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**THE BASIC VILLAGE EDUCATION PROJECT
(PROGRAMA DE EDUCACION BASICA RURAL)**

GUATEMALA

**SECOND INTERIM REPORT
EVALUATION COMPONENT**

by
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and
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TAMPA, FLORIDA
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PREFACE

A. Background and Program Requirements

There has been no fundamental change in program requirements from those stated in the report on the first year's operation.* Selected excerpts from this report are included here:

"Interest in development and modernization has been stimulated by recognition of rapid population increases, food shortages, and the mounting evidence of the crippling effects of severe nutritional deficiencies on human growth and potential. The traditional subsistence economy, with population pressures and concomitant low yield farm practices has become the special target of development programs through formal and nonformal education, agricultural improvement practices, and health and nutrition improvement practices."

"Despite attempts to improve formal rural education and to develop adult literacy programs, the subsistence level peasant population remains largely illiterate and slow to change. Nonformal education, through mass media, such as radio, appears to be a major communication channel for reaching enough people in a time period that will make an overall impact."

"Guatemala's national development plan encompasses many programs to help rural families improve their education, agriculture, living conditions, and communities. Using traditional extension methods, the number of families reached by such programs is limited. A much larger proportion of the rural population can be served, however, if the efforts of agents, promoters, teachers, etc., can be reinforced through use of modern communications techniques."

"The Academy for Education Development (1973) concluded that an experimental project in Basic Village Education is feasible in Guatemala and stressed the importance of the following factors:

- 1) The need for rural development in Guatemala.
- 2) The potential benefits of the project to rural development.
- 3) The availability of resources to develop materials and information for such educational programs.
- 4) The capacity and willingness of Guatemalan agencies in health, agriculture and education to cooperate and to provide adequate administration of the project."

B. Program Description

The Basic Village Education Project (BVE) is an experimental program of non-formal adult education which does not initially require literacy. It seeks to determine the effectiveness and relative costs of selected combinations of communications media that have potential for use in development programs where resources are limited.

*Although there have been no changes in the rationale of the program, significant delays encountered in starting the program in the Occidente during 1975 have required adjustments in the evaluation time table and the potential loss of some aspects of the analysis. The reasons for the delay and the options now being discussed with AID to minimize the impact of the delay on the program evaluation are presented in the amendment to this report.

The target population in Guatemala is the rural, peasant subsistence farmer, characteristic of the traditional rural societies that are still found throughout the world. Arensberg and Niehoff (1971) describe the attributes of the rural peasant and their description is most applicable to that of the current population under study. These attributes are as follows, paraphrasing generally from the reference:

- 1) Use subsistence form of agriculture.
- 2) Live in a cluster of houses, from a few hundred to a few thousand people.
- 3) Have greater self-sufficiency than farmers in industrial states but dependent on cities for special goods.
- 4) Sell some surplus production for cash.
- 5) Are ambivalent towards the city in that they need goods but have fear of exploitation.
- 6) Are bound by traditional values and custom.
- 7) Are on the average, illiterate.
- 8) Have low levels of educational attainment.
- 9) Follow regional patterns of diet, home use of remedies, and use of local practitioners.
- 10) Are not productive farmers in terms of the national economy.

Thus, the primary audience for BVE is the small, often illiterate subsistence farmer. Program content stresses information that will help that farmer to improve his production and income from basic grain crops. When the program is operational, the Project will include matched experimental and control areas in eastern Guatemala (Oriente) and in the Quiché-speaking Indian Highlands of western Guatemala (Occidente).

C. Evaluation Plan

The original plan for the Basic Village Education Program also included some specific evaluation requirements. They were stated as follows:

The evaluation plan deals specifically with:

- 1) Evaluation of the differential effectiveness of a series of communication treatments in producing change in attitude, knowledge, practice and production.
- 2) Measurement of such changes in two highly different cultural settings (Oriente-Ladins, Occidente-Indian).
- 3) A related cost benefit analysis following the experimental aspects of development.

Measurement of change is based primarily upon degrees of significance of differences between various treatment and control areas in changes in knowledge, attitudes, practices and production. Given the measurement of differences, together with crop yields and program cost elements, cost effectiveness will be determined and extrapolated for a larger population by an agricultural economist.

Formal analysis, evaluation and reporting can encompass only the above. Some important side benefits should also accrue, however, in terms of additional inferences that may be made, and later researched by others. These include, for example:

- 1) A time sample feed-back system throughout the experiment will provide much information concerning effectiveness of specific modes of message presentation within each of the treatments. Such information, used to guide preparation of message materials for BVE, should also be of value to communicators in other rural education programs.
- 2) Where changes in knowledge and attitudes are not accompanied by changes in practices or production, there will be opportunity to gain insights into other obstacles that inhibit or prevent change.
- 3) Although no conclusions will be possible concerning forms of organization that can best provide needed agricultural infrastructure, nor the quantitative effects of adequate vs. inadequate service availability, nevertheless some inferences on the influence of such service availability on rapidity of change may be possible.
- 4) If treatment application does result in differential rates of change, conditions will be created that will permit study (not by BVE) of the social and economic consequences of such change.

Many of the goals of the Basic Village Education program are well on the way of being realized at this time when the second interim report is being prepared. The products of the evaluation component are outlined in the following section. Also included in this report are the activities (process) that the evaluation staff have been engaged in during the past year as the data has been gathered, processed, analyzed and reported. A list of personnel and their responsibilities is found in Section III; Section IV is dedicated to plans and prospects for the next 12 months for the evaluation unit; finally, a number of materials are included in the appendix that will add further detail to the items summarized throughout the report.

Some changes can be noted in the findings but they are more in the area of knowledge and attitude changes. The changes in practice are not as evident nor are they all in a positive direction. These findings are consistent with the literature on the subject which reports that little change in practice can be expected in the short time span of one year.

I. PRODUCTS

There are a number of products expected as a result of the efforts of those engaged in the formal evaluations of the Basic Village Education program. The most immediate product is a measurement of overall change that can be attributed to the educational programs produced for use in the selected areas of Guatemala. A summary of the results of the first year of operation are included in this section. Also included is a description of the large number of reports that have been prepared by the evaluation staff during the life of the project. These reports give further detail to the summary of findings as well as an explanation of the many aspects of gathering, processing, and analyzing the data. A selected sample of these reports have been included in the appendix.

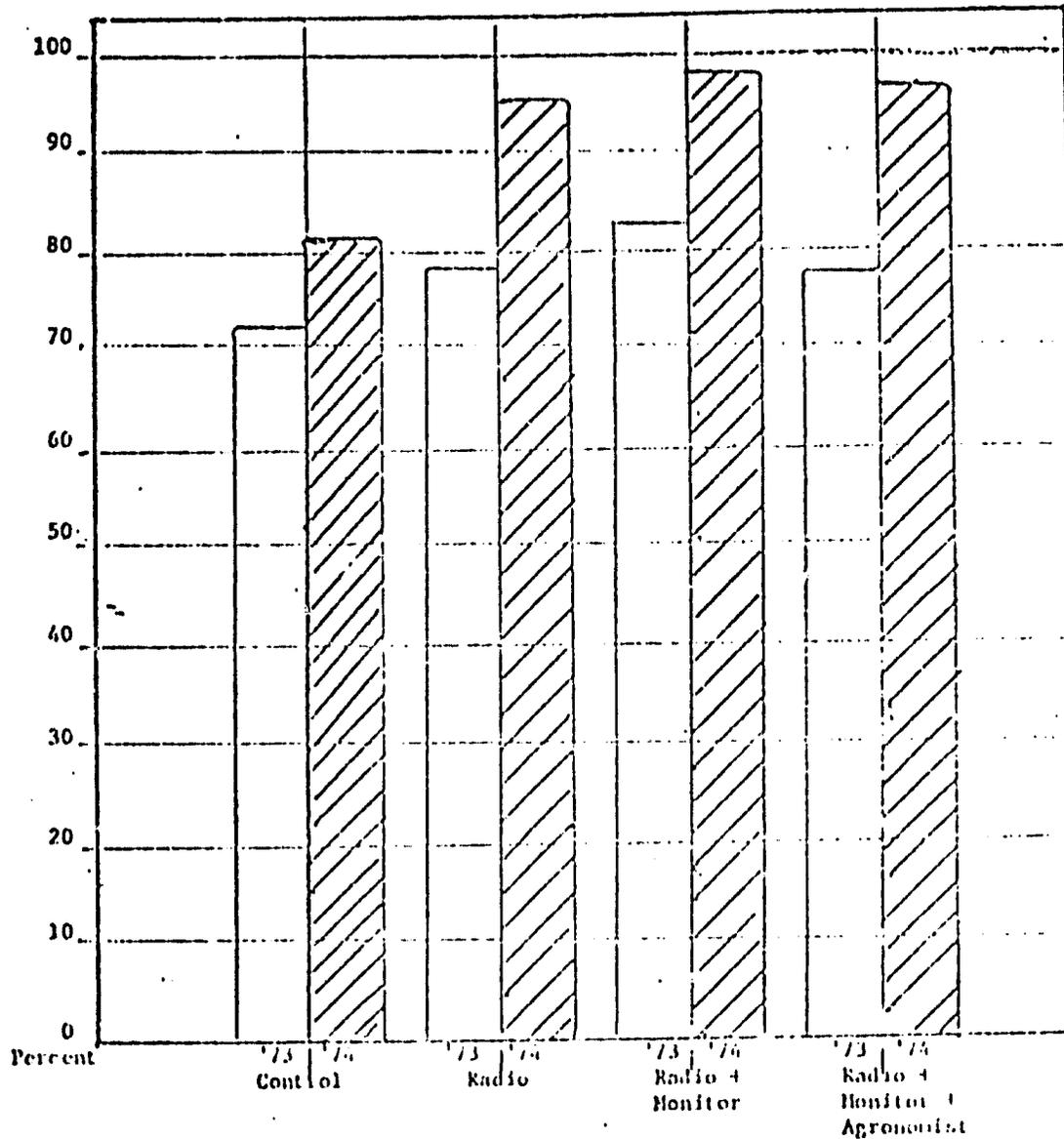
A. Representative Findings: First year of BVE Experimental Program.

1. There has been an increase in radio listenership (see Figure 1).
2. There has been an increase in reported knowledge of recommended agricultural practices (see Figure 2).
3. There has been a greater increase in new knowledge of recommended agricultural practices in the Radio treatment sub-area than in the control area. This increase is even greater in the Radio/Monitor treatment sub-area than in the Radio area and it is greater yet in the Radio/Monitor/Aprononista treatment sub-area than in the Radio/Monitor area (see Figure 2).
4. There has been an increase in favorable attitudes toward recommended agricultural practices (see Figure 3).
5. There has been a greater increase in favorable attitude toward recommended agricultural practices in the Radio treatment sub-area than in the control area. This increase is even greater in the Radio/Monitor treatment sub-area than in the radio area and greater yet in the Radio/Monitor/Aprononista treatment sub-area than in the Radio/Monitor area (see Figure 3).
6. There has been no consistent increase in the use of recommended practices. (Note: field reports indicate adverse growing conditions as well as scarcity of fertilizers and other products during the period measured.) (See Figure 4.)
7. The increase in knowledge of recommended practices has been higher than the increase in favorable attitudes (see Figure 5).
8. The increase in favorable attitudes has been higher than the increase in the actual use of recommended practices (see Figure 5).
9. The use of insecticides has increased more in the Radio/Monitor treatment sub-area than in the other areas (see Figure 6).
10. The proportion of farmers using fertilizer has increased in all of the experimental treatment sub-areas in contrast to a decrease in the control area. (Note: the evidence seems to confirm that more farmers are using fertilizer but in smaller quantities due to the shortage.) (See Figure 7.)
11. Crop yields in 1974 were lower than in 1973 in all treatment sub-areas as well as in the control area. (Note: field reports indicate adverse growing conditions as well as scarcity of fertilizers and other products during 1974 growing season.) (See Figures 8, 9, 10.)

The 1974 Baseline Surveys conducted in the new areas selected for the amplified experimental BVE programs show many similar characteristics as those found in the Quezada area in 1973. There are also a number of contrasts in such things as crop yields and educational levels. The five major areas are compared in Table 1 as to 26 items. Further comparison of sub-areas is found in Appendix IV.

Figure 1

RADIO LISTENING: PERCENT THAT LISTEN DAILY



1973 (Q.83)	71.3	77.2	83.0	78.3
1974 (Q.210)	80.7	94.6	97.2	96.6

There has been an increase in radio listenership. Radio listenership has increased in all of the treatment sub-areas between 1973 and 1974. The change by treatment sub-area was as follows:

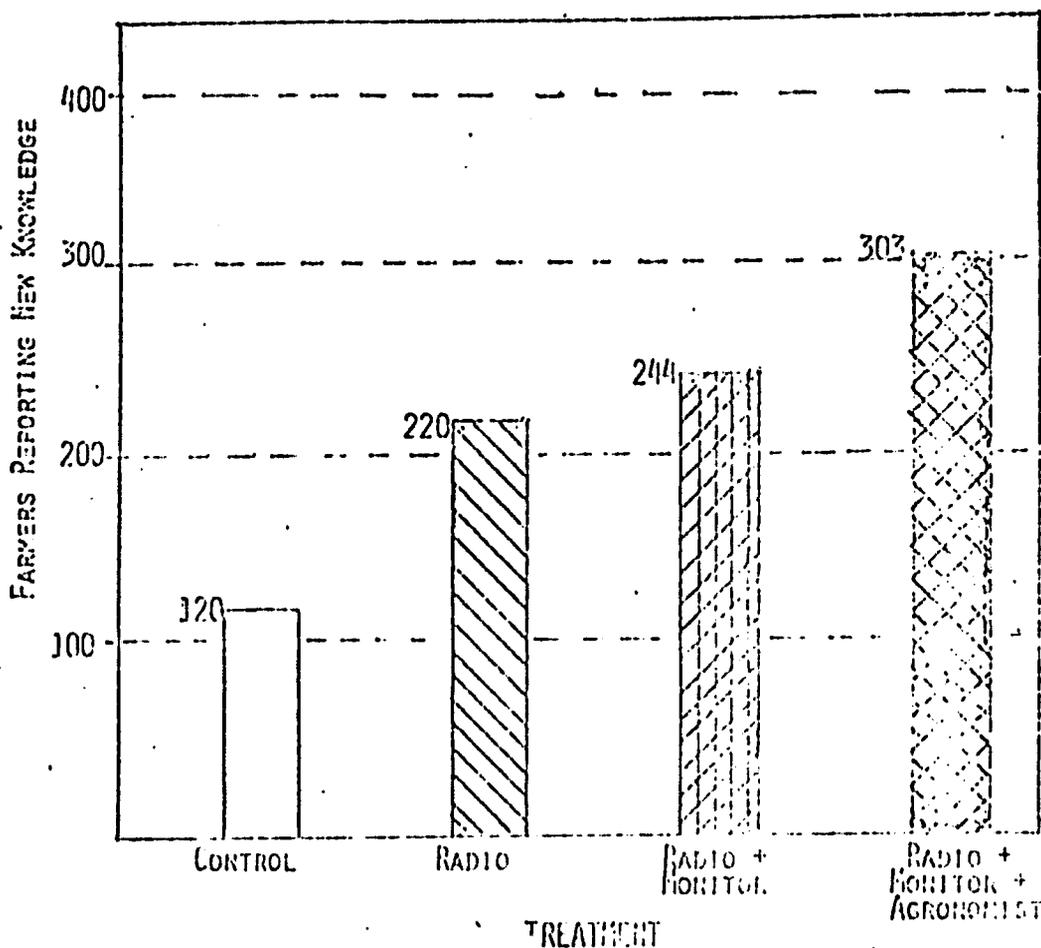
$$RMA = 18.3\% (96.6\% - 78.3\% = 18.3\%); R = 17.4\%, RM = 14.2\%, Control = 9.4\%$$

The increase in the control sub-area would indicate a general increase in radio listenership for the whole area. The effect of the BVE program can be observed in the greater change reported in the sub-areas reached by Radio Quezada.

For further details see Appendix 1.

Figure 2

NEW KNOWLEDGE OF RECOMMENDED PRACTICES REPORTED 1974



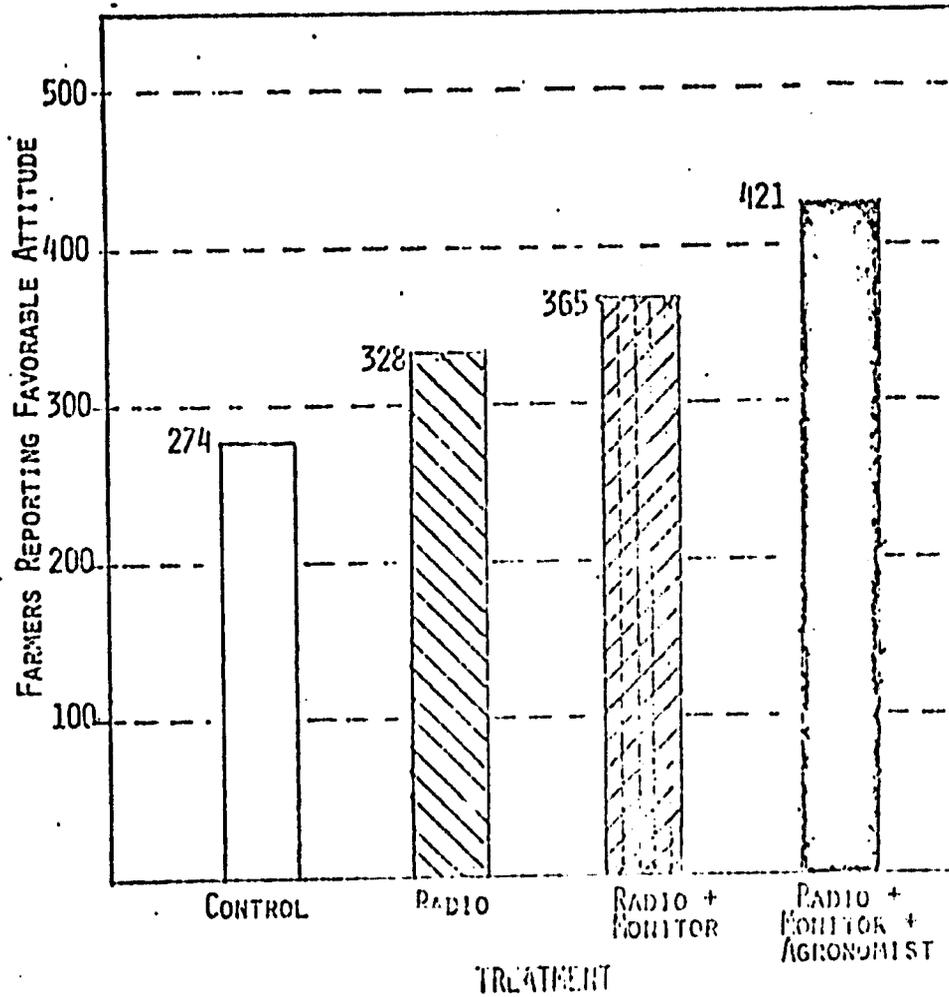
2. There has been an increase in reported knowledge of recommended agricultural practices.
3. There has been a greater increase in new knowledge of recommended agricultural practices in the Radio treatment sub-area than in the control area. This increase is even greater in the Radio/Monitor treatment sub-area than in the Radio area and it is greater yet in the Radio/Monitor/Agronomist treatment sub-area than in the Radio/Monitor area.

Figure 2 is a graphic representation of responses of the farmers when asked if they had heard any new information regarding specific recommended practices. There were 36 practices and 25 farmers in each sub-area were asked about each one giving a total of 900 possible responses per sub-area. The lowest proportion of responses came from the Control sub-area with 120; the highest from RMA with 303. The progression from Control through R, RM, and RMA would seem to indicate that the amount of new knowledge increased as the number of combined communication treatments increased.

For further details see Appendix II and Appendix III.

Figure 3

FAVORABLE ATTITUDES TOWARD RECOMMENDED PRACTICES REPORTED 1974

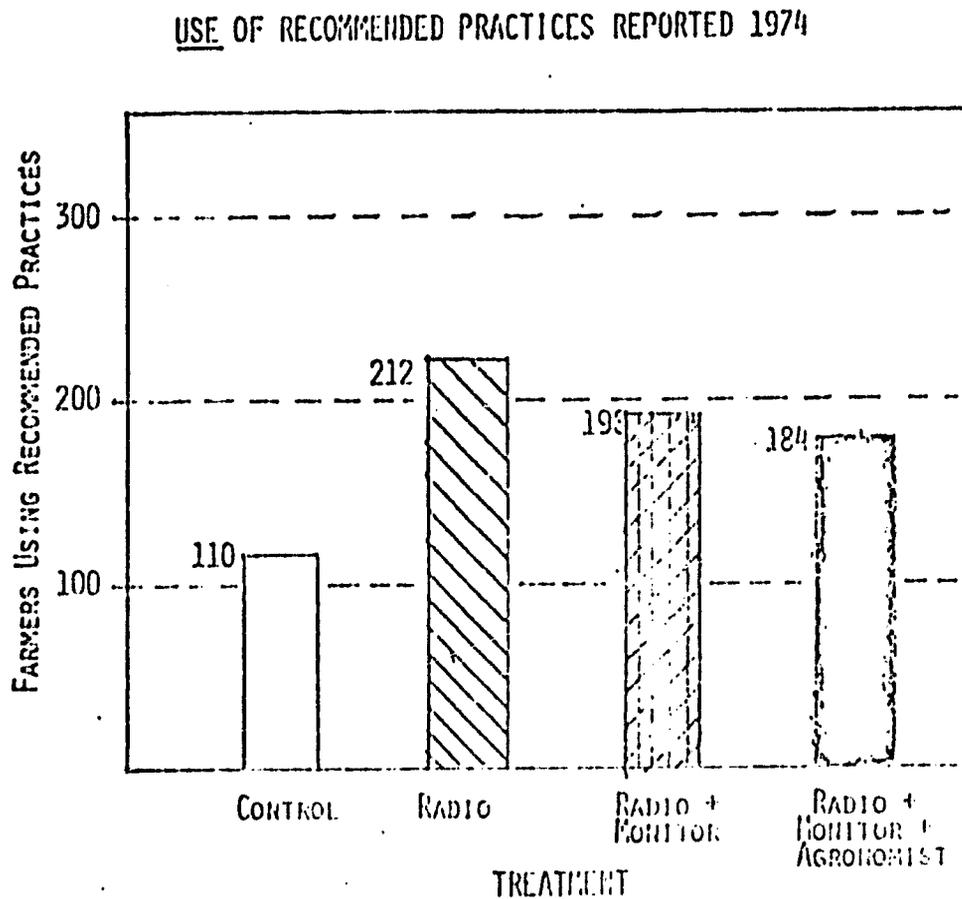


1. There has been an increase in favorable attitudes toward recommended agricultural practices.
5. There has been a greater increase in favorable attitude toward recommended agricultural practices in the Radio treatment sub-area than in the Control area. This increase is even greater in the Radio/Monitor treatment sub-area than in the radio area and greater yet in the Radio/Monitor/Agronomist treatment sub-area than in the Radio/Monitor area.

Figure 3 is a graphic representation of the responses of the farmers when asked how they felt about a specific recommended practice. There were 900 possible favorable responses in each of the sub-areas. The control sub-area had the lowest number (274) of favorable responses; RMA the highest. The progression from Control to R, to RM and to RMA would seem to indicate an increase in favorable response as the combination of communication treatments is increased.

For further details see Appendix II and Appendix III.

Figure 4



- b. There has been no consistent increase in the use of recommended practices. (Note: field reports indicate adverse growing conditions as well as scarcity of fertilizers and other products during the period measured.)

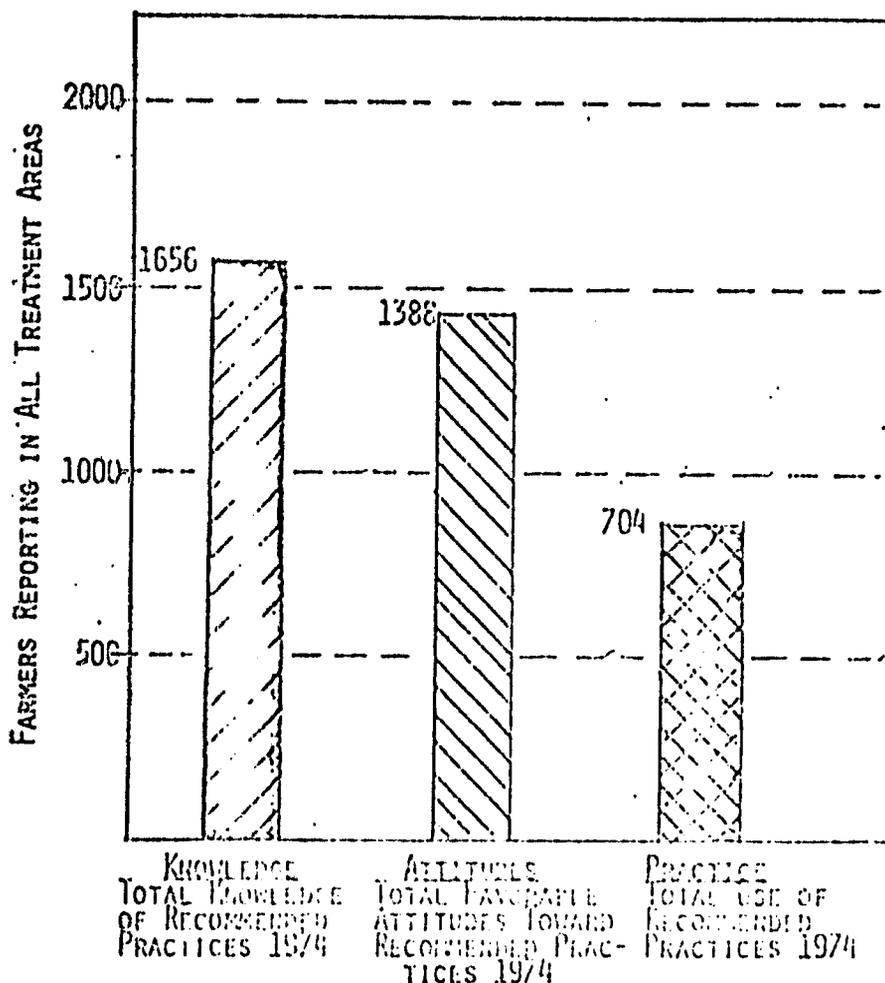
Figure 4 is a graphic representation of the responses of the farmers when asked if they used a specific recommended practice. There were 900 possible favorable responses in each of the sub-areas. The control sub-area had the lowest number (110); R the highest.

All of the experimental sub-areas (R, RM, RMA) show a higher response than the Control area, but the responses in the treatment areas do not follow the same pattern as those of knowledge and attitude. The R sub-area had a much higher level of use of recommended practices at the initiation of the project. Practices change slowly and it would be highly unlikely that the adoption of new practices in the short span of one year would offset the prior level.

For further details see Appendix II and Appendix III.

Figure 5

COMPARISON OF KNOWLEDGE, ATTITUDES AND
USE OF RECOMMENDED PRACTICES 1974



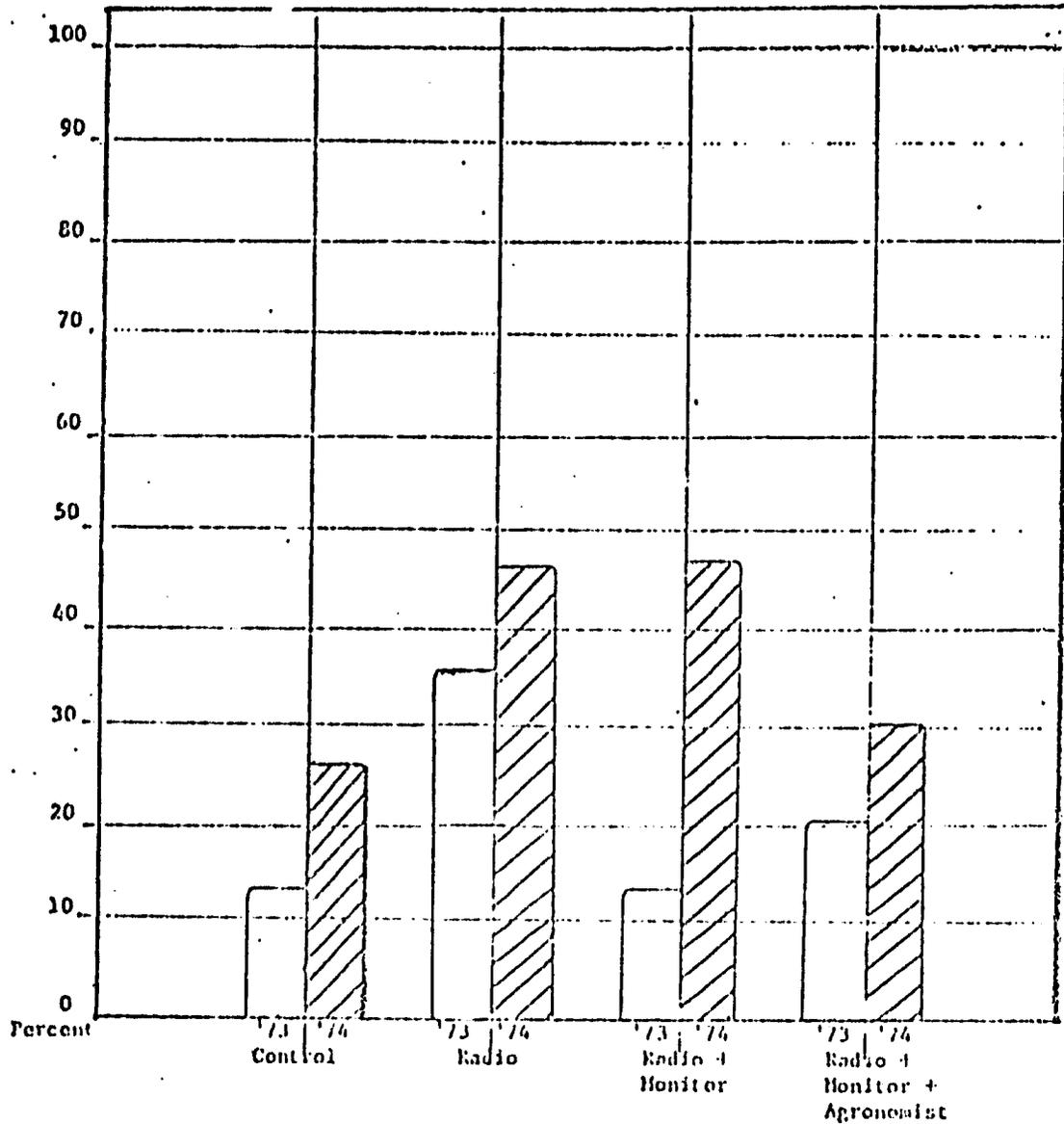
7. The increase in knowledge of recommended practices has been higher than the increase in favorable attitudes.
8. The increase in favorable attitudes has been higher than the increase in the actual use of recommended practices.

Figure 5 is a graphic representation of the combined responses of the farmers in all of the four sub-areas (Control, R, RM, RMA). There were a total of 3600 possible responses to each of the questions (Knowledge, Attitude, and Practice). The higher level of Knowledge (1656), the intermediate level of Attitudes (1388), and the lower level of Practices (704) is consistent with the literature on the subject.

Note: The total knowledge of recommended practices is a combination of knowledge present in 1973 plus new knowledge acquired in 1974.

For further details see Appendix II and Appendix III.

INSECTICIDE USE:
PERCENT OF FARMERS USING ONE OR MORE INSECTICIDES

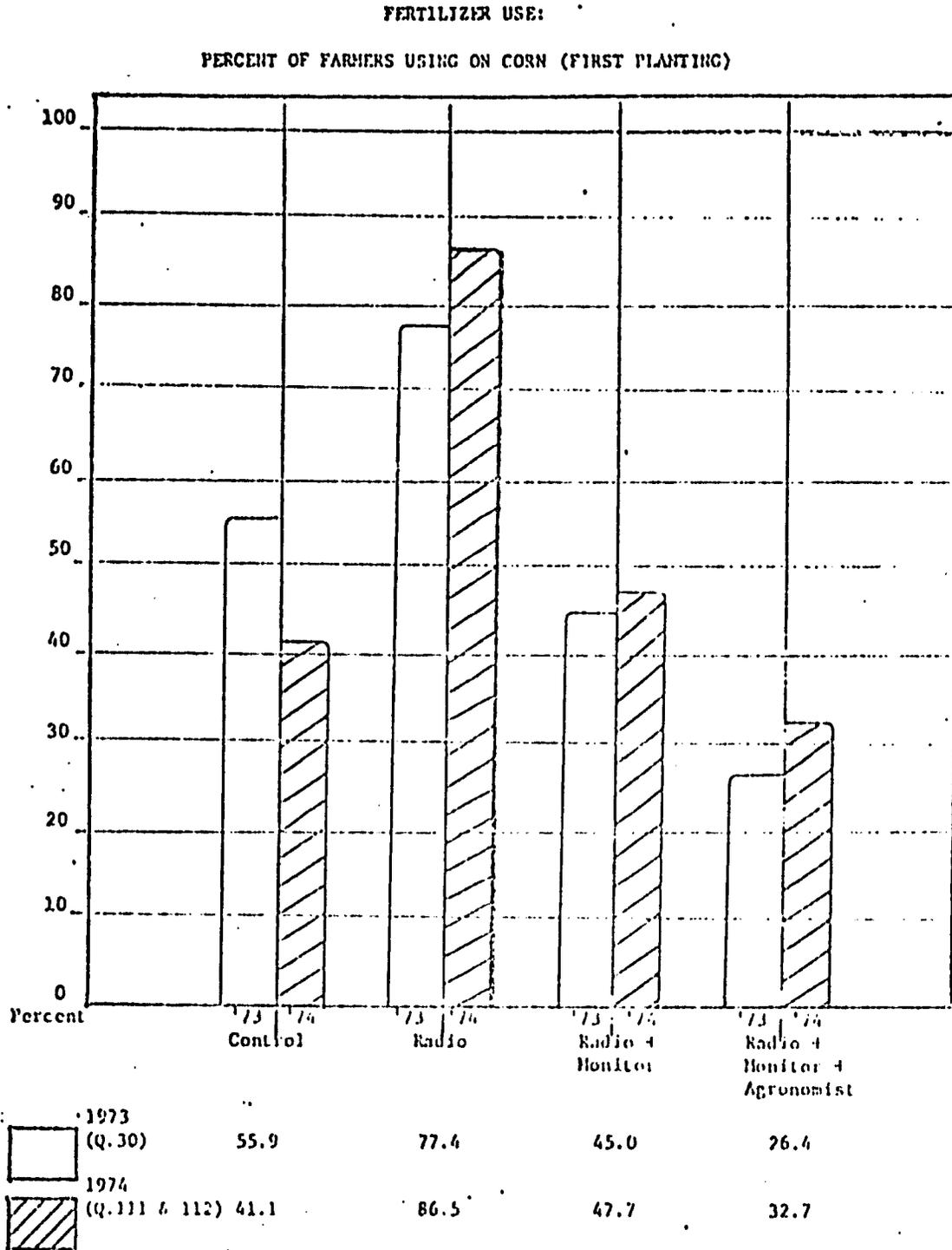


1973 (Q.35)	13.2	35.3	13.6	20.3
1974 (Q.99)	26.4	46.4	47.7	30.3

9. The use of insecticides has increased more in the Radio/Monitor treatment sub-area than in the other areas.

Figure 6 is a graphic representation of the responses of the farmers when asked if they used one or more insecticides on their crops. The greatest change occurred in the RM treatment sub-area, from 13.6% to 47.7% or a change of 34.1%. The other two experimental treatment sub-areas reported less change than the Control area. Due to the delay in practice adoption, the changes reflected here are more likely a result of factors not directly related to the BVE program.

For further details see Appendix 1.



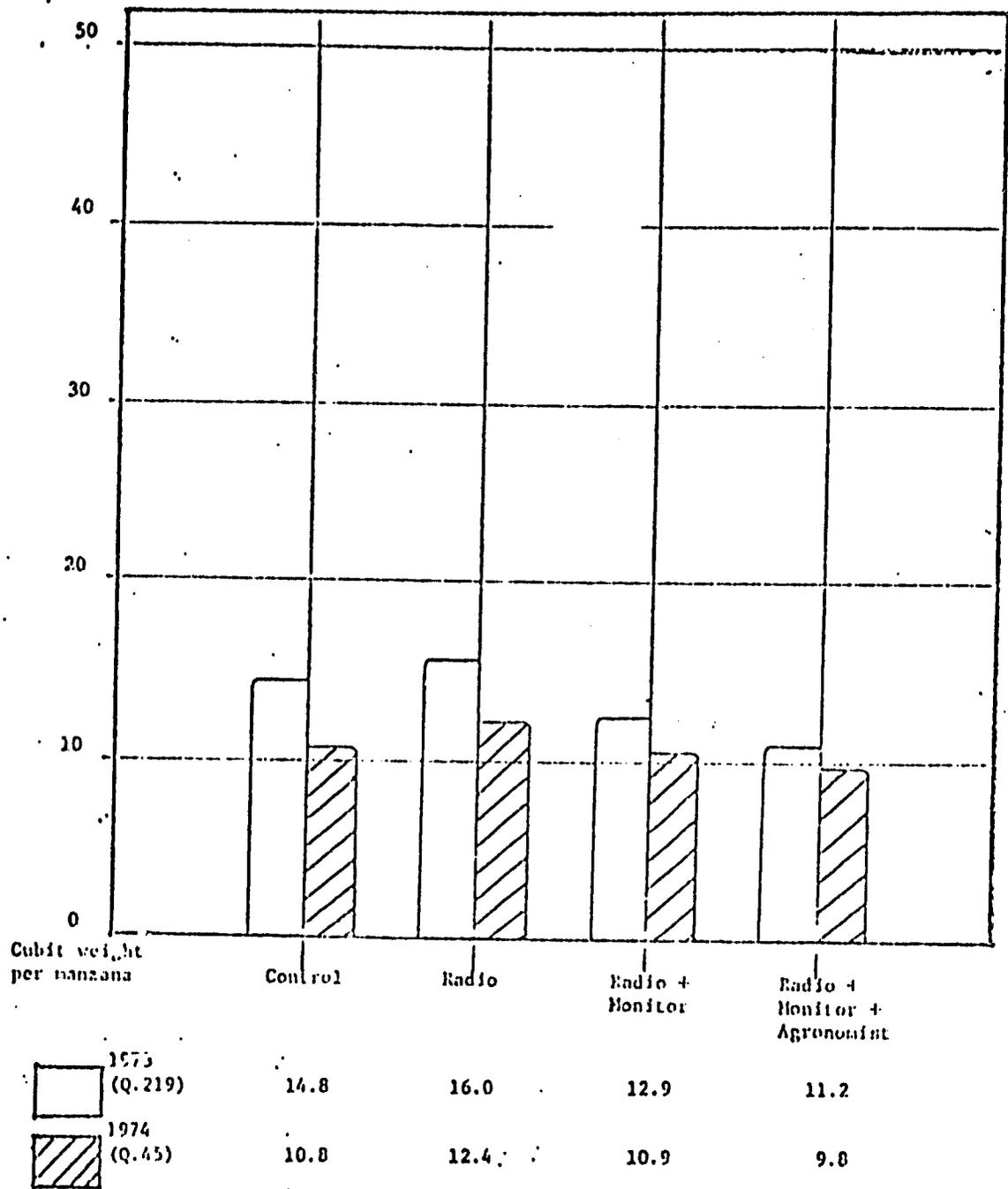
10. The proportion of farmers using fertilizer has increased in all of the experimental treatment sub-areas in contrast to a decrease in the control area. (Note: the evidence seems to confirm that more farmers are using fertilizer but in smaller quantities due to the shortage.)

Figure 7 is a graphic representation of the responses of the farmers, when asked if they used fertilizer on their first planting of corn. There was a decrease in those reporting fertilizer use in the control sub-area but not in the experimental sub-areas. It would appear that the EVE program did have an impact on fertilizer use but it also should be remembered that practices usually do not change in such a short time span. Other explanations for the difference between the control and experimental areas should be explored also.

For further details see Appendix I.

Figure 8

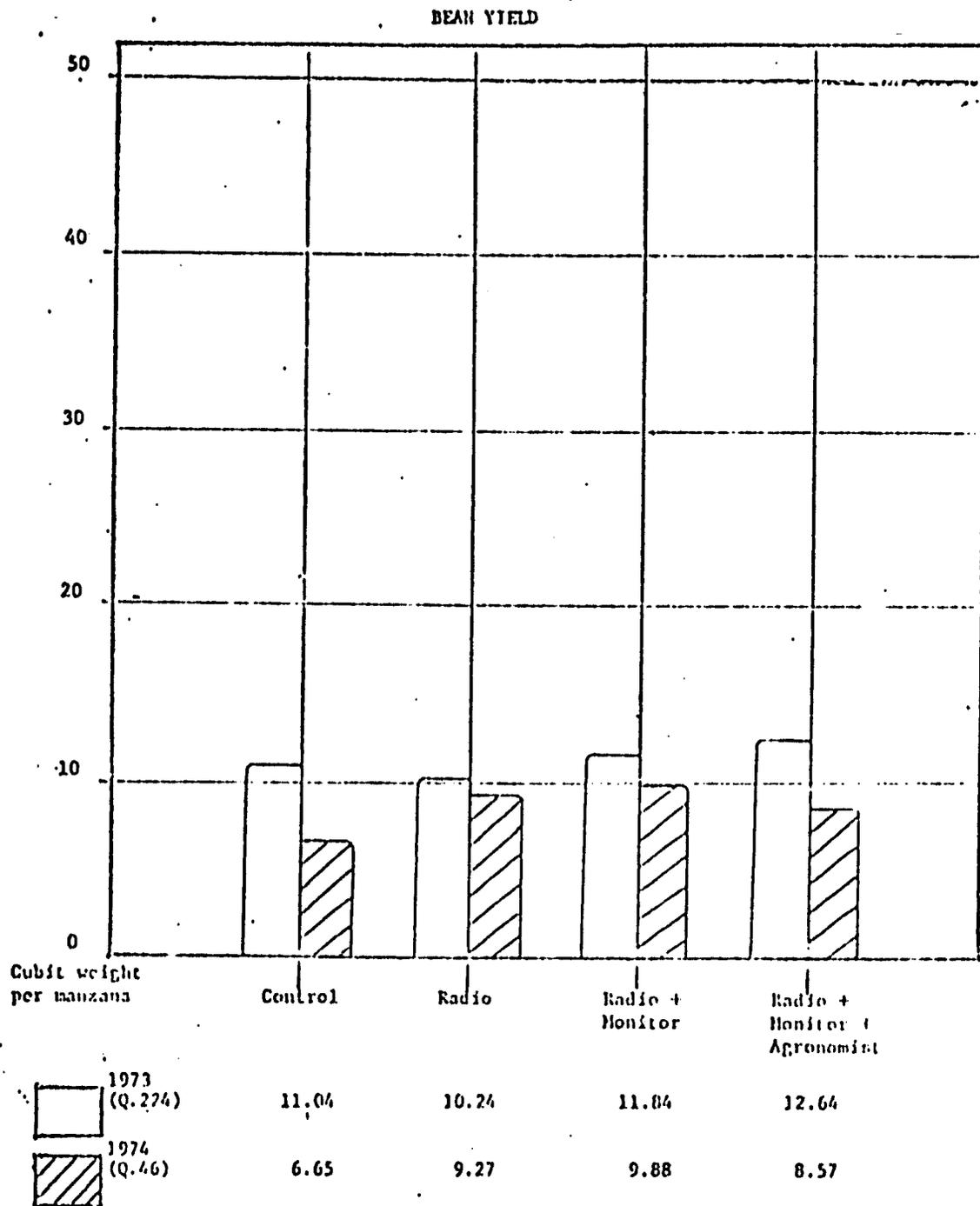
CORN YIELD



11. Crop yields in 1974 were lower than in 1973 in all treatment sub-areas as well as in the control area. (Note: field reports indicate adverse growing conditions as well as scarcity of fertilizers and other products during 1974 growing season.)

Figure 8 is a graphic representation of the responses of the farmers when asked about their corn yields. The yields are listed in cubit weight per manzana. As can be noted, all of the yields were lower in 1974. The adverse growing conditions and shortage of fertilizers are reported as being responsible for the decline.

For further details see Appendix 1.



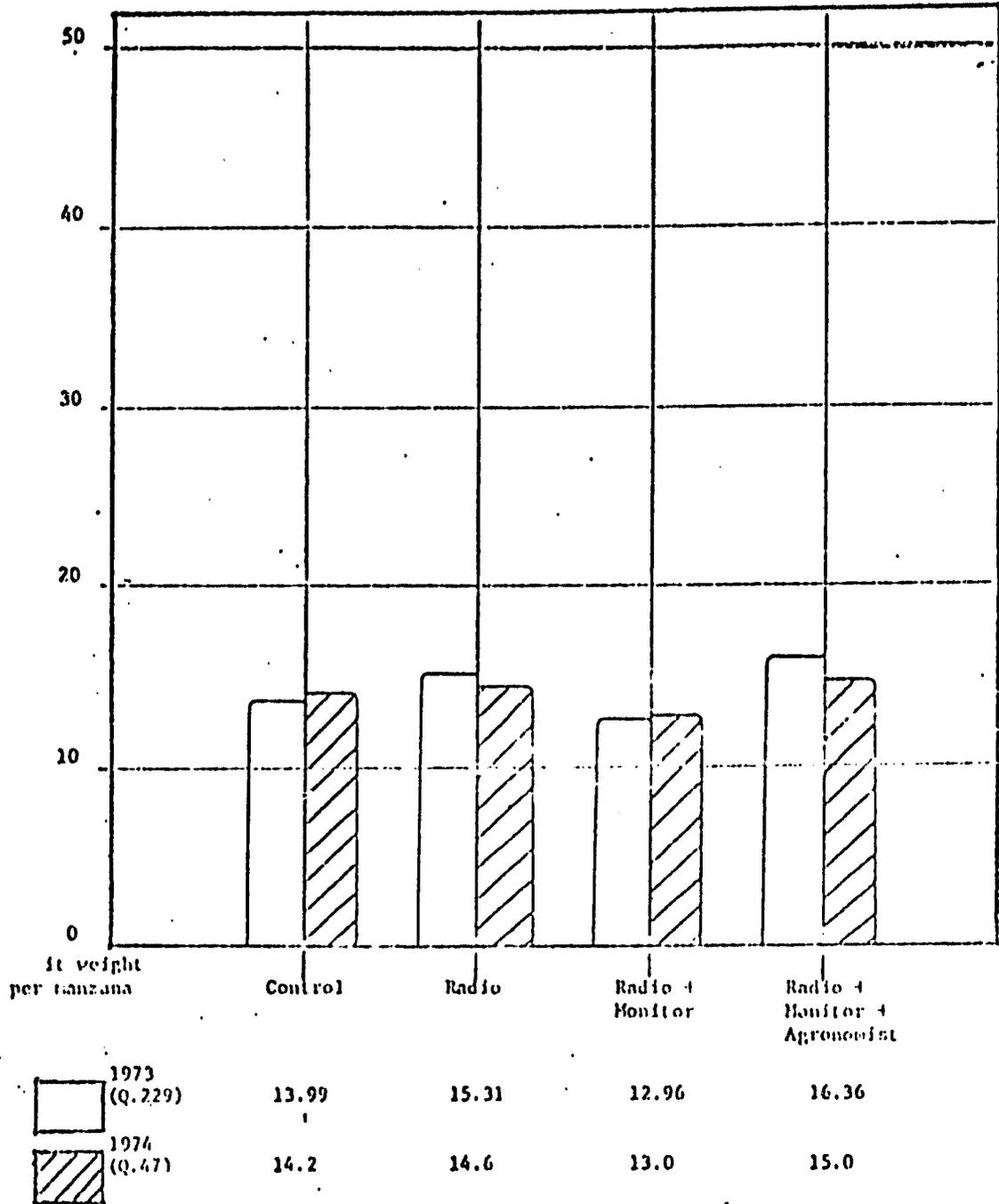
11a. Crop yields in 1974 were lower than in 1973 in all treatment sub-areas as well as the control area. (Note: field reports indicate adverse growing conditions as well as scarcity of fertilizers and other products during 1974 growing season.)

Figure 9 is a graphic representation of the response of the farmers when asked about their bean yields. The yields are listed in cubit weight per manzana. As can be noted, all of the yields were lower in 1974. The adverse growing conditions and shortages of fertilizer are reported as being responsible for the decline.

For further details see Appendix I.

Figure 10

SORGHUM YIELD



11b. Sorghum yields in 1974 were generally lower than in 1973, although not as pronounced as the other crop yields. This is a graphic representation of the response of the farmers when asked about the sorghum yields. The yields are listed in cubic weight per manzana. As can be noted, some of the yields were lower in 1974. The adverse growing conditions and shortages of fertilizer are reported as being responsible for the decline.

There was a slight increase in two of the sub-areas and a decrease in the other two. It would appear that the adverse conditions in 1974 did not effect the sorghum crop as greatly as corn and beans.

For further details see Appendix I.

BASIC VILLAGE EDUCATION: GUATEMALA

COMPARATIVE INFORMATION

SELECTED ITEMS FROM 1974 SURVEY

Evaluation Report
 April 30, 1975
 (Revised supplement
 for Evaluation Report
 of April 16, 1975)*

Major Area Comparisons

TABLE I

Area/s	Quezada	Oriente		Occidente	
		Yupi	Ipala	Momos	Quiche
13. Occupation: "Farmer" (%)	100.0	99.7	100.0	98.3	100.0
26. Use hybrid seed corn (%)	3.2	1.6	0.4	0.0	0.0
45. Average corn yield (growers only) (qq/mza)	11.0	10.45	9.92	19.0	15.82
46. Average bean yield (growers only) (qq/mza)	8.53	6.88	18.0	5.2	2.61
99. Use insecticides (%)	37.1	24.1	13.3	29.3	11.1
122. Use chemical fertilizer on corn at flowering time (% using more than 1 qq/mza)	10.5	5.4	1.2	14.6	9.2
125. Use chemical fertilizer on corn/beans at flowering time (% using more than 1 qq/mza)	2.5	0.5	5.9	40.1	30.2
169. Use credit (%)	18.1	9.1	7.9	25.2	12.5
174. Visited by agronomist (%)	73.7	37.0	20.0	3.6	0.0
182. Own land (%)	80.5	69.6	52.5	99.3	99.5
Average size of land owned (owners only) (mzs)	3.05	2.52	2.73	2.35	1.57
183. Rent land (%)	27.3	42.6	60.1	2.6	4.8
Average size of rented land (renters only) (mzs)	1.93	1.87	2.14	0.0	0.8
184. Has communal land (%)	9.2	4.5	0.4	0.3	0.0
Average size of communal land (communal operators only) (mzs)	2.75	3.7	0.0	0.0	0.0
185. Has sharecropped land (%)	10.7	19.2	0.0	0.9	0.5
Average size of sharecropped land (Sharecroppers only) (mzs)	2.25	2.19	0.0	0.0	2.0

*The original computer print-out did not include all of the cases. All 373 cases have been included in this summary. (Yupi)

TABLE I, continued

Area/s	<u>Oriente</u>		Ipala	<u>Occidente</u>	
	Quezadn	Yupí		Momos	Quiche
195. Spends time working away (%)	46.1	42.6	28.3	77.3	50.0
210. Listen to radio daily (%)	91.8	83.1	76.3	53.5	53.9
251. Has toilet facilities (%)	7.7	0.8	5.1	9.5	0.5
254. Average number of children	5.75	3.97	4.63	4.27	3.56
255. Illiterate (%)	54.4	63.8	59.6	66.3	82.7
256. Attended school (%)	37.4	29.1	30.1	27.5	15.9
Average years of school attendance (attenders)	2.51	2.28	2.52	2.33	1.79

In addition to the formal evaluation there have been other measures of effectiveness that have been part of the ongoing field program. These are included in the annual report of field activities and serve to give a more complete view of results.

These findings coming from the formal evaluation are reported in a number of forms. The contract requires periodic reports but the majority of the effort of the evaluation staff is directed at the preparation of materials to meet programming needs of the field and to provide answers for other development projects throughout the world. In the following paragraphs both the periodic reports and those prepared to meet special needs are listed.

B. Evaluation Reports. There have been more than 50 Evaluation Reports prepared since the project began in 1973. These reports are prepared for immediate field use and distributed to a limited audience. They are often revised and included in other reports as a later date. Thirty-nine of these reports are listed below.

1. Procedures for Data Processing. 3 pp., September 19, 1973. Notes from discussion of data processing procedures with Ray, Rich, Anderson and Nesman on 9/18/73.
2. Evaluation of an Experiment in Non-Formal Education. 30 pp., April, 1974. Report prepared for presentation at Annual Review in State Department.
3. Procedures for Analysis of Data. 2 pp., September, 1974. Proposed procedures and questions to guide in the analysis of the data from the field surveys.
4. The Use of Paraprofessionals in Nonformal Education. 61 pp., February 7, 1975. A summary of general principles in the recruitment, training, supervision and evaluation of local leaders.
5. Data Processing Check on 1973 Baseline Survey (Phase I). 8 pp., February 24, 1975. Procedures and rationale for complete and final check of all data being used for computer analysis.
6. Radio Use in Occidente. 39 pp., February 25, 1975. A summary of radio ownership and use in the Momos area of Occidente. The 1974 Momos data is also compared to the 1973 Quezada data.
7. Field Interview Techniques. 7 pp., February 24, 1975. Suggestions for field interviewers made by Astolfo Mellado, field interviewer for Oriente 1973-74.
8. Behavioral Objectives and Time Sampling. 28 pp., February 26, 1975. A summary of the 1974 Time Sample Surveys in the Quezada area.
9. Comparison of Selected Characteristics of Farmers in Oriente and Occidente. 1 pg., February 28, 1975. A comparison of 11 items from 1974 Baseline Survey in sub-areas of Ipala (Ore.) and Momos (Occ.).
10. Ranking System. 2 pp., February 28, 1975. A proposal for a method to measure change using a scoring system for recommended practices.
11. Comparative Information From 1974 Baseline/Year-End Survey. 13 pp., April 16, 1975. A selection of 24 items to compare major areas and treatment areas in Oriente and Occidente including information on occupation, land tenure arrangements, radio use, home sanitary facilities, family size, education, selected agricultural practices and crop yields (with revisions on May 30).
12. Disease Control: Momostenango. 5 pp., April 22, 1975. A summary of responses relating to disease control for Momostenango from 1974 Baseline Survey.

13. Disease Control: Ipala. 5 pp., April 22, 1975. A summary of responses relating to disease control for Ipala from 1974 Baseline Survey.
14. Insect Control: Momostenango. 5 pp., April 23, 1975. A summary of responses relating to disease control for Momostenango from 1974 Baseline Survey.
15. Insect Control: Ipala. 5 pp., April 24, 1975. A summary of responses relating to insect control for Ipala from 1974 Baseline Survey.
16. Measurement of Change 1973-74 in Oriente I Experimental Area. 5 pp., April 28, 1975. Outlines procedure for scoring and scaling of items on 1973 and 1974 surveys so that an accurate measure of change can be obtained (see May 30 revision).
17. Disease Control: Yupi. 5 pp., May 3, 1975. A summary of responses relating to disease control for Yupi from 1974 Baseline Survey.
18. Insect Control: Yupi. 5 pp., May 3, 1975. A summary of responses relating to insect control for Yupi from 1974 Baseline Survey.
19. Insect Control: Chichi. 5 pp., May 5, 1975. A summary of responses relating to insect control for Yupi from 1974 Baseline Survey.
20. Disease Control: Chichi. 5 pp., May 5, 1975. A summary of responses relating to disease control for Chichi from 1974 Baseline Survey.
21. Oriente Evaluation Time Line. 4 pp., May 9, 1975. An outline of the research design for Oriente including major areas, treatment areas, villages and respondents for each year.
22. Occidente Evaluation Time Line. 3 pp., May 9, 1975. An outline of the research design for Occidente including major areas, treatment areas, villages and respondents for each year.
23. Revised Computer Card and Case ID Numbering System. 8 pp., May 28, 1975. A standardized system to distinguish major areas, treatment sub-areas, villages, individual cases, and survey number (revised June 6, 1975).
24. Notice of Coding Change. 1 pg., May 30, 1975. A notification of an error in treatment area coding in the 1974 Quezada Year-End Survey data.
25. Disease Control: Quezada. 5 pp., May 30, 1975. A summary of responses relating to disease control for Quezada from the 1974 Year-End Survey.
26. Insect Control: Quezada. 5 pp., May 30, 1975. A summary of responses relating to insect control for Quezada from the 1974 Year-End Survey.
27. Measurement of Change 1973-74 in Oriente I Experimental Area. 5 pp., May 30, 1975. An update on the Evaluation Report of April 28 regarding scoring and scaling of items on the 1973 and 1974 surveys so that an accurate measure of change can be obtained.
28. Evaluation Report for Annual Review. 57 pp. of background material prepared to accompany slide presentation at State Department on June 16/17, 1975.
29. Annual Review - Project Presentation: An Outline of Topics Discussed. 12 pp., June 20, 1975. Summary of topics discussed.
30. Results of 1974 EYE Program in Jutiapa, Guatemala. 35 pp. with 34 graphs, July 22, 1975. Graphs show both 1973 and 1974 levels. Items include: information sources, technical assistance, credit use and recent practice changes; land clearing and planting methods; insect, disease and weed control.
31. Characteristics of "Progressive" Farmers in Jutiapa. 1 pg., August 8, 1975. A summary of items found in correlation analysis of 1973 Baseline data.
32. Data Summary: Quezada. 76 pp., July, 1975. A complete summary of all responses by treatment sub-areas on 1974 Year-End Survey in the Quezada area.

33. Data Summary: Yupi. 76 pp., August, 1975. A complete summary of all responses by treatment sub-areas on 1974 Baseline Survey in the Yupi area.
34. Data Summary: Ipala. 76 pp., August, 1975. A complete summary of all responses by treatment sub-areas on 1974 Baseline Survey in the Ipala area.
35. Comparative Information for Occidente. 29 pp. with 28 graphs, August 15, 1975. Graphs show selected items from 1974 Baseline Survey for treatment and control sub-areas of Momos and Chichi.
36. Average Amount of Crop Land Available for Planting in 1974. 2 pp. with 1 table, August 20, 1975. A summary of total crop land available for planting.
37. Time Sample Data Processing Procedures. 2 pp., August 25, 1975. Revised procedures and checklist used with each time sample survey.
38. Judges' Rating of Questions Used in 1974 Baseline Survey. 4 pp., August 29, 1975. Check on validity and reliability of each question asked in survey.
39. Data Summary: Momos. 76 pp., August, 1975. A complete summary of all responses by treatment sub-areas on 1974 Baseline Survey in the Momos area.

C. Working Papers. The working papers represent an intermediate step in the process of reporting the findings from this unique experimental program in nonformal education. These papers are circulated to a limited audience for comments and suggestions. At a later date necessary revisions and corrections will be made so that the papers can be circulated to a wider audience through the Academy for Educational Development or other suitable publishing outlets. The following paragraphs describe the working papers that have been prepared to date. Fifty bound copies of each have been prepared and distributed.

1. The General Characteristics of Subsistence Farmers in the Department of Jutiapa, Guatemala. Working Paper No. 1, University of South Florida, October, 1974, 93 pp. This is a descriptive report based on the data from the surveys conducted in November, 1973. It contains eight pages of summary narrative and 81 pages of tables. The text is included in Appendix V.
2. The Agricultural Characteristics of Subsistence Farmers in the Department of Jutiapa, Guatemala. Working Paper No. 2, University of South Florida, February, 1975, 130 pp. This is a descriptive report based on the data from the baseline surveys conducted in November, 1973. It is much like Working Paper No. 1 except that it deals in agricultural characteristics instead of general characteristics. It contains 44 pages of summary narrative and 86 pages of tables. A summary is included in Appendix VI.
3. Evaluation of Changes in Knowledge, Attitude and Practices Among Subsistence Farmers in the Department of Jutiapa, Guatemala: A Time Sampling Methodology. Working Paper No. 3, University of South Florida, May, 1975, 134 pp. This paper is of both descriptive and analytical nature based on the data collected in the 1974 monthly time sample surveys. It contains 19 pages of narrative and 115 pages of tables. For further details see Appendix III.

D. Professional Papers. Measuring the results of a non-formal educational project such as BVE go far beyond the requirements for increased efficiency in the project itself. The expected findings even go beyond the needs of national development of Guatemala. The results of this unique experiment have far reaching consequences for development the world over. Not only applied natural scientists have interest in the results but all branches of the behavioral sciences are interested in the theoretical aspects of attitude and behavior change in non-laboratory settings. Guatemala offers a special opportunity for this study because of the present stage of development and the presence of diverse cultures.

In an attempt to communicate some of the preliminary findings from the project two professional papers have been prepared by the evaluation staff with the assistance of the field staff. These papers are listed below and summaries are found in Appendix VII and Appendix VIII.

1. Innovativeness Among Subsistence Farmers in Guatemala by Nesman, Rich and Ray. This is an analytical paper based on the data from the base-line surveys of November, 1973. This paper is 18 pages in length and was presented at the annual meetings of the Rural Sociological Society in Montreal, Canada in August, 1974.
2. The Comparative Study of the Impact of Mass Communications on Subsistence Farmers in Guatemala by Nesman and Rich. This is a 26 page analytical report based on the data from the time sample surveys conducted during 1974. The paper was presented at the Southern Sociological Society Meeting held in Washington, D. C. in April of 1975. The different experimental treatments (R, RM, RMA) were compared with each other and with the control group using tests of statistical significance. Some of the results of this paper were incorporated in Working Paper No. 3.

E. Practice Manuals. If the experience from the BVE project is to be applied in other projects and places, it is important that the procedures as well as the results be published. The practice manuals are an attempt to provide a "how to do it cook book" for others to use. This is particularly important for the educational programming activities but it is of equal importance for the evaluation and research aspects as well. Outlines have been prepared for the following practice manuals on evaluation subjects and some are now in first draft form:

1. Evaluation Research in Nonformal Education (including basic concepts in the evaluation of field projects).
2. Recruitment, Training and Supervision of Paraprofessionals in Nonformal Education.
3. Population and Area Selection Procedures for an Experimental Program in Nonformal Education.
4. Questionnaire Preparation for Field Evaluation of Nonformal Education.
5. The Use of Behavioral Objectives in the Evaluation of Nonformal Education Programs.
6. Time Sampling and Short Term Feedback Mechanisms in Evaluation.
7. The Use of a RAP Format for the Evaluation of Nonformal Education.
8. The Politics of Evaluation of Field Projects.

F. Monthly Reports. A report is prepared each month that outlines the activities of the Tapa based evaluation staff for the month ending and the proposed activities for the next month. These reports are from two to three pages in length and 18 have been prepared to date. This report also serves an organizing function and establishes job priorities. Copies are sent to Washington, to Guatemala and to administrative officials here at the University.

G. Interim Reports. This present report is the second interim report prepared in accordance with contract requirements. It also serves the same organizing function as the monthly reports.

H. Annual Review. A packet of materials is prepared each year to accompany the oral presentation for the annual review at the State Department in Washington.

I. Annual Budget and Contract Proposal. Each year a proposal is submitted for renewal of the AED/USF evaluation sub-contract.

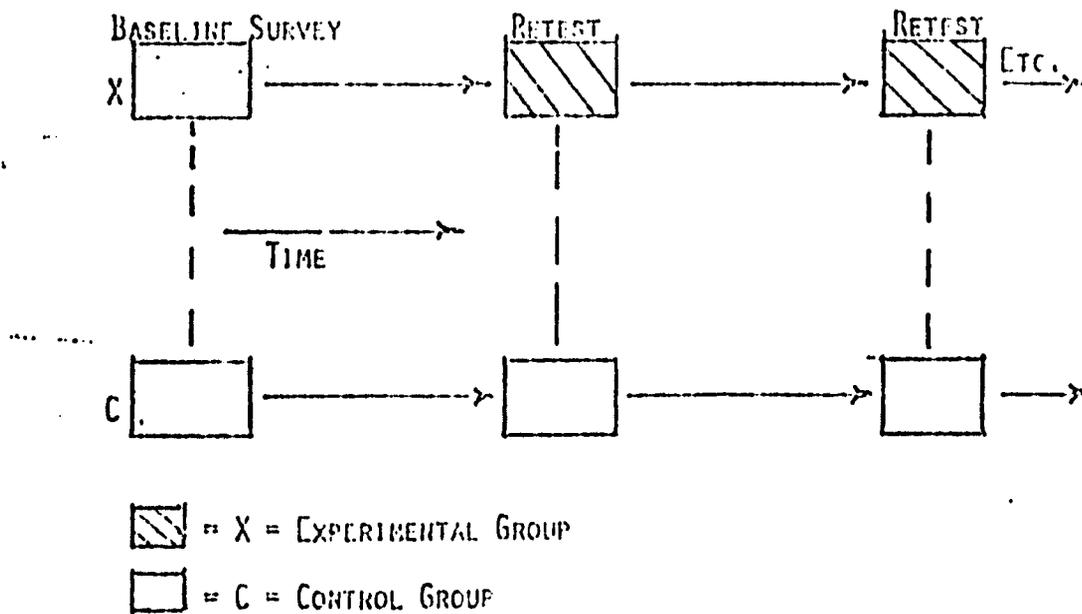
J. Final Project Report. The present contract requires that a final evaluation report will be submitted by June 30, 1977.

II. EVALUATION PROCESS

It is not always easy to separate the overall goals or products from the process or activities by which the goals are achieved. In order to measure the impact of the Basic Village Education it was necessary to develop a research design. The features of the design are outlined in this section. The evaluation activities, both in the field and at the University of South Florida, are also included.

A. Evaluation Research Design. A modified form of standard experimental design was selected to meet the evaluation requirements of the Basic Village Education. Figure 11 best describes the basic experimental design. Change is measured by using an experimental group which receives the treatment to be measured (educational program in this case) and a control group which is not exposed to the treatment. It also includes a pre-test before the treatment begins and a post-test after the treatment.

Figure 11
BASIC FEATURES OF EXPERIMENTAL DESIGN



DESIGNED TO MEASURE THE RESULTS OF AN EXPERIMENTAL TREATMENT OVER TIME

The characteristics of the Basic Village Education design are described below:

1. It measures change by treatment over time. The BVE program has been prepared in such a way that one group of people will receive new information by way of radio (R), another group of equal size will receive radio accompanied with community meeting led by a local leader called a monitor (RM) that has had some training, and a third group that will have radio information with monitor accompaniment and the addition of a technical advisor (RMA) that visits the farms (see Figure 12). Two additional aspects have also been added at the suggestion of sponsoring agencies. A monitor control (CM) group has been added which will get the same program treatment as the RM sub-area except it will not get radio broadcasts. Provision has also been made for field testing of different combinations of materials and media within the treatment areas.

In order to measure the impact of these three information treatments over time using experimental design which includes both experimental and control groups, the control group must be selected with all of the same characteristics as the experimental group except that it receives no treatment as part of the educational program. Both experimental and control groups are measured before the educational program is initiated and again at periodic intervals. In the BVE program, there are three experimental groups (R, RM, and RMA) and two control groups (C and CM). All are of equal size (5 villages each with approximately 125 total people). The baseline survey was completed in November of 1973 in Quezada and Yupi and the same people were reinterviewed in November of 1974.

2. Monthly measurement of change. The monthly time sample is an additional feature of the design for formal evaluation in the BVE program. This gives immediate feedback on the results of the prior months educational programming. It also serves to explain and confirm the results of the surveys done at the end of the year. The time sample feature can be observed in Figure 12.
3. It measures change by geographical area over time. It would be expected that any change in geographical location would be accompanied by changes in many things that could effect the results of an educational program such as BVE. In order to see how geographical difference might effect the results, the original area chosen for programming and measurement in 1974 was replicated to include two additional areas in Oriente for programming and evaluation in 1975 and 1976. These areas are Yupi and Ipala.

In addition to the people and villages chosen for the expanded program, another group was chosen for a further experimental treatment. This fourth treatment (CM) which was mentioned above is identical to the radio-monitor (RM) except it does not include radio. In one way it serves as a control to test radio against no radio, and in another way it gives a link between the experimental and control areas. This design can be observed in Figure 13. The three geographical areas thus included in Oriente are Quezada, Yupi and Ipala.

4. It measures change across cultural areas. One of the reasons that

Figure 12

1974 BVE EXPERIMENTAL PROGRAM

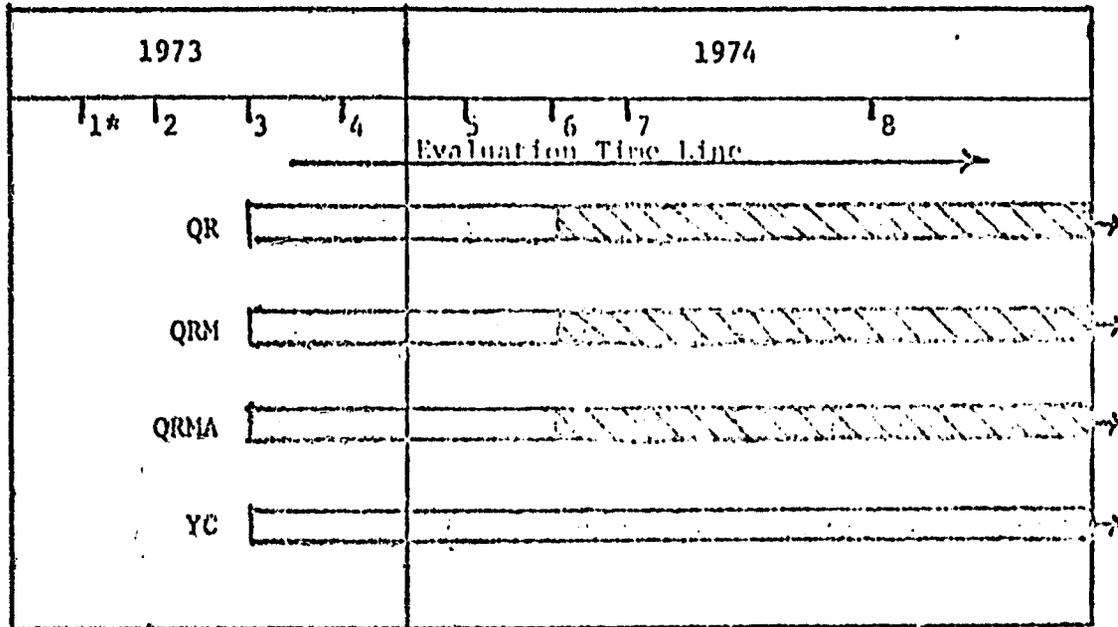
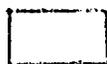


Figure 12 is a graphic representation of the research design used in measuring the results of the experimental program of BVE during 1973 and 1974. The stages are outlined in the Evaluation Time Line:

1. *Prior to July 1, 1974 - Planning stage. No educational program.
2. July-August 1973 - Selection of areas and farmers to be interviewed during life of project. No educational program.
3. August-November 1974 - Baseline survey interviews with farmers in four sub-areas (three to be used as experimental and one for control). No educational program.
4. November 1973-November 1974. Program preparation.
5. January 1974 - 1973 crop yield survey. A 20% sample of all farmers interviewed in baseline survey. No educational program.
6. March 1974. Educational program initiated in three experimental areas in Quezada Valley: Radio = QR; Radio/Monitor = QRM; and Radio/Monitor/Apron-omist = QRMA. The control area in Yupi (YC) is continued with no program.
7. April 1974-September 1974. Monthly time sample surveys. A 20% sample of all farmers of experimental and control sub-areas interviewed each month for seven months.
8. September-November 1974. Year-end survey. Interviews conducted with all farmers of all four sub-areas that were included in original baseline survey.

KEY FOR FIGURES 12, 13, 14, & 16



periods of no experimental treatment and control areas



periods of experimental treatment



periods of new treatment which excludes radio broadcasts

Figure 13 - BVE EXPERIMENTAL PROGRAM - PLAN FOR ORIENTE 1973-1977

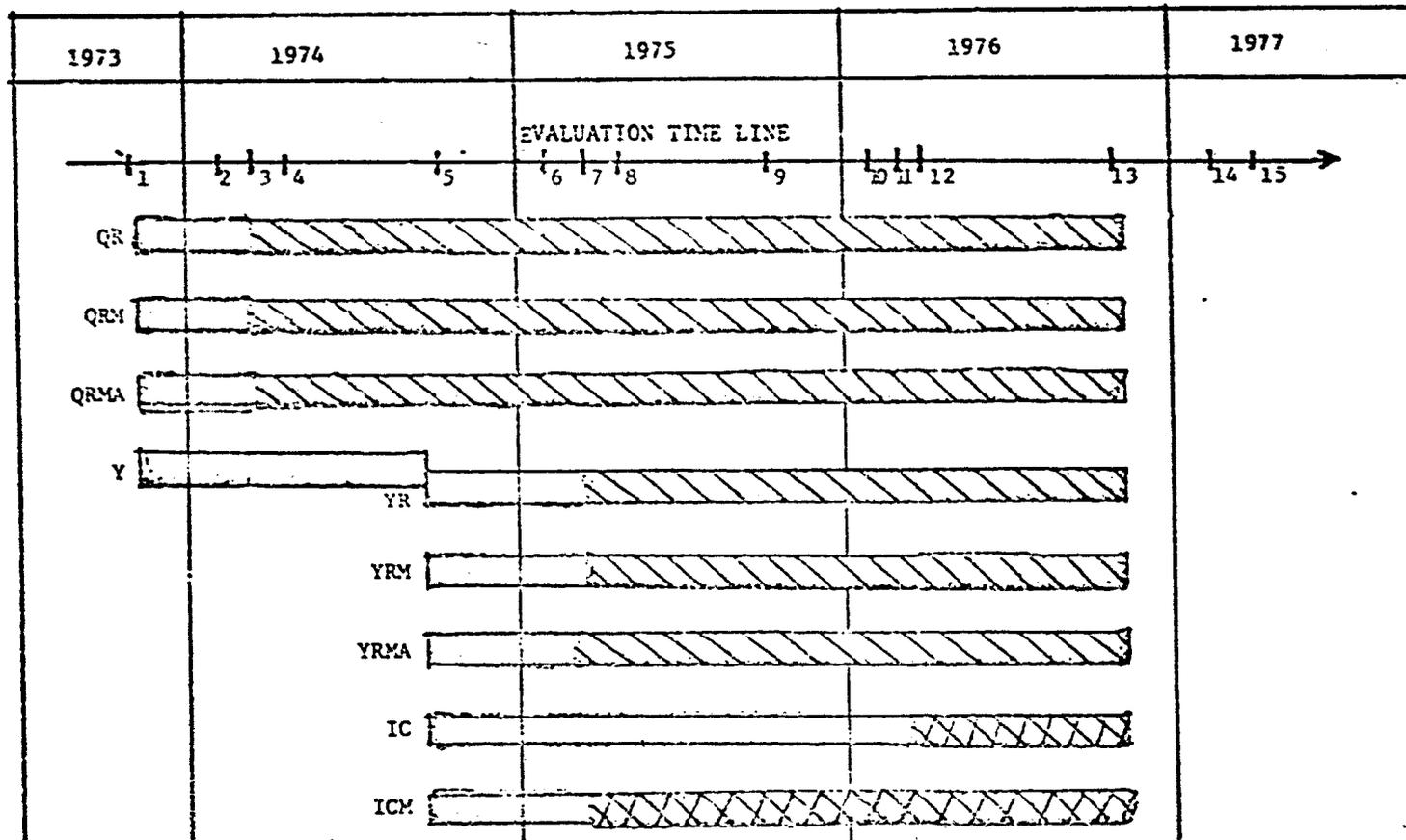


Figure 13 is a graphic representation of the research design as presently being used in the Oriente area of Quezada. The stages are outlined in the Evaluation Time Line: 1) August-November 1973, Baseline survey in sub-areas selected for QR*, QRM, QRMA, and YC. 2) January 1974, yield survey for 1973 crops. 3) March 1974: Initiation of educational program. 4) April-September 1974: Monthly time sample surveys. 5) September-November 1974: Year-end survey Quezada areas: baseline surveys for Yupi and Ipala. 6) January 1975: Yield Survey for 1974 crops. 7) March 1975: Initiation of program in new areas. 8) April-September 1975: Time Sample Surveys all areas. 9) September-November 1975: Year-end surveys all areas. 10) January 1976: Yield survey for 1975 crops. 11) March 1976: Initiation of program in IC sub-area. 12) April-September 1976: Time Sample Surveys all areas. 13) September-November 1976: Year-end survey. 14) January 1977: Yield survey for 1976 crops. 15) January-July 1977: Final analysis and reporting.

*Areas: Q = Quezada; Y = Yupi; I = Ipala. Treatments: R = Radio; M = Monitor; A = Agronomist; C = Control.

Guatemala was chosen as a setting for this experiment in nonformal education was because of the existence of more than one culture within the national boundaries. The contrasts between the Ladino culture of the Oriente and the Indian culture of the Occidente offer excellent possibilities for comparative measurement of change. A design was developed for Occidente which included the same features as that in Oriente. When added onto the Oriente design it offers the opportunity for a number of comparative measurements:

- 1) Month by month with time samples.
 - 2) Year by year with the baseline and year-end surveys.
 - 3) By four experimental treatments.
 - 4) By geographic area in five separate settings.
 - 5) Across two major cultures in Oriente and Occidente.
5. It measures changes by types of practices. Even within a given subject matter area such as agriculture, not all practices are equally subject to change. A comparative study of change by practice can give further assistance in the selection and timing of program content. The baseline and year-end surveys contain 258 items that can be analyzed separately and compared to each other. Further comparison of these items can be made through the analysis of the time sample surveys (see Table 1) and yield surveys.
 6. Measures Change in Total KAP Over Time. If the educational programs of the Basic Village Education are effective, there should be some measurable changes in the agricultural practices of the people. At the same time it is clear that traditional people do not immediately change their behavior. The sequence of change that takes place starts as the point of new knowledge (K), continues with a favorable attitude (A), and finally may result in practice (P) change. In a short time span of a year (or even in the total evaluation time span allocated to the BVE program) there may be little change in agricultural practices (P) but there should be a noticeable change in knowledge (K) and attitudes (A). For this reason the measuring instruments (questionnaires) used have included provisions for measuring knowledge (K) and attitudes (A) as well as practices (P).
 7. Relation of change to age, size of farm, education, travel, contact with change agents, group membership, risk orientation, off farm work, diet, etc. Not all people are as willing or able to change. In any given population of people it is important to recognize those individuals and communities that are more receptive to change so that limited resources can be used where more results are possible. The survey data can be analyzed to give this kind of information (see Evaluation Report 31, Appendix IX for a preliminary analysis of the characteristics of the "progressive" farmers in the Quezada area).
 8. Modification of the control group. A fundamental modification in experimental design has been made regarding the control group as can be noted in Figure 12. The control group is discontinued after the first year-end survey. This modification was necessary due to the non-laboratory nature of the project. It is impossible to continue to ask people questions without arousing their interest in the subjects and their desire to get information related to problems that they face daily. Survey research serves to stimulate the desire for new information. The requests from individuals as well as the combined political pressure left no alternative but to include the control groups in the experimental treatment areas after the first year. Projections from the first year will be made into

following years to approximate the effect of the treatments vs. the control. With the addition of a radio-free monitor treatment in both Oriente and Occidente, a measure of the effect of radio vs. no radio will be measured.

9. Overall Evaluation Design. The overall design for the measurement of change as a result of the experimental BVE program can best be observed in Figure 14. It includes provisions to measure change comparatively: 1) over time, 2) by experimental treatments, 3) by geographical areas, 4) by month for immediate feedback, 5) across-cultures, 6) by levels of knowledge, attitude and practice, 7) by practice, and 8) by socio economic characteristics of the people and villages.

In carrying out the design, there were over 2200 interviews conducted in 1974. There will be approximately 3500 additional interviews conducted during 1975 and a like amount in 1976. The total scope of the data gathering requirements of the project can be observed in Figure 16 with over 10,250 separate interviews anticipated over the four-year period.

B. Evaluation Activities.

1. Selection of Areas and Individuals for Interviewing. The areas and the individuals that were included in the baseline survey of 1973 and the time sample interviews during the 1974 programming year were all re-interviewed in the year-end survey of November 1974. There were 506 farmers in the original sample and there were 472 of these still included in the sample at the end of the year. They were distributed as follows:

- | | |
|----------------------|----------------------------|
| 1) Quezada (Oriente) | 15 villages
370 farmers |
| 2) Yupi (Oriente) | 5 villages
136 farmers |

In addition to the above, the following areas and individuals were added at the time of the November survey (note: for additional details see Appendix X, Evaluation Time-Line for Oriente and Occidente):

- | | |
|----------------------|----------------------------|
| 3) Yupi (Oriente) | 8 villages
237 farmers |
| 4) Ipala (Oriente) | 6 villages
240 farmers |
| 5) Momos (Occidente) | 13 villages
400 farmers |
| 6) Chichl | 3 villages
208 farmers |

The search and selection of additional areas and individuals to be included in the 1975 programming and measurement population has been a long and detailed process. The major responsibility for this job has been with the field staff in Guatemala. A number of field trips were

Figure 14

SVE EXPERIMENTAL PROGRAM PLAN FOR OCCIDENTE 1973-1977*

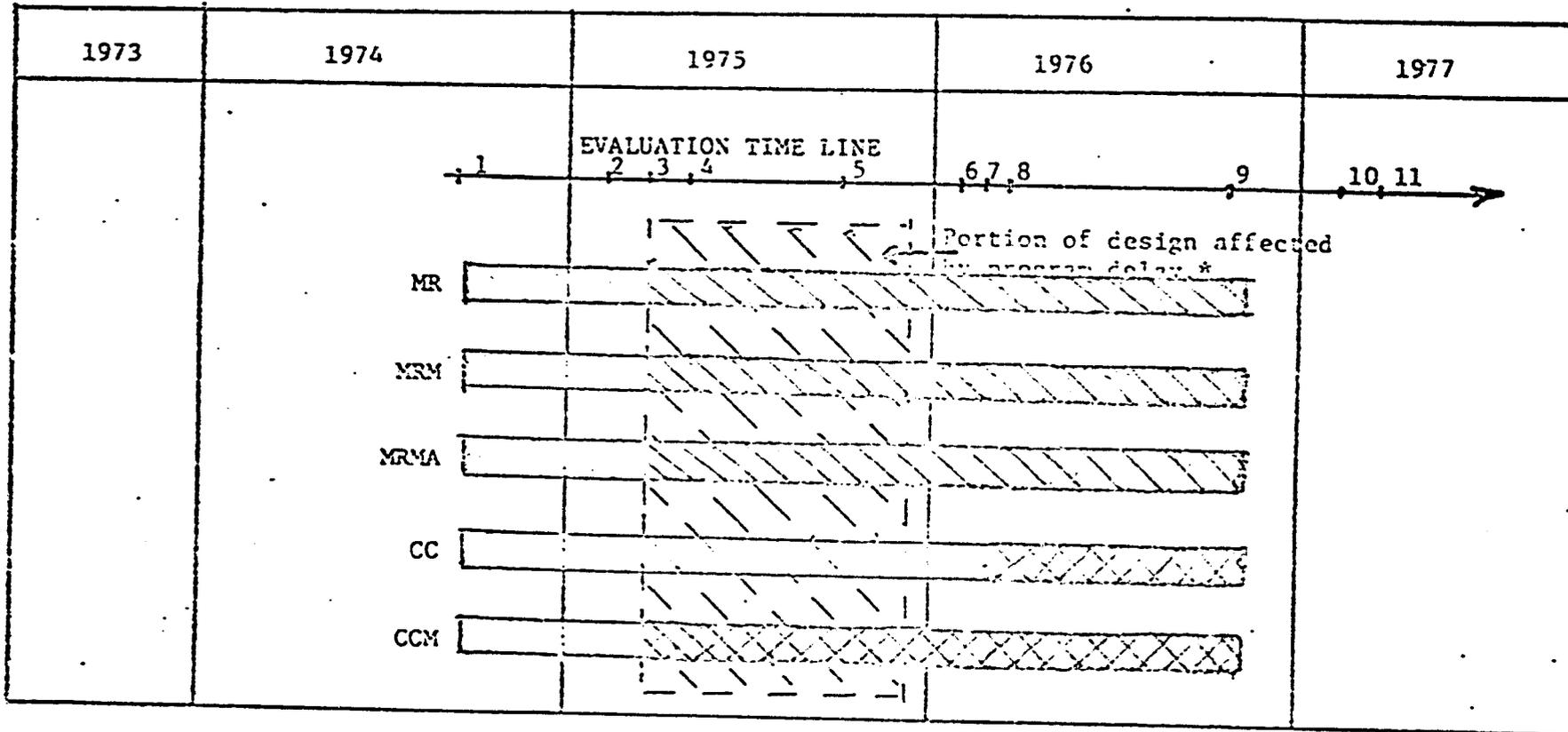


Figure 14 is a graphic representation of the research design as proposed for use in the Occidente area of Guatemala. The stages are outlined in the Evaluation Time Line: 1) August-November 1974: Baseline survey in MR**, MRM, MRMA, CC, and CCM. 2) January 1975: Yield survey for 1974 crops. 3) March 1975: Initiation of educational program. 4) April-September 1975: Monthly Time Sample Surveys. 5) September-November 1975: Year-end survey. 6) January 1976: Yield survey for 1975 crops. 7) March 1976: Initiation of educational program in CC sub-area. 8) April-September 1976: Monthly time sample surveys. 9) September-December 1976: Year-end survey. 10) January 1977: Yield survey for 1976 crops. 11) January-July 1977: Final analysis and report.

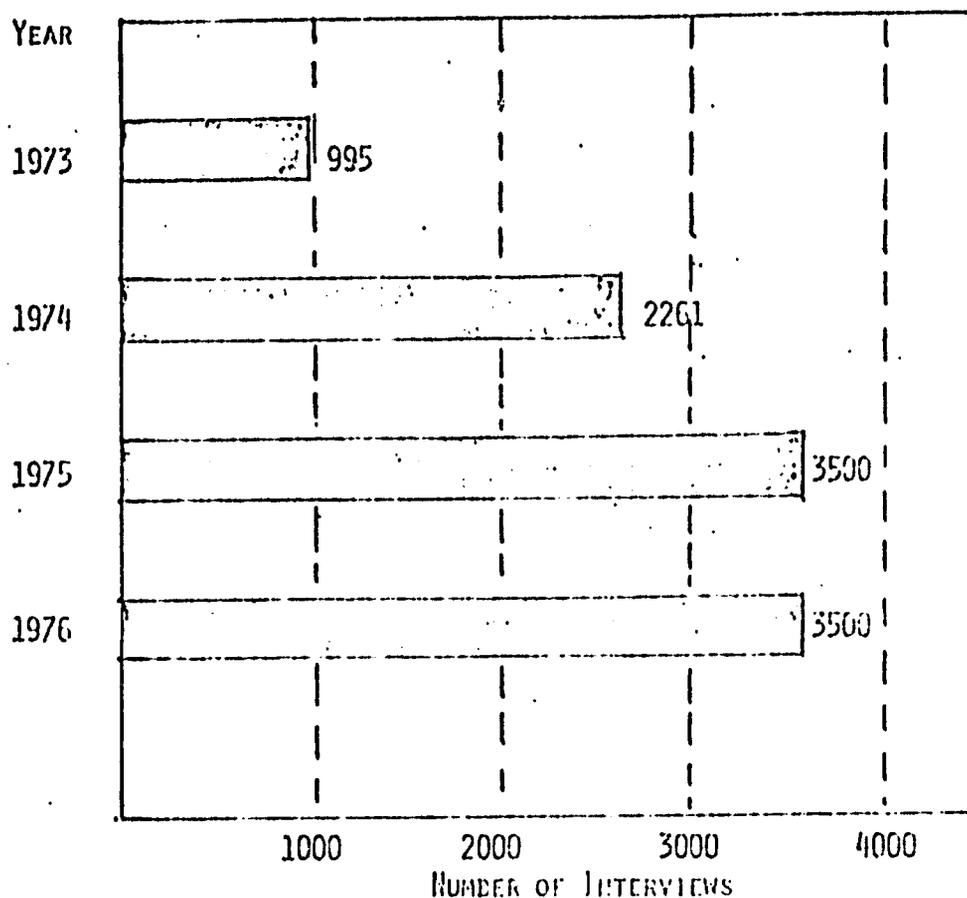
*The educational program was not initiated in March 1975 as planned so that the design has become inoperative.

**Areas: M = Momos; C = Chichi. Treatments: R = Radio; M = Monitor; A = Agronomist.

See Report Amendment pp. i - iv and alternate design in Figure 15.

Figure 15

INTERVIEWS CONDUCTED AS PART OF BVE EVALUATION



DURING LIFE OF PROJECT:
APPROXIMATELY 10,250 SEPARATE INTERVIEWS
WITH 1561 FARMERS
IN 49 VILLAGES
IN 14 TREATMENT AREAS
IN 5 MAJOR GEOGRAPHICAL AREAS, AND
IN 2 CONTRASTING CULTURES.

Figure 16 is a graphic representation of the number of interviews that will be conducted as part of the measurement of the results of the Basic Village Education experimental program. In 1973 there were 995 interviews conducted; in 1974 there were 2261; and 3500 are planned for both 1975 and 1976.*

*Due to delays in 1975 programming in Occidente, some modifications will be made.

necessary as part of the selection process and the evaluation staff participated in these when possible. The criteria that were used by the evaluation staff as they assisted the field staff in the selection of areas was as follows:

Criteria for Selection of Villages:

- 1) Small farms: 0.5 to 12 mza
- 2) Similar agricultural practices
- 3) Illiterate: 50%+
- 4) Communicate more with each other than with people in another village
- 5) Possibility of some change and improvement
- 6) No extraordinary social or political conditions

Criteria for Selection of Sub-Areas:

- 1) Villages form a general cluster that tend to fit together
- 2) All villages have necessary characteristics listed above and are generally alike

Criteria for Selection of Experimental Area (Including Control):

- 1) As near alike in sub-areas as possible and still allow enough distance for a radio-free control area

The steps also included: obtaining census data on the areas; obtaining maps; determining the soil types, the climate and the cropping practices; and determining the political and social characteristics of the area. As final selection was approached, contact was made with all of the political leaders and those representing the agricultural and educational agencies so that full understanding of the project would be possible.

This general process was followed in both Oriente and Occidente. In addition, there were special cultural conditions that were taken into account in the Occidente area. The assistance of Dr. Carmack was essential in this area (see Carmack report, Field Report Section IV C 1).

2. Preparation of the 1974 Baseline/Year End Questionnaire. The 1973 baseline questionnaire (in 1973 the baseline survey was divided into two parts that were administered separately at an interval of one month) were used as a starting point in the development of the 1974 questionnaire. There were many revisions that seemed necessary but it was also important that the questions remain as near alike as possible for comparability. The interviewers that had used the 1974 questionnaire evaluated each question and their comments were included in the revisions. All of the tabulation summaries were examined to see if the old questions had been useful and accurate. The coded answers were checked as to completeness as well as direction. The flow of questions was checked to see if the sequence was logical and non-threatening. Each of the questions was checked for adaptability to all of the geographical areas. The final refinements were completed by the evaluation field supervisor with the help of the interviewers. A full report of the procedures are included in the Field Staff report, sections IV B5 and IV C8. Also a field report is included in the appendix section of this report (see Appendix XI).
3. Field Interviewing and Data Processing. The first step in the field interviewing process was the selection of interviewers. Fourteen interviewers were selected for Oriente and eight for Occidente. The interviewers were selected on the basis of personality, work experience in rural areas and educational background. In addition, those working in the Occidente were fluent in the Quiche dialect.

The interviewer training period lasted for two weeks and included: team building exercises, techniques of interviewing, understanding of survey and evaluation, field testing of the questionnaire, and final revision of the questionnaire (see Appendix XII and Field Report Sections IV B5 and IV C8).

Interviewing was conducted in a central location and each person who had been selected in the sample was notified as to the time and place. Prior to this, all of the necessary arrangements had been made with local leaders so that there were no misunderstandings as to the intent of the interviewing. Each interview was done separately and was of approximately 30 minutes duration. Upon completion, the interviewer checked to see if all answers had been recorded correctly. Before leaving the field, a further check was made by the team supervisor.

Before shipment to Tampa, the questionnaires were checked further, coded and transferred to sense sheets. The complete procedure used in Guatemala is included in Appendix XIII.

In Tampa the material sent from the field was checked again and transferred from sense sheets to computer cards for processing. Before the cards are sent to the computer, a complete case printout is prepared for rechecking against the original questionnaires in the field. All errors are recorded so that the steps in the process can be completed with greater accuracy in the future.

4. Time Sample Survey Procedures. A complete description of the Time Sampling procedure was outlined in the 1973-74 interim report. Up to that point, two such surveys had been completed and it was evident that revisions were necessary in both the questionnaire format and interviewing procedures. The following paragraphs give details of the system that was used in the remaining five time samples conducted during 1974.

The time sample procedure consisted of a questionnaire developed from the same behavioral objectives used in programming. A multi-dimensional format was used in which the following questions were a part:

- 1) What did you do last year (in relation to a given agricultural practice)?
- 2) What did you do this year (related to same practice)?
- 3) Have you heard any new information regarding this practice?
- 4) What was the source of the new information?
- 5) How do you feel about this practice?

Each questionnaire contained approximately 35 questions that were related to six or seven basic practices that had been broadcast the prior month (see Table 2).

Interviews were conducted with a 20% sample each month from each treatment and control area. The sample was selected randomly from each of the five villages in all treatment sub-areas. There were 25 people interviewed in each of the treatment sub-areas giving a total of 100 people interviewed every month in the whole experimental area where the study was conducted. There were seven time samples conducted in 1974, five of which are included in the list in Table 2. A problem was encountered in that many of the farmers were absent from their farms due to work on the coast so that it was not always possible to interview them at the time their name was chosen for the sub-sample. In some cases they were not available for interviewing in any of the monthly surveys (see Table 3).

Table 2

BASIC VILLAGE EDUCATION

RECOMMENDED PRACTICES MEASURED IN 1974 TIME SAMPLE SURVEYS

<u>TS-3</u>	3	Soil disinfecting
	8	Selection of corn seed
	13	Number of corn seed per hole
	18	Type of fertilizer at seeding
	23	Amount of fertilizer per manzana
	28	How to apply fertilizer
	33	How to measure amount of fertilizer applied by hill dropping
<u>TS-4</u>	3	Use of insecticides
	8	Height of weeds at first weeding
	13	Association of weeding and hilling
	18	Use of weed control
	23	Use of fungicide
	28	How to drain steep land
	33	How to drain flat land
	38	How to drain low land
<u>TS-5</u>	3	Control of insects in beans
	8	Safety precautions with insecticide use
	13	Type of insecticide to control corn ear worm
	18	How to plant second crop/association
	23	How to obtain second crop--sorghum seed
	28	How to obtain second crop--corn seed
<u>TS-6</u>	3	Use of compost piles
	8	Advisor for fertilizers
	18	Type of fertilizer/initiation of flowering corn
	23	Amount of fertilizer per manzana on corn/bean association
	28	Amount of fertilizer per manzana on sorghum/bean association
	33	Proper time to disinfect soil with insecticides
	38	Advisor to identify crop diseases
	13	Timing of fertilizer at initiation of flowering
<u>TS-7</u>	3	First weeding of the corn field/determined by weed height
	8	Second weeding of the corn field/determined by weed height
	13	Order in which you should weed, hill and fertilize
	18	Order in which you should weed and hill your first crop of corn
	23	Insecticide most effective for the diabrotica beetle
	28	How to mix the insecticides used to control the diabrotica beetle
	33	Advisor about use of insecticides on the crops

Table 3

BASIC VILLAGE EDUCATION

SUMMARY OF INTERVIEWS IN 1974 TIME SAMPLE SURVEYS

1. Total number of monthly time sample surveys (TS) included in study = 5.

2. Number of practices included in each survey:

1) TS III	= 7
2) TS IV	= 8
3) TS V	= 6
4) TS VI	= 8
5) TS VII	= 7
	<u>36</u> Total Practices

3. Number of respondents chosen for each survey:

1) Control sub-area	= 25
2) Radio sub-area	= 25
3) Radio + monitor sub-area	= 25
4) Radio + monitor + agronomist	= 25
Total Respondents	<u>100</u>

4. Total respondents chosen from each sub-area for all five surveys:

1) Control sub-area	=125
2) Radio sub-area	=125
3) Radio + monitor sub-area	=125
4) Radio + monitor + agronomist	=125

The person selected to do the interviewing was chosen because of his prior experience in survey research, his knowledge of the area, and his rapport with the people. The interviewing procedures for the time sample were pretested and determined to be most effectively carried out in the following way: After the sample was selected and a list of names was available, the interviewer went to the farm of the person to be interviewed. Upon arrival he began with an informal conversation in which he presented himself and gave the reason for the visit. After the conversation had proceeded informally he then asked specific questions and filled in the questionnaire.

The data from the questionnaires was field checked, transferred to sense sheets and then to computer cards for standard data analysis. A test of the difference of means was used to compare the effect of different communication treatments on changes in knowledge, attitudes and practices.

Further modifications were made in the time sampling procedures at the time they were reinitiated in March, 1975. As of July 1, three time sample surveys have been completed in each of the three areas of Oriente.*

5. The data is analyzed at the North Florida Computer Center in Gainesville under the supervision of Dr. Richard Anderson. The output includes:
 - 1) frequency distribution of all answers to all items on the questionnaires;
 - 2) a breakdown of all answers by major area and treatment sub-area;
 - 3) a test for significant difference between the treatment sub-areas on each item; and
 - 4) the mean, mode, median and standard deviation for each item.

In addition special computer runs are made when needed to obtain:

- 1) correlation between items;
- 2) average yields;
- 3) village characteristics;
- 4) characteristics of missing cases that have dropped out of original sample;
- 5) scoring and scaling to measure change;
- 6) characteristics of responses by interviewer; and
- 7) cumulative responses of treatment sub-areas over time.

The possibilities for further analysis are unlimited. A standardized ID system gives a link that can relate a response of an individual to any response that he makes at a later date or to the responses of farmers in his or other areas.

6. Interpretation on Reported Findings. Three copies of each computer run are prepared. One remains with Anderson in Gainesville, one is sent to Tampa, and one is sent to the BVE office in Guatemala.

Special reports such as Radio Use in Occidente (Evaluation Report #6) are prepared immediately and sent to the field for use. As soon as possible, a summary of all of the responses for each of the major areas is prepared and printed (see Evaluation Reports #32, 33, 34). The outstanding characteristics of each area are then selected and prepared in narrative or graphic form and bound along with the data summaries for wider distribution in the working papers.

The large volume of materials that were listed at the beginning of this section are a result of all of the evaluation activities that start with the development of an evaluation research design and follow through to interpretation and reporting.

*No time sample surveys have been completed in Occidente due to the delays in program initiation.

III. PERSONNEL.

The formal evaluation activities were carried on during the contract year from October 1, 1974 to September 30, 1975 by the following personnel.

At U.S.F. Tampa

1. The Director dedicated one-fifth of his time during the fall months, 30% from January to June and full-time during the summer.
2. The Co-Director dedicated one-third time during the fall months, two-third's from January to June and full-time during the summer.
3. One Graduate Assistant worked during the fall and three additional assistants from January through the summer.
4. A Secretary worked two-third's time all year.

The actual and projected man-months for the Tampa-based personnel for the contract year October 1, 1974 to September 30, 1975 are as follows:

Dr. T. A. Rich, Project Director	4.6	MM
Dr. E. G. Newman, Project Co-Director	8.8	MM
Mrs. Joan Sheppard, Secretary	8.6	MM
Miss Sandra Kellher, Research Assistant	6.4	MM
Mrs. Cecelia Henton, Research Assistant	1.1	MM
Mrs. Sally (Green) Rivers, Research Assistant	3.7	MM
Mr. Ricardo Strull, Graduate Assistant	0.6	MM
Mr. Peyton Mason, Graduate Assistant	0.8	MM
Total Man Months	<u>34.6</u>	

The original plan called for a full-time research assistant for 12 months but due to delays in contract signing we were unable to secure a person for the job. The contract delays seriously hampered the fall work schedule and the lost time has not been fully recovered.

In addition to the Tampa-based personnel, the evaluation staff depends heavily on the assistance of others that are not on our contract.

On Separate Contract

1. Terzuola as Field Supervisor for data gathering in Oriente.
2. Straub as Field Supervisor for data gathering in the Occidente.
3. Personnel and transportation for interviewing and data processing, furnished by field office.
4. Anderson for data processing at Gainesville.
5. Ray and field staff for advice and field information.

IV. EVALUATION PROSPECTS 1975-76

The plans for the coming year are related to the original goals of the project that include the measurement of the impact of various communication treatments in two diverse cultural settings. The plans are stated below for Oriente, Occidente and cross-cultural comparison.

A. Oriente. The Evaluation Component will gather and analyze data from the three geographical areas of Oriente in much the same fashion as in the year ending. These three areas include three experimental treatment areas in Quezada (R, RM, RMA) three experimental treatment areas in Yupi (R, RM, RMA) and a combined treatment area in Ipala (CM). The Ipala area was divided in two parts during this past year but the pure control area will merge with the monitor control to receive the educational program.

B. Occidente. (See Amendment pp. 38-41). The Evaluation Component will gather and analyze data for the two geographic areas of Occidente in much the same form as was planned for the year just ending. These two areas include three experimental treatment (R, RM, RMA) areas in Momos and two control areas in Chichi (C4CM).

In the absence of programming, all five of the sub-areas of Occidente will be considered as program free control areas for the 1975 year. Due to the delay in programming it is assumed that experimental treatments originally proposed for 1975 will be carried out in 1976.

C. Cross-Cultural Comparison. During the coming year, the analysis of cross-cultural differences will be initiated. This will be in addition to the standard analysis described in the previous section. The original design called for a comparison of Oriente (using Yupi R, RM, RMA and Ipala C, CM) with Occidente (using Momos R, RM, RMA and Chichi C, CM) at the same point in time. The modified plan calls for a year's difference in the application of a comparable design so that any changes in weather and market conditions will have to be considered.

D. Field Interviews and Data Processing.

1. September - November 1975 - Year-End Survey
2. January 1976 - Total 1975 Crop Production Survey
3. March to September - Seven monthly time sample surveys

The above plan is based on the following field operations and support:

1. Continued and constant level of program inputs in radio message as well as monitor and agronomist performance.
2. Personnel and supervision for field surveys.
3. Personnel and supervision for field data processing.
4. Materials, supplies and transportation necessary for field surveys.

E. Data Analysis and Reporting. The main emphasis of the Evaluation Component in 1975-76 will be in the measurement and reporting of change as a result of the BVE program. The findings will be reported in the form of Evaluation Reports, Working Papers, Professional Papers, Monthly Reports and the Annual Interim Report. It is also contemplated that the first Practice Manuals will be ready for publication during the year.

F. Personnel and Facilities. In order to carry out the plan of work as outlined above the following Tampa-based personnel are contemplated:

Dr. Thomas A. Rich, Project Director	4 MM
Dr. Edgar G. Nesman, Project Co-Director	8 MM
Mrs. Joan Sheppard, Secretary	8 MM
Clerk-Typist	6 MM
Miss Sandra Fellner, Research Assistant	10 MM
Graduate Research Assistants as needed	<u>10 MM</u>
Total Man Months	46 MM

It is assumed also that the University will furnish:

1. Office space (as overhead contribution): Office space for six workers.
2. Office equipment (on rental basis): typewriters, dictaphone, calculator.
3. Data Processing Services (on a fee basis).
4. Printing and Binding Services (on a fee basis).
5. Finance and Accounting Services (as overhead contribution).
6. Grant Contract Renewal Services (as overhead contribution).
7. Release-Time Replacements.

It is also assumed that the collaboration with Dr. Richard Anderson and the North Florida Data Center will continue.

Report Amendment*

The second interim report covers the evaluation activities during the period from July, 1974, to July, 1975. This amendment is intended to acquaint the reader with more recent discussions just prior to publication of the report concerning possible changes in the program schedule and design which result from delays during 1975 in the start of the program in the Occidente area.

Initiation of educational programming in the Occidente was scheduled to begin in January, 1975, however the programming could not begin in the experimental areas until August, 1975. The major factors contributing to the delay, as described in the field operations report, included:

1. Difficulties in selection of an appropriate site for installation of the radio transmitter.
2. The time required for installation and testing of the radio station installed at Momostenango.
3. Delays in appointment by the GOG of staff for production of programs, operation of radio station, and field operations in the Occidente.

In short, programming could not be initiated until all physical installations had been completed, and bi-lingual (Spanish-Quiché) staff were in place and trained.

The prolonged delay in Occidente start-up had serious implications for the Project. By the end of July or earlier, farmers would have made essentially all major decisions for the year concerning their crops, and the agricultural cycle would be well-advanced. The remaining months of 1975 could be considered only as a period for developing competence in program operation, and an opportunity to gain the attention, interest and confidence of the local people. The potential for program impact in terms of significant change in attitudes toward, and adoption of, improved agricultural practices would be minimal.

Thus, following the current project schedule, educational programming can now extend over only one complete agricultural cycle in the Occidente instead of the two cycles projected in the Implementation Plan.

Several options have been presented and discussed among the participants in the program. The option which has been recommended for AID's consideration by the Academy and the Evaluation Team at the University of South Florida would extend the radio programming and evaluation components for one additional year in the Occidente with the final report of findings and cross-cultural comparisons then being due on June 30, 1978. The Oriente schedule is anticipated to be on time and the final report for that due as scheduled on June 30, 1977. This extension would enable the program to 1) fully meet its objectives of producing answers concerning cost benefits

*This Amendment has been prepared by the Academy's Project Coordinator based on discussions with the Evaluation and Field operations team personnel.

and differential effectiveness of the treatments in the Highland area (this information will be necessary also for future programming under the planned Rational Non Formal Education program in Guatemala), and 2) to carry out the important cross-cultural comparisons of the program's effectiveness. Extension of the program in the Occidente area has many programmatic and budget implications which are now being considered with a decision expected in late 1975. Figure 16 graphically presents the changes in the schedule of program operations and evaluation which would result from the one year extension in the Occidente area.

Figure 16

BVE EXPERIMENTAL PROGRAM - ALTERNATE PLAN FOR OCCIDENTE 1973-78*

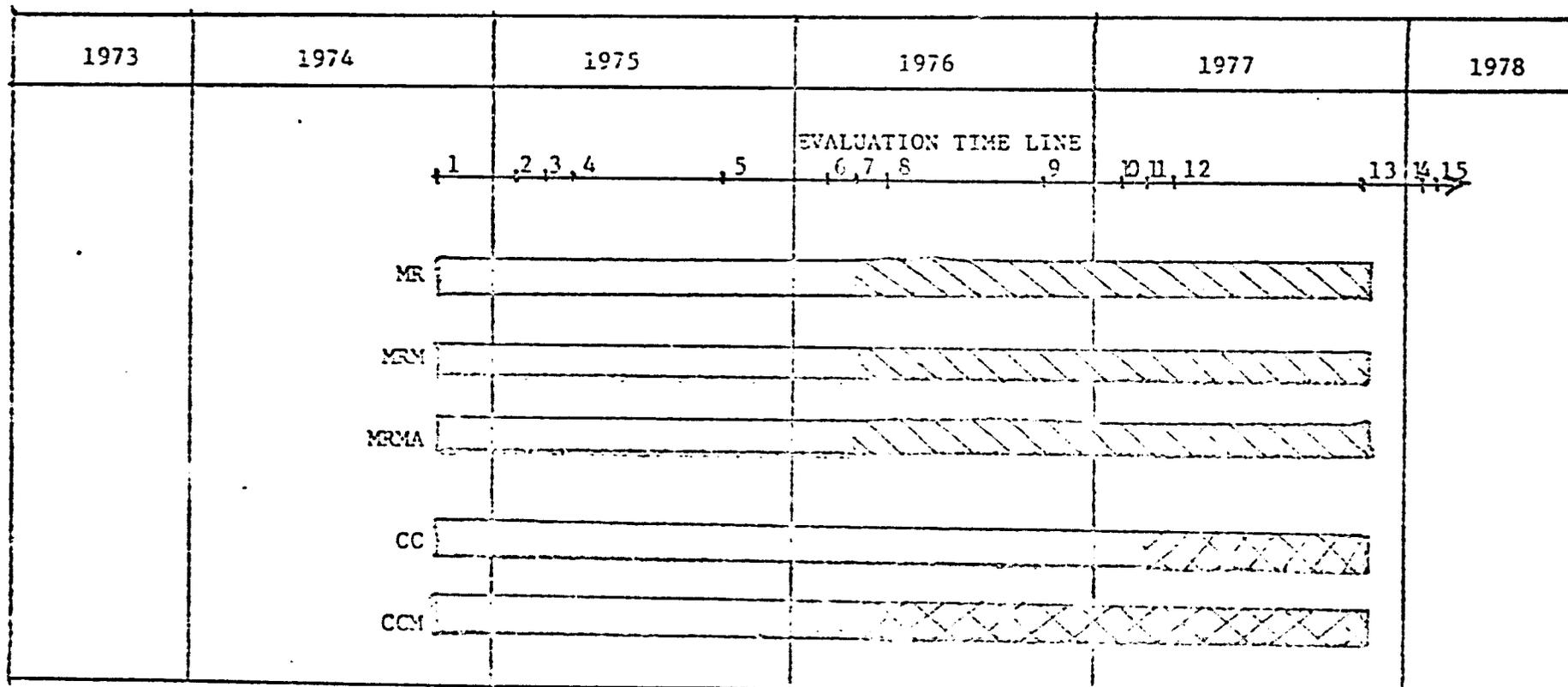


Figure 15 is a graphic representation of the research design as proposed for use in the Occidente area of Guatemala. This does not effect in any way the plan for Oriente (Figure 13) which remains in effect. The stages are outlined in the Evaluation Time Line: 1) August-November 1974: Baseline survey in all sub-areas. 2) January 1975: No yield survey. 3) March 1975: Educational program not initiated. 4) April-September 1975: Monthly time sample surveys not conducted. 5) September-November 1975: Year-end survey (all sub-areas considered as program-free control areas during year). 6) January 1976: Yield survey for 1975 crops. 7) March 1976: Initiation of educational program in all sub-areas except CC. 8) April-September 1976: Monthly time sample surveys. 9) September-December 1976: Year-end surveys. 10) January 1977: Yield survey for 1976 crops. 11) March 1977: Initiation of educational program in CC sub-area. 12) April-September 1977: Monthly time sample surveys. 13) September-December 1977: Year-end survey. 14) January 1978: Yield survey for 1977. 15) January-July 1978: Final analysis of Occidente data, cross-cultural comparison and final report.

*See Report Amendment pp. i - iv.