3. Among individuals, persons living in communities where a development project has taken place feel that local communities should be more actively involved in their own development than do individuals in communities in which no such projects had taken place.

PART IV

CASE HISTORY OF SAN MARTIN

Part IV presents a case study of a development project designed to provide irrigation to small farmers in the highland community of San Martin, Guatemala.[1] The primary focus of the case study is a micro-analysis of the role of local participation within the project. Information presented here is relevant to contractual objectives two and four. The small farmer irrigation project at San Martin was selected for this study based on interviews with approximately twenty-five international and Guatemalan agencies.[2] The agency interviews indicated that local participation had played a significant role in various phases of the irrigation project at San Martin, making it an appropriate location for the initial field study.

The design of the interview schedules used in San Martin drew heavily on ideas developed by Cohen and Uphoff (1977). Questions were designed to elicit information about the history of the project, the process of participation during the different phases of the project, and characteristics of project participants. Characteristics of the project and of the community that might affect participation were examined.

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[1] This community, the agencies involved in the project, and all individuals mentioned in this case history have been given pseudonyms, in order to protect the privacy of the informants.

[2] A report based on this information is being prepared by the Guatemalan local participation team.

The study of the irrigation project at San Martin involved two weeks of field work. During this time a local participation team composed of the Guatemalan coordinator of Activity One, a Guatemalan fieldworker, and the authors of this report stayed in San Miguel, a small city and departmental capital located about seven kilometers from San Martin. Structured interviews were conducted with AGOG and IDA employees in their regional offices. Interviews with 15 of the 16 project participants and with 15 residents of San Martin who had not participated in the project were conducted in the community itself. Most of these interviews were carried out at the respondents' homes; a few took place in fields or at a small community hall located near the center of San Martin. Community leaders such as the auxiliary mayor and the schoolteacher were also interviewed. These interviews took the form of relatively unstructured conversations. The leaders were asked about the community itself as well as the project under study.

This case study 1) describes the history of the irrigation project, and 2) reports the findings of an analysis of the data gathered during a field study of the project. The project was co-sponsored by an International Development Agency (IDA) and an Agency of the Guatemalan Government (AGOG) as the pilot project for their joint Small Farmer Irrigation Program. The primary focus of the study is upon the participation of local people throughout the various

phases of the project. The immediate objective is to investigate the role which local participation played in the Small Farmer Irrigation Project in San Martin. The ultimate goal is to gain understanding to help in devising methods by which local participation may be effectively incorporated into development projects in Guatemala.

Chapter 8

BACKGROUND OF THE PROJECT

8.1 THE SMALL FARMER IRRIGATION PROGRAM

The small farmer irrigation program under which the San Martin project was funded was established a couple of years ago with the granting of a $500,000 revolving loan to the government of Guatemala by an international development agency. The money is administered by the Banco Popular de Desarrollo de Guatemala (BPDG). The money is available to farmers owning small amounts of land for funding small-scale irrigation projects.

Technical assistance is provided by AGOG and IDA. Loans for approved projects are made for up to twenty years at two percent interest. A three year grace period on payment of the principle is available if necessary. No land titles or other collateral are held against the loans because of concern that many small farmers would be reluctant to accept such a requirement.

Individual farmers wishing to participate are required to hold clear title to their land. They can own no more than ten hectares of land. They cannot be in default on any other loans from BPDG. They are required to join with other farmers in their community in a group to request the loan and administer the project.

The project selection process is initiated when local people petition AGOG for assistance. AGOG personnel then visit the community and their technicians measure the water supply and calculate how much land could be irrigated with the available water. Based on these calculations, and taking into account the distance the water would need to be transported and what crops are to be grown, AGOG determines if the project is technically and economically feasible.

Once a project has been declared technically feasible, it becomes the responsibility of local people to form a mini-irrigation group to organize and carry out the project. Technical assistance is be provided by AGOG and IDA, but in the absence of genuine and sustained interest on the part of the local community, no project is carried out.

The administration of an irrigation project can be set up in one of two ways:

1. If there is a deficiency of water, each member of the group is permitted to irrigate the same amount of land, no matter how much land each individual owns. Everyone is charged the same fee for their water, regardless of the location of their land within the system.
2. If there is an excess of water, the members of the irrigation group can irrigate however much land they choose, but their fees are proportional to the amount of land irrigated (i.e., how much water they use).

In the first three years of the small farmer irrigation program, thirteen projects were completed, and four more were in progress. The irrigation project at San Martin was the first of these projects.

8.2 THE COMMUNITY OF SAN MARTIN

San Martin is a small village of about 45 households spread out along either side of a major paved highway between two departmental capitals. The village is located on the slope of a mountain overlooking San Martin's departmental capital, seven kilometers distant. On a clear day, the ocean can be seen from some of the higher houses in town. Many buses ply the busy highway and pass through the center of San Martin, giving the residents easy access to the wide range of services available in the capital.

San Martin is a community in a period of transition from an Indian community to a Ladino (mestizo) community. All residents of the village speak only Spanish. Several informants reported that one elderly woman in the settlement of Cinco Colinas (which is located near the water source used in the irrigation project) is the only resident of the San Martin area who still speaks the indigenous language of the region. All the men in the community wear western-style clothing. However, many of the women dress in traditional fashion, wearing the hand-woven "huipiles" (blouses) and wrap-around skirts typical of indigenous communities in the area.

San Martin was assigned a score of three on the community development scale discussed in Chapter Five. Most residents have access to potable water, due to a community water project that was undertaken several years before this study occurred. In addition, the irrigation project under review increased the supply of potable water available. There is a paved road and a primary school. The town has no electrical service.

Although there is no health post in San Martin, the residents do have easy access to health care at a health post in a nearby community. However, many residents of San Martin seem to find the quality of care in the health post unsatisfactory and travel instead to the equally accessible departmental capital for medical attention. Thus, although San Martin technically ranks as a three on the community development scale, it is obvious that the residents of San Martin have access to four of the five basic services. In addition, San Martin has a small community hall and many of the houses have latrines, the result of an earlier project.

When thirty residents of San Martin were asked to name their community's most urgent needs, twenty-six of them mentioned electrical service. In all, fifteen different items, including a community building, drainage projects, additional teachers and classrooms, access roads, agricultural technology and agricultural credit were mentioned as community needs. Residents of San Martin overwhelmingly agreed that

the next thing their community needs is electrical service. In fact, preliminary organizing towards initiating such a project was underway at the time of this study. There seemed to be little consensus about other community needs. This is the type of response pattern expected of developmental level four communities, i.e., a strong consensus that the community needs the one basic service that it lacks, but little agreement on additional needs.

8.3 A HISTORY OF THE SAN MARTIN MINI-IRRIGATION PROJECT

According to most accounts, the initial idea of an irrigation project for San Martin came from Benito Gomez, an agronomist employed by AGOG who worked out of the local AGOG office serving San Martin. Benito had been working for some time with farmers in the community of San Martin. He noticed that there was a water source there, and conceived of the idea of using the water for some kind of irrigation project. He and other employees in the local AGOG office began asking their regional office in a nearby city for help to develop this project but no funds were available.

Coincidentally, at about the same time, funding became available through the Small Farmer Irrigation Program. Dr. Bob Emerson, the IDA engineer who was in charge of the newly formulated irrigation program, was looking for a pilot project. Bob arranged to give a presentation about small farmer irrigation projects in the municipality in which San Martin is located.

Benito was still wanting to get an irrigation project going in San Martin, but most of the local farmers were unable to conceive of how such a project could work or benefit them. However, they had much interest in increasing their supply of potable water and saw that an irrigation project would satisfy this goal as well as providing water for agriculture. Benito heard about Dr. Emerson's upcoming presentation, and convinced several of the farmers from San Martin to attend. Among the group was Jose Maria Martinez, who was generally recognized as a leader in the community. Jose Maria had been working as a promoter for another Guatemalan government agency in his community and was viewed by many community members as a very knowledgeable person. Jose Maria was sold on the idea of an irrigation project for San Martin after hearing Bob's presentation, and he began working to convince a number of San Martin farmers to form a group to apply for funding for such a project in their community.

Jose Maria and one or two other community members went from house to house inviting farmers to join the group, explaining about the project, telling people the benefits they could receive from participating in the irrigation project, and generally trying to get as many local farmers as possible to join the mini-irrigation group. They were able to find sixteen farmers willing to make a commitment to the project, and these individuals formed the "Comite 10 de Agosto" to carry out the project.

Bob Emerson designed the system in use in San Martin, and he and AGOG employees made the technical decisions. The irrigation system in San Martin utilized the aspersion by gravity method of irrigation. The system has a capacity of 16 liters per second. The water source is 'riachuela' San Ramon which flows down from the mountain at Cinco Colinas, a very small village on a mountain above San Martin.

The participants in the project were responsible for all non-technical decisions. They decided what land they wanted to irrigate. They were responsible for organizing themselves to carry out the administrative procedures needed to get the project underway; for picking up materials and transporting them to the project site; and for the actual construction of the irrigation system. Once the construction phase of the project was completed, project participants assumed responsibility for ongoing maintenance and administration of the system.

Chapter 9

CHARACTERISTICS OF THE PROJECT

The characteristics of a particular development project will necessarily have an effect on the type and degree of participation that occurs in the different phases of the project. In this chapter, a number of such factors that affect participation are discussed as they apply to the San Martin irrigation project.

9.1 TECHNOLOGICAL COMPLEXITY

The technology employed in the irrigation project at San Martin was relatively simple. The system was set up to distribute the irrigation water by means of gravity. As no pumps were used, there was no machinery to install, operate or repair.

The project participants needed to learn new skills to lay the pipes that carry the water. They seemed to have mastered the necessary techniques well and could repair the pipes in case of a break. At the time of the study three of the participants were employed by AGOG to supervise installation of similar irrigation systems in other communities.

The members of the irrigation group also had to learn proper irrigation techniques in order to take good advantage

of the irrigation system. Technicians from AGOG and IDA worked with them to provide them with the necessary information. However, one of the IDA technicians indicated in that the project participants are not getting the full benefit of the irrigation because they have not assimilated all the information they were given about proper irrigation techniques. They do not irrigate long enough at one time to get the soil wet deep enough for maximum crop growth.

9.2 RESOURCE REQUIREMENTS

In order to participate in the small farmer irrigation program each participant is required to hold title to his land. This restriction has a strong effect on who participates in projects, as many Guatemalan farmers do not own their own land or do not hold clear land titles. This was the case in San Martin where several small farmers were excluded from the project because they rented rather than owned their land. There is also a requirement that no one owning more than ten hectares of land may participate in the program. This restriction is designed to limit the program benefits to small farmers. This requirement was not relevant to San Martin, as no farmer in town owns as much as ten hectares.

9.3 BENEFITS

The farmers of San Martin who participated in the irrigation project received very tangible benefits the first year the irrigation system was in operation in the form of increased income from selling vegetables. They were able to make more intensive use of their land to market a new and profitable crop. These benefits were recognized throughout the community. Several participants commented that other community residents who had refused to join the group when it was forming were now sorry that they had not done so.

Those participants who owned the most land received the most benefits. But all participants felt that they had benefited by their participation in the project. In addition to increased incomes, a number of participants listed improved nutrition as a benefit, as their familes were eating more vegetables than before.

Another benefit to all participants was an increased supply of potable water to their households. The community of San Martin had installed a potable water system some years ago, but the water supply was not adequate at all times of year. As part of the project, water from the irrigation system became available for household use by the families of participants in the project. In fact, the possibility of a increase in the amount of potable water available to their households was a motivating factor in the decision of some project participants to join the irrigation project.

9.4 PROGRAM LINKAGES

Some linkage existed between the small farmer irrigation program and a soil conservation program. Both were administered by AGOG with technical assistance and financing through IDA. Participants in the project at San Martin were encouraged to also participate in the soil conservation program, which involved construction of terraces on the steep slopes used for farmland in highland Guatemala. A number of the San Martin farmers participated in this project.

Chapter 10

HOW DID PARTICIPATION OCCUR

Cohen and Uphoff (1977) have identified a number of specific characteristics of participation that can further an understanding of local participation in development projects. This chapter will examine these characteristics as they are pertinent to the irrigation project in San Martin.

10.1 INITIATIVE

The initiative for the participation of community members in the irrigation project at San Martin came both from the community itself and from the agencies sponsoring the project.

1. Community leaders were active in forming the group and in encouraging as many community residents as were interested to join in the project. Most participants credit community leader Jose Maria Martinez with being the person most responsible for organizing the project and soliciiting local participation.
2. The entire mini-irrigation program as designed by IDA and AGOG was set up to include community participation. No project is undertaken in a community that has not requested such a project and has not formed

some sort of organized group to request the loan and carry out the construction of the project.

10.2 INDUCEMENT

No material incentives were offered to encourage participation in the project, in that no money or food was offered in direct remuneration for participation. The largest inducement came in the form of the hopes of the participants for a more dependable potable water supply and increased incomes as a result of the installation of the irrigation system.

10.3 STRUCTURE

A formal committee of participants was organized at the very beginning of the project. This committee elected officers, met regularly, and continued to function as the administrating body for the irrigation project at the time of this study. Many of the participants in the project had served as officers in the committee at one time or another since the initiation of the project.

During the planning and construction phases of the project the committee scheduled the hours each member worked. After the irrigation system was completed the group administered the system, set up irrigation schedules and resolved disputes. Decisions in meetings were made by a vote of the members. The executive committee (made up of the President,

Vice President, Secretary, Treasurer, and two "Vocales") could make decisions between sessions. Attendance at meetings was required. A small fine was levied on members who failed to attend committee meetings.

10.4 CHANNELS

The participation of the farmers of San Martin in the irrigation project was direct rather than indirect. The participants organized their own committee, attended regular meetings, voted on major decisions, worked directly on construction of the irrigation system, and, through the on-going committee structure, administered the completed irrigation system.

10.5 DURATION

Organizing work for the irrigation project began in early 1977. The farmers received their loan and began construction in May of that same year. The irrigation committee met weekly during this period to plan the project. During the actual construction phase participation was much more intense and time-consuming, as the farmers themselves provided all the labor for the construction of the system. After construction of the project was completed participants attended weekly meetings of the irrigation committee. These meetings were used to resolve any problems in the administration and/or maintenance of the irrigation system.

10.6 EMPOWERMENT

In general the participants seemed to have the power to make decisions and to make changes in the project. Twelve of the fifteen participants answered in the affirmative when asked if they had had power or influence in decisions that had been made about the project. Ten of them said that if they had any complaints they would present them before the irrigation committee.

One example demonstrates that the committee had the power to make decisions concerning almost any aspect of the project. At one point during the construction phase, the participants voted to change the design of the irrigation system, and followed through with the change , against the advice of the technical advisors. The results of this incident are related in Chapter 11.

The participants in the mini-irrigation project learned that they could work together to improve their incomes and the quality of their lives.

Chapter 11

WHO PARTICIPATED

This chapter examines the question of who participated in the San Martin mini-irrigation project from two different perspectives (see Cohen & Uphoff, 1977). First is a discussion of which functional categories of participants were involved in different phases of the project. The categories examined are the same as those used in the discussion of patterns of participation presented in Part III, i.e., community leaders, community organizations, community members, the municipality, Guatemalan government institutions, and non-profit organizations.

The next three sections of the chapter examine the characteristics of community residents who joined the irrigation committee. Project participants are compared with non-participating community members on the basis of demographic characteristics, agricultural production, and history of participation in development projects.

11.1 PARTICIPATION IN PROJECT PHASES

11.1.1 SELECTION

The ultimate selection of the irrigation project rested with the community. Within the small farmer irrigation program no projects are initiated unless interested local farmers form a committee and request a loan to carry out the project. In San Martin, several community leaders became interested in the irrigation project and organized the group that requested the loan and constructed the irrigation system.

AGOG and IDA also played a part in the selection process. They were actively promoting the mini-irrigation program and were in search of a community in which to begin a pilot project. And it should not be forgotten that it was an AGOG technician who first conceived of an irrigation system for San Martin.

11.1.2 PLANNING

Technical planning for the irrigation system was carried out by IDA and AGOG. AGOG employees assessed the technical feasibility of the project. Bob Emerson of IDA designed the actual system that was constructed in San Martin.

The participants in the project made decisions about what land they wanted to irrigate, within the technical limitations of the system to be constructed. They also made all administrative decisions within their irrigation committee

and continue to have full responsibility for administration of the system.

At one point during construction of the system a conflict over decision-making in planning arose. The participants unilaterally changed the design of the system. This eventually caused a blowout of sixteen pieces of eight-inch PVC pipe. The end result of this incident was that the participants had to come up with $1500 extra to replace the damaged pipe. They did so and returned to the original design.

11.1.3 EXECUTION

The actual building of the irrigation system in San Martin was carried out by the participants and their families. AGOG and IDA employees visited the community frequently during the construction phase to supervise, give advice and lend a hand, but responsibility for construction rested with the participants. A number of participants had relatives who helped them with their share of the labor, and a few of those who could afford to do so hired laborers to help with their share.

The participants were also responsible for implementing and administering the system once construction was completed. Through regular meetings of the irrigation committee (composed of all participants), the farmers set the schedule for irrigating, and resolve any disputes or difficulties that might arise. An example of the later occurred when one

of the participants who lives in a house on the road that passes through San Martin opened a small truck washing business, using water from the irrigation system. Some of the other participants complained about this use of the water. They all discussed the problem at a meeting of the committee, fined the participant in question a small sum of money, and told him that he could no longer use the irrigation water to wash trucks.

11.1.4 EVALUATION

No formal evaluation of the irrigation system had been completed at the time of this field study. However, an agency of the Guatemalan government, with some ties to AGOG and IDA, was undertaking an economic impact evaluation of the project. The field work for this evaluation was completed and the final report was being prepared. The preliminary findings of the evaluation indicated that all participants received some benefits as a result of their participation in the project. The report further indicated that those farmers who owned larger plots of land were able to benefit more than those who owned small parcels.

The fifteen participants surveyed as part of the field study evaluated the project positively. All said they would participate in a similar venture again. Most seemed quite satisfied with the agency intervention in the project and with the role they themselves had played in the project

through the irrigation committee. Those few who had complaints were more concerned with specific details concerning the ongoing administration of the project than with the overall project itself.

11.1.5 PARTICIPATION PATTERNS

When the information discussed in the preceding paragraphs is diagrammed, the pattern of participation in the irrigation project in San Martin looks like that illustrated in Table 13.

TABLE 13

Participation Patterns: San Martin Irrigation Project

	SEL	PLAN	EXEC	EVAL
COMMUNITY LEADERS	YES	NO	NO	NO
COMMUNITY ORGANIZATIONS	YES	YES	YES	YES
COMMUNITY MEMBERS	NO	NO	NO	NO
MUNICIPALITY	NO	NO	NO	NO
GUATEMALAN GOV. ORGS.	YES	YES	YES	YES
NON-PROFIT ORGANIZATIONS	YES	YES	YES	YES

Community leaders participated in selecting the project. While many of these same individuals continued to participate throughout the project, their continued participation was as members of the irrigation committee that was formed to carry out the project, not as community leaders as such. The irrigation committee is considered to be a community organization, albeit one which was formed specifically for this project. This organization was involved in the selection of the project through its requesting the loan and technical assistance from AGOG and IDA. It was further involved in the planning phase, as it was repsonsible for helping make decisions about what land was to be irrigated and to set up the ongoing system for administering the water distribution system once the construction phase was over. And it was involved in the execution phase of the project, as the committee members were the ones who actually built the irrigation system. Committee members were surveyed for this study and the economic impact evaluation. In addition, the participants are continually evaluating the project on an informal basis through their committee meetings.

Community members did not actively participate in any phase of the project, nor did the municipal government participate at any time.

Guatemalan government organizations, i.e., AGOG, and non-profit institutions, i.e., IDA, were actively involved in all phases of the project. Their role in selection,

planning, and execution has been discussed in the preceding paragraphs. The economic impact evaluation was actually conducted by another agency peripheral to AGOG, but both AGOG and IDA had input into that evaluation and will benefit from it.

11.2 DEMOGRAPHIC CHARACTERISTICS OF PARTICIPANTS AND NON-PARTICIPANTS

11.2.1 THE PARTICIPANTS

The village of San Martin is made up of approximately 45 households. Sixteen household heads participated in the small farmer irrigation project. Fifteen of the sixteen participants were interviewed. Included in the interview schedule were a series of questions requesting demographic and socioeconomic information about the participants and their families. The information reported in this section about the characteristics of the participants is compiled from the responses to these questions.

The ages of the participants ranged from 32 to 55. The mean age at the time of the study was 45.3. All but one of the participants were male. Two of those interviewed were single; the rest, married or living in free union. All of them could read and all but one could write. Most had two or three years of school. None had attended school for more than three years. All spoke Spanish as their only language.

Nearly 75% (11) of the participants gave farmer as their principal occupation. The other four named bricklayer (2

responses), businessman, and soapmaker. These four respondents said that they were farmers as a secondary occupation. Although the interview schedule asked for only one occupation or profession, ten of the respondents mentioned a secondary occupation. In addition to the four responses of farmer, the following were mentioned as secondary occupations: housewife, businessman, agricultural promoter, plumber, and sawmill worker.

The respondents were evenly divided on religious preference. Seven were Catholic, seven evangelicals, and one responded that he adhered to no religion.

The ages of the participants' spouses ranged from 28 to 53, with 36.7 being the mean age. Eight of the thirteen spouses could read and seven knew how to write. Six of them (nearly 50%) had not attended school. Four had attended two years of school; two, three years of school; and one, five years of school. All spoke only Spanish. All but one respondent listed housewife as his spouses's principal occupation. The one exception said that she was a soapmaker. Six were Catholics and five evangelicals, with two not responding to the question of spouse's religious preference.

The number of children in the families of the participants ranged from zero to ten. The mean number of children was five. The size of the current household ranged from three to thirteen, with 7.5 persons being the mean household size.

Most of the participants had always lived in San Martin. The mean length of residence was 38.5 years (as compared with the participants' mean age of 45.3 years). Two of the participants actually lived in the departmental capital a few kilometers away from San Martin, and two lived in an adjacent village. However, these non-residents of San Martin owned land there, had relatives in San Martin, and seemed to have close ties to that community. Thirteen of the participants reported that they owned their homes, and two said they lived in houses owned by relatives (wife and mother respectively).

The participants reported yearly incomes ranging from 250 quetzales to 1560 quetzales (3 not reporting). The mean yearly income for the group of participants interviewed was 843 quetzales. (One quetzal=one U.S. dollar; the value of the quetzal is tied to the value of the U.S. dollar at a ratio of one to one.)

11.2.2 THE NON-PARTICIPANTS

Fifteen of the thirty non-participating household heads in San Martin were randomly selected and interviewed. The non-participants were administered an abbreviated interview schedule that included the same demographic and socioeconomic information requested of participants; the respondents' opinions about their community's needs and priorities (also asked of participants); and a group of questions asking them

about their personal participation history and why they did not participate in the irrigation project. The results of these interviews are reported in this section.

The sample of fifteen residents of San Martin who had not participated in the irrigation project ranged in age from 28 to 74, with a mean of 43.9 years. The sample was made up of fourteen men and one woman. Among the heads of households eleven were married, one lived in free union, and three were single. All but one could read and write. Years of schooling ranged from zero to five years, with the largest number of respondents (8) having attended three years of school. All spoke only Spanish.

Seven of the fifteen persons interviewed gave farmer as their principal occupation. Four were masons, two were weavers, one a businessman and one a dressmaker. The interview schedule did not include a question specifically asking about a secondary occupation. Nonetheless, four of the respondents indicated that they were farmers as a secondary occupation and one listed a secondary occupation of businessman. Nine of the non-participants were Catholic and five were evangelicals. One listed no religion.

The spouses of the twelve respondents who were married or lived in free union were from 23 to 72 years old, with a mean age of 32.7 years. Half could read and write. Eight had not attended school; the other four had attended from one to three years. Six were housewives as ther primary oc-

cupation. Other occupations mentioned (one mention each) were weaver, dressmaker, promoter, and candle-maker. In addition, two spouses were weavers as a secondary occupation. Six of the spouses were Catholic and five were evangelical. One gave no religion.

The number of children in these households ranged from zero to eight, with a mean of 3.9 children. The current household size ranged from two to eleven, with a mean of 5.5 persons. Most of the respondents had always lived in San Martin. The mean time of residence was 40.2 years.

Yearly incomes of the non-participants ranged from 25 quetzales per year to 2250 quetzales per year. Income information was missing for four cases. The mean annual income for those reporting was 630 quetzales.

11.2.3 COMPARISON OF DEMOGRAPHIC INFORMATION

A comparison of the demographic and socioeconomic information gathered from participants and non-participants in San Martin indicates few differences between the two groups. They were of approximately the same age (a mean of 45.3 years for participants vs. 43.9 years for the non-participants); most of them were married; the vast majority could read and write; most had attended two to three years of school. The participants were divided evenly as to religion between Catholics and evangelicals. A larger percentage of the non-participants were Catholic (60%), while 33% of this group were evangelicals.

The number of children per household was slightly higher among participants than among the non-participants interviewed (five children for participants as compared with a mean of 3.9 children for the non-participants), and the average size of the current households of the participants (7.5 persons) was larger than the mean household size for non- participants (5.5). Most of the respondents for both groups had lived all their lives in San Martin. The mean yearly income for participants was higher than that for non-participants: 843 quetzales per year for participants versus 630 quetzales per year for the non-participants. It should be noted that income information was requested only for the year in which the interview took place; thus, additional income participants might be earning as a result of their participation in the irrigation project would be included in the income figures. It is not possible to ascertain from the data gathered whether the same income difference between participants and non-participants held true before the irrigation project.

Eleven of the participants gave farmer as their primary occupation, and the remaining four indicated that they were farmers as a secondary occupation. In contrast fewer than half (seven of fifteen) of the non-participants listed farmer as their primary occupation, and four more listed farmer as a secondary occupation. More of the non-participants viewed themselves as something other than farmer than did the participants.

In fact, other than differences in occupation, participants in the irrigation project at San Martin did not differ very much from their neighbors in terms of their demographic characteristics.

11.3 AGRICULTURAL PRODUCTION OF PARTICIPANTS AND NON-PARTICIPANTS

11.3.1 THE PARTICIPANTS

The interview schedule administered to participants in the irrigation project included a section that covered land tenure and agricultural production five years and one year before the interview, in an attempt to identify changes in agricultural patterns. Respondents were asked what crops were planted, what yields were obtained, and what percentage of each harvest was consumed by the household. They were asked how much land they owned and rented, and how much of each type of land was currently under cultivation.

The amount of land owned by participants and/or their families ranged from one to 87 cuerdas, with a mean of 25.3 cuerdas. (In San Martin a cuerda is a piece of land 25 X 25 varas in size; a vara is a measure of length that is slightly shorter than a meter.) Two of the respondents also rented one and three cuerdas respectively for cultivation. The amount of owned land under cultivation at the time of study ranged from 1 to 40 cuerdas, with a mean of 14.7 cuerdas.

The first crop mentioned by the farmers of San Martin was corn. Five years ago the number of cuerdas planted in corn

ranged from 2 to 40 cuerdas. (Information was not obtained about agricultural production five years ago from three respondents.) The mean number of cuerdas cultivated in corn five years ago was 33.4 cuerdas. One year ago the range of cuerdas planted in corn was from 1 to 40 cuerdas, and the mean number of cuerdas in corn dropped from 33.4 to 12.1 cuerdas. Five years ago the mean corn harvest was 45.8 quintales of corn per household. (A quintal is 100 pounds.) One year ago the mean had fallen to 25.4 quintales of corn per household. In both years the majority of respondents (8 of 11 answering the question for five years ago and 12 of 13 answering for one year ago) reported that 100% of the corn harvested was consumed by the household.

Five of the respondents reported that they planted from ten to thirty cuerdas of beans five years ago. Seven did not report that they cultivated beans, and three did not give information on crops planted five years ago. It can be assumed, however, that most of the participants planted at least some beans, as the custom in highland Guatemala is to plant beans among the corn (milpa). Of those reporting that they planted beans, the mean number of cuerdas planted dropped from 16 cuerdas five years ago to 7.6 one year ago. Little information is available about yield for this crop. The majority of responses indicate that 100% of bean production was consumed by the household.

Only one of the respondents reported planting vegetables five years ago. In contrast, all fifteen participants grew vegetables one year ago. The vegetables grown included beets, carrots, cabbage, radishes, and onions. The number of cuerdas planted ranged from one to ten, with a mean of four cuerdas. Precise information about vegetable yields was difficult to obtain. Some respondents reported yields of such vegetables as carrots and beets in terms of how many dozens were harvested. Others gave the amount of money they had been able to sell their vegetables for in the market. (For example, one farmer said that he had sold almost all the cabbage he harvested, and that he had earned one hundred quetzales.) Others reported the number of quintales of vegetables harvested. An attempt was made to determine vegetable production by a consistent measure so aggregate statistics could be reported. It was finally determined that for seven of the cases not enough information was available to accurately measure vegetable yields. Of the eight participants for whom vegetable production was recorded, the mean yield was 27.7 quintales per household. The percentage of vegetables consumed by the household ranged from zero to 50%, with a mean of 22.9%. The rest of the vegetables were sold.

11.3.2 THE NON-PARTICIPANTS

Information about agricultural production five years ago was not asked of the non-participants. One year ago the non-participants' corn cultivation ranged from one to fifteen cuerdas, with a mean of 8.5 cuerdas. Their mean yield was 12.5 quintales of corn per household. Ten of the respondents said that their entire corn harvest was consumed by the household. One reported a household consumption of 40%, and one, 70%. Information on consumption was missing for three cases.

Bean cultivation one year ago ranged from zero to fifteen cuerdas, with a mean of 7.5 cuerdas. Those planting beans and reporting yield harvested a mean of 1.2 quintales of beans. All but one household reporting bean production consumed 100% of their harvest.

Only two of the non-participants cultivated vegetables one year ago: one and three cuerdas respectively. One of these reported a yield of eleven quintales and consumed 60% of these in the household. Yield and consumption information is missing for the other informant.

The non-participants owned from zero to 60 cuerdas of land. Three owned no land, three owned one cuerda, and three owned four cuerdas. The mean amount of land owned was ten cuerdas. The amount of owned land currently under cultivation had a mean of 5.9 cuerdas. Five of the informants rented land in amounts ranging from five to ten cuerdas. All of this rented land was under cultivation.

11.3.3 COMPARISON OF AGRICULTURAL PRODUCTION INFORMATION

A review of the agricultural production information gathered about the project participants and the non-participants shows a number of differences between the two groups. The participants in the project all owned farmland, with a mean of 25.3 cuerdas. Two participants also rented small parcels of cropland (one and three cuerdas each). In contrast, the mean amount of land owned by the non-participants was only ten cuerdas. Three of them owned no land, and six others owned fewer than five cuerdas each.

It should also be noted that all project participants planted vegetables one year ago, averaging four cuerdas of vegetables each. Only two of the non-participants planted even small quantities of vegetables. Of course, this vegetable raising by project participants is a direct result of their participation in the project, as five years ago only one of them had planted vegetables.

11.4 PARTICIPATION HISTORY OF PARTICIPANTS AND NON-PARTICIPANTS

All individuals interviewed in San Martin were asked for information about their past participation in development projects. Non-participants were asked if they or any member of their households had participated in any development projects. Those that responded in the affirmative were asked what projects they had been involved in. Many of the respondents named more than one project.

The project participants were also asked if they had or were currently participating in any projects other than the irrigation project. Those who had participated in past projects were asked for information about the project and the nature of their participation. The question asked of participants was structured in such a way that only one project was named by most respondents, even if they had participated in several different projects.

11.4.1 PARTICIPANTS

Among the participants in the irrigation project, ten said they had participated in other projects. The projects named included soil conservation, introduction of potable water, the community tree nursery, construction of a small courthouse, road construction, and a latrinization project. Four respondents said they had not participated in projects in the past. Information was not obtained from one participant.

11.4.2 NON-PARTICIPANTS

Eleven of the fifteen non-participants said that they or some member of their household had participated in some community project other than the irrigation project. In addition, two of those responding to this question said that they had donated money or materials to community projects, even though they had been unable to directly participate.

Eight of these respondents had participated in installing and/or repairing San Martin's potable water system, which had been installed some years previous to the current study. Other projects in which participation had occurred included construction of the courthouse, a soil conservation program, school construction, a latrine construction project, and a tree nursery.

When asked why they had not participated in the small farmer irrigation project, the largest number of informants (four for each response) said that they did not own land or that they did not have time to participate because of their (non-agricultural) work; these respondents were primarily weavers or businessmen. Several of the non-participants mentioned lack of money or a reluctance to take on the responsibility of the loan as reasons for not participating in the project. Three respondents said they were not invited to participate; two cited personality conflicts with certain project participants as their reason for not joining the irrigation group.

The majority of non-participants questioned (eleven of fifteen) said that there was no difference between those community residents who had participated in the project and those who had not. Three persons said that the participants were richer than other community residents. And one respondent (a Catholic) said that the participants were all evangelicals.

11.5 CONCLUSIONS FROM THE CASE HISTORY

This case study presents an analysis of the participation process in one specific development project. The participation process is far too complex to proceed identically in any two projects, and the specific factors affecting participation will vary. However, the participants in the San Martin mini-irrigation project reported patterns of participation very similar to the general patterns identified in Part III.

This section presents the major findings of the case study. Several factors which facilitated participation and several factors which impeded participation in San Martin are discussed. Similar factors can be expected to affect the participation process in development projects throughout the Guatemalan highlands.

The results of this case study indicate that the local participation process functioned quite effectively within the San Martin mini-irrigation project. Among the factors contributing to this effectiveness were:

1. An employee of a Guatemalan government agency who was very aware of San Martin's needs and resources and who was greatly admired in the community convinced several community leaders that the mini-irrigation project would benefit local farmers.
2. Good effective leadership in the community of San Martin itself contributed greatly to the level of

participation in the project. When a widely respected community leader became committed to the project, others followed his lead and became involved.

3. The prospect of increasing the supply of potable water to their households was a powerful inducement to eligible San Martin residents to participate.
4. The community of San Martin had a history of community participation in development projects. Projects incorporating community participation within the past few years included a potable water project, a latrinization project, construction of a small courthouse, and establishment of a small community tree nursery to reforest the mountainsides surrounding San Martin.
5. Community participation was an integral part of the original design of the mini-irrigation project. Local people selected the project and formed an effective organization that took responsibility for carrying out the project.
6. The technology used in the irrigation system was of a level that local people could readily learn and apply. Technical assistance from outside the community was needed only during the planning stage of the project.

A few factors that impeded participation or that contributed to problems in the project can also be identified.

1. Each participant had to assume responsibility for paying back the loan that financed the project. A number of San Martin residents did not join the group because they did not want to have this responsibility.
2. Participation required a sizable commitment of time to be spent working on the project. Some individuals were not able to commit the time needed for participation.
3. Personal conflicts kept a few persons from participating. A key leader in the irrigation group had had a dispute with another San Martin farmer over a parcel of land. That farmer and several of his relatives did not join the project because they did not want to associate with the leader of the group, even though they were convinced that participation would benefit their households.
4. One problem arose when the irrigation group (against the advice of AGOG and IDA technicians) changed the design of the system, resulting in a blowout of several sections of pipe. The problem was resolved by returning to the original design and replacing the damaged pipe at the expense of the participants.
5. A minor problem concerning improper use of the irrigation water to wash trucks was resolved by the irrigation committee, which levied a small fine on the

offender and required him to stop washing trucks with project water.

The few problems that did occur seem relatively minor and did not seriously reduce the effectiveness of local participation in the project.

Everyone who participated in the mini-irrigation project said that he had benefited from his participation. Prior to completion of the mini-irrigation system, all but one of the participating farmers cultivated corn and beans exclusively. As part of the technical assistance associated with the project, they were encouraged to grow such vegetables as cabbage, beets and onions. In fact, all participating farmers did begin growing vegetables, and as a result improved both their incomes and the nutritional status of their families. Signs of prosperity were evident in the homes of the participants. New corrugated sheet metal roofs had been added to several houses; a cement porch was being constructed at another. Several group members had purchased new transistor radios and wrist watches, and new Western-style clothes and sunglasses were to be seen. The participants are aware that their increased prosperity is a direct result of the cooperative efforts of the members of the irrigation committee supported by technical and financial assistance from AGOG and IDA. All of them said that they would participate in similar projects in the future.

PART V

CONCLUSION

Chapter 12

CONCLUSIONS

The analyses reported in this paper were undertaken to meet the five contractual objectives of the local participation component of the Integrated Area Development Studies project. This final chapter presents each objective, the analyses undertaken to meet that objective, and a discussion of the significant findings of these analyses as they relate to each objective.

12.1 THE FIVE OBJECTIVES

12.1.1 OBJECTIVE #1

"Elicit in a sensitive manner the expressions of the population regarding their preferences, needs and priorities."

12.1.1.1 ANALYSES DESIGNED TO MEET OBJECTIVE #1

The analysis of community needs and priorities as presented in Part II of this report was designed to meet this first objective of the local participation study. An ad hoc group of community leaders and officials were asked what they felt were their communities' three most urgent needs.

The data obtained in these surveys gives specific information about the felt needs of the Guatemalan people. The

data can be viewed on a municipality, a departmental, or a regional level. In the analysis presented in this report the data were analyzed on a regional level, and the communities in the sample were disaggregated by level of community development; thus, the differences in locally reported needs and priorities of communities with access to differing amounts of services and infrastructure could be examined.

12.1.1.2 FINDINGS OF THE ANALYSIS: OBJECTIVE #1

By far the most significant finding of this analysis as it pertains to Objective #1 is the overwhelming agreement of community leaders and individuals that water, health care, roads, schools, and electrical service are the urgent community needs of rural highland Guatemalan communities. Until these basic needs are met, neither leaders nor individuals are concerned with other services or infrastructure.

12.1.2 OBJECTIVE #2

"Test the relative effectiveness and efficiency of alternative methods of soliciting local participation."

12.1.2.1 ANALYSES DESIGNED TO MEET OBJECTIVE #2

As no experiments in local participation were actually undertaken in this study, alternative methods of "soliciting" local partication were not tested empirically in the field. However, both the analysis of patterns of participa-

tion (Part III) and the case history (Part IV) address this objective.

12.1.2.2 FINDINGS OF THE ANALYSIS: OBJECTIVE #2

One of the most important findings of the analysis of participation patterns documents the fact that an enormous amount of local participation is already taking place in development projects in highland Guatemala. Local people assume that any development project in their communities will involve some sort of local participation. This indicates that institutions offering projects to communities have little need to "solicit" local participation for projects that community residents perceive to be needed and useful.

Local participation in development projects is virtually assured due to the fact that most projects are selected by local people who are subsequently involved in the planning, execution, and evaluation of those projects. This was the case in the mini-irrigation project at San Martin where community participation came about when local people perceived that a proposed project would provide an improved supply of potable water, a widely-felt community need.

12.1.3 OBJECTIVE #3

"Compare the expressions of local perceptions and planning proposals based on technical criteria."

12.1.3.1 ANALYSIS DESIGNED TO MEET OBJECTIVE #3

The analysis of community needs and priorities in Part II was designed to gather the "expressions of local perceptions" needed to carry out this objective.

12.1.3.2 FINDINGS OF THE ANALYSIS: OBJECTIVE #3

At the time of this writing, the analysis of locally expressed needs had been completed, but no specific planning proposals based on technical criteria were available.

12.1.4 OBJECTIVE #4

"Synthesize community preferences and technical planning recommendations into a common set of feasible and desirable investments ranked by priority."

12.1.4.1 ANALYSES DESIGNED TO MEET OBJECTIVE #4

The analyses of community needs and priorities, participation patterns and the case study all contribute participatory information to help meet Objective #4.

12.1.4.2 FINDINGS OF THE ANALYSIS: OBJECTIVE #4

At this time, a synthesis of community preferences and technical planning cannot take place, as the second of these is not completed. The technical work necessary to meet this objective is being carried out at Iowa State University.

Even though it is not possible to synthesize community preferences and technical planning recommendations now, it is possible to recommend a set of feasible and desirable investments based on the results of the local participation analyses.

Any recommendations based on the results of the analyses presented in this report must focus on the five basic needs (water, health care, roads, schools, and electrical service) expressed by community leaders and individuals. The analysis of community needs and priorities shows that communities that lack these five basic services have very little interest in any other infrastructure or services.

Investments made to meet these five basic needs are desirable because of the following factors:

1. The local people define them as desirable. Local people have strongly expressed their own desires for projects that provide these five basic services.
2. The contract for the Integrated Area Development Studies project defines them as desirable. The objective of this project is to produce a "systematic planing methodology...to determine needs and assign priorities for economic and social infrastructure and services" which will "contribute to improving the quality of life and increasing the incomes of the rural poor" (Project Grant Agreement, pp. 1-2). It is

obvious that projects designed to meet the five basic needs will result in direct and immediate increases in the quality of life of the rural poor in Guatemala.

The feasibility of investments to meet these five basic needs is of course in large part dependent upon technical considerations unavailable at this time. However, participatory factors affecting their feasibility can be examined.

The Annex to the Project Grant Agreement notes that, "...there is an increasing body of evidence which suggests that local involvement is the key determinant of the success of rural development and small farmer projects" (Annex to Project Grant Agreement, pg. 16). The results of both the analysis of patterns of participation and the case study tend to support this statement. These analyses indicate that the time of greatest participation by local communities (relative to involvement by the outside component) is during the phases of selection and execution. This indicates that when local people and organizations participate in selecting community development projects, they tend to remain involved through completion of the project, providing essential organization and labor, without which such projects would be very difficult to complete.

12.1.5 OBJECTIVE #5

"Educate the community so that their expressions of felt needs are constrained to the general realm of feasibility."

12.1.5.1 ANALYSES DESIGNED TO MEET OBJECTIVE #5

As no experiments in local participation were carried out, this objective was not directly addressed in the design of this study. However, the analyses of community needs and priorities and of patterns of participation do shed some light on this topic.

12.1.5.2 FINDINGS OF THE ANALYSIS: OBJECTIVE #5

The results of the analyses of community needs and priorities indicate that in fact the expressions of felt needs by Guatemalan highland communities are constrained to the general realm of feasibility. Rural people overwhelmingly request the infrastructure and services necessary to meet very basic needs. Furthermore, the analysis of participation patterns indicates that these people are willing to and in fact expect to actively participate in all phases of projects designed to meet these basic needs. All they need is a little help from their friends.

12.2 SOCIOPOLITICAL SITUATION

As we all know, there is a great deal of violence in Guatemalan society at this time. We must be as aware as possible of how our projects might affect the people we are working with. We must do everything possible to avoid bringing violence to the people we are trying to help.

Violence must be considered in making decisions about any of the above recommendations. In these politically volatile times in Guatemala, local leaders and community organizations are frequently placed in physical danger, as are agency personel who are working to assist those leaders and organizations. Development agencies have a responsibility to both their workers and those they are trying to help to take this reality into consideration as they make plans for regional development.

At the same time, the violence must not be allowed to delay projects that can help the rural poor of the Guatemalan highlands to help themselves.

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