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ACADEMY FOR EDUCATIONAL DEVELOPMENT, INC.
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BASIC VILLAGE EDUCATION PROJECT - GUATEMALA

Project Implementation Plan

Submitted to: Office of Development Resources
Bureau for Latin America
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Washington, D.C. 20523

Contract No.: AID/CM/la-C-73-19

Date: August 15, 1973

A. I. D.
Reference Center
Room 1656 NS

The Implementation Plan which follows is based on accumulated knowledge and experience in Guatemala, results from similar programs in other parts of the developing world, technical advice from experts in specialized fields, and sound principles of research design and evaluation. It represents the best current judgment of the Contractor and Guatemalan leadership in the Project as to the most appropriate means and approaches to achieve the objectives of the project, and it will constitute the fundamental planning document for the Basic Village Education Project.

As the project progresses, however, there will undoubtedly be need for in-course corrections based on information and experience gained early in the project. Consistent with the design and plan for evaluation, and as indicated by experience and results gained in the project, such modifications will be made from time to time to insure that greatest possible effectiveness and maximum information be forthcoming at the completion of the project.

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BASIC VILLAGE EDUCATION
PROJECT IMPLEMENTATION PLAN

<u>Table of Contents</u>	<u>Page</u>
FORWARD	1
GLOSSARY OF TERMS	111
I. DESCRIPTION OF PROGRAM	1
A. General	1
B. Location	2
C. Experimental design	2
D. Treatments	5
II. DESIGN, EVALUATION, ANALYSIS	8
A. Measurement of results	8
B. Research and evaluation design	9
C. Data processing and analysis	14
D. Duration	17
III. CHRONOLOGY OF WORK	19
A. Operational planning	19
B. Program implementation	28
C. Evaluation	37
IV. DOCUMENTATION AND REPORTING	40
V. PERSONNEL, TECHNICAL SERVICES TRAINING REQUIREMENTS	42
A. Personnel	42
B. Technical services	51
C. Training	51
VI. COMMODITY REQUIREMENTS	53
VII. BUDGET	54
APPENDIX I	56

LIST OF FIGURES

PAGE

1. Treatment format for experimental area in 1974.	7
2. Progressive determination of message-induced change by campesinos (illustrative).	10
3. Research design for BVE experiment.	11
4. Time sequence of area use for experiment and control, illustrating one complete cycle of experimentation in the Oriente.	15
5. Integrated calendar of work for planning, preparation, implementation, and evaluation.	21
6. Assignments of responsibilities, by organization and by personnel.	22
7. Calendar of work for collection of preliminary data and information.	29
8. Calendar of work for establishment and operation of radio program production and transmission system.	31
9. Calendar of work for establishment of visual aids production system.	32
10. Calendar of work for development of message calendar and content.	34
11. Calendar of work for development and operation of message delivery system.	35
12. Calendar of work for providing essential services.	38
13. Calendar of work for evaluation.	39

FOREWORD

The present project is the product of discussions and studies begun in 1971 and directed to the feasibility of utilizing various combinations of modern communications systems to educate the large mass of illiterate peasants in Latin America who are outside the formal education system. The AID/Washington-funded project, although located in Guatemala, is intended to provide information to other countries about the effectiveness and cost of the methods employed. The project is to be implemented by a team of specialists contracted by the Academy for Educational Development, under the guidance of USAID/Guatemala and the coordination of the Ministry of Education, Government of Guatemala.

The project originally envisioned the use of radio as a new alternative in the formal education system for reaching rural illiterate adults with a broad spectrum of messages on health, nutrition, and agriculture. As a result of discussions within the USAID/Guatemala Mission and with the Government of Guatemala in late 1972 and early 1973, the decision was made to limit the message content of the program to agriculture. This decision was based on the following suppositions:

Improvement in agriculture is basic to all other improvements in a subsistence peasant society. Changes in agricultural practices and production can be measured in a limited period of time compared to other areas of concern such as health, education, etc. Although serious problems exist in agriculture, the field of health does not have the necessary infrastructure covering the basic services needed to meet the demands for medical attention and hospitals created by an educational program of this nature. Resources required to encompass more than one type of message in such a program would be great, and evaluation extremely difficult.

A feasibility study was conducted in mid-1972 for AID/Washington by the Academy for Educational Development to determine the potential viability of the proposed program. Major conclusions of the study team were that a pilot study would be worthwhile, and that considerable communications expertise exists in Guatemala. Their report raised general questions as to what subject matter should be included and what cultural, demographic, and physiographic constraints to successful implementation of such a program must be faced. The report did not develop baseline information necessary for planning a specific program of the type envisioned, nor was a calendar of operations developed which would permit initiation of the project in a form synchronized with the 1973 crop cycle as recommended by the team. In short, the feasibility study did not present a project plan or experimental design, but supported the feasibility of a pilot project.

Following the AED report, the BVE field team spent several months of intensive study on cultural, demographic, physiographic, agricultural,

and organizational characteristics and constraints before developing an experimental design and proceeding with operational planning for the program.

Although the program is oriented to agriculture in the present phase, consideration may be given in the future to such additional components as health, nutrition and sanitation. The radio transmission system to be established by BVE will be utilized from the outset for other types of educational programs.*

Nevertheless, the BVE program itself must remain intact without modification other than in-course corrections based on continuing analysis of the program as it progresses in order to obtain valid results amenable to evaluation in terms of cost-effectiveness.

*The radio transmission system described on pp. 28-30 will be located in the PEMEP pilot school in Quesada in 1974, and in 1975 in a PEMEP regional school now under construction in Yupiltepeque. Each of these schools, designed as centers for rural development and offering agricultural, industrial arts and meeting facilities, will serve up to 16 remote rural satellite schools within the experimental area. In collaboration with PEMEP (an AID loan and grant funded program) radio programs with necessary accompanying teaching materials and teacher instruction will be offered during school hours. PEMEP will prepare all program materials, with BVE radio and audiovisual assistance where necessary. The purposes are to 1) upgrade rural primary instruction, 2) multiply the effectiveness of the regional schools and 3) reinforce both primary and adult understanding and interest in education for development. Under present and anticipated AID loans to the GOG for improvement and extension of rural education, more than 50 rural regional schools will be constructed. New practical problem-solving curriculum and teaching methods for these schools have been developed over the past four years in AID-funded pilot schools in Ladino and Indian areas.

Some radio programming during the day will also be directed to women and children who are not in school.

GLOSSARY OF TERMS

- Oriente - Generally speaking, the region lying between the Department of Guatemala and the El Salvador and Honduras borders. For purposes of this report, only the four southeastern Departments are considered: Chiquimula, Jalapa, Jutiapa, and Sta. Rosa.
- Occident - As used in this report, the Indian highland or altiplano region extending from central Guatemala to the Mexican border, including the Departments of Totonicapan, Quiche, Quezaltenango, and Huehuetenango.
- Ladino - A Guatemalan, of whatever racial origin, but generally of Indian or mixed Indian and Spanish descent, who speaks Spanish or another European language, wears western dress, and does not belong to an Indian community.
- See also Indian.
- Indian - A Guatemalan using one of the Indian languages or dialects, wearing traditional Indian costume and belonging to an Indian community. This definition, generally accepted in Guatemala, is ethnic or cultural rather than racial.
- See also Ladino.
- Region - The Oriente composed primarily of a Ladino population, or the Occidente made up primarily of Indian communities.
- Site - In the evaluation sense, an experimental or control unit.
- Area - A group of communities which together constitute an experimental or control unit.
- Sub-area - A subdivision of an experimental area upon which a specified treatment will be imposed.

<u>Treatment</u>	-	A specified level of intensity of message delivery to be imposed upon a sub-area.
<u>Design Cycle</u>	-	Program action and evaluation applied sequentially to selected areas in a region as required to achieve objectives of the experiment. In the present design, one design cycle requires three years of program action in a region with accompanying evaluation.
<u>Agricultural Cycle</u>		The complete sequence of preparation for and operations associated with the production, harvest, and marketing of crops in a given crop year (in Guatemala, coincides approximately with calendar year).
<u>Essential Services</u>	-	Services which must be provided to farmers in addition to his own resources of land, skills, etc., in order for him to participate in agricultural modernization--credit, input supplies, market access, assurance of fair price, etc.
<u>BVE</u>	-	Basic Village Education Project.
<u>GOG</u>	-	Government of Guatemala.
<u>MOE</u>	-	Ministry of Education, GOG.
<u>MOA</u>	-	Ministry of Agriculture, GOG.
<u>Quintal</u>	-	103 pounds.
<u>Manzana</u>	-	Unit of land measure; approximately 1.7 acres.

I. DESCRIPTION OF THE PROGRAM

A. General

The Basic Village Education Project (BVE) is an experimental program of information and education for the rural adult in Guatemala. Its objective is to determine effectiveness and relative costs of different mixes of communications media, used to supplement the work of extension agents (limited in number), in influencing change in agricultural practices and production among the Ladinos and Indians of rural Guatemala.

Given an illiterate, subsistence, rural population, this experimental program is based on the following hypotheses:

- 1) Present day technology offers a variety of communications systems which, properly utilized, can stimulate the interest of the campesino and increase his capacity to take advantage of programs designed to help him raise his level of living;
- 2) A communications system using modern technology can multiply the effectiveness of extensionists and teachers who are currently limited largely to person-to-person contact;
- 3) Educational programs addressed to improvement of the campesino must be closely coordinated to his current needs, and to the facilities and services available to meet those needs.

Consistent with its experimental nature, BVE is comprised of two equally important parts: 1) a carefully controlled nonformal educational program which initially does not require literacy, and 2) a rigorous evaluation of that program in relation to its objectives and underlying hypotheses.

For experimental purposes, program content is concentrated on production and marketing of basic crops*, an area of development where changes in attitudes and practices can be measured most readily in a limited period of time; and where, unlike health, a minimal infrastructure exists (although essential supporting services such as extension, credit, and marketing will probably be marginal in quality). However, results are expected to have much broader application, both in Guatemala and elsewhere in Latin America, in the continuing development of viable rural education programs that respond directly and effectively to a broad range of local needs.

*Corn, beans, sorghum and rice in the Oriente; corn, beans and wheat in the Occidente.

The present plan is based upon intensive studies initiated in late May 1973 upon arrival in Guatemala of the present BVE field team under contract. Such studies encompassed: cultural, demographic, physiographic and agricultural conditions and constraints; GOG capability to contribute expertise and resources to the program; and determination of realistic criteria for selection of experimental and control areas.

B. Location

The experiment will be carried out in two regions of Guatemala representing two major ethnic groups, Ladinos and Quiche-speaking Indians.

The Department of Jutiapa in the Oriente of Guatemala has been selected to represent the Ladino Region. Based on the site selection criteria outlined in Appendix 1, three areas in Jutiapa have been selected as being suitable for the experiment. They are (designated by the name of the municipio in which the greater portion of land and people are located): Quesada, Yupiltepeque, and Comapa.

Final verification of the above areas is being made on the basis of available census data, analysis of census map information, land-holding patterns, site surveys, and other available background data. Quesada will be the experimental area and Yupiltepeque the control area for 1974 programming in the Ladino region.

In the region of Quiche-speaking Indians, selection of experimental and control areas must await the completion of the preliminary investigation described later in this report.

C. Experimental design

The design and plan for evaluation of the experiment are based on a series of general assumptions, and recognition of hazards beyond the control of the experiment that may seriously affect results obtained in any given agricultural year. These include:

- 1) There are acute and recognized problems in rural Guatemala such as rapid population growth; low health standards, low productivity and poor income distribution; cultural and linguistic isolation of the Indian; extremely low levels of formal schooling; high rates of illiteracy in the adult population.
- 2) Adult literacy programs in Guatemala have not been able to cover population in rural zones in Guatemala.

- 3) The situation in other Latin American countries regarding rural problems and literacy programs is similar in many respects to that of Guatemala.
- 4) Present and potential limitations in resources and manpower in developing countries for reaching rural people through conventional extension programs result in an urgent continuing need to find effective, low-cost means to supplement the work of extension agents in order to reach the entire rural population.
- 5) Limited experience in other developing areas of the world indicates that an educational program directed at rural people and using communication methods that do not include literacy or formal classes is feasible, and may be the most economical way of solving some of the acute problems.
- 6) An experimental program to study the use of communications methods to supplement the work of extension workers in both a Ladino and an Indian language cultural setting in Guatemala is feasible.
 - a) A controlled experiment susceptible to sound evaluation is feasible.
 - b) Relatively homogeneous areas exist in both regions that can be subdivided for purposes of treatment imposition, and for selection of experimental and control areas.
 - c) An agricultural message can be developed for each experimental region that, if adopted, has the potential to increase production, profits, and well-being of the rural family engaged in agriculture.
 - d) Most families in the regions selected for the investigation either own radios or will buy them if made available at low cost.
 - e) It is possible to provide an adequate and equal level of availability of services (credit, inputs, market access, fair price) to both the experimental and control areas through existing GOG programs.
- 7) The program is subject to major hazards completely beyond the control of the experiment that may seriously limit, or in extreme cases negate, the possibility for valid measurement of results in a given area in a given year. These include:

- a) Natural hazards such as drought, flood, or unexpected infestations of insects or diseases which may occur in any area at any time.
- b) Inability of the responsible agencies to provide essential services, most likely to occur during the first year of program operation in an area.
- c) Drop in price for agricultural produce--could be local or general in scope depending upon the underlying cause(s).

The research design for the program is the responsibility of a team of evaluation and agriculture specialists under contract in consultation with USAID, the Ministry of Education (MOE), and other appropriate agencies of the Government of Guatemala (GOG). The design is described in Chapter II.

The basic research design concepts proposed in Chapter II for the Ladino area will be applied in the Indian communities of the Occidente. The same general principles of intensive study for site selection, development of experimental and control areas, provision of appropriate treatments, collection of baseline data and later re-evaluation based on the agricultural calendar will be followed.

The Mayan communities are highly idiosyncratic, however, in terms of language, culture and custom; and only limited information is available concerning the modernization process in the region. The BVE field team conferred with a panel of eminent anthropologists and sociologists* having long experience in the Occidente of Guatemala to determine the best course of action under such circumstances. That group recommended unanimously that preliminary field studies be undertaken in the region to permit development of a viable design and experimental program. Their recommendation has been accepted, and the pre-study will be made by anthropologists under contract to provide the following information:

- 1) A description of agricultural practices and general sociocultural patterns of selected Indian communities of the Occidente.

* Dr. Benjamin D. Paul, Stanford University; Dr. Richard Adams, University of Texas; Dr. Robert Carmack, State University of New York; Dr. Donald Sibley, formerly of Iowa State University.

- 2) An analysis of modes of communications in these communities, especially with regard to information on agricultural modernization. The analysis will include types of communication, scale, relative effectiveness, sponsoring agencies, etc.
- 3) Recommendations for specific communities from the Occidente to receive the experimental communication system, and bilingual (Spanish-Quiche) personnel available in selected areas for program implementation and field investigation.*

After completion of the pre-study, a modified design will be developed and implemented in the Occidente, beginning in mid-1974, for the 1975 agricultural year.

D. Treatments

1. Oriente

As previously noted, the same levels of availability to farmers of needed services and ongoing programs (such as extension) will be maintained insofar as possible in both experimental and control areas. Otherwise, no treatments will be applied to the control area. In the experimental area, differential treatments will be applied in the sub-areas beginning in January 1974. Message transmission will continue through the complete crop year, with content carefully synchronized to the agricultural cycle.

Treatments to be imposed represent varying degrees of intensity in message delivery as shown schematically in Figure 1. Radio will cover the entire experimental area. It will constitute the sole means for message delivery in sub-area A. Sub-areas B and C will receive, in addition to radio, increasingly intensive means for message delivery. The treatments to be used are as follows:

Treatment 1 (in sub-area A)

Radio alone (centralized radio sets will be made available to same extent as in sub-areas B and C. Personal radios will be made available at low cost or loan basis to all families who do not presently have a radio).

Treatment 2 (in sub-area B)

- a) Radio (as in Treatment 1).

* As of this date, no Quiche-speaking trained agronomists have been identified, although Quiche comprises the largest of the 22 Indian groups.

- b) Local monitors with limited audiovisual materials (minimum of two monitors).
 - i. Farm radio forums will be used where a concentration of farmers exists; a centralized set will be provided for each forum. Where there is no such concentration, monitors will work on an individual or nonformal group basis.
 - ii. The basic teaching aid provided to monitors will be audio-cassettes. In addition, simple flip charts and printed handout materials will be supplied.

Treatment 3 (in sub-area C)

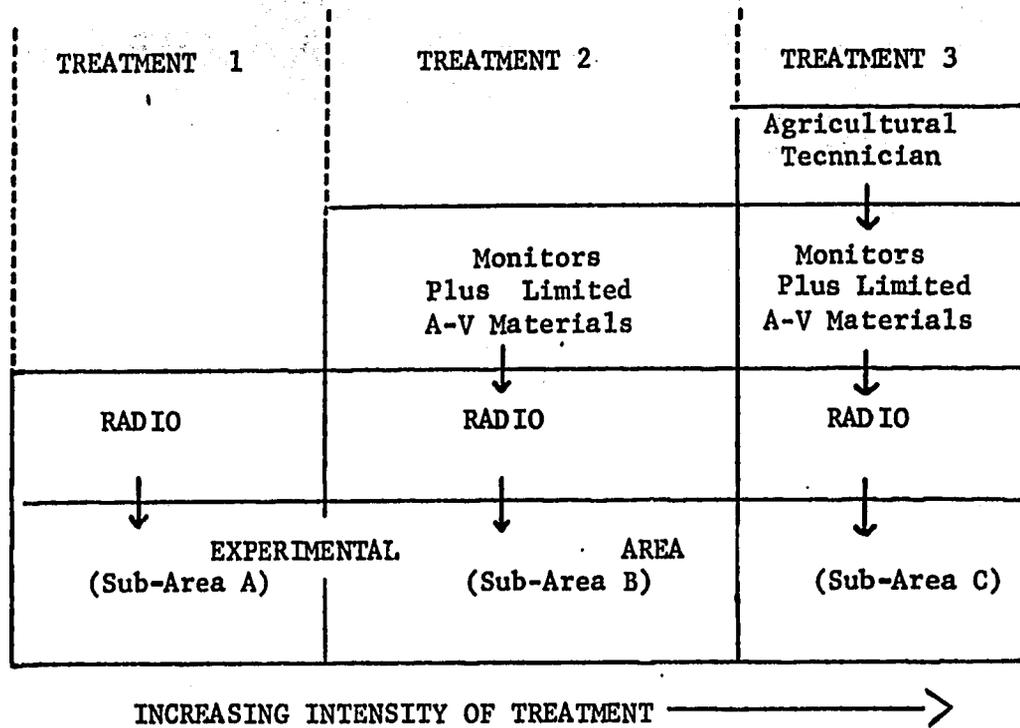
- a) Radio (as in Treatment 1).
- b) Local monitors with limited audiovisual materials (as in Treatment 2).
- c) Agricultural technicians with diversified package of audiovisual materials and crop demonstrations.
 - i. Technician assistance (P.S. level) to be made available to the extent that would be possible if he were serving an area with 300 to 400 farm families.
 - ii. Technician to supervise and reinforce monitors, and have responsibility for crop demonstrations.

The details of treatment imposition will be worked out in consultation with media-use specialists, MOE and other appropriate agencies of GOG, taking into consideration the characteristics of the experimental area.

2. Occidente

Determination of specific treatments to be applied in the experimental area in the Indian region will be guided by the results of the aforementioned preliminary investigation.

Figure 1. Treatment format for experimental area in 1974



II. DESIGN, EVALUATION, ANALYSIS

A. Measurement of results

The evaluation plan deals specifically with:

- 1) An evaluation of the differential effectiveness of a series of communication treatments in producing changes in attitude, knowledge, practice, and production.
- 2) Measurement of such changes in two highly different cultural settings.
- 3) A cost-benefit analysis following the experimental aspects of development.

Measurement of change will be 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 constant feedback 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.

The relationships among the various categories of change are shown schematically in Figure 2.

B. Research and evaluation design

On the following pages, the outline of the evaluation plan is shown with explanatory materials at each stage in the process. Figure 3 and the materials in order reflect the nature of the target population, the selection of experimental and control groups, the establishment of baseline measures of attitude and practice and, in this case, agricultural yield a definition of the treatments to be administered over time and re-evaluation after the agricultural cycle is complete.

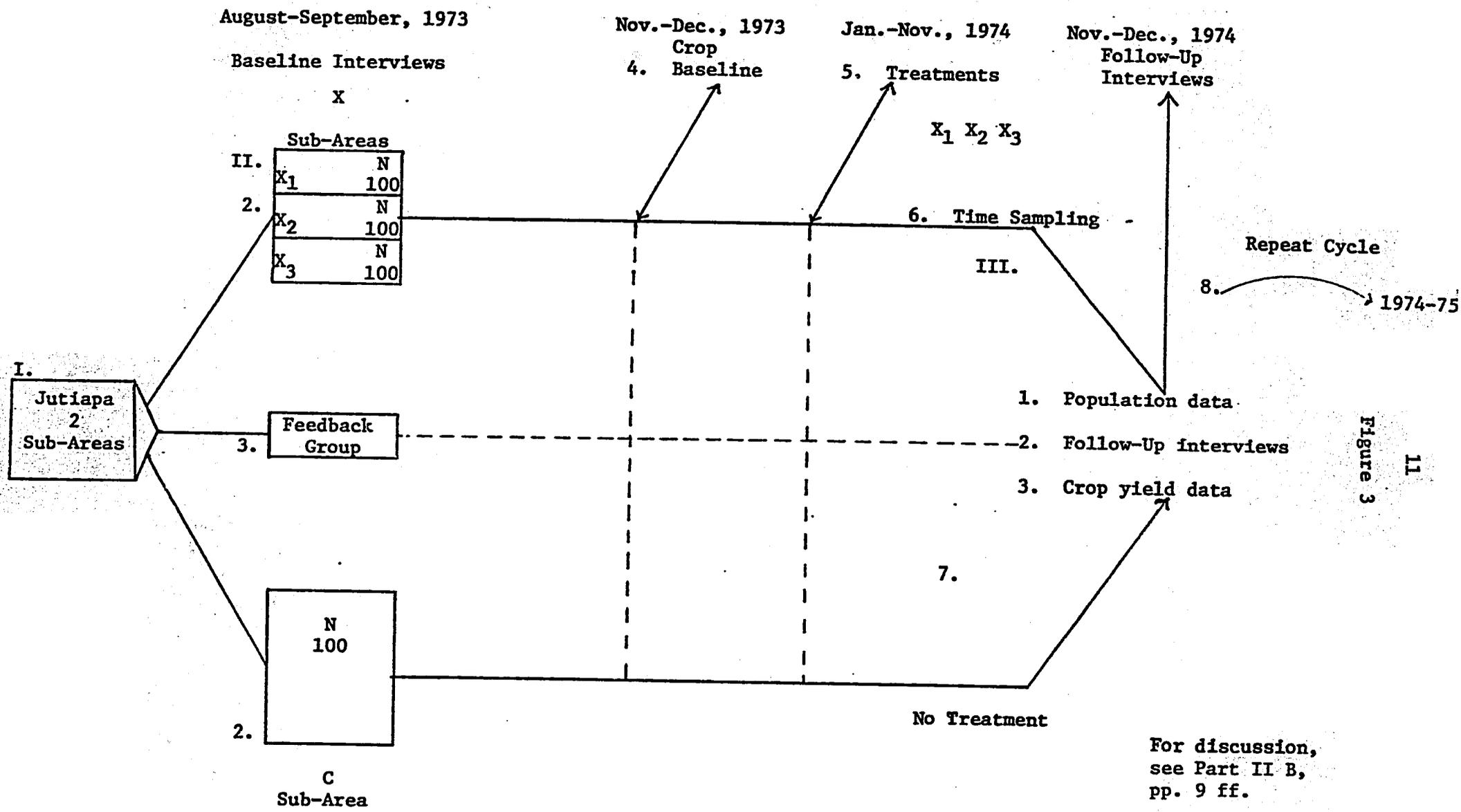
Several added factors are necessary in the proposed research plan. The first of the new factors is a special feedback group which will be identified in the baseline questionnaire as opinion leaders and key informants in each of the villages under study. This group will serve for study on the same variables as the experimental and control groups and will be intensively involved as evaluators of the messages depending upon the treatment condition in which their village is located. The group is a special feedback unit for improving and evaluating the nature of the message during the first few months of the project. As opinion leaders in each village it is also hoped that the reasons for resistance or willingness to change can be further defined in the first year by using this group as a research feedback forum.

A second feature not always found in field research is that of continuous time sampling of behavior and attitudes in the field during the course of the experiment. A field investigator will be trained to systematically contact, interview and observe behavior and attitudes of members of the intensive subsample as well as village monitors and the key informants mentioned above. This time sampling will have impact on the nature of the messages given and on the receptivity of the subjects toward the message and will yield important process data in interpreting the later baseline evaluation.

Proposed Evaluation Plan for the Oriente (See Figure 3)

1. In the Department of Jutiapa, one control area and one experimental area have been selected for the initiation of the project.

In 1974, Quesada will be the experimental area and Yupiltepeque the control area. The experimental area will be divided into three sub-areas, each to receive a different treatment during the coming year. The three sub-divisions will be based on a combination of geographic proximity and estimated degree of interpersonal interaction, providing for three distinct sub-areas as separate as possible within the same general geographic area. No comparable sub-divisions will be made in the control area.



I. Selection
 a. Census
 b. Maps
 c. Area visits

II. Sample - Random
 a. 20-30 males per village
 b. Land control :5 - 12.0 manzanas

III. Treatments
 Three levels
 Radio +

For discussion, see Part II B, pp. 9 ff.

Figure 3

2. First phase interviewing - sample selection for intensive interviews will be undertaken in both the experimental and control areas.
 - a) Experimental site - in each of the three sub-divisions of the experimental area, a sample of 100 will be drawn for intensive interviewing during the months of September and October. This interviewing will be by use of a questionnaire presently being developed to determine baseline demographic data, agricultural knowledge and practice, and a third section to include a variety of related questions concerning health, nutrition, transportation, communication practices, level of living, mobility, sources of information, and occupation. A list of subjects by village will be prepared from the available census data and provided to interviewers so that a random sample from a pre-selected acceptable list in each village may be obtained. This random sample will consist of approximately 20 to 30 subjects from each village within each sub-division up to a sample of 100. This particular sampling will give a broad range of types of subjects, landholding and land quality. The subjects will be males, controlling from .5 to 7.0 manzanas of land under cultivation with intent to remain on the land for the coming year. Variables such as perceived literacy, perceived soil quality and other such critical areas will be studied through correlation procedures the first year with experimental field verification of actual land suitability and literacy as time and technology permits.
 - b) Control site - in the control site a random sample of 100 subjects from a broad range of villages will be gathered based on the same criteria listed for the experimental site. The intensive interviewing in the control area will take place during the first half of October.
3. Feedback group - in the experimental area a special feedback group will be selected which will consist of informants identified as opinion leaders in each of the villages and monitors where monitors have been assigned. This group will receive the same intensive interviewing but will serve a different function from the experimental groups. The group will serve as a sounding board and focal point for the evaluation team to get consistent feedback over time concerning the reaction of the area to the message, the quality of the message, the availability of radio, and factors in resistance or acceptance of the message; and generally will be the touch base point for the field investigator.

4. Second phase interviewing - in November and December the subjects interviewed in the intensive sampling will again be contacted on an individual basis with an interview containing two major parts. The first part will be follow-up questions concerning agricultural practice and knowledge based on analysis of the first interview data. The second major aspect of this interviewing will be to obtain accurate and reliable data on major crop yields to serve as a baseline for comparison with crop yield for the coming agricultural year. This data should be collected and completed not later than December 15, 1973.

Utilization of data collected to this point and time: Beginning with the initial intensive interviews in September and following through to crop yield interviews in November and December, all data will be pre-coded and shipped immediately to Tampa for checking and computer analysis, and the results will be sent back to the field team. The data will be distributed for further analysis of agricultural problems for input into the message systems being developed by Professor Dardon.

5. Treatments - Beginning in January 1974, the three treatments will be applied to the three experimental sub-areas. The focus of the treatments will be a portable radio station located in the experimental area. The exact nature and extent of the three treatments will depend upon the final plan developed by the field team in conjunction with an agricultural communications specialist. The treatments will include varying degrees or intensity of messages provided by increased use of audiovisual materials and by increased personal contact by agricultural specialists.

The exact differentiation of the three treatments will be determined independently of the evaluation unit. During this year, there will be no treatment in the control area. At the same time it is expected that related services such as credit will be made available in the control and experimental areas so that change will not be restricted by the lack of service inputs in either area. The treatments will continue throughout and be correlated with the agricultural calendar period.

6. Treatment effectiveness - Evaluation - In November and December of 1974 the subjects in the initial sample will be re-interviewed to evaluate any changes in attitude and practice concerning agricultural production. Actual crop yield data will also be collected and compared with the original baseline data for change between experimental and control areas and for change within experimental areas subjected to different levels of treatment.

Other population data such as overall reports of fertilizer sales, general product yields and credit provided will also be considered for re-evaluation for population changes.

7. Second year treatment and evaluation - Because of the nature of agricultural communications and rural adoption patterns, it seems important that the experimental program continue through the second agricultural year. Evaluation in the second year would be based on the continuing data collection from the feedback group, time sampling of production indicators by the field research supervisor and a final treatment effectiveness evaluation at the end of the second crop year.

Proposed Evaluation Plan for the Occidente

The basic evaluation concepts proposed for the Ladino area will be applied in the Indian communities of the Occidente. Because of limited information concerning the modernization process in the Mayan area including such small informational bits as the use of radio and radio listening habits, it will be necessary during the first year to conduct field studies and be ready to implement a modified design beginning approximately September 1974. The same general principles of intensive study for site selection, development of experimental and control areas, provision of appropriate treatments, collection of baseline data and later re-evaluation based on the agricultural calendar will be followed.

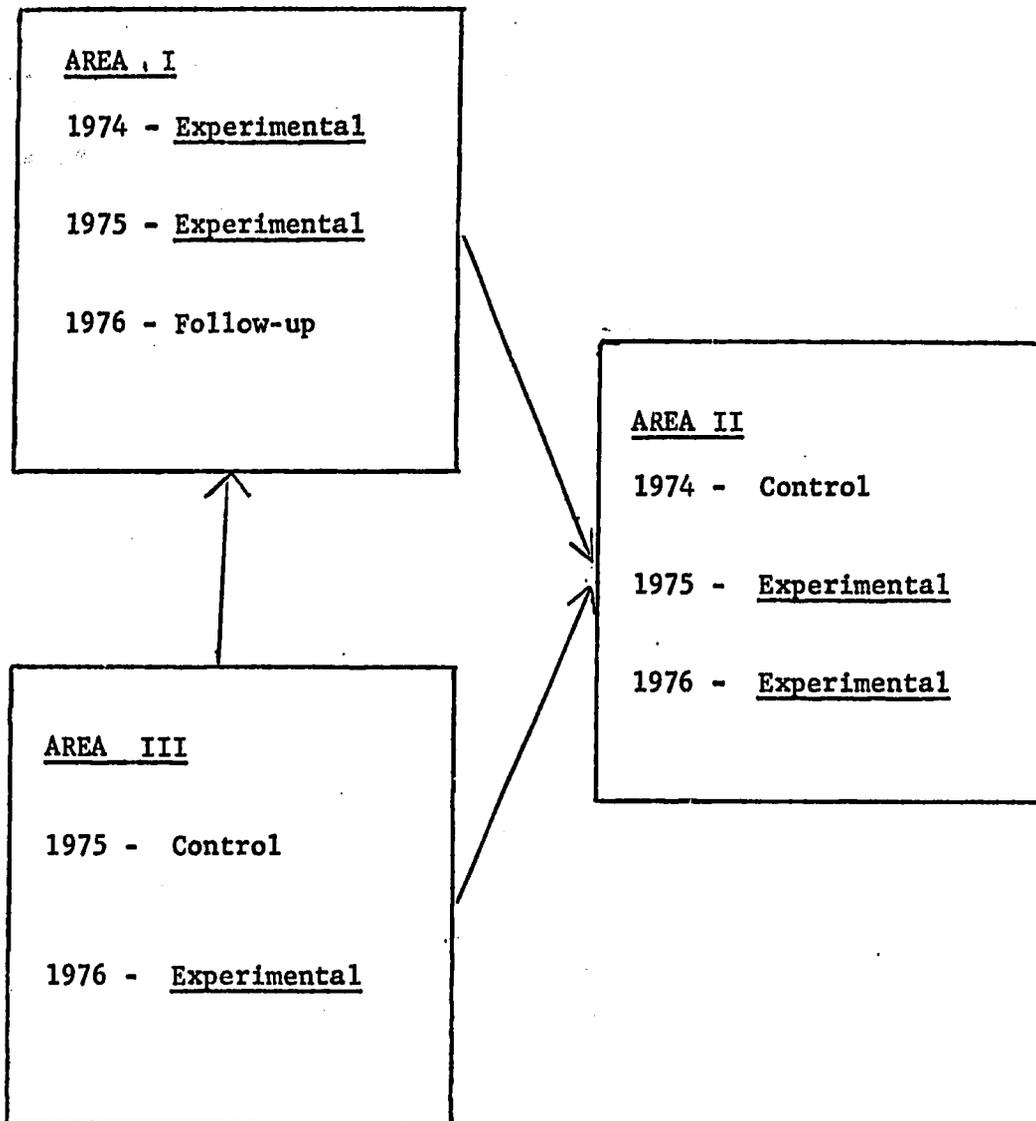
Experimental Replication in Three Areas

Not shown but presumed in the experimental design is the potentiality for replication of the experiment. For example, at present in the Ladino area three areas have been identified as generally suitable for experimental or control areas. Assuming that the experiment may add longitudinal data, it is possible that Area I would be the experimental area for 1973-74 and Area II as a control area with no action taken in Area III. In the 1974-75 design, experimental area, control Area II would become a first year experimental area, then it would be possible to have two years of information on the impact on Area I, one year of information on the impact on Area II, and a fairly carefully studied population in Area III serving as control. Depending on results and further refinements needed for differentiation of effectiveness and cost benefit measures, it might be possible then to continue that design as set up or move to a period where all three are subjected to different treatment and having no area with no treatment. This cyclical design (Figure 4) would permit maximum information on both short term and long term data building from a base to be established in August and September of the current year, 1973.

C. Data processing and analysis

1. The questionnaire for the field survey will be pre-coded in Guatemala and shipped immediately to the evaluation Unit in Tampa for transfer to coding sheets.
2. The coded data will be delivered to Dr. R. J. Anderson for computer analysis. (Programs currently being developed). These programs will provide intensive data analysis for immediate feedback to the field team and program staff.

Figure 4. Time sequence of areas used for experiment and control, illustrating one complete cycle of experimentation in the Oriente.



3. The major dimensions of analysis are as follows:

- a. The first stage of the analysis will provide a descriptive profile of Treatment Areas 1, 2 and 3 in Quesada and a profile of the control sample in Yupiltepeque.

Analysis of differences by items on the questionnaire in terms of background, sources of information, agricultural knowledge, land-holding, etc., will be made on this first run to insure matching of the experimental and control areas. If significant differences are encountered, modifications will be made to accommodate them in the research plan. A further example, critical to program planning, will be to determine if the percent of radio ownership and listening is approximately the same in all areas and if not to explore variables that might account for differences observed.

This level of analysis will primarily involve descriptive statistics for population profiles, chi squares or analysis of variance depending on the nature of the data.

- b. In November additional data will be added from intensive study of land and agricultural characteristics, along with crop-yield. This data will be added to the previous information collected on each subject and again cross-sample comparisons made as well as within sample by areas to investigate emerging differences. Some preliminary correlational analysis may also be made at this point to determine if major characteristics of the individuals seem to be related to differences in knowledge, attitude and crop yield revealed in base line data.
- c. At the end of the crop cycle in November of 1974, a refined version of the initial questionnaire will be re-administered, along with collection of crop-yield data. The analysis will concentrate on differences within the three treatment areas to determine first if there is a measurable difference in effectiveness to later be related to cost/benefit analysis. The 3 sub-areas will be individually and collectively compared with the new information obtained for the control group as the base for making statements about change.
- d. In addition to the standard experimental comparisons made between treatment and non-treatment groups, samples will be studied to determine the nature and characteristics of those people who responded most to the treatment or who changed most in the control condition. High change subjects will be compared with low change subjects and studied on the wide range of demographic, agricultural and social variables. In addition to looking at experimental and control groups it should be possible to identify target populations within groups of illiterates with differing responsiveness to mass media.

Since there will be increasingly complex sets of variables as subjects are studied across the total sample, it may be necessary to utilize more complex multi-variate analysis of the data to insure that maximum information has been gained from the study.

At an early point in implementation and data collection, it is assumed that AED will provide an economist with extensive cost benefit analysis experience to begin to relate the variables of treatment conditions and cost so that the final section on cost benefit analysis will be available at the conclusion of the design.

D. Duration

Although final results will require the time frame indicated below, the program will be under continuing evaluation and analysis. It is anticipated that preliminary findings may be available as early as mid-1975 which will permit application in other rural education programs. Thus, it is expected that the BVE program will be able to feed useful information into other programs in advance of completion of the experiment itself.

After three years of programming, one cycle of the design will be completed in the Oriente, and two years of experimentation will be completed in the Occidente. In advance of programming, six months is required for site selection, collection of baseline data, development of message material, etc.; and an equal amount of time will be required for final analysis of results and report preparation after programming is terminated. On that basis, a realistic projected completion date for the program is July 1, 1977.*

Although the BVE experiment may terminate in 1977 or 1978, the use of facilities in collaboration with other programs will not cease. For example:

1. Even during the experimental period, it is anticipated that educational programs developed by the PEMEP program will be transmitted during hours not needed for agricultural

* Continuation of programming for one additional year in the Occidente is recommended to complete a design cycle in that region, also.

Continuation of the entire program through a second design cycle on at least a limited basis may prove desirable from the standpoint of additional information obtained. The cost of such an extension would be relatively small in relation to the total cost of the experiment.

programming. The audience at the outset will probably be the satellite schools. If this approach proves viable, the radio transmitters could become an integral part of the PEMEP type program.

2. Since the objective of the program is to extend the effectiveness of present extension efforts, and since it is structured in such a way that it can become a part of the present Guatemalan system, the BVE facilities could become an integral part of the new Guatemalan extension system. Both the extension (DIGESA) and research (ICTA) organs of the MOA are planning to expand their activities, DIGESA is specifically considering the use of radio, and the Ministry of Education has, in the present year, created a Directorate of Educational Technology.
3. The same facilities would provide the means to expand the BVE approach and test it in other fields such as health, sanitation, nutrition, and education. (Consideration should be given to initiating some work in such fields while present BVE is still in progress, using the BVE facilities for transmission of their specific messages).

III. CHRONOLOGY OF WORK

The agricultural cycle dictates the timing of all aspects of the program. Message delivery, to be synchronized with that cycle, should begin in January of a given crop year and continue at least through October. Consequently, all operational planning, installation of facilities, collection of baseline data, training, and preparation of needed materials must be completed prior to January.

A. Operational Planning

The Basic Village Education Program is, by definition, a controlled experiment requiring sound research design, controlled variables, and systematic evaluation. As a consequence, primary responsibility for operational planning rests with the evaluation and agriculture specialists under contract in consultation with USAID, MOE, and other appropriate agencies of the GOG. In addition, short term specialists are utilized in planning for specialized components (hardware, software, etc.) required to implement the program.

The following framework has been used for development of the operational plan:

- 1) Development of research design, treatments, evaluation, and site criteria;
- 2) Determination of requirements for implementation of program in accordance with design;
- 3) Development of integrated calendar of work including planning, preparation, implementation, and evaluation (Figure 5), based on the following assumptions:
 - a) The project will be approved by both AID and GOG without major modification in design or resources, and will provide an adequate level of support to the program through the life of the experiment.

(The BVE field team and GOG Project Coordinator must keep needs for personnel and other resources under continuous review to anticipate possible changes far enough in advance to permit forward budgeting.)
 - b) Agricultural programming must begin in January 1974 in Quesada, the 1974 experimental area, to be synchronized with the agricultural cycle. All other activities must be scheduled accordingly.

- c) A radio transmitter can be purchased, shipped to Guatemala, installed, tested, and in operation by early January 1974.

(The schedule is extremely tight, especially with respect to purchase and installation of equipment such as the transmitter and tower.)

- d) A radio and other audio materials programming unit will be established in BVE to prepare radio and other audio program materials early in 1974.
- e) Existing GOG programs can provide an adequate level of services of credit, inputs, market access, and fair price to farmers in the experimental and control areas.

(This assumption still remains to be validated.)

- f) Necessary agricultural expertise for the project will be provided by the Ministry of Agriculture.

(Representatives of the MOA have expressed strong interest in collaboration with BVE, but have indicated their present inability to provide substantive assistance due to personnel and budgeting constraints. Therefore, some agricultural expertise has been budgeted in BVE to fill this gap.)

- 4) Assignment of specific responsibilities of organizations and personnel involved, including long and short term contract personnel, USAID, GOG (Figure 6);
- 5) Development of detailed calendar for each major program component and activity (Figures 7-13);
- 6) Development of message delivery calendar.

Overlaps in time and function have been taken into consideration in the development of the operational plan. A total time frame of two years is used for each year of message delivery--six months for preparation, 12 months for programming, and six months for follow-up evaluation and analysis of results. Except for the initial preparation phase (partially), and the final analysis and report phase, the above functions will be carried out concurrently.

Details of calendar and responsibilities are presented in the sections which follow.

FIGURE 6. ASSIGNMENTS OF RESPONSIBILITY, BY ORGANIZATION AND BY PERSONNEL.

ACTIVITY	PRIMARY RESPONSIBILITY	ORGANIZATIONS INVOLVED		TIME SPAN	PERSONNEL FOREIGN	ASSIGNMENTS GUATEMALAN	REMARKS
		WITHIN THE G. O. G.	OTHER THAN G. O. G.				
I OPERATIONAL PLANNING							
A Experimental Design	Rich, Ray		USF, CIT	7/73	Nesman		Additional input from Wright
B Treatment Selection	Ray	MOE-EBR MOA	CFT, AED	8/73	Ward		
C Evaluation Plan	Rich, (Ray)		USF, CIT	7-8/ 73	Nesman		Additional input from Wright
D Site Selection Criteria	Ray, Rich	MOE-EBR MOA	CFT, USF	7/73			Additional input from Wright
E Message Delivery System	Bradford, Ray, Dardon	MOE-EBR MOA	CFT, AED	7-9/ 73	Arnaud, Ward, Fanning, Serritella		
F Commodity & Personnel Requirements	Bradford, Ray, Rich	MOE-EBR	CFT, USF, AED	7-11/ 73	Arnaud, Ward, Fanning, Serritella, Nesman, A-V Spec.		
G Calendar of Implementation	Ray	MOE-EBR	CFT	7-8/ 73			Additional inputs from Bradford, Rich, Arnaud, Ward, Martin, Wright, and Dardon

H Plan Approval (Technical)	Wright - Applegate		USAID/G. AID/W	8/9/73			
I Pre-investigation in Occidente	Carmack		SUNY, AED, CFT	10/73-5-74	Carmack Staff		Investigation to be carried out by SUNY under sub-contract to AED
J Modifications for Occidente	Rich, Ray	MOE-EBR	USF, CFT	6-7/74	Nesman, short term consultants		Additional input from Wright
II PROGRAM IMPLEMENTATION				In Oriente 1973/74			
A Site Selection	Rich, Ray	MOE-EBR MOA	USF, CFT	7-8/73	Nesman		Additional input from Wright
B Collection of Preliminary Information	Rich, Ray Dardon	MOE-EBR MOA CENSUS BUREAU	CFT, USF, AED	8-11/73	Nesman	EBR Staff Peña * Sedinagro**	*On loan from PEMEP until 12/31/73; funded by AED after that date. **Sub-contract for technical services funded by AED
C Personnel Recruitment & Training	Rich, Ray, Bradford, Dardon, Moseley	MOE-EBR MOA MOE-PEMEX	CFT, USF, AED, USAID/GUAT.				
D Radio Program Production-Transmission System							
1. Transmission Unit	Bradford, Dardon, Moseley	MOE-EBR MOE-PEMEX	CFT, AED, USAID/G.	7/73 Cont.	Arnaud	Radio Transmission staff	Local staff funded by MOE-EBR

2. Program Production Unit	Programming Specialist to be recruited, Dardon	MOE-EBR MOA	CFT, AED	8/73 Cont.	Serritella, Ward	Radio-audio program materials production unit contract work	Local personnel funded by MOE-EBR Local contract funded by AED
E Visual Aids Production System		MOE-EBR MOA	CFT, AED	8/73 Cont.	Fanning, Ward	Visual aids production unit contract work	
F Annual Message Calendar	Ray	MOA MOE-EBR	CFT	9-10/ 73		Sedinagro* Peña** EBR Staff	*See above Re Sedinagro **See above Re Peña
G Message Development	Ray	MOA MOE-EBR	CFT	9/73 Cont.	Programming Specialist	Local pretest group	Funded by MOE-EBR
H Message Delivery	Bradford, Dardon, Ray	MOE-EBR MOA	CFT	9/73 Cont.	:	4 fulltime local monitors, 1 agricultural technician* EBR Staff	*Part time-probably Rene Peña; other local staff funded by MOA-EBR
I Provision of Essential Services	Ray, Dardon	MOA MOE-EBR	CFT	7/73 Cont.		1 credit/marketing technician	Funded by MOA or MOE-EBR

J Logistics of Operation	Bradford, Dardor Moseley	MOE-EBR	CFT, AED USAID/G.	7/73 Cont.		EBR Staff local speciali- zed services	Local staff funded by MOE- EBR services funded by AED & MOE-EBR
III EVALUATION							Independent evaluation handled under sub-contract with USF at Tampa
A Baseline Survey							
1. First Phase Interviewing	Rich, (Ray)	MOE-EBR MOA	USF, CFT, USAID/G.	7-10/ 73, 7- 10/74	Nesman, Anderson, Terzuola	EBR Staff 10 Inter- viewers 5 local informants	Interviewers & Informants to be funded by AED
2. Second Phase Interviewing	Rich, (Ray)	MOE-EBR MOA		10-12- 73, 10- 12-74			
B Key Informant Selection	Rich	MOE-EBR	USF, CFT	10/73 Cont.	Nesman, Terzuola	EBR Staff 15-30 local informants	
C Systematic Time Sampling	Rich, Ray	MOE-EBR	USF, CFT	1/74 Cont.	Nesman, Terzuola	EBR Staff Local infor- mants	Local informants to be funded by AED
D Re-interview Baseline Sample	Rich, (Ray)	MOE-EBR MOA	USF, CFT, USAID/G.	10-12/ 74, 10- 12-75, 10-12/76	Nesman, Anderson, Terzuola	EBR Staff 10 inter- viewers 5 local informants	Interviewers and informants to be funded by AED

E Data Analysis & Interpretation	Rich, Ray		USF, CFT, AED, USAID, GUAT.	1-3/ 75, 1-3/ 76, 1-3/ 77	Nesman, Anderson, short term Agri. Econ.		
IV DOCUMENTATION-REPORTING							
A Documentation							
1. Written	Bradford, Dardon,	MOE-EBR	CFT	7/73 Cont.		EBR Staff	
2. Pictorial	Bradford, Ray, Dardon	MOE-EBR	CFT	8/73 Cont.	Terzuola	Filmstrip: EBR photo- grapher EBR Staff	*Sub contract funded by AED
3. Archives	Bradford, Dardon	MOE-EBR	CFT	1/74 Cont.		EBR Staff	
B Reporting							
1. Monthly Progress	Bradford		CFT	7/73 Cont.			
2. Interim Analytical	Rich, Ray, (Bradford)		USF, CFT, USAID/G.	3-6/ 74, 3-6/ 75, 3-6/ 76, 3-6/ 77	Nesman		
3. Final Regional	Rich, Ray, (Bradford)		USF, CFT, USAID/G.	2-6/77	Nesman		
4. Terminal	Rich, Ray, Bradford		USF, CFT, USAID/G.	3-6/77			
5. Budget Expenditures & Accounting	Moseley		AED	Quarterly			

ABBREVIATIONS USED		
GOC	-	Government of Guatemala
MOE-EBR	-	Ministry of Education program for basis rural education
MOA	-	Ministry of Agriculture
MOC	-	Ministry of Communications
PEMEP	-	Proyecto de extensión y mejoramiento de la educación primaria
USF	-	University of South Florida
CIT	-	BVE Field team under contract to AED
AED	-	Academy for Educational Development
SUNY	-	State University of New York at Albany
EBR	-	Programa educación básica rural
SEDINAGRO	-	Guatemalan Agronomic consulting firm

B. Program Implementation

Program implementation begins with selection of experimental and control areas that meet site selection criteria, and includes all preliminary activities necessary to establish working relationships among the entities involved, establishment of necessary facilities, selection and training of personnel, etc. All such activities obviously must precede initiation of message delivery.

Considered as a whole, program implementation is the joint responsibility of the field team under contract and the Guatemalan program coordinator with assistance as needed from short term consultants in specific areas of specialization. The evaluation and agriculture members of the contract team have a further specific responsibility to insure that implementation is consistent with the design and evaluation plan of the experiment.

1. Site Selection

Areas under consideration for the experiment are described earlier (p.2). Final selection of experimental and control areas, and delineation of sub-areas to receive differential treatments, is the responsibility of the evaluation and agriculture specialists in consultation with USAID, MOE, and other relevant agencies of the GOG.

Final selection of experimental area and sub-areas, and the control area for 1974 is programmed for completion by August 15, 1973.

2. Collection of preliminary data and information

Data and information from various sources and at different levels of aggregation are necessary for final selection of sites, development of baseline studies, and development of message calendar and content. Types of data required, and programmed dates for collection are shown in Figure 7.

3. Radio program production and transmission system

Message delivery by means of radio is a basic element in the design of the experiment. A radio message received clearly throughout the experimental area, and not received in the control area is essential to the design. Also, the message must be highly localized to test fully the effectiveness of radio as a medium for inducing change.

Preliminary investigations indicate that signals from radio stations presently operating in the Oriente are received over such an extensive region that it is virtually impossible to select two comparable areas for the experiment of which only one would receive the signal. Further, in view of the region served by such a station, appropriate localization of the message for the experimental area would create the risk of acceptance and use of the message by farmers in other areas for whom the message would not be correct. Finally, time limitations on commercial stations would affect the flexibility needed by the BVE program.

The most feasible alternative to use of commercial stations, an alternative that meets the requirements of the experimental design, is the installation of a limited-range mid-band radio transmitter in each experimental area. Such a transmitter can later be moved to other locations as dictated by the experimental design. This alternative has been adopted, and BVE has been authorized a frequency over which to transmit.

Specifications for transmission equipment needed and plans for installation and operation of the unit are being developed by a short term consultant.

The production of program materials -- radio novelas, informational programs, spot announcements, local color, etc. -- will be the responsibility of a radio program production unit to be established within BVE. Commodity and personnel requirements for that unit will be developed by a short term consultant, and production of materials will be carried out, at least for the first year of the program, under the supervision of a radio programming specialist (probably U.S.) employed under contract. It is anticipated that some radio production work will be contracted out to local firms in the initial period while the BVE unit is being organized and the personnel trained. The calendar of work associated with establishment and operation of the radio program production and transmission system is shown in Figure 8.

4. Visual aids production system

Visual aids and printed materials which communicate through illustrations rather than through words constitute a second basic treatment element in the experiment.

The production of such materials will be the responsibility of a visual aids production unit to be established within BVE. Commodity and personnel requirements for that unit will be developed by a short term consultant, and production of materials will be carried out, at least for the first year of programming, under the supervision of a visual aids specialist (probably U.S.) under contract. It is anticipated that production of visuals will be contracted out to a local firm during the initial period while the production unit is being organized and personnel trained.

A calendar of work associated with establishment and operation of the visual aids production system is shown in Figure 9.

5. Message development system

A valid measure of the relative effectiveness of different combinations of communications media in inducing change requires that the right message be communicated. The message must be accurate; it must be timely; it must recommend something that is possible for the receiver to apply; it must be something that will contribute to his well-being; and it must be in a form that is understandable and

convincing to him.

The message used by BVE to test various mixes of communications media will be agriculture.

Primary responsibility for message content development rests with the agriculture specialist under contract.

The form in which the message is presented is also critical. Although the materials production units have primary responsibility to develop message form, they must operate in close collaboration with those responsible for message content to insure that the integrity of the message is preserved.

Finally, the message content and form must be tested in the field before use in the experimental area, and there must be continuing feed-back from the experimental area to determine accuracy, understanding, and receptivity to the various forms of message delivery employed.

The calendar of work associated with development of the message calendar and content is presented in Figure 10.

6. Message delivery system

The radio transmission component of the message delivery system is discussed under item 3, pp. 28-30. The monitors and agricultural technicians utilized in treatments 2 and/or 3 constitute the other two critical components. An efficient materials flow system to ensure that all materials are in the proper place at the proper time is also essential. The agriculture specialist under contract has primary responsibility for training and performance of both monitors and agricultural technicians. Arrangements for recruitment and training of such personnel, and the logistics of materials flow are the primary responsibility of the U.S. and Guatemalan coordinators.

The calendar of work associated with development and operation of the message delivery system is presented in Figure 11.

7. Provisions of essential services to farmers

Measurement of the effectiveness of any change agent is possible only where there is change, and change can only occur if the means necessary to effect that change are available to the changer. In the context of the present experiment, even though a farmer is convinced of the value of a new practice or input, he can adopt it only if he has available to him the necessary credit, inputs and markets. Availability of such services to the farmer is essential to the BVE experiment. Further, they must be equally available to farmers in both the experimental and control areas.

PARA **MESSAGE DEVELOPMENT**

CALENDARIO DE TRABAJO

FORM

ESR 7/73

ACTIVIDADES	1973						1974											
	SEPT.	OCT.	NOV.	DEC.	ENERO	FEB.	MAR.	ABR.	MAYO	JUNO	JULIO	AGOSTO	SEPT.	OCT.	NOV.	DEC.		
A 1974 MESSAGE CALENDAR																		
1. DEVELOP PRELIMINARY CALENDAR			■															
2. CHECK AND REVISE				■														
3. PREPARE FINAL CALENDAR					■													
B MESSAGE FOR JANUARY 1974																		
1. PREPARE DRAFT OF CONTENT			■															
2. CHECK, REVISE, FINALIZE				■														
3. PREPARE PRELIM. PROGRAM MATERIALS					■	■	■	■	■	■	■	■	■	■	■	■	■	
4. FIELD CHECK MATERIALS (PRE-TEST)						■	■	■	■	■	■	■	■	■	■	■	■	
5. REVISE PROGRAM MATERIALS							■	■	■	■	■	■	■	■	■	■	■	
6. CHECK FOR ACCURACY OF CONTENT								■	■	■	■	■	■	■	■	■	■	
7. PRODUCE MATERIALS FOR PROGRAMMING									■	■	■	■	■	■	■	■	■	
C MESSAGE FOR FEB.-MAR. 1974																		
1. PREPARE DRAFT OF CONTENT				■														
2. CHECK, REVISE, FINALIZE					■													
3. PREPARE PRELIM. PROGRAM MATERIALS						■	■	■	■	■	■	■	■	■	■	■	■	
4. FIELD CHECK MATERIALS (PRE-TEST)							■	■	■	■	■	■	■	■	■	■	■	
5. REVISE PROGRAM MATERIALS								■	■	■	■	■	■	■	■	■	■	
6. CHECK FOR ACCURACY OF CONTENT									■	■	■	■	■	■	■	■	■	
7. PRODUCE MATERIALS FOR PROGRAMMING										■	■	■	■	■	■	■	■	
D MESSAGE FOR APR.-JUNE 1974																		
1. PREPARE DRAFT OF CONTENT					■													
2. CHECK, REVISE, FINALIZE						■												
3. PREPARE PRELIM. PROGRAM MATERIALS							■	■	■	■	■	■	■	■	■	■	■	
4. FIELD CHECK MATERIALS (PRE-TEST)								■	■	■	■	■	■	■	■	■	■	
5. REVISE PROGRAM MATERIALS									■	■	■	■	■	■	■	■	■	
6. CHECK FOR ACCURACY OF CONTENT										■	■	■	■	■	■	■	■	
7. PRODUCE MATERIALS FOR PROGRAMMING											■	■	■	■	■	■	■	

ACTIVIDADES	1973						1974												
	JULIO	AGOSTO	SEPT.	OCT.	NOV.	DIC.	ENERO	FEB.	MAR.	ABR.	MAYO	JUNIO	JULIO	AGOSTO	SEPT.	OCT.	NOV.	DEC.	
E MESSAGE FOR JULY-SEPT. 1974																			
1. PREPARE DRAFT OF CONTENT							██████████												
2. CHECK, REVISE, FINALIZE							██████████												
3. PREPARE PRELIM. PROGRAM MATERIALS							██████████	██████████											
4. FIELD CHECK MATERIALS (PRE-TEST)							██████████	██████████	██████████										
5. REVISE PROGRAM MATERIALS							██████████	██████████	██████████										
6. CHECK FOR ACCURACY OF CONTENT							██████████	██████████	██████████										
7. PRODUCE MATERIALS FOR PROGRAMMING							██████████	██████████	██████████	██████████									
F MESSAGE FOR OCT.-DEC. 1974																			
1. PREPARE DRAFT OF CONTENT										██████████									
2. CHECK, REVISE, FINALIZE										██████████									
3. PREPARE PRELIM. PROGRAM MATERIALS										██████████	██████████								
4. FIELD CHECK MATERIALS (PRE-TEST)										██████████	██████████	██████████							
5. REVISE PROGRAM MATERIALS										██████████	██████████	██████████							
6. CHECK FOR ACCURACY OF CONTENT										██████████	██████████	██████████							
7. PRODUCE MATERIALS FOR PROGRAMMING										██████████	██████████	██████████	██████████						

At present, the agricultural infrastructure is limited by personnel and program constraints in all of the areas under consideration. To ensure the availability of services to all farmers who want and need them, special arrangements will have to be made in the experimental and control areas to remove these constraints. Such arrangements will be made with the MOA to the extent possible. Primary responsibility for this phase of the program rests with the agriculture specialist under contract, supported by the Guatemalan program coordinator.

Due to the complexities inherent in developing agricultural infrastructure for selected areas, and to the large number of agencies involved, there is high probability that availability of some or all essential services will be less than adequate, particularly in the first year of programming. This must be recognized and dealt with in evaluation of results.

A calendar of work associated with providing services is shown in Figure 12.

Logistics of program operation

The U.S. and Guatemalan BVE program coordinators jointly have primary responsibility for all steps necessary to facilitate timely installation of facilities, preparation and delivery of program materials, development and maintenance of working relationships among agencies and organizations involved, and operation of the program in accordance with the plan as detailed above.

Evaluation

As indicated earlier, primary responsibility for evaluation of the experiment rests with evaluation specialist under contract.

The evaluation plan is presented in an earlier section of this report. The calendar of work for evaluation is presented in Figure 13.

NAMA EVALUATION

CALENDARIO DE TRABAJO

REGION

ENR 7/71

ACTIVIDADES	1973						1974												
	JULIO	AGOSTO	SEPT.	OCT.	NOV.	DIC.	ENERO	FEB.	MAR.	ABR.	MAYO	JUNO	JULIO	AGOSTO	SEPT.	OCT.	NOV.	DIC.	
A. <u>COMPLETE EVALUATION DESIGN</u>	█																		
B. <u>BASELINE SURVEY</u>																			
1. <u>DEVELOP AND PRETEST QUESTIONNAIRE</u>		█																	
2. <u>REFINE SAMPLING TECHNIQUES</u>	█																		
3. <u>SELECT FIELD SUPERVISOR(S)</u>		█																	
4. <u>ESTABLISH DATA PROCESSING SYSTEM</u>	█																		
5. <u>SELECT AND TRAIN INTERVIEWERS</u>		█																	
6. <u>SELECT SAMPLE FOR INTERVIEWING</u>		█																	
7. <u>INITIATE AND CONDUCT SURVEY IN EXPERIMENTAL AND CONTROL AREAS</u>			█																
8. <u>ANALYZE BASELINE DATA</u>				█															
9. <u>INTERPRET AND REPORT BASELINE DATA FINDINGS TO FIELD</u>				█															
C. <u>SELECT KEY INFORMANTS IN EXPTAL AREAS</u>				█															
D. <u>CROP BASELINE SURVEY</u>																			
1. <u>PREPARE</u>				█															
2. <u>CONDUCT</u>					█														
3. <u>HELP INTERPRET RESULTS FOR MESSAGE AND MEDIA TREATMENT</u>						█													
E. <u>SYSTEMATIC TIME SAMPLING</u>																			
- <u>EXPERIMENTAL AREA</u>																			
- <u>CONTROL AREA</u>																			
F. <u>RE-INTERVIEW OF INITIAL BASELINE SAMPLE</u>																			
1. <u>PREPARE</u>																			
2. <u>CONDUCT</u>																			
G. <u>ANALYZE AND INTERPRET DATA</u>																			
H. <u>PREPARE FIRST INTERIM REPORT</u>																			

3/75
4/75

IV. DOCUMENTATION AND REPORTING

A detailed documentation will be made of the entire experimental program including planning, implementation, and evaluation. The objective of such documentation will be two-fold: 1) to permit an assessment of the program in terms of steps which might have been taken to achieve greater efficiency in planning and operation; and 2) to provide guidance to those charged with responsibility to develop similar programs in Guatemala or elsewhere in Latin America.

Periodic and final reports will be submitted to report progress, and to present a rigorous evaluation and interpretation of results obtained, both positive and negative.

A. Documentation

The program coordinator will have primary responsibility to ensure that documentation is complete and kept current throughout the life of the project through:

1. Maintaining a complete file of reports on field trips, meetings, conferences, decisions and actions taken, personnel movements, etc.
2. Maintaining a file of all official actions and documents relating to the program, and all reports of short term consultants and field team members.
3. Preserving in the program archives, examples of each type of program material (audio, visual, printed) utilized in the program. A brief resume will be prepared for each, indicating when and how the material was used, an assessment of its effectiveness, and recommendations as appropriate for its improvement.
4. Arranging for a documentary 16 mm. movie to be filmed for use both within the program, and as a teaching film for use by other entities and countries who wish to establish a similar program.

B. Reporting

In accordance with the requirements of USAID/Washington, and to ensure systematic and complete reporting, the following formal reports will be submitted:

1. Monthly in-person reports to the cognizant technical office in USAID/Guatemala.

2. Interim reports which discuss in detail the use of various media "treatments", the results of these treatments as they are reflected in farming practices and production, and an analysis of the results based on the pre-established criteria for evaluation stated in the research design:
 - July 1, 1974 - Interim progress report.
 - July 1, 1975 - Report on first year program in Oriente.
 - July 1, 1976 - Report on second year program in Oriente and first year in Occidente.
 - July 1, 1977 - Report on third year in Oriente and second year in Occidente.
3. A final report, due July 1, 1977, for each experimental region encompassing the three years of experimentation and follow-up in the Oriente and two years in the Occidente. (The final interim report may be combined with the final regional reports).
4. A terminal report, due July 1, 1977, that discusses the combined results of experimentation and evaluation in both experimental regions, provides the extensive analysis and evaluation cited above, provides suggestions for follow-up on the experimental sites, and, if experimental results are positive, prescribes a program that could be implemented in Guatemala on a larger scale.
5. Quarterly report of expenditures by budget category in five copies to the USAID/Washington Contracting Officer.

In addition to the above formal reports, progress reports will be maintained in the BVE files, and special reports will be prepared as appropriate to highlight achievements or problems of a specific nature.

V. PERSONNEL, TECHNICAL SERVICES & TRAINING REQUIREMENTS

Requirements for personnel have been determined on the basis of the experimental plan developed since late May, 1973, which is detailed in the implementation plan. These fall into several categories:

Project leadership and coordination

- Program Leader
- Program Administrator (GOG)
- Program Administrative Officer (U.S.)
- Evaluation Coordinator
- Chief, Education Division USAID/Guatemala
- Field Supervisor

Administrative support

Program operation

Evaluation

Specialized technical services

The Chief, Education Division USAID/Guatemala and the Program Administrator (GOG) will represent the interests of their respective governments in the project.

Requirements for technical services and training have likewise been considered in accordance with the demands of the project as set forth in this implementation plan.

A. Personnel requirements

Personnel required for program operations will, insofar as possible, be provided by the Ministry of Education (GOG). Inputs of U.S. personnel are also needed to help direct, administer and maintain experimental control over the program; to evaluate results; and to provide specialized technical assistance not readily available in Guatemala. In addition, some local personnel will be required which GOG cannot provide, at least in the early stages of the program. Staff requirements are detailed below with indication of the source of funding for each position. Personnel provided by the Government of Guatemala are indicated by (*), and those which are AID-funded are indicated by (**).

Program Leader**

- 1) Primary responsibility for planning (in conjunction with evaluation coordinator) and development of the program in accordance with the experimental design.

- 2) Direction of the basic program components in accordance with the implementation plan, and in collaboration with the project administrators and coordinators.
- 3) Keep project operations under continuous review to assure adherence (within reasonable limits) to the time schedules of the plan and adequacy of performance to meet project goals.
- 4) Based on such reviews, make necessary adjustments in scheduling or other changes to the extent possible within limitations of the implementation plan and approved budget; and recommend necessary action to the appropriate authorities where major modification is needed.
- 5) Develop, in collaboration with appropriate GOG agencies, the agricultural components required by the project; and assist in direction and supervision of same:
 - a) Determination of agricultural information required for baseline and re-evaluation studies.
 - b) Determination of appropriate agricultural message calendar and message content.
 - c) Development and pretesting of agricultural program materials.
 - d) Coordination of Ministry of Agriculture inputs of services, goods and infrastructure.
 - e) In-service training of staff.
 - f) Participation with evaluation staff in planning for and collecting appropriate baseline and experimental data.

U.S. Program Administrative Officer**

- 1) Facilitate project implementation through continuing liaison with AED (Washington), AID/W, USAID/Guatemala, GOG Ministry of Communications, local government authorities in areas under consideration or selected for use as experimental or control areas.
- 2) Coordinate development of specification, purchase, delivery, installation, operation and maintenance of commodity and service inputs of the Contractor as called for under the implementation plan.
- 3) Coordination, with AED (Washington), of recruitment, travel, etc., of medium and short term consultants according to project needs as identified by the project team and within budgetary limitations.

- 4) Maintain project budget and accounting system, keeping USAID, AED (Washington) and program leader informed of financial situation on a regular basis.
- 5) Coordinate with the MOE the planning and installation of program production facilities and services including personnel recruitment and training and the contracting of special services as required to maintain production flow.
- 6) Ensure, in collaboration with the MOE, the development of detailed programming for radio transmission, to include not only the approved message as developed through the plan, but also the necessary supportive programs to maintain listener interest and the educational programs to be undertaken through PEMEP.
- 7) Maintain detailed documentation of project as it progresses.
- 8) Make regular progress reports to AED (Washington) and USAID/ Guatemala.

Evaluation Coordinator**

- 1) Develop the research design.
- 2) Develop and pre-test the baseline survey questionnaire.
- 3) Coordinate research and evaluation operations with those of other BVE team members and AED.
- 4) Coordinate data collection, data processing and information feed-back operations.
- 5) Recruit and supervise research and evaluation personnel.
- 6) Interpret and report findings resulting from data collection and analysis.

Chief, Education Division, USAID/Guatemala**

Will provide USAID supervision and guidance as required, and coordination with USAID programs in education and rural development; attend to USAID relations as required with appropriate agencies of the GOG and international agencies; and serve as consultant and resource on Guatemalan rural culture, research and education.

Field Supervisor**

- 1) Maintain day to day contact with each phase of project operation to assure that it adheres to the programmed time schedule

within reasonable limits, and keep program leader, administrators and coordinators informed of actual or anticipated delays or deviations from the planned program.

- 2) Assist in development of the questionnaire for baseline survey.
- 3) Assist in the selection and training of interviewers.
- 4) Supervise field data collection for baseline survey and crop survey.
- 5) Contact key informants periodically and collect time sample data.
- 6) Supervise treatment effectiveness survey.
- 7) Serve as channel for immediate feed-back of information to agricultural and communication experts for purposes of message effectiveness.
- 8) Assist program leader in coordination of Ministry of Agriculture inputs of services, goods and infrastructure.
- 9) Provide material to program administrative officer to incorporate into progress reports.

GOG Program Administrator*

- 1) Supervise and coordinate the work of all personnel assigned to the BVE program of the Ministry of Education, and exercise all administrative functions normally corresponding to these responsibilities.
- 2) Develop annual work plans for the BVE program within the Ministry of Education and present it to suitable authority for approval.
- 3) Be responsible for training and orientation of personnel assigned by the Ministry to the program, recommend participation of all personnel in training and professional courses considered convenient for development of the project.
- 4) Periodically inspect field operations such as radio forums and recommend improvements for more effective functioning.
- 5) Plan and carry out special studies or operations through the use of field monitors as required.
- 6) Obtain and distribute equipment and supplies necessary for field operations.

- 7) Maintain adequate personnel records.
- 8) Be responsible for official applications, correspondence, and documentation for the functioning of the program.
- 9) Represent the Ministry in working program meetings with representatives of international and other Government of Guatemala agencies.

The program support staff, under the direct supervision of the GOG Program Administrator will include both administrative support and program operations:

Administrative support

- 1) Supervisors-trainers (3)*
 - Executive secretary*
 - Bi-lingual secretary*
 - Clerk-typists (2)*
 - U.S. field team bi-lingual secretary**
- 3) Accounts and accounting
 - Accountant*
 - Clerk*
- 4) Stores and inventory
 - Stores officer*
 - Part-time assistant*
- 5) Transport, custodial service, security
 - Drivers (3)*
 - Watchmen (2)*
 - Janitors (2)*

Program operations

Estimated personnel requirements for program operations are as follows:

- 1) Radio and other audio program materials production 1/
(required for the life of the project)
 - Recording technician-editor*
 - Script writers (2)*
 - Occasional actors/directors**

2) Visual aids production 1/

(required for the life of the project)

Photographer*
 Photographer's helper*
 Senior artist (1)*
 Artist's helper (1)*
 Multilith operator*
 Special equipment operator (1)*

3) Message content development

Ingeniero agronomo (for life of project)**

4) Radio transmission

1974 - 3 operators (2 regular** 1 relief*)
 1 maintenance/repair*

1975 - 9 operators*
 1 maintenance/repair*
 3 watchmen*

1976 - 9 operators*
 1 maintenance/repair*
 3 watchmen*

5) In the field

1974 - pretest group (10 individuals)**
 full time monitors (2)*
 perito agronomo (part-time)**
 field supervisor (part-time)**
 credit and marketing technician*

1975 - Oriente: same as 1974
 Occidente: same as for Oriente

1976 - Same as 1975

1/ It is anticipated that either a member of the present MOE-EBR staff or the radio editor will be given responsibility for direction and management of an integrated audio-visual materials production center encompassing items (1) and (2) by the end of the first year of programming.

Evaluation**

The program will be subjected to independent evaluation in accordance with an evaluation plan developed and directed by a team of experts headed by the evaluation coordinator. The core evaluation staff will be funded under sub-contract 1/ with the University of South Florida (USF) supplemented with necessary additional personnel under the prime contract. Projected personnel requirements and position descriptions are given below.

Evaluation Coordinator

(See position description on p. 44)

Senior Field Supervisor (USF subcontract) to serve on a periodic basis for a total of 20 man months (in Guatemala and ac USF) with major responsibility to:

- 1) Supervise the selection and training of field interviews.
- 2) Monitor the pre-test interviewing.
- 3) Monitor the field interviewing and crop data survey.
- 4) Supervise the checking, coding and transmittal of data for processing.
- 5) Monitor the time sample data gathering.
- 6) Monitor the treatment effectiveness evaluation.
- 7) Assist the Evaluation Coordinator in the interpretation and reporting of findings from study.

Field Evaluation Supervisor (Occidente) Will probably be required for 30 months with responsibilities similar to those earlier described for the field supervisor (p. 44). Final decision on this position must await results of the Occident pre-investigation.

Specialist in data analysis to serve on a periodic basis for a total of 4 man months (principally in the U.S.) with major responsibility to:

- 1) Prepare computer program.
- 2) Supervise data processing.

1/ Beginning January 1, 1974. Expenditures until that date to be borne directly by prime contract.

- 3) Assist in analysis and interpretation of data.
- 4) Budget for computer time.

Graduate Assistant (USF subcontract) to serve on a 1/3 time basis up to a total of 15 man months (at USF) with major responsibility to:

- 1) Assist in data processing operations.
- 2) Assist in literature review.
- 3) Assist in preparing final report.

Secretary (USF subcontract) to serve on part-time basis up to a total of 24 man months (at USF) with major responsibility to:

- 1) Handle all correspondence and communications related to evaluation aspect of BVE project.
- 2) Coordinate the reception of data from the field, the coding operation, and the transmission to the data processor.

Economist with experience in cost benefit analysis and agricultural production economics to serve on a periodic consultancy basis for an estimated period of up to 4 man months, with primary responsibility to determine relative cost effectiveness of mixes of communications media employed in inducing change in agricultural practices and production.

Short term consultants, unspecified up to a total of one man month for consultation on data analysis and interpretation.

Specialized Technical Assistance** Twenty-eight man months of medium and short term consultant time are estimated as the minimum required to provide essential technical expertise to the program. Such expertise will be varied in nature, and often required on short notice during different stages of the program. Medium and short term personnel requirements have been identified by category and job description insofar as possible, and are indicated below. Exact time requirements and possible additional type of needed expertise can only be determined as the program progresses.

Programming specialist (radio and other audio materials) 1/ to serve on a full time consultancy basis for a period of up to 12 man months with primary responsibility to:

- 1) Develop specifications for facilities and equipment required for radio (and other audio) program material production unit.
- 2) Assist in organizing the unit.

- 3) Plan and supervise production of radio and other audio materials for the first year of programming.
- 4) Assist in training MOE staff in the organization and operation of the unit, and the development and production of radio and other audio materials.

Programming specialist (visual aids) 1/ to serve on a periodic consultancy basis for a period of up to 6 man months with primary responsibility to:

- 1) Develop specifications for facilities and equipment required for the visual materials production unit.
- 2) Assist in organizing the unit.
- 3) Plan and supervise production of visual program materials for the first year of programming.
- 4) Assist in training MOE staff in the organization and operation of the unit, and the development and production of visual program materials.

Radio engineer to serve on a periodic consultancy basis for a period of up to 4 man months with primary responsibility to:

- 1) Develop specifications for radio transmission facilities including hardware, sites, operating and maintenance personnel.
- 2) Supervise installation and test operation of radio transmission facilities.
- 3) Make recommendations as to alternative means for transmission of messages (reel tape vs. cassette, live vs. recorded, etc.).

Agricultural communications specialist to serve on a periodic consultancy basis for an estimated period of up to 1.5 man months to assist in:

- 1) Determination of specific treatments to be imposed in each experimental area.
- 2) In-course modification of treatments based on feed-back and interim evaluation during the course of the experiment.

1/ An integrated audio-visual program production unit under a single head is desirable, if one specialist can be recruited who has sufficient breadth of experience in organization and management of such a unit. If that is not possible, two specialists will be required as indicated herein.

Other short term consultants in diverse fields such as radio hardware, audio-visual materials, print materials, anthropology/sociology up to a total of 4.5 man months.

B. Technical services

Technical services of four general types will be required to supplement the resources available within the program:

- 1) For short term specialized needs at critical stages in the project, technical services of local qualified specialists and firms in fields such as agronomy and radio novela direction will be secured by sub-contract. The nature of the job to be done will determine the type of service engaged.
- 2) Although BVE will establish small units for preparation of audio and visual program materials, specialized facilities and services for production and reproduction (such as radio studios for recording radio novelas, reproduction facilities for large posters, and color film development laboratories) must be secured from local firms. In the early months of programming, it is anticipated that the majority of program materials will be prepared by such firms. A local film company will be engaged to film a documentary film of the project.
- 3) Computer services will be contracted through R. J. Anderson utilizing computer facilities of the University of Florida as described under the evaluation plan (p. 16).
- 4) The major specific study anticipated will be a pre-investigation of the Occidente as described on p. 5.

C. Training

One of the unstated objectives of BVE is to develop Guatemalan capability to organize and operate adult rural education programs based on findings and experience growing out of the present experiment. Considering both this aspect and the specific needs of the project, two general types of training will be conducted.

First, formal training events followed by continuing on-the-job training will be required for specific functions such as interviewers to conduct baseline and follow-up evaluation interviews, and local monitors assigned to treatment areas 2 and 3 in the experimental areas.

Second, and perhaps of greatest long range importance, all personnel involved will gain experience, competence and understanding through their work with the project. Within budget limitations, short term

formal training of personnel with specialized needs will be provided. By the time the project is completed, it is reasonable to expect that a corps of people representing capability in virtually every phase of planning, materials preparation, and operation of such a program will have been developed.

VI. COMMODITY REQUIREMENTS

Commodity requirements of the program are of two principal types: (1) vehicles needed to provide transportation to, from, and within the experimental and control areas of the Oriente and the Occidente; and (2) audio-visual equipment and materials needed for the production, dissemination, and reception of radio programs and supporting audio-visual aids.

Four vehicles have been purchased, suitable for travel in the project areas in the rainy season as well as under more favorable conditions. No further vehicle purchases have been programmed for the life of the project.

The principal budgeted expense for the radio program is for the purchase and installation of three small, limited range, semi-mobile radio transmitter stations, plus a central studio for recording of all but the most specialized radio programs through a simple cassette system. A limited amount of test equipment is budgeted. A small audio-visual workshop and photographic laboratory will also be required.

Based on preliminary reconnaissance of the proposed experimental areas, it is believed that a majority of rural residents in these areas have radios. However, since access to radio is important to the design of the project, the plan envisages making small radio receivers available at low cost or on a loan basis. Receivers will be of two types: a small individual or family-type transistor radio of the kind which normally retails at about \$10, and a few slightly larger sets suitable for group meetings. Batteries will also be purchased and made available at low cost.

Another type of equipment needed will be a limited number of audio cassettes to facilitate the work of monitors and agronomists in some of the experimental sub-areas.

Specifications for radio and audio-visual equipment are being developed by short-term communications specialists.

VII. BUDGET

Elaboration of the Project Implementation Plan has resulted in several important modifications in the design of the experiment, as described more fully in earlier sections. The changes which have most strongly affected the budget are the following:

- 1) Recommended increase in the life of the project to permit a three-year cycle of experiment and control in the Oriente or Ladino area (two in the Occidente or Indian area) followed by a brief period of evaluation and analysis. Together with the necessary time for planning operations prior to the beginning of the next agricultural cycle (January 1974), this implies a total project life of approximately four years, as compared to the years contemplated in the existing Project Proposal.
- 2) Adoption of the principle of the small, limited-range, highly localized radio station for dissemination of the message, rather than placing reliance on either official or commercial radio channels.

Of these two significant modifications, the increase in life of project was of far greater importance from a cost standpoint. Annual cost estimates have not been raised appreciably from earlier estimates, but the increase in project duration, considered essential from the standpoint of the experimental design, will result in greater over-all project cost.

Another important budgetary assumption is that Guatemala has an interest in the project because of possible future application on a national or regional (within Guatemala) basis, whereas the interest of AID, and especially AID/W includes possible application in other countries. This implies that the Government of Guatemala will be most inclined and able to support those elements of the program for which it sees most immediate possible application in Guatemala, whereas AID should provide the support necessary to insure the complete and accurate realization of the experimental design and evaluation. Considering realistically the timing of Guatemalan budget operations, it will be difficult to obtain a substantive increase in GOG support of this program until calendar year 1975. In the meantime, on the Guatemalan side, the project can count only on the present and currently foreseen GOG budget for fiscal (calendar) years 1973 and 1974, of Q50,000 and Q75,000 respectively, plus less tangible benefits such as the sharing of office space and secretarial service.

For these reasons, in order to insure that the project will be carried out as designed, it has been found necessary to include in the U.S. funding for the period October 1973 - September 1974 (corresponding roughly to FY 1974 in terms of financial requirements) a small amount for the payment of such services as operator/radio announcers in the experimental radio station, together with contract services to permit program production until such time as professional Guatemalan capability in these areas can be developed. For budgetary purposes it is assumed that some of these costs, and especially those which would normally be provided by the staff of the Basic Rural Education Program of the Ministry of Education, will be absorbed by the GOG in future years.

In order to permit the scheduling of a viable transmission program by January 1974 and the application of the message for the entire agricultural year in the Oriente, it has been necessary to undertake preliminary planning and budgeting without having detailed specifications and estimates from the short-term communications experts who are now expected to arrive in Guatemala in September. Some adjustments may be necessary, so that maximum flexibility will be needed in the establishment of the budget. Also, since this is an experimental program and many of the assumptions will need to be tested during the life of the project, the budget for later years is somewhat less firm than for Fiscal Year 1974, and will need to be reviewed on the basis of experience acquired in the first year of project operation.

PROPOSED BUDGET

BASIC VILLAGE EDUCATION - GUATEMALA - MAY 1973 - Sept. 1977 a/

(U. S. Dollar Costs)

	Life of Project	May 73 - Sept. 73	Oct. 73 - Sept. 74	Oct. 74 - Sept. 75	Oct. 75 - Sept. 76	Oct. 76 Sept. 77
Salaries and Wages	\$ 411,995	\$ 30,440	\$142,300	\$ 99,950	\$102,850	\$ 36,455
Employee Benefits	73,235	5,880	24,680	17,570	18,460	6,645
Consultant Services	37,400	13,900	11,500	6,000	4,000	2,000
Allowances	102,260	13,260	35,330	23,880	24,740	5,050
Travel & Transportation	44,050	12,700	12,900	4,350	3,650	10,450
Other Direct Costs	45,010	2,700	9,160	9,600	10,850	12,700
Indirect Costs	118,685	13,125	39,460	26,690	26,960	12,450
Equipment & Materials <u>b/</u>	183,410	40,560	79,550	43,600	18,000	1,700
Subcontract Costs	<u>118,285</u>	<u>-</u>	<u>27,490</u>	<u>30,370</u>	<u>30,370</u>	<u>30,055</u>
Total Budget	\$1,134,330	\$132,565	\$382,370	\$262,010	\$239,880	\$117,505
Funds Obligated to Date	\$ <u>280,000</u>					
Additional Funds Required	\$ <u>854,300</u>					

a/ Physical operations including evaluation are expected to end June 30, 1977; an extra 90 days has been assumed to permit termination of reporting, accounting, and fiscal responsibilities by the Contractor.

b/ Includes locally procured services including special studies.

GENERAL PROJECT SUPPORT

Period: 5/1/73 to 9/30/77

(U.S. Dollar Costs)

Category of Expense		Amount
1.	<u>Personnel Salaries:</u>	
	<u>A. U.S. Personnel</u>	
	Sr. Administrative Officer (1)	43.5 \$122,470
	Project Leader (Agriculture Specialist) (1)	43.5 99,140
	Contract Administrator (AED/Washington) (1)	18.5 34,500
	Administrative Assistant (1)	18.5 17,670
	Clerical Support	6.5 3,900
	<u>B. Local Personnel</u>	
	Agronomist (2)	66.0 26,400
	Secretary (1)	39.0 11,700
	Total Line 1	\$315,780
2.	<u>Employee Benefits</u>	\$ 59,350
3.	<u>Consultant Services</u>	
	Various specialists including communications, economics, anthropology and sociology	7.5 \$ 15,100
4.	<u>Travel and Transportation</u>	
	Domestic	\$ 4,300
	International	9,500
	Shipping and Storage	14,800
	Total Line 4	\$ 28,600
5.	<u>Local Allowances:</u>	
	Post differential, housing and education allowances	\$ 61,935
	Per diem (short-term staff and consultants)	8,375
	Total Line 5	\$ 70,310
6.	<u>Other Direct Costs:</u>	
	Telephone and cables	\$ 8,400
	Postage	2,700
	Copy reproduction	7,900
	Report printing	5,200
	Expendable supplies	1,460
	Medical exams, passports, visas, etc.	450
	Total Line 6	\$ 26,110

Continued

<u>Category of Expense</u>	<u>Amount</u>
7. <u>Equipment, Vehicles, and</u>	
<u>Local Services:</u>	
Office Equipment	\$ 1,300
Vehicle Purchase, repairs and shipping	27,310
Local supplies and services	14,000
Total Line 7	<u>\$ 42,610</u>
8. Indirect costs @ 20% of lines 1 - and 6	<u>\$ 88,985</u>
Total General Project Support	<u>\$646,845</u>

EVALUATION SUPPORT*

Period: 5/1/73 to 9/30/77

(U.S. Dollar Costs)

Category of Expense		Amount
1.	<u>Personnel Salaries:</u>	
		<u>Man Months</u>
	Evaluation Coordinator	6.7
	Field Supervisor	20.4
	Data Information Analyst	4.0
	Field Investigator	35.0
	Graduate Assistant	48.0
	Secretary	27.5
	Interviewers (local personnel)	
	Total Line 1	<u>\$130,320</u>
2.	<u>Employee Benefits</u>	\$ 15,405
3.	<u>Consultants</u>	4.8
		\$ 8,800
4.	<u>International Transportation</u>	\$ 9,900
5.	<u>Allowances:</u>	
	Post differential and housing	\$ 14,175
	Per diem	8,700
	Total Line 5	<u>\$ 22,875</u>
6.	<u>Other Direct Costs:</u>	
	Telephone and Cables	\$ 3,250
	Postage	1,350
	Copy Reproduction	1,100
	Office Supplies	2,900
	Computer Facilities and Services	18,000
	Total Line 6	<u>\$ 26,600</u>
7.	Office Equipment	\$ 1,000
8.	Indirect Costs	<u>\$ 29,880</u>
	Total Evaluation Support	<u>\$244,780</u>

* Portion of Evaluation Budget (\$118,285) to be subcontracted for key evaluation personnel to University of South Florida.

RADIO, AUDIO-VISUAL AND PRINT MATERIALS
PRODUCTION SUPPORT

Period: 5/1/73 to 9/30/77

(U.S. Dollar Costs)

Category of Expense	Amount
1. <u>Personnel Salaries:</u>	
Radio program advisor	\$ 20,000
Audio-visual advisor	9,000
Radio transmitter operators and announcer	9,400
Total Line 1	<u>\$ 38,400</u>
2. <u>Employee Benefits</u>	\$ 6,740
3. <u>Consultants:</u>	
Various specialists in radio software and hardware, audio-visual and print materials	\$ 15,500
4. <u>Travel and Transportation:</u>	
Domestic	\$ 300
International	5,250
Shipping and storage	6,000
Total Line 4	<u>\$ 11,550</u>
5. <u>Local Allowances:</u>	
Post differential, housing and education	\$ 10,550
Per diem	4,725
Total Line 5	<u>\$ 15,275</u>
6. Other Direct Costs	None
7. <u>Equipment, Materials and Local Services:</u>	
Transmission equipment, installation and shipping	\$ 57,000
Audio studio equipment, installation and shipping	5,000
Equipment maintenance and repair	3,000
Visual studio equipment	3,000
Visual materials	8,000

continued

<u>Category of Expense</u>	<u>Amount</u>
7. <u>Equipment, Materials and Local Services</u> - Continued	
Radio receivers and batteries	\$ 13,100
Audio cassette play-back machines and batteries	2,700
Commercial radio - studio services	13,500
Local audio-visual and print services	5,250
Message pretesting services	2,250
Total Line 7	<u>\$112,800</u>
8. Indirect Costs	<u>\$ 14,440</u>
Total Production Support	<u>\$214,705</u>

PROJECT SUPPORT SERVICES AND STUDIES

Period: 5/1/73 to 9/30/74

(U.S. Dollar Costs)

<u>Category of Expense</u>	<u>Amount</u>
1. Agricultural technical services	\$ 5,000
2. Quiche Indian Anthropological Study	8,000
3. Project Film	<u>15,000</u>
Total	\$ 28,000

APPENDIX I

SITE SELECTION CRITERIA - ORIENTE

I. Demographic characteristics

- A. At least 90 percent Ladino.
- B. No more than 30 percent literacy in the adult population.
- C. Population concentrated in identifiable sub-areas, each of which has minimal communication with the other sub-areas.
 - 1. Three identifiable sub-areas required in each experimental or control area.
 - 2. Each sub-area of appropriate size and characteristics to permit drawing valid sample of 100 farmers for in-depth study.
- D. Predominantly small farms.

II. Physiographic characteristics

- A. Each area must be of appropriate size and configuration to permit full coverage with limited-range transportable mid-band radio transmitter.
- B. The areas in a region must be sufficiently separated that the message beamed from the limited range transmitter at any one area will not be received by any other area.
- C. The three areas in a region must have approximately the same degree of diversity in physiographic characteristics, including similar features.

III. Agricultural characteristics

- A. Each site must have potential for significant improvement in agricultural production and income within constraints of present knowledge and available technology.
- B. The present level of production and adoption of improved technology must be reasonably uniform within a site, and

between sites in the same region. For example:

1. Average yield of maize less than 16 qq/mz. with no more than 20 percent of the farmers exceeding 20 qq/mz.
 2. At least 70 percent of the farmers either using no fertilizer or an inadequate fertilizer program.
 3. No more than 20 percent of the farmers using insecticides effectively.
- C. Sites must not have been subjected to "special" programs such as church mission programs, intensive cooperative development, etc. "Normal" on-going programs serving the area such as DIGESA or conventional cooperative are acceptable.
- D. Sites must either have needed services -- credit, inputs, markets, price assurance -- available to all farmers, or must be so situated that such services can be provided equally to all areas in which the project is operating within a region.