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TRAILS SELECTION CRITERIA AND
EVALUATION DESIGNS FOR THE
HONDURAS RURAL TRAILS PROJECT

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SECTION ONE

CONSULTANCY BACKGROUND AND OBJECTIVES

A. BACKGROUND OF THE HONDURAS RURAL TRAILS PROJECT

In March 1978, USAID/Honduras entered into an Agreement with the Government of Honduras (GOH) to undertake a Rural Trails Project (Project Number: 522-0137). This project is one of a series of rural access improvement activities sponsored by AID and administered by the Directorate of Highways of the Ministry of Communications, Public Works and Transportation (SECOPT).

The Rural Trails Project is designed to meet several objectives. These are described in the Project Agreement as follows:

The purpose of the project is to test, on a pilot basis, the feasibility of improving access to and from isolated rural communities in Honduras using low-cost (under \$4,000 per kilometer), labor-intensive construction of jeep trails and bridges and self-help community maintenance of such trails. The short-run impact of jeep trails on isolated communities will also be evaluated. The project will provide data on the desirability of including jeep trail designs in the Government's road building programs and on the desirability of including a labor-intensive road building component in future programs which may receive A.I.D. assistance.

To accomplish these objectives, the trails project includes four activities: 1) trail and bridge construction; 2) the development of a community maintenance system; 3) the refinement of the trail selection procedure; and 4) the evaluation of the short-run impact of trails constructed during the project. Of the total estimated GOH and AID supported

LIST OF ACRONYMS

AID	Agency for International Development
CMO	Caminos por Mano de Obra (Department of Labor Intensive Road Construction)
CONSUPLANE	Consejo Nacional Superior de Planificación (The National Executive Planning Council)
DS/RAD	Development Support Bureau, Office of Rural Development and Development Administration at AID
GITEC	A comprehensive road ranking approach developed under a World Bank contract with a German firm.
IHCAFE	Instituto Hondureño de Café (Honduran Coffee Institute)
JNBS	Junta Nacional de Bienestar Social (National Social Welfare Board)
LDC	Less Developed Country
MOE	Ministry of Education
MOH	Ministry of Health
MNR	Ministry of Natural Resources
PRODERO	Proyecto de Desarrollo de la Región Occidental (Western Region Development Project)
PCI	Practical Concepts Incorporated
SECOPT	Ministry of Communications, Public Works and Transportation
USAID	U.S. AID Mission in Honduras

project costs of \$622,000 over a two-year period, the Project Agreement sets aside \$40,000 for the refinement of the trails selection procedure and the short-run evaluation study.

B. THE RURAL TRAILS CONSULTANCY OBJECTIVES

As part of a three-year engagement with AID's Office of Rural Development and Development Administration (DS/RAD), Practical Concepts Incorporated (PCI) is undertaking consultancies to assist USAIDs, LDCs and AID/Washington in addressing data gathering and analysis issues for rural development projects. Rural infrastructure projects and the impact of rural development efforts on beneficiary groups are areas receiving particular attention under the contract.

In June of 1978, the Honduras USAID Mission contacted DS/RAD regarding the possibility of obtaining PCI consultancy services under their Rural Development Data Gathering and Analysis Methods Project. The Mission communication stated:

We are also interested in assistance in conjunction with two aspects of the Rural Trails Project (#522-0137): the refinement of trails selection procedures and the design of impact evaluations. An emphasis which is not brought out in the project paper is a need to develop non-traditional selection procedures for all types of access roads being, or proposed to be, financed by the Mission in Honduras. The problem of developing a low-cost, easy to implement selection procedure which will provide useful information is a general one, not limited solely to the rural trails project.

Subsequently, it was decided that a PCI consultancy team should visit Honduras to provide assistance in these areas.

In late October 1978, PCI consultants Michael Dalmat, an Evaluation Specialist; and Dr. Ronald Schwarz, an Anthropologist, accompanied by the DS/RAD Project Manager, Rollo Ehrich, an Agricultural Economist, undertook a three-week visit to Honduras to address the scope of work identified in the Mission's cable.* Prior to their departure from Washington, D. C., the team consulted with knowledgeable individuals in the Latin American Bureau and other PCI staff members who had conducted similar consultancies in the past.

Upon arrival in Honduras, the PCI team discussed the consultancy objectives with USAID Mission personnel. The scope of work which was reviewed and agreed upon included:

- recommending modifications, as required, in the rural trails selection procedure;
- preparing an evaluation design for the short-run rural trails impact study;
- preparing a scope of work for the implementation of the short-run impact study.

In addition, it became obvious during our conversations with GOH and USAID personnel that the Rural Trails Project reflected several more general, still unresolved, rural access roads policy issues. These included: 1) whether 3-meter trails are warranted or whether all roads should be 4 or more meters in width as suggested by World Bank personnel; 2) whether a single, low-cost, standardized roads selection procedure could be developed for all rural access roads; 3) whether the long-run impact of the rural trails activities deserved additional attention in view of the fact that the Mission is considering further rural infrastructure assistance; and 4) whether alternative mechanisms

*/ Rollo Ehrich returned to Washington, D. C. following week two of the consultancy.

existed for obtaining and sustaining local community participation in road construction and maintenance activities. The consultancy team was encouraged to consider these issues during their stay, and address them in the consultancy report.

While in Honduras, the team consulted with a number of Mission and host government personnel in the capital city and in the project area. (See Appendix A and Appendix B for a description of activities completed during the consultancy and individuals visited in conjunction with the consultancy.) A draft of this consultancy report was left with Mission personnel prior to the team's departure.

C. MAJOR CONCLUSIONS AND RECOMMENDATIONS

The major conclusions and recommendations contained in this report are presented below. They are based on our review of project documents and the three-week field consultancy.

Conclusion 1:

A rural roads selection procedure and a rural roads impact evaluation are related in several ways. First, they are both based on a clear formulation of project objectives. Thus, an essential ingredient in the development of both a selection procedure and an impact evaluation is the specification of desired objectives and hypothesized causal relationships. Second, a selection procedure is related to an impact evaluation with respect to time. While a selection procedure provides a systematic method for predicting which roads will be most cost-effective, an impact evaluation assesses whether those predictions were accurate after the fact. Due to the time lag, a major role of impact evaluation is to determine the accuracy or validity of the selection procedure, and recommend improvements as needed.

Recommendations:

- The GOH rural roads selection procedure should be based on clearly defined rural development objectives. Modification of the procedures can only be valid and useful if undertaken in this light.
- The USAID should view the conduct of impact evaluations as an important mechanism for determining the accuracy of the current GOH trail selection procedure.

Conclusion 2:

The rural trails procedure being used by the Department of Labor Intensive Roads needs modification. The current procedure--which includes a complex road site ranking system in addition to a simplified cost-benefit technique--is inappropriate for choosing among low-cost, labor-intensive access trails.

Recommendations:

- The GOH should view the rural trails selection procedure as a sequential or staged process. In such a process, roads sites would be screened along several key dimensions.
- The rural trails selection procedure proposed in this consultancy report includes the following steps:
 - a. Establish Regional Transportation Priorities
 - b. Cluster selection of sites
 - c. Inform communities of selection criteria
 - d. Add other plausible nominations
 - e. Conduct preliminary screening
 - f. Select appropriate type of road
 - g. Calculate a simple cost-benefit ratio
 - h. Rank-order remaining sites using simple cost-effectiveness criteria
- The GOH should attempt to minimize the cost of gathering and analyzing data required by the selection process. Adaptation of the modifications suggested by this report should assist both in lowering costs and improving road selection information.
- The GOH should review the selection procedure modifications suggested in this report with rural roads personnel and donor

agency officials. The modified procedure should be used to select the remaining Rural Trails Project sites.

Conclusion 3:

Given the pilot nature of the Rural Trails Project and the potential for additional rural access road projects, immediate attention should be given to the conduct of both a short-term (two-year) and a long-term (four-year) impact evaluation. The evaluation design recommended herein is based on the following five-step procedure that is applicable for either a short- or long-term evaluation:

1. Specify key evaluation issues and decisionmakers
2. Determine when decisionmakers need evaluation results
3. Specify what evaluation information is required in decisionmaking
4. Select an evaluation research design
5. Prepare an evaluation implementation plan

Recommendations:

- The USAID should move ahead immediately to carry out a short-run impact evaluation. A scope of work, implementation schedule, and tentative cost estimate for the short-run evaluation effort are included as Exhibits to Section IV of this report.
- The USAID should decide whether to undertake a substantive, long-term impact evaluation of the Rural Trails Project. This consultancy report outlines a long-term evaluation option. The long-term evaluation option complements the short-term design described in the report. An illustrative implementation schedule and cost estimate for the long-term evaluation is included. If the Mission decides to move ahead with the long-term option, additional steps, as outlined in this report, will be needed to complete preparation of a scope of work.

SECTION TWO

SELECTION PROCEDURES AND IMPACT EVALUATIONS: AN OVERVIEW

A. SELECTION PROCEDURES AND IMPACT EVALUATION DEFINITIONS

The "pilot" nature of the Rural Trails Project construction and maintenance activities extends to the testing of GOH rural access roads selection procedures and short-run impact evaluation methods. For both the selection procedures and the impact evaluation methods, the GOH and major road donors are interested in the installation of appropriate low-cost measures which effectively perform their respective functions. The GOH and USAID look on the Rural Trails Project as an opportunity to experiment with selection procedures and impact evaluation measures. This section of the report sets the stage for an in-depth consideration of appropriate selection procedures and impact evaluation methods by defining the functions of both and demonstrating the important relationship which exists between them.

1. The Function of a Selection Procedure

The function of a rural infrastructure selection procedure is to assist project implementors in making cost-effective site selection decisions. It does this by screening potential road sites in relation to the expected cost and the expected benefits (of effectiveness) which should result from road construction and maintenance. A good selection procedure usually takes into account regional development objectives, and assures that road construction and maintenance are undertaken in close proximity to minimize supervisory time and the cost of moving equipment. When development resources are limited,

the use of an appropriate selection procedure can lead to dramatic increases in the benefits expected from roads.*

A good selection procedure provides decisionmakers with cost-effectiveness information on potential road sites. The cost parameter has two dimensions: first, the expected monetary cost of construction and maintenance activities, usually projected to some point in the future; and second, the cost of administering the selection procedure itself. Since the cost of making the selections may be relatively high compared to construction and maintenance expenditures, the selection procedure costs should be viewed as an important component of the overall road costs.

The effectiveness parameter of the selection procedure focuses on the probability that an access road, once constructed and maintained, will be beneficial. That is, the selection procedure should provide a measure of the degree to which a specific proposed road will contribute to mutually agreed upon socioeconomic development objectives. Therefore, the selection procedure provides a comparative estimate, with respect to other proposed road sites, of the amount of beneficial impact per kilometer of road constructed.

When the cost and effectiveness measures are combined in one selection procedure, project implementors are able to use the resulting information to rationally allocate their limited resources.

*/ It should also be noted that a selection procedure which values potential road sites based on the possibility for high community support will likely decrease the time and cost associated with construction and improve the probability for local maintenance.

2. The Function of Impact Evaluation

The function of impact evaluation is to determine the effects of project activities and to provide useful information on how and why these effects occur. A commitment to obtaining useful information implies an interest in positive and constructive evaluations which are forward-looking and are focused on improving the probability of ultimate project success. In brief, evaluation can be a practical management technique which increases relevant knowledge about a project environment so that project decision-makers can make better choices which lead to more successful projects.

3. The Relationship Between a Selection Procedure and an Impact Evaluation

A selection procedure and an impact evaluation share one requirement: both need to be based on a clear understanding of project objectives and those conditions (other than the road itself) which are presumed to be necessary if the objectives are to be accomplished. For this reason, an essential ingredient in the development of both a selection procedure and an impact evaluation is the specification of measurable objectives, and the causal relationships between project activities and the achievement of these objectives. During the design stage, AID-supported projects are required to specify measurable objectives and indicate external conditions (or assumptions) upon which impact depends. The standard methodology used to formulate projects in this fashion is called the "Logical Framework Approach". This report will use the Rural Trails Project Logical

*/ This approach assists project designers in identifying: a linked set of project objectives, measurable indicators for assessing project progress, sources and measures for verifying indicators (via gathering and analyzing data), and the key assumptions or expected external conditions which are presumed to occur in order for the project to succeed. Therefore, the Logical Framework Approach identifies the minimum set of necessary and sufficient data for determining the substantive content of both the selection procedure and the impact evaluation design.

Framework, contained in the Project Paper and expanded during the PCI consultancy, as a framework against which to carry out the tasks identified in the consultancy scope of work.

A selection procedure and an impact evaluation are also related with respect to time. While the selection procedure provides a systematic method for predicting which access roads will be most cost-effective, impact evaluations assess whether those predictions were accurate. Due to the time lag, a major role which impact evaluation can play is to determine the accuracy or validity of the selection procedure that has actually been used, and indicate what improvements are needed. For example, if an evaluation demonstrates that a previously overlooked factor is critical to project success, the selection procedure can be revised to incorporate this element before the procedure is again applied. Thus impact evaluations offer an important means for validating and improving road selection procedures.

B. THE RURAL TRAILS PROJECT LOGICAL FRAMEWORK

The Project Design Summary Logical Framework contained in the Honduras Rural Trails Project Paper is presented in Table II-1. This Summary reflects all of the key components of the project. For the purposes of the consultancy, however, it was felt that several additional indicators and assumptions, discussed elsewhere in the Project Paper, should be incorporated in the Summary. Thus, after a review of project documents and discussions with the GOH and USAID personnel, the consultancy team developed an expanded, more detailed, Design Summary (see Table II-2). This expanded Project Design Summary is used extensively in Sections III and IV of this report as the basis for refining the Project Selection Procedure and designing the Impact Evaluation Plan.

TABLE II-1

PROJECT DESIGN SUMMARY LOGICAL FRAMEWORK

HONDURAS RURAL TRAILS PROJECT

ANNEX 4

PROJECT DESIGN SUMMARY
LOGICAL FRAMEWORK

Life of Project:
From FY 1978 to FY 1979
Total U.S. Funding \$400,000
Date Prepared: January, 1978

Project Title & Number: RURAL TRAILS 522-0137

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
<p>Program or Sector Goal: The broader objective to which this project contributes: Goal: To improve the quality of life of rural people living in isolated mountainous areas of Honduras.</p>	<p>Measures of Goal Achievement: 1. increase in disposable income of the small farmer of between \$8 and \$24 per year as a minimum.* 2. increased benefits from utilization of public and private services, e.g. increased school attendance and visits to health posts. 3. increase in benefits from services offered by GOH and private institutions, e.g. visits by extension agents and promoters.</p>	<p>Case study records</p>	<p>Assumptions for achieving goal targets: transportation savings will accrue largely to farmers rather than to transportation sector.</p>
<p>Purpose: To test the feasibility of improving access to and from isolated rural communities in Honduras at low cost by constructing easily maintained jeep trails.</p>	<p>1. trails passable year-round by 4-wheel drive vehicles. 2. transportation costs reduced by a minimum of \$1.30/ton/km. 3. design and construction of trails adopted and continued by GOH.</p>	<p>Case study records</p>	<p>Local leader's will accept responsibility for road maintenance.</p>
<p>Output: 1. approximately 185 km of foot and mule paths upgraded to nearly all weather, jeep trails. 2. a system of maintenance for the trails. 3. case studies. 4. refined designs for trails, drainage and bridges. 5. trail selection procedure. 6. personnel trained in trail design and construction.</p>	<p>1. 165 km. of jeep trails constructed by the end of CY 1979. 2. each community has designated responsibility for maintenance and has trained personnel. 3. report issued on results of case studies by the end of 1978. 5. report issued on trail selection procedure by the end of CY 1978. 6. department personnel able to carry out activities without assistance by the end of CY 1979.</p>	<p>Project records and inspection</p>	<p>1. right-of-way problems can be resolved expeditiously. 2. sufficient labor is available in construction sites at low wages.</p>

* This minimum figure will be generated from transport savings alone. The non-quantified benefits from increased delivery of health, education, agricultural, and other services are expected to be significant and to have substantial impact on the quality of life of people living in benefitting communities.

SECTION THREE

ROADS SELECTION PROCEDURES: STATUS AND SUGGESTED MODIFICATIONS

This section of the report reviews the selection procedure currently used in the Rural Trails Project. Based on this review, several immediate refinements are suggested along with a suitable means for their installation.

A. CURRENT STATUS OF THE RURAL TRAILS SELECTION PROCEDURE

The Rural Trails Project Agreement specifies the following in respect to the selection procedure for this activity:

"Different procedures for trail selection will be experimented with to develop one which will provide a sufficient basis to select, determine a cost-benefit ratio for, and rank candidate trails within the boundaries of the need to use a procedure meeting the criteria of low-cost and easy-to-implement. The current selection approach will be utilized to the extent possible so as to take advantage of the experience gained to date."

The Agreement goes on to note that the implementing agency (the Department of Labor Intensive Roads or Caminos por Mano de Obra) would select trails for construction during 1978 by applying the methodology currently used by the Department of Labor along with a simple cost-benefit ratio. AID was to be consulted with regard to the selection of individual trails for 1978, while the 1979 selection procedure was to be agreed upon in writing at a later date. The Project Agreement also stipulated that the selection procedure should take into consideration, in addition to the minimum feasibility and other existing criteria, differing conditions of terrain and crop production. Moreover, it instructed the Department to integrate trails construction with other GOH

development plans so as to maximize the socioeconomic benefits generated by the project. It specifies that the Department should consult with the public and private agencies active in the Western Region, such as the coordinating body for the Integrated Development Project of the West, the Honduran Coffee Institute, the Ministry of Education, the Ministry of Public Health, and others and solicit their plans and programs for investment and service delivery. Finally, the project documents note:

Since this project is a pilot program being used to provide experience-for and develop methodology for possible future national programs, and since, therefore, it is not a cheap trail-building program per se, the project will select trails for construction on the basis of providing a broad experience in a relatively short time span, rather than on the basis of a national system of integrated investment planning with other sectors or the relative rank order of a large number of candidate trails. However, institutions providing a wide range of social and economic services will be consulted by the Department with regard to their plans for service facilities or other service outreach programs during the selection process. Trails will be selected in differing terrain, and in different crop production regions, e.g., coffee, vegetables, and basic grains. Results will be compared in terms of cost and impact. All trails to be constructed, however, will meet a set of minimum feasibility and desirability requirements as discussed in the economic analysis. Once a trail has been completed the Department will consult periodically with various service institutions and in effect promote the establishment of additional services in the area of the new access trails.

One of the first tasks of the consultancy was to determine what type of selection procedure was actually being used in the Rural Trails Project, and what refinements were necessary and feasible. Mission personnel told the PCI team that the terms of reference for the selection criteria in the Project Agreement remained in effect. Mission personnel, at this juncture, indicated that they

TABLE II-2

REVISED LOGICAL FRAMEWORK FOR HONDURAS RURAL TRAILS

<p><u>GOAL</u></p> <p>Socio-economic status of isolated rural communities raised.</p>	<p><u>OBJECTIVELY VERIFIABLE INDICATORS</u></p> <ol style="list-style-type: none"> 1. An increase in disposable income of small farmers of between 15-24 per year as a minimum. 2. Decrease in morbidity/mortality directly due to ignorance, lack of curative care, or lack of preventive programs. 3. Increased agriculture production/productivity and/or reduced losses during cultivation/harvest/storage/transportation. 4. Increased percentage of residents completing basic education (i.e., literacy) courses. 5. For all of the above indicators, benefits to be equitably distributed: minimum: large (more than 15 ha) vs. small (less than 15 ha) farmers. 	<p><u>MEANS OF VERIFICATION</u></p> <p>For all goal level indicators-- two year and five year impact evaluation using before and after research design with control groups; also making comparisons with data from the economic survey of small farmers conducted as part of the Agricultural Sector Assessment (1977), which provides detailed income and production data for all small farms; and the baseline survey of villages in the Depto. de Occidente area of the western region of Honduras, completed for the non-formal Rural Education Project.</p> <p>Sources: existing data complemented by questionnaires and case study data</p>	<p><u>ASSUMPTIONS</u></p> <ol style="list-style-type: none"> 1. Improved Socio-economic status equates with improved quality of life. 2. Evaluation results demonstrate validity/reliability of 3-meter trails approach such that GOM and others (World Bank, AID) replicate program elsewhere in Honduras.
<p><u>PURPOSE</u></p> <p>Increased, year round flow of people, goods, and services between isolated rural communities and district/administrative centers</p>	<ol style="list-style-type: none"> 1. Increased visits/year from Ag./Social/Health and Education extension workers to villages. 2. Increased visits/year to Ag./Social/Health and Education service facilities by villagers from previously isolated rural communities. 3. No sustained interruptions in above visits due to poor rural trail conditions 4. Transportation costs reduced by a minimum of \$1.30/ton/km. 5. Increased availability of basic consumer goods in community (e.g., flash light batteries, candles, salt, sugar, matches, etc.) 6. Indicators 1 and 2 above show equitable distribution of visits among social/economic groups of the target population. 	<p>As for goal, with additional data being collected relevant to purpose level indicators.</p>	<ol style="list-style-type: none"> 1. Transportation cost reductions bring immediate benefits to farmers; 2. Market prices for coffee (national and international), rice, beans and corn are favorable for the small farmer. 3. All extensionists (Ag./Social/Education/Health) have adequate technical and interpersonal abilities, and are effective communicators; 4. Agricultural inputs are available to small farmers at costs that do not exceed their increased earnings over time. 5. Land and farm labor available as needed by small farmers in endeavours to increase income.
<p><u>OUTPUTS</u></p> <ol style="list-style-type: none"> 1. 185 kms of foot and mule paths upgraded to year-round jeep trails providing access to isolated rural communities by end of FY 1979. 2. Maintenance system for jeep trails is effective 3. Evaluation activities provide useful information as scheduled. 4. Trail drainage and bridge designs refined by end of FY 1979. 5. Effective trail selection procedure applied to all GOM rural road projects by end of FY 1979 6. Personnel trained in trail design and construction. 	<ol style="list-style-type: none"> 1. a. ___ trails completed serving ___ communities of ___ small farm facilities. b. All trails meet engineering specifications appropriate to type of trail. c. Trails are completed within ___ % of projected costs and time. d. No major faults (land sinking/land slides etc.) occur in roads for minimum of ___ years after construction. 2. a. Major trail obstacles eliminated within ___ days of time agreed upon by general inspector and community maintenance coordinating entity. b. Field engineer judges quality of normal repairs by responsible community organization to be adequate and appropriate. c. Cost of maintenance efforts within approved guidelines for type of activities. 3. a. Evaluative information provided to key decision makers and policy implications discussed within one week of agreed-upon dates. b. Investigation reports include: <ul style="list-style-type: none"> • Recommendations for program improvements, guidelines for implementation. • Discussion of plausible alternative approaches for making improvements based on study findings; • Substantiation of study conclusions with findings, identification of information gaps and their implications. 4. a. Manual of design alternatives and conditions under which each is most appropriate prepared and certified by GOM, IBRD, and USAID engineering staff. b. Manual circulated by World Bank and AID for use elsewhere by June, 1980. 5. a. Trail and access road sites are consistent with regional priorities (i.e., PROCEBO Development Plan) and judgment of experienced field workers from MRR, MRR, and INRS. b. Data used in site selection procedure approved by evaluators as adequate for baseline. c. Cost of site selection does not exceed US \$50/km. of trail constructed. d. High quality data collection and analysis techniques and consistent procedures used at all times (consistent with approved procedure). 6. GOM personnel able to carry out construction and maintenance activities without assistance by end of CY 1979. 	<p>As for Goal and Purpose on issues of attribution (causality);</p> <p>Data from project records;</p> <p>Data from participating agencies;</p> <p>Careful in-project documentation of processes/changes and reasons for change/alternatives considered and reasons for adoption or rejection, etc. for:</p> <ul style="list-style-type: none"> • Site Selection Procedure • Trail construction methods; • Worker recruitment, training, payment, incentives, etc. • Both for construction and for maintenance; • Degree of community involvement (planning, implementation, and follow-up); • Coordination with service agencies (Ag./Health/Education/social) both centrally locally; 	<ol style="list-style-type: none"> 1. Sufficient numbers of extensionists (health workers, teachers, classroom space, adult education facilities, etc.) are ready and able to absorb increased demand for, or opportunities to provide, services. 2. Sufficient vehicles available to support increasing flow of people, goods, and services. 3. Rural vehicle operating costs do not increase by more than 50% by 1981. <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <p><u>INPUT TO OUTPUT ASSUMPTIONS:</u></p> <ol style="list-style-type: none"> 1. Wages and food offered in payment for trail construction attract local labor; 2. Sufficient local labor is available at appropriate times for trail construction; 3. Local communities sufficiently interested in project to provide local labor and supplies (sand, rocks; mules to supplement labor, etc.); 4. Local organizations sufficiently involved in advance planning and site selection to fully support project efforts. </div>

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wanted the consultancy team to recommend a selection procedure with the following characteristics:

- It could be readily applied in rural Honduras;
- It would be acceptable to the GOH, the USAID and other roads donors;
- It would include a simple cost-benefit ratio calculation to establish economic feasibility;
- It would allow for a rough comparison between potential road sites; and
- It would be low-cost.*

In view of these criteria, the PCI team reviewed the existing selection procedure with two questions in mind. First, could a revised procedure be suggested which would improve the selection of the remaining sites under the trails projects? Second, could revisions be suggested which would facilitate selection procedure validation and improvement, in conjunction with the impact evaluations.

Our review of Honduras roads documents, supplemented by field interviews, revealed that the Department is currently using two approaches to select rural access road and trail sites. The first is a comprehensive road ranking approach developed under a World Bank Contract with a German firm, hereafter referred to as the GITEC method.**

*/ USAID personnel decided on a cost parameter for administering the selection procedure of no more than U.S. \$50 per km of constructed road.

**/ For a review of the GITEC approach, see "Estudio de un Programa de Prioridades para la construccion de Caminos Rurales: Metodologia y Resultados", GITEC CONSULT GMBH, Tegucigalpa, D.C., Honduras, June 1978.

The second is a streamlined cost-benefit method which has been modified for use in this project by Lic. Reinaldo Romero. The Department used a combination of these approaches to select two initial 1978 sites as well as four follow-up sites for road construction under the Rural Trails Project. The salient characteristics of both approaches are summarized below.

1. The GITEC Road Selection Approach

The GITEC approach is a procedure for initial screening and subsequent rank-ordering of candidate roads. The rank-ordering is based on a series of 27 weighted economic and social indicators. A description and critique of the approach, as contained in the Rural Trails Project Paper, is enclosed as Appendix C.

To date the GITEC methodology has been primarily used in the southern region of Honduras. The World Bank also has a roads project in the southwest portion of the country, where this approach is in use. This area overlaps with the Rural Trails Project area.

Preliminary screening is done with the GITEC approach by reviewing potential sites in terms of the following five criteria:

- Unavailability of all-weather roads in the foreseeable future
- Connection with all-weather roads
- Minimum of 30 families/linear km
- Topographical feasibility
- Majority of farmers with less than 35 hectares

Sites must meet all of these preliminary criteria before they receive additional consideration.

The GITEC ranking approach uses a standardized data collection instrument. The questionnaire is typically administered in the potential road site by two Department employees: an engineer and a combination accountant/junior economist. These individuals fill out the questionnaire, which is then returned to the Department where various roads are rank-ordered by means of a rather complex procedure. In the past, the ranking analysis was done by a German employee.

During our conversation with GOH officials and donor personnel, many criticisms of the GITEC approach were voiced. These include:

- Problems of validity due to the arbitrary weighting of economic and social factors;
- Problems associated with the data gathering process;
- Problems associated with the complexity of the analysis required to rank candidate roads; and
- Problems related to the fact that the system takes no account of regional plans which could markedly affect the benefits of trail construction.

Several of these issues are discussed in more detail below.

a. Data collection problems in the GITEC approach

The validity of the instrument is questionable. Some methodological problems are evident in the instrument instructions. Further, the data which an investigator uses to answer questions are often vague, highly subjective, speculative or not rigorous. Based on observations of the data collection process in a community, we found:

- Data collection is heavily dependent on formal leaders, many of whom have hidden agendas which have to be uncovered in order to "decode" the community response. The formal leaders (e.g., alcaldes) are often not permanent residents of the community and thus may not be suitable respondents. In addition, there is no mechanism for checking responses between people to detect accurate patterns and no procedure

for making sure that respondents represent the different economic, social and power groups within the communities.

- Personnel responsible for collecting data are not professionally trained to locate and effectively use key informants.
- There is a tendency to ask one community for information about another. This introduces potential biases, and also apparently encourages investigators not to visit the other community.
- Responses are not recorded immediately. This can contribute to inaccurate data. In addition, there was substantial verbal interaction between interviewers while data was being recorded. This could lead to subjective interpretation and unwarranted consensus.
- There is no systematic use of information from other development agencies working in the local areas.

b. Data analysis issues in the GITEC approach

The analysis issues uncovered in our review include:

- Arbitrary and fixed assignment of weights to individual data elements. USAID and GITEC personnel agreed that weights should be determined based on regional development conditions and potential. Major socioeconomic and environmental differences in the Southern and Western Regions are not reflected in the weighting system.
- Arbitrary definition of the "areas of influence" of a trail, i.e., two kilometers on each side of the access trail. Since settlement patterns vary along trails, this approach introduces underreporting which can yield distorted answers. (This approach has been improved by Lic. Reinaldo Romero. He uses an existing census map to identify population concentrations in a trail area, and then validates during field inspections whether people from these communities actually use the trail.)

For these reasons there is considerable pressure on the Department to develop a less complex and less costly set of selection criteria that would better complement regional development strategies and be more appropriate to the Rural Trails Project.

2. The Department's Cost-Benefit Methodology

The Rural Trails Project Paper contained considerable information on the cost-benefit methodology to be applied by Department staff in conjunction with the selection of trail sites. A simplified cost-benefit analysis approach was discussed in the Project Paper, Annex 2b. An application of this model to an actual trail was provided in Annex 2d. Also, Annex 2d contained a cost-benefit application prepared by Lic. Reinaldo Romero and Ing. Sergio Canales in January 1978. This cost-benefit methodology used simple and readily available transportation savings (benefit indicator) and road construction/maintenance (cost indicator) data. Several initial problems with this approach have been resolved, including:

- A redefinition of the area of influence using on-the-ground validation of census map data;
- More flexible cost estimates based on engineering data from site visits. Road costs were originally calculated at L5000/kilometer. Since topographics, usable percentage of old trail, and climate differ from one place to another, the actual costs vary greatly.

All major parties recognized that the key deficiency of the cost-benefit methodology is that the benefit indicator--transportation savings--encompasses only one narrow segment of the expected socio-economic benefits resulting from the provision of all-weather access. For this reason the cost-benefit ratio has been used only to decide whether a road is likely to represent an economically sound investment, e.g., have a C/B ratio of greater than 1. Due to its narrow benefit definition, it has not been possible to use the ratio to rank-order candidate roads in terms of their long-run expected socio-economic benefits.

In summary, the trails selection procedure dilemma confronted by the Department is that the GITEC approach appears to be overly complex, costly, and of questionable validity while the cost-benefit methodology

is too narrow in its perspective. Thus, there is considerable demand for a modified, low-cost selection procedure which incorporates accurate socioeconomic data, allows for a simple cost-benefit determination, and provides a suitable process for rank-ordering alternative sites. In the following paragraphs we present our suggestions for a modified selection procedure to assist in this endeavor. The issue of evaluating the actual predictive ability of the current selection procedure will be discussed in conjunction with the short-run impact evaluation design presented in Section IV.

B. PROPOSED RURAL TRAILS PROJECT SELECTION PROCEDURE

Our proposal for modifying the selection procedure is presented below. We suggest that the Department look at the selection procedure as a sequential and staged process. Viewed in this way, it is evident that the major components of the proposed procedure are already in place. Several other components need to be added or substantially revised. In the last part of this section, we suggest a mechanism for facilitating the selection procedure modifications by bringing together GOH staff and roads assistance donors in a brief workshop.

1. Selection Procedure Steps

The selection procedure recommended by the consulting team can be viewed as a sequential screening process which gradually identifies a rank-ordered list of feasible and cost-effective rural access road sites. The steps in this screening process are summarized in Table III-1 and discussed in more detail below.

As a pre-condition for the selection procedure, we recommend that a period of time sufficient to select sites (approximately 1-2 calendar

TABLE 111-1

PRELIMINARY OUTLINE OF MODIFIED RURAL TRAILS SITE SELECTION PROCEDURE

SELECTION STEP	STEP A	STEP B	STEP C	STEP D	STEP E		STEP F	STEP G	STEP H
	DEFINE REGIONAL PRIORITIES RELATED TO TRANSPORTATION ACTIVITIES	CLUSTER SELECTION OF RURAL ROAD SITES WITHIN REGIONS	INFORM COMMUNITIES OF RURAL TRAILS PROGRAM & SELECTION CRITERIA	ADD OTHER PLAUSIBLE NOMINATIONS	CONDUCT PRELIMINARY SCREENING		SELECT APPROPRIATE TYPE OF ACCESS ROAD	CALCULATE A SIMPLE COST-BENEFIT/RATIO	CONDUCT FINAL SCREENING BY APPLYING A COST-EFFECTIVENESS RANKING PROCEDURE
AGENCY RESPONSIBLE	PROPERD	PROPERD	PROPERD	PROPERD	<ul style="list-style-type: none"> • NON-HEALTH OR SOCIAL PROBLEMS • NO EXTENSION TO OTHER PROJECTS 	1-3 PROPERD 4 - COM	PROPERD	PROPERD	PROPERD
CRITERIA	<ol style="list-style-type: none"> 1. LOCAL CONDITIONS 2. REGIONAL PRIORITIES 3. AVAILABLE BUDGET 	CRITERIA RECONCILIATION AMONG PROPERD & INAC	<ol style="list-style-type: none"> 1. CLEAR PROCEDURES 2. SPECIFIC CRITERIA 	EXPERIENCE/ JUDGMENT OF THOSE HAVING WORKED IN AREAS	<ol style="list-style-type: none"> 1. PERSONS FROM BOTH SITES LOCATIONS USING EXISTING TRAILS 2. CLEANLINESS & UTILITY OF EXISTING TRAILS 3. PAST EXPERIENCE W/ COLLABORATIVE PROJECTS 4. RELIABLE 	<ol style="list-style-type: none"> 1. UNAVAILABILITY OF ALL WEATHER ROADS IN FORESEEABLE FUTURE 2. CONNECTS W/ ALL WEATHER ROAD 3. MINIMUM OF 30 FAMILIES/LINEAR KM 4. TOPOGRAPHICAL FEASIBILITY 5. MAJORITY OF FARMERS WITH LESS THAN 15 HECTARES 	<ol style="list-style-type: none"> 1. POTENTIAL AVERAGE DAILY TRAFFIC BY VEHICLE CLASS AND WEIGHT 2. TECHNICAL CRITERIA (PHYSICAL TERRAIN, ETC.) 	<ol style="list-style-type: none"> 1. TRANSPORTATION SAVINGS 2. COST OF CONSTRUCTION REFLECTING TOPOGRAPHIC VARIATIONS 	COST: TOTAL PER KM COST CALCULATIONS EFFECTIVENESS PREDICTORS: <ol style="list-style-type: none"> 1. VOLUME OF PROPS/AGGREG PER KM 2. DISEASE INCIDENCE/ CLINIC CAPACITY PER KM 3. UNUTILIZED LAND/ POTENTIAL PRODUCTION PER KM 4. NON-ENROLLED CHILDREN/ SCHOOL CAPACITY PER KM
SOURCES OF DATA	PROPERD OR VET/INAC PLAN	PROPERD INTER-MINISTERIAL COORDINATING GROUP (INAC)	1. APPROVED SELECTION PROCEDURE	AS ABOVE	<ol style="list-style-type: none"> 1. CENSUS MAPS <ul style="list-style-type: none"> • PLAN/ZONE • DISTRICT • COMMUNITY 2. COMMUNITY OBSERVATION 3. INTERVIEWS W/ KEY PERSONNEL 4. PHOTOGRAPHIC & SKETCH 	<ol style="list-style-type: none"> 1. MAPS VET 2. MAPS VET 3. CENSUS DATA (AS RELATED WITH CENSUS MAP) 4. ENGINEER INSPECTION 5. DENSITY MAP 	<ul style="list-style-type: none"> • HECTARES UNDER CULTIVABLE LAND FROM CENSUS • PRODUCTION/ CULTIVATED HECTARES FROM CENSUS • VEHICLE CAPACITY AND WEIGHT FROM MAP 	<ul style="list-style-type: none"> • COST FROM STEP F • WEIGHTED AVERAGE DISTANCE FROM MAP & DATA • CENSUS DATA ON PRODUCTION OR NON DATA 	COST: FROM STEP G CALCULATION EFFECTIVENESS PREDICTOR: <ol style="list-style-type: none"> 1. FROM STEP G CALCULATION 2. SITE OBSERVATION/RECORDS OF REGIONAL HEALTH RECORDS/REGIONAL HEALTH PLANS 3. SITE OBSERVATION/AGRICULTURAL OR SURVEY RECORDS 4. DENSITY MAPS/HECK OF REGIONAL EDUCATION RECORDS/REGIONAL SCHOOL PLANS

NOTE: Approximately 75% of the data elements required to make the selection are available from existing sources of data.

months) be identified during the part of the year when road construction would be most difficult (e.g., principal harvest season, peak rainy season). During the months prior to this time, all requests for community roads would be received.

Step A: Define Regional Priorities Related to Transportation Activities

In Honduras there are substantial variations between regions that influence desirable modes of transportation and expected socio-economic benefits. Thus, the first step in the selection procedure should be for regional transportation staff to specify regional priorities, available transportation funding and regional conditions. This includes the development of regional inventories on population density, the current transportation network, agricultural production potential, and the availability (planned and actual) of private and public services. The consultancy team found most of this information to be readily available at regional headquarters.

Step B: Cluster Selection of Rural Road Sites Within Regions

There are immediate and delayed costs associated with building roads in dispersed areas which can be partially avoided by concentrating road construction activity in high demand clusters (sub-polo). Thus, we recommend that one or more high demand priority areas be established on a yearly basis. If there are not enough qualified communities within one sub-polo, adjacent sites should be considered. (We recognize that there might be strong political pressure to spread roads among a number of sub-polos due to their high visibility. However, this is not a key consideration in the relatively small and short-run trails project.)

Step C: Inform Communities of Rural Trails Program and Selection Criteria

After priority areas are determined, communities in the areas should be fully informed of the procedure they will need to follow to be considered for inclusion in the project. This implies a clear specification of the selection criteria which will be followed in selecting road sites. At this stage, it is important to consider two issues. On the one hand, the GOH wants to establish criteria which will motivate communities to demonstrate their commitment to the road construction effort. On the other hand they do not want to create excessive demand for projects which will not be funded. In either case the potential rewards associated with this step suggest that it should receive increased attention.

Step D: Add Other Plausible Nominations

Some of the most isolated communities may not receive, or may not be able to make an appropriate or timely response to the information requested in conjunction with Step C above. Therefore, extension workers or promoters familiar with these isolated communities should be asked to make additional road site nominations. Without this step the GOH runs the risk of introducing a systematic bias favoring only those communities that are well informed or already served by knowledgeable change agents.

Step E: Conduct Preliminary Screening

The next step includes a two-stage preliminary screening to determine whether minimum feasibility can be established for a potential road site. This involves: 1) making an initial determination about community commitment to participate in and actively support road construction and maintenance; and 2) applying a set of preliminary screening criteria similar to those currently used by GITEC in conducting initial site screening. The specific criteria and sources of data for these substeps is provided in Table III-1. It is possible that the field trips currently used to gather this preliminary data could be substantially reduced or shortened if Department site selection instructions to the communities (as discussed in Step C above) can be substantially improved.

Step F: Select Appropriate Type of Access Road

The next step is to determine what type of access road should be constructed. This determination should be made based on technical criteria and road use estimates. Technical engineering criteria take into account the physical terrain and related factors. Road use estimates should be based on potential increases in economic and social activity resulting from the road. Data to make these estimates will include the current amount of cultivated and uncultivated land in the road's area of influence, and the area's population density. Threshold traffic levels for various types of access (e.g., 3 meter vs. 4 meter roads) should be pre-established and used in the road specification selection process. Information on the technical specifications of the proposed road, along with the road use estimates, will also be required in the next step in the site selection process, the calculation of a simple cost-benefit ratio.

Step G: Calculate a Simple Cost-Benefit Ratio

We suggest that the Department continue to use the simplified cost-benefit ratio, based on transport savings and construction/maintenance cost data, for deciding which sites are likely to represent economically sound investments. Sites which fail to have a C/B ratio of more than 1 should be screened out at this stage. The cost-benefit procedure currently in use is a low-cost method for demonstrating minimal economic viability.

Step H: Conduct Final Screening by Applying a Cost-Effective Ranking Procedure

The final step in the procedure is to array the remaining sites in a way which will facilitate rational selection. It is our opinion that a simplified, yet situationally appropriate, "cost-effectiveness technique" should be applied at this stage. When we say "situationally appropriate" we refer to a technique which will allow economic factors to be favored in regions whose priorities emphasize those factors, and social factors to be stressed in other regions whose priorities favor them. The technique we suggest (on pages III-13-18), although considerably less complex than the GITEC procedure currently in use, does rely

on field-based data. Thus, in order to minimize the cost associated with the collection and analysis of irrelevant data, we recommend that the cost-effectiveness ranking technique only be applied in conjunction with those sites which have emerged from Steps A-G as potential candidates. There is no need to perform the rank-ordering for sites which are selected out at an earlier stage.

The rank-ordering process has two substeps--a final feasibility determination and a cost/socio-economic effectiveness assessment. The substantive basis for both of these substeps is grounded in the Rural Trails Project Design Summary presented in Table II-2 of Section II.

a. Final Feasibility Determination

Prior to assessing the relative cost-effectiveness of roads in various locations, a final feasibility determination should be made. By "final feasibility" we refer to an assessment of the likelihood that our chosen activities will really achieve the planned results--i.e. that the construction of a road in a particular area is likely to result in the achievement of planned short-term and long-term development objectives within that area.

One way to assess a project's likelihood of success is to investigate those occurrences or conditions which might prevent that success. There are two sources of risk: internal and external conditions. Internally we must ask whether the basic concept of the project seems sensible and managerially possible. Externally, we consider those conditions outside our control which might influence success. The Logical Framework Design Summary identifies the latter group of conditions as "Assumptions". Table III-2 presents the major assumptions of the Rural Trails Project along with the feasibility questions they suggest and the data necessary to answer these questions.

TABLE III-2
QUESTIONS REQUIRED FOR ASSESSING ROAD SITE FEASIBILITY

ASSUMPTIONS	QUESTION	DATA REQUIRED TO ANSWER QUESTION
<u>PURPOSE TO GOAL</u>		
1. Transportation cost reductions bring immediate benefits to farmers	1a. Will savings occur?	<ul style="list-style-type: none"> • Cost savings from use of vehicles.
	1b. Will savings in Transportation costs be passed on to small farmers?	<ul style="list-style-type: none"> • Profile of competitive conditions; • Ease of entry into transportation sector; • Supply of trucks vs. possible competing demand for their use.
2. Market prices for coffee, rice, beans and corn favor small farmer.	2. Are market prices likely to favor the small farmer in next 2/5 years?	<ul style="list-style-type: none"> • International market price trends; • Domestic demand and supply trends; • Price stabilization policies; • Weather predictions
3. All extensionists (Ag. Health, Social, Education) have adequate technical and interpersonal skills, and are reliable.	3a. Do extensionists have adequate skills?	<ul style="list-style-type: none"> • Skills required; • Experience; • Work loads.
	3b. Are extensionists generally reliable?	<ul style="list-style-type: none"> • Definition of reliable; • Incentives; • Reliable means of transport; • Work conflicts with other personal priorities;
4. Agricultural inputs are available to small farmers at costs that do not exceed their increased earnings over time.	4. Will Agricultural inputs be available at reasonable cost in response to increased demand for them?	<ul style="list-style-type: none"> • Preparedness of local providers of Ag. inputs; • National/international price trends for Ag. inputs--e.g., fertilizer; • Flexibility of distribution systems;
5. Land and farm labor available as needed by small farmers in endeavors to increase income.	5a. In the target communities, is there arable land available for farm expansion?	<ul style="list-style-type: none"> • Percent arable land not currently being cultivated; • Ownership of available land/legal requirements for farmer purchase; • Availability of credit;
	5b. In the target communities, is there an available labor supply -- is it seasonal?	<ul style="list-style-type: none"> • Total labor availability; • Fluctuations by season • Conflicting demands for labor due to opening up of access trail;
6. System exists for responding to increasing community demands as knowledge/awareness expands.	6a. Are local agencies (Ag., health, etc.) sensitive to, and continually in touch with, their "clients"?	<ul style="list-style-type: none"> • Lists of local agencies; • Services provided/used; • Feedback mechanisms from villages to agencies; • Contacts with village leaders/organizations;
	6b. Are there effectively utilized information flow systems along the chain from communities to central government?	<ul style="list-style-type: none"> • Response rates to village/small farmer requests for assistance; • Advance planning for expanded anticipated demand for services;
	6c. Can agencies mobilize quickly in response to recognized demand?	<ul style="list-style-type: none"> • Resource Inventory • Staffing levels--current and predicted.

TABLE III-2 (Cont.)

ASSUMPTIONS	QUESTION	DATA REQUIRED TO ANSWER QUESTION
<u>OUTPUT TO PURPOSE</u>		
1. Sufficient numbers of extensionists, health workers, facilities, etc., ready and able to absorb increased demand for services.	1. Are local Agencies adequately staffed to meet anticipated increased in services.	<ul style="list-style-type: none"> • Staffing levels--current and predicted--especially for service staff; • Facility expansion plans? • Resource Inventories.
2. Sufficient vehicles available to support increasing flow of people, goods, and services.	2a. Will there be a sufficient number of trucks in this region to support increased use of trails? 2b. Are spare parts and local repair capability available at reasonable cost?	<ul style="list-style-type: none"> • Existing numbers of trucks/ Average trips/loads. • Local resources available to increase numbers of trucks if necessary; • Inventory of local repair shops; time for normal repairs; frequency of repairs needed for existing trucks, etc.
3. World oil prices do not adversely affect transportation costs.	3. Are World oil price fluctuations likely to impact transportation costs in this study region?	<ul style="list-style-type: none"> • Previous history of oil-prices in region; • Relationship of price changes locally to world prices;
<u>INPUT TO OUTPUT</u>		
1. Wages & food in payment for trail construction will attract local labor.	1. Will wages & food offered as payment for trail construction attract sufficient numbers of local labor?	<ul style="list-style-type: none"> • Previous experience in this community; • Alternative employment payment comparisons; • Local attitudes towards food for work;
2. Sufficient local labor is available at appropriate times for trail construction.	2. When are the most appropriate times for local labor to be available?	<ul style="list-style-type: none"> • Specific harvest/planting seasons; • Other seasonal employment opportunities in area;
3. Local communities sufficiently interested in project to provide local labor and supplies.	3. Are local communities interested and able to support project efforts with: Time Materials?	<ul style="list-style-type: none"> • Community attitudes; • Availability of required supplies in community; • previous experience of community in self-help efforts of similar nature.
4. Local organizations sufficiently involved in advance planning and site selection to fully support project efforts.	4. Are local communities committed to support project efforts on a continuing basis?	<ul style="list-style-type: none"> • Local agency knowledge of central government plans; • Agency attitudes; • Future agency plans.

In the Trails Project, feasibility analysis should take the form of general design critique and a simple checklist derived from the elements included in Table III-2. It is our judgment that gathering basic data on 5-10 elements drawn from this table, some of which are regional and others of which are site specific, will be sufficient to make reasonable feasibility determinations. The 5-10 highest priority elements should be agreed upon by GOH and USAID officials, preferably at the roads workshop (recommended at the end of this section). In selecting elements for investigation, priority should be given to those which are judged to have high impact and high variability.

b. Cost-Effectiveness Determination and Site Rank-Ordering

A cost-effectiveness determination is made by estimating total expected road cost and impact benefits for each site. Road cost estimates are easy to obtain--the same total cost per kilometer figures used in conjunction with cost-benefit calculations are applicable here.

The effectiveness data should be derived from the expected socio-economic impact which the road will have. The key benefits expected from individual trails, as summarized in Table II-2, include:

- (1) Expected number of residents along the proposed road whose income will increase by a minimum of \$24 in a given number of years following road construction.
- (2) Expected number of residents whose morbidity (common disease incidence) will decrease by some target percentage during a given period.
- (3) Expected number of residents whose production will increase by some target percentage during some time following road construction.
- (4) Expected number of residents whose completion of basic education courses will increase by some target percentage during a given period following road construction.

Each of these key benefits is expected to result from the construction of the right roads in the right places. Benefit (1), increased income, is intended to cover only those benefits resulting from direct cost savings on the transport of agricultural goods to the market. These benefits are identical to those calculated for purposes of the simple cost-benefit analysis and include no explicit allowance for new commercial activities. Benefit (2), morbidity decrease, refers to the expected health impacts of greater accessibility of clinics. Benefit (3), production increase, considers additional production occasioned by increased accessibility and reduced transport costs for agricultural inputs and products. Benefit (4), basic education, refers to the expected increase in school attendance brought about by improved accessibility of schools.

It is both complex and costly to gather sufficient data to make firm predictions about the likely level of each of these types of benefits in each potential site. However, if these benefits are in fact the rationale for the project, then an assessment of the probability that such benefits will accrue should be central to the selection of sites. We suggest, as a practical alternative, that several easy to measure factors be identified which we believe are closely linked to the level of benefits we can expect. By using these factors instead of more complex measures, we are making the implicit hypotheses that these factors are adequate "predictors" of the benefits we care about.

The "predictors" we would recommend, by benefit category, are presented Table III-3. We have chosen them as a result of our analysis of the links by which roads lead to the various benefits identified above. There is, however, an element of arbitrariness in any such list. We therefore suggest that the list be reviewed by the GOH and discussed at the proposed road workshop. The objective is to identify a simple set of measures which allow us to predict and compare the level of benefits from roads in different locations.

Table III-3: Road Effectiveness "Predictors" by Trails Project Benefit Category

Road Benefit Category	Effectiveness Predictors
1. Income increases	1. Average volume of main crops/goods per kilometer.
2. Morbidity decreases	2. Disease incidence and projected clinic capacities per kilometer.
3. Production/productivity increases.	3. Average number of hectares uncultivated and estimates of agricultural potential per kilometer.
4. Literary increases	4. Number of school age students not in school and projected shcool capacities per kilometer.

The data on these "predictors" should be easily available and should not take more than about one or two man-days per site to compile. Data on the first "predictor", average crop/goods volume, should be available from central purchasing boards (e.g., Coffee Board or Banco Nacional de Fomento) by area.* In the case of other goods, rough estimates could be obtained by visiting the central trading establishment in the area and ascertaining the main item(s) transported in or out and their volume. If all such data is unavailable, total estimated income of the area would be a rough proxy. Where the incidence of illness is highest, it is maybe due to their lack of access to adequate treatment. Data on the incidence of some readily observable or well documented disease which is prevalent and treatable could be used as a "predictor" of potential gain. However, the estimate of potential gain should be limited by the treatment capacity of current clinics plus additional clinics which might be added were a road available.

With reduced input prices and reduced costs of transport for outputs, the incentives to produce should increase. Data on our suggested "predictor", uncultivated land and agricultural potential, should be available from analysis of aerial photographs by agricultural experts and/or local extension agents. Data on our fourth "predictor", nonenrolled school-age children, should again be available in rough form through central records. Population records give estimates of the school-age population and Ministry of Education records give estimates of enrollment in the area. The difference between these two provides an estimate of unenrolled school-age children. However, as with clinics, potential gains from improved access are limited by the enrollment capacity of existing schools, supplemented by any additional schools which might be established as a result of the road. Precise measurement of these, or any other predictor, is both difficult and unnecessary. Rough estimates are sufficient and represent a major improvement over simple guesswork or narrow cost-benefit analysis.

*/ It may be necessary to secure data from the Ministry of Agriculture for some crops.

The actual "predictors" which are finally chosen should rely on data which are easily available or directly observable.

Once a final list of predictors has been agreed upon and estimates for each of the potential sites are available, a simple cost-effectiveness index can be used to rank-order the sites. The simplest procedure would be to give each "predictor" a value between 1 and 100 for each site. This value should then be "weighted" by a factor reflecting the relative priority of each objective. The weighted values should then be summed to establish an effectiveness index and divided by the cost per kilometer to yield a "cost/effectiveness index". Sites with the highest indexes should receive highest priority for construction.

An example of a cost-effectiveness index application comparing two illustrative sites is shown in Table III-4.

Obviously, the choice of the weights is critical. As they reflect the relative value placed on each objective, we would suggest they be discussed widely with those responsible for establishing such priorities--perhaps at the proposed roads workshop. As a practical matter, the weights should be determined before data are collected to ensure that the index reflects genuine priorities rather than the desire to manipulate the system in favor of a particular road. Unlike the complex GITEC method now in use, the cost-effectiveness index requires a minimum of field data, and will link site selection more closely to national and regional development objectives.

TABLE III-4

ILLUSTRATIVE COST-EFFECTIVENESS INDEX
APPLICATION FOR TWO ROAD SITES

	<u>Benefit Category</u>	<u>Value (1-100)</u>	<u>Priority Weights</u>	<u>Weighted Value</u>	<u>Cost/Km</u>	<u>Cost Effectiveness Index</u>
Site 1	1	70	30	2100	4000	1.5 ==
	2	20	20	400		
	3	100	30	3000		
	4	25	20	500		
			<u>100</u>	<u>6000</u>		
Site 2	1	60	30	1800	3000	1.9 ==
	2	80	20	1600		
	3	20	30	600		
	4	80	20	1600		
			<u>100</u>	<u>5,600</u>		

DECISION: CHOOSE SITE 2

2. Method for Installing the Revised Selection Procedure

The consultancy team recognizes that our proposed selection procedures will require several adjustments in current GOH operations. In order to facilitate a full consideration of the key selection criteria and other procedural issues before the trail sites are chosen, we suggest that a short workshop be held to review the proposed selection criteria and, at the same time, choose the remaining roads to be constructed under the Rural Trails Project.

Many development agencies of the GOH are actively cooperating in a regional approach to planning extension activities in the western Santa Rosa Region. Representatives of these agencies, including field and supervisory staff, are familiar with the rural communities and can provide valuable data on issues such as the local economy, community organization, the level of social services and the potential benefits which could accrue from the construction of access roads. We suggest that these individuals, along with representatives from the Department of Labor Intensive Roads and USAID, participate in a two-day workshop to review the regional development plans and the requests from communities and reach an agreement on the remaining trail sites for this project.

One reason for suggesting this procedure is that the construction of roads provides access to the services of many ministries. It seems, therefore, that a meeting would provide those who have the necessary information on available services, together with those who are responsible for regional development decisions, the opportunity to play a role in the selection process. In addition to the immediate selection decisions, another outcome of this meeting should be an assessment of the selection procedure proposed in this report.

To provide a focal point for a general discussion at the workshop, the PCI team suggests a review of the selection procedure presented in Table III-1. The key issues to be addressed include:

- What social, economic, political and technical criteria are the most crucial to the selection process?
- Who should be involved in making decisions about road construction?
- What data is needed on the area and communities in order to select road sites?
- How can data be obtained inexpensively and who should be responsible for collecting and analyzing it?

Conversations with GOH and USAID officials confirmed that this type of workshop would be acceptable, and that it could be organized and conducted by USAID Mission personnel.*

*/ It would be very useful if the short-run evaluation contractor, discussed in Section IV, could be involved in this workshop.

SECTION FOUR

IMPACT EVALUATION PLAN

A. EVALUATION REQUIREMENTS

The impact evaluation requirements for the Honduras Rural Trails Project contained in project documents include:

- AID and the GOP have agreed to "establish an evaluation program as part of the project, except as the parties otherwise agree in writing. The program will include during the implementation of the project and at one or more points thereafter a) evaluation of progress toward obtainment of the objectives of the project, b) identification and evaluation of problem areas or constraints which may inhibit such attainment, c) assessment of how such information may be used to help overcome such problems and d) evaluation of the overall development impact on the intended beneficiaries of the project."
- With respect to the impact of specific trails, the Project Agreement specifies that "appropriate technical assistance will be contracted to carry out approximately two to three case studies to determine the impact of trails constructed under the project. The scope of work for the case studies, their timing and the source of technical assistance will be agreed upon in writing. If appropriate, the case studies may be carried out in conjunction with the work on the refinement of the trail selection procedure."
- The Project Paper augments the requirements of the impact studies by noting "such aspects as changes in farmgate prices, transportation methods and costs, social effects, local agency executive effectiveness, and the use and availability of public services will be covered. The calculation of the benefit/cost ratio for the specific trail will be made and the incidence of benefits will be determined. The case studies will be undertaken during the first harvest season after the completion of construction since it is the most active period of economic activity."
- The Project Paper indicates that in the conduct of the evaluation "the department will keep records on construction programs, including a detailed breakdown of man days required

and construction costs per kilometer, for each trail and will summarize the results in a trail completion report, a copy of which will be furnished to AID."

In determining the specific scope-of-work requirements after arriving in Honduras, the consultant team was informed by AID and GOH personnel of several additional factors which affected the impact evaluation design. These are discussed briefly below.

First, Mission personnel recognized that the type of impact evaluation which could be conducted within the two-year time span would be very limited and necessarily inconclusive. Their rationale was summarized in the Project Paper as follows:

"Two to three case studies will be carried out to determine the short-run impact of trails constructed during the project. Such aspects as changes in transportation methods and costs and the use and availability of public services will be covered. The incidence of benefits derived from and the social effects of, the trail construction will also be determined. The longer-run impact of trails, such as changes in agricultural productivity, unfortunately, cannot be evaluated comprehensively during a two-year project. The more comprehensive, longer-run impact evaluation would be a logical component of an expanded follow-on program. AID will provide approximately twenty thousand dollars over a two year period to finance these (short-run impact) evaluations." (underlining added)

Mission personnel requested, therefore, that the consultant team provide recommendations for both a short-run impact evaluation and a longer-run impact evaluation. This section of the report contains our work in both areas, with a heavier emphasis on the short-run rural trails evaluation plan.

A second key Mission concern involved the timing of the short-run evaluation effort. There was a great deal of pressure in the Mission to move ahead immediately with the design and implementation of the short-run evaluation for several reasons. The engineering staffs of the USAID and the World Bank had differing opinions about

acceptable technical specifications for Honduras access roads/trails. This difference of opinion was delaying the roads selection and construction process. Both parties, therefore, viewed the short-run impact evaluation as a means of demonstrating the validity of their approach. Secondly, the AID Mission was in the process of moving ahead in the design of an agriculture sector loan which contains a substantial access road component. They were interested in receiving evaluative data from the Rural Trails Project by July 1979 in order to incorporate a feasible rural trails approach in that effort. Finally, one key Mission staff member, with responsibility for the Rural Trails Project, was preparing to leave the Mission and was interested in assuring that short-run impact evaluation issues were clarified before his departure.

Another factor influencing the recommended evaluation design was funding limitations. Only twenty thousand dollars were allocated to conduct the short-run impact evaluation case studies. The field consultants were, however, advised that additional funds might be available if needed. The plan produced by the consultancy team is thus based on the assumption that the short-run evaluation plan could exceed its original cost estimate, i.e., it could run two or three times the amount which had been allocated in the Rural Trails Project Paper, thus ranging from forty to sixty thousand dollars. The field consultants also worked on the assumption that the long-run impact evaluation plan should be designed to be comprehensive and provide a high quality impact assessment. The funding level required for the long-term assessment was not assumed, a priori, to be constrained.

B. METHODOLOGY FOR DEVELOPING IMPACT EVALUATION DESIGNS

USAID's standard methodology for clarifying project evaluation issues uses the "Logical Framework" approach.* The Logical Framework Design

*/ AID, Project Assistance Handbook III, Chapter 3, Appendix 3-H.

Summary facilitates identification of specific objectives and targets in the project against which performance can be assessed. It normally includes measurable indicators and key assumptions (external conditions) on which data can be gathered and analyzed during an evaluation. These elements are to be detailed in an evaluation plan which accompanies a project. As outlined in AID Handbook 3, Appendix 3H, these essential

"elements for evaluation will be incorporated into all project designs from their earliest stages, thereby assuring that the design will permit and facilitate: 1) measurement of progress toward planned targets; 2) determination of why the project is or is not achieving its planned targets; and 3) determination of whether the project purpose continues to be relevant to the country's development needs."

The essential elements referred to here include: baseline data, targeted indicators, progress indicators, planning assumptions, and causal hypotheses.

In the remaining part of this section we will follow a five-step procedure in detailing the short run and long-run evaluation designs for the Rural Trails Project. The five steps involved in developing the impact evaluation plan are:

1. Specify key evaluation issues and decisionmakers.
2. Determine when decisionmakers need evaluation results.
3. Specify what evaluation information is required in decisionmaking.
4. Select an evaluation research design.
5. Prepare an evaluation implementation plan.

The substantive content for the short-run and long-run evaluation plans is drawn from Rural Trails Project documents along with information provided by GOH and USAID/Honduras staff.

C. PROPOSED SHORT-RUN EVALUATION PLAN FOR THE RURAL TRAILS PROJECT

Step One: Specify Key Evaluation Issues and Decisionmakers

Based upon our review of the Rural Trails Project documents and our conversations with rural trails decisionmakers, PCI identified eight short-run impact evaluation issues. These issues are presented in Table IV-1 along with a list of their policy implications and the location of decisionmakers who are immediately interested in each issue.* The issues presented in Table IV-1 emphasize the expected positive consequences of this project. As such, they exclude several negative impacts or burdens which frequently result from rural access projects. The potential burdens, listed below, are also of concern to GOH and USAID decisionmakers and should be assessed during the short-run evaluation:

- o Increase in community conflict or factionalism.
- o Migration patterns which may disrupt family life and decrease the availability of household labor.
- o Soil and forest depletion.
- o In-migration of wealthy persons who purchase land and contribute to unequitable land tenure patterns.
- o Reduced business for mule train owners.

Step Two: Determine When Decisionmakers Need Evaluation Results

The Rural Trails Project documents specify that a short-run impact evaluation should be completed following the second year of the project, i.e., after March 1980. This period of time should be sufficient to evaluate the short-run impact of the project funded trails which were under construction in November 1978 and are likely to

*/ Table IV-1 also relates each key issue to the "narrative" column of the Trails Project Design Summary presented earlier in Table II-2.

TABLE IV-1

POLICY AND PROGRAM IMPLICATIONS OF RURAL TRAILS IMPACT EVALUATION AND DECISION MAKERS

Relationship to Project Objectives	EVALUATION ISSUE	POLICY AND PROGRAM IMPLICATION	DECISION MAKERS		
			GOH	AID	OTHER
0 > G *	1. What changes in socio-economic status have occurred in isolated rural communities and to what extent are these changes attributable to the rural trails?	1. Proportion of public investment made in rural roads	CONSUPLANE	USAID-Ag Sector II Loan	IHCAFÉ World Bank
0 > P	2. To what extent are the economic and social services received by isolated rural communities and their distribution within communities affected by the construction of a rural road?	2.1. Timing of construction of rural roads in relationship to implementing economic and social programs.	CONSUPLANE PRODERO MRN MOH MOE	USAID-Ag Sector II Loan Human Resources Development Programs	IHCAFÉ World Bank
		2.2. Effects of timing of rural road construction on the nature of the economic or social programs	CONSUPLANE PRODERO MRN MOH MOE	USAID-Ag Sector II Loan Human Resources Development Programs	
0 > G	3. To what extent are the types of economic and social impacts and their distribution among isolated rural communities affected by the type of rural road constructed?	3.1. Determination of the type of road to be constructed for different "classes" of communities based on economic, social, and ecological characteristics (present, potential) 3.2. Integration of rural road construction planning into regional development strategy as a "pacing" variable for economic and social program plans.	CONSUPLANE PRODERO SECOPT CMO MRN CONSUPLANE PRODERO MRN MOH MOE JNBS SECOPT CMO	USAID-Ag Sector II Loan USAID Program Loan Ag Human Resources Development	IHCAFÉ World Bank IHCAFÉ

*/ These letters refer to hypothesized relationships between levels in the Project Design Summary as presented in Table II-2.

Key: G = Goal; P = Purpose; O = Output; and I = Input

cont.

TABLE IV-1 CONT.

POLICY AND PROGRAM IMPLICATIONS OF RURAL TRAILS IMPACT EVALUATION AND DECISION MAKERS

Relationship to Project Objectives	EVALUATION ISSUE	POLICY AND PROGRAM IMPLICATION	DECISION MAKERS		
			GOV	AID	OTHER
I > 0	4. For different ecological conditions, what is the durability of different types of rural roads?	4. Adjustment of Road Network Plans (Plan Vial) to make use of most durable rural road types in different areas within regions.	SECOPT CMO CONSUPLANE	USAID Ag Sector II Loan Engineering	IHCAFÉ
I > 0	5. What is the effect of different maintenance systems on the durability of different types of rural roads?	5.1. Changes in public investment to reinforce maintenance systems for existing and new rural roads. 5.2. Adjustments of Plan Vial to make use of rural road type, which are the most durable given the type of maintenance system that can be perpetuated.	SECOPT CMO CONSUPLANE	USAID Ag Sector II Loan Engineering	IHCAFÉ
I > 0	6. Given the different social, economic, and organizational characteristics of different communities, what is the most effective and least expensive way of constructing rural roads?	6.1. Determination of circumstances under which different forms of community participation are most effective. 6.2. Determination of circumstances under which different road construction techniques are most appropriate. 6.3. Determination of circumstances under which different approaches to organizing construction projects are most effective. (e.g., constructing "clusters" of projects, building a road "to" the community vs. "from" the community, use of local foremen vs. foremen promoted from projects elsewhere, etc.).	CMO INBS	USAID Program Engineering	IHCAFÉ World Bank

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cont.

TABLE IV-1 CONT.

POLICY AND PROGRAM IMPLICATIONS OF RURAL TRAILS IMPACT EVALUATION AND DECISION MAKERS

Relationship to Project Objectives	EVALUATION ISSUE	POLICY AND PROGRAM IMPLICATION	DECISION MAKERS		
			GOV	AID	OTHER
I > C (cont.)	7. Given the different social, economic, and organizational characteristics of different communities, what is the most effective and least expensive way of maintaining rural roads?	<p>7.1. Determination of circumstances under which different forms of community participation are most effective?</p> <ul style="list-style-type: none"> • Incentive Systems <ol style="list-style-type: none"> 1. Payment for work 2. Voluntarism 3. Community obligation/peer pressure 4. Sub-contracting work 5. Etc. • Coordinating Mechanism <ol style="list-style-type: none"> 1. Alcaldía 2. Patronato 3. Regional Committee 4. Etc. • Etc. 	CMO INBS	USAID Program Engineering	IHCAFÉ World Bank
I > O	8. What is the least expensive way of selecting priority trail sites from among the isolated rural communities in need of rural roads?	<p>8.1 Context for site selection (national, regional, area)</p> <p>8.2 Entities responsible for site selection in long run.</p> <p>8.3 Relationship of selection criteria to development priorities.</p> <p>8.4. Investment required for site selection (i.e., use of secondary vs. primary sources of data.)</p>	CMO MRN PROCERO	USAID Program Engineering	IHCAFÉ World Bank

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be completed in mid-1979. If this schedule is adhered to, the final data collection phase for the short-run evaluation study will occur approximately one year after the trails are in service. Thus, sufficient time will have elapsed to allow evaluation of the impact which occurs during one complete agricultural production cycle, following construction of a trail (see Figure IV-1 for a depiction of the production cycle). Initial baseline information needs to be available for Mission use in conjunction with a proposed agriculture sector loan by July 1979.

Step Three: Specify What Evaluation Information is Required

The key issues for the short-run evaluation were presented in Table IV-1. In that table each of the issues was cross-referenced by the type of information needed to address them. This was accomplished by relating each issue to measurable indicators in the Trails Project Design Summary presented in Table II-2. The "Indicators" column of that summary specifies the information required to address each of the key evaluation issues.

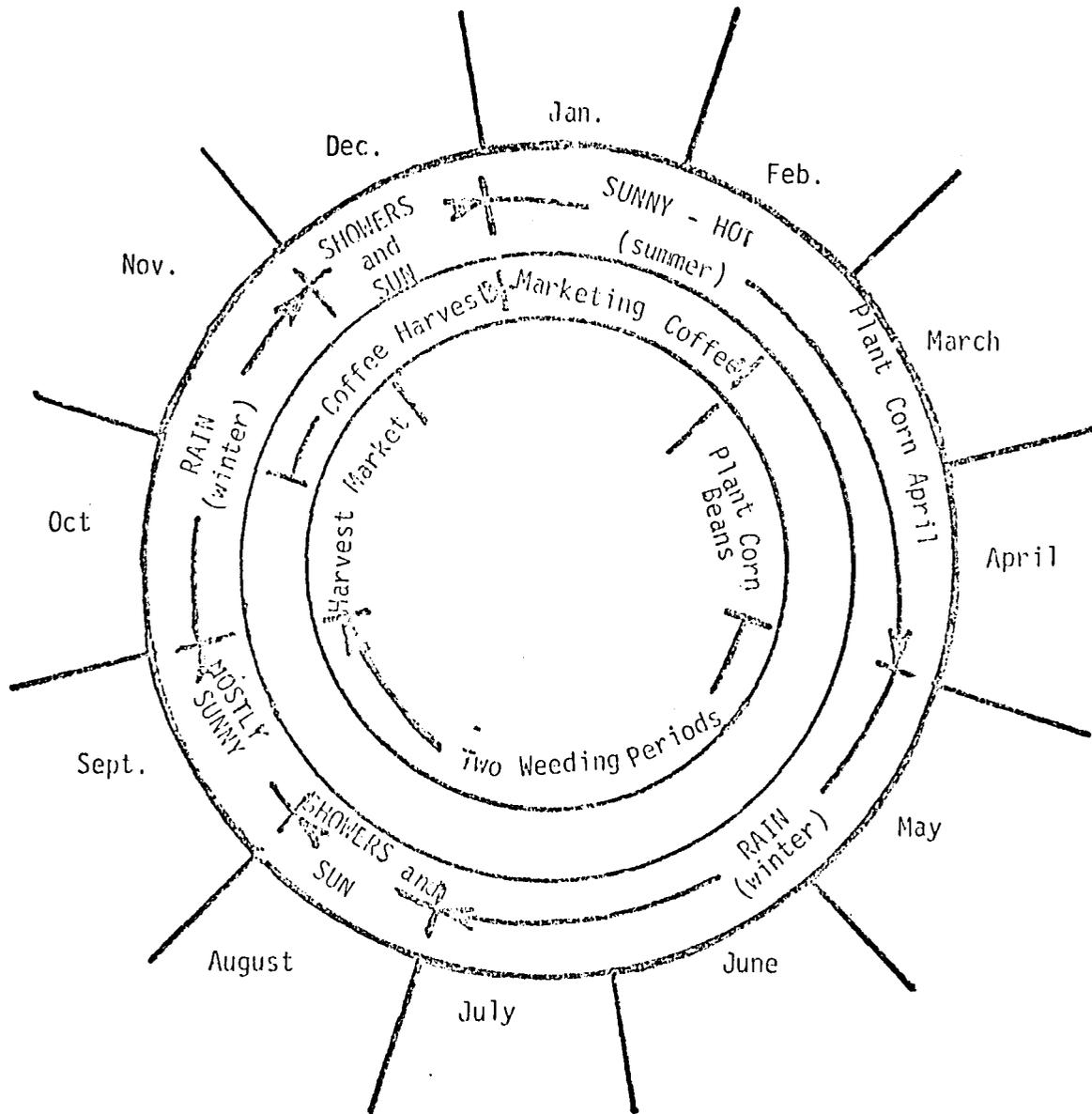
Step Four: Select an Evaluation Design

a. Research Design

The short-run evaluation research design that we propose for this project involves a comparison of areas receiving 3-meter trails with other similar areas which do not receive 3-meter trails. More specifically, we suggest that four different areas be included in the evaluation as follows:

1. A coffee-growing area serviced by a new labor intensive 3-meter project trail.
2. A non-coffee growing area serviced by a new labor intensive 3-meter project trail.
3. A coffee-growing area serviced by a new labor-intensive 4-meter access road constructed in the same region under a different project.
4. A coffee-growing area similar to #1 and #3 where no access trails are currently planned.

FIGURE IV-1
CLIMATIC AND CROP CYCLE, LA LABOR
SANTA ROSA REGION



For each of these areas, we propose the collection and analysis of longitudinal and comparative data.

As stipulated in the Rural Trails Project Agreement, case studies are to be used in examining the comparison areas. In the case studies individual communities would be examined. A case study can help accomplish one of several things:

- o Trying to formulate hypotheses about the population.
- o Trying to determine cause and effect relationships (answer a set of why questions) about a single situation
- o Trying to find out how people use concepts and words so that we can develop instruments to use in other types of research.
- o Trying to detect change over time on some variable(s).

Compared to sample surveys which tend to examine a small number of variable across a large sample of units, the case studies will allow AID to examine a large number of variable and conditions across a small number of units. Case studies are particularly useful for securing background information. Because it is intensive, the case study brings to light important variables, processes and interactions which deserve extensive attention and are often overlooked in other approaches. These case studies will allow AID to generate new hypotheses for further study. However, the case studies cannot be expected to provide representative data on all communities in the project area since the number of communities involved will be too small. (When the number of cases adequately represents the universe--30-40 cases aer usually sufficient--case studies can be used to make generalizations about larger populations.)

In the following paragraphs data analysis and data collection for this effort are addressed.

a. Data Analysis Approach

Evaluation "information" consists of project-related data which is organized and presented in a useful way for USAID and the GOH decision-makers. Thus, the role of the analysis plan is to illustrate how the case study data will be analyzed and transformed into useful information. A secondary function of the analysis plan is to suggest areas where data is not needed as well as to point out areas where additional data is required.

Our tentative suggestions for the short-run evaluation analysis plan are presented below. A final, more detailed plan should be completed by the evaluator early in the evaluation effort in order to allow for sufficient time to revise data collection plans.

The analysis plan we suggest is based on two types of analytic data displays: longitudinal and comparative impact tables. The longitudinal tables will present preproject and postproject impact data. These displays will provide project decisionmakers with information on the changes occurring in each of the four case study areas at several points during the project. The descriptive tables will be developed in June 1979 (for baseline data) and completed in mid-1980 at the end of the short-run evaluation.

The second type of display will consist of comparative tables on changes occurring across the case study areas. For example, one table might compare the before-project status of areas which receive and do not receive rural trails with postproject changes in the same areas. The comparative tables will assist AID and the GOH in determining whether the 3-meter trails are cost-effective relative to other types of access trails. The comparisons will serve to "control" for alternative causes which could explain the observed changes in project versus non-project areas. The comparative analysis will also help to isolate the

process by which various external conditions contribute to or inhibit full acceptance of the road by local inhabitants. Detailed table formats and analysis procedures should be established during the early stages of the evaluation. By that time accurate information will exist on the availability and quality of project data.

b. Data Collection Approach

For each case study, three methods of collecting data appear to be relevant:

- Examination of existing secondary sources, e.g., records kept by the GOH and AID.
- On-site interviews. The initial interviews conducted at the case study sites will probably need to be relatively unstructured, i.e., both allowing the development of questions on the spot and accepting unstructured (open-ended) answers. However, it should be possible to use preliminary (pre-test) interviews to develop a more structured approach that can be administered with some confidence across the case study sites.
- Observation. The field research team will also need to carry out some simple procedures that involve observing who uses the trail, how project participants behave during the trail construction and maintenance phases, and how the community in general changes as a result of the new trail. For the most part these observations should be linked to the on-site interviews so that the two data collection methods provide validated (cross-checked) information.

The sources of data for the evaluation are briefly mentioned in the "means of verification" column of the Trails Project Design Summary presented in Table II-2 and are discussed in more detail below.

Data for measuring immediate project results are primarily located in the file documents of the project implementation unit, in this case the Department of Labor Intensive Roads. For example, data on the kilometers of trails constructed and procedures followed in

employing construction and maintenance labor, are contained in the Department construction records. Providing this information to USAID is stipulated in the Project Agreement as a responsibility of the GOH. Thus, this information should be readily available to the evaluator.

Data on trail use and target group impact are more difficult to obtain. These data originate in the trails area among targeted beneficiaries--in this case small farmers, truckers, extension and social agency workers--and in local or national organizations. The primary method for collecting this data will be interviews and observations in the case study areas.

A final category of data relates to the measurement of key external conditions which influence project results. These conditions are identified in the Trails Project Design Summary in Table II-2 and further specified in Table III-3. Data to measure these conditions also originates in the trails project area and relate to the specific attributes of the project environment, such as economic, social, and political incentives for behavior change.

A major task of the evaluator will be to design a collection instrument for gathering and recording data from these various sources.

Step 5: Prepare an Evaluation Implementation Plan

a. Evaluation Phases

The short-run evaluation should be carried out in three phases as discussed below.

Phase I: Evaluation Initiation

The principal tasks during the initiation phase will be to establish working relationships with USAID and GOH officials; to detail the evaluation design; and to select the 4 case study areas. Attention will have to be given to the development of a comprehensive data collection instrument and information display tables. It is estimated that this phase will take approximately 9 person weeks and should commence no later than May 1979. During this time, the evaluation consultant should work in both Tegucigalpa and Santa Rosa de Copan. Field work should be conducted in all of the case study areas.

Phase II: Interim Assessment

During the interim 5 week phase, the evaluator will return to each of the four research sites for approximately one week to assess initial changes and observe on-going community processes. The major task during this phase is to monitor changes in the communities and to determine the extent to which GOH agencies are responding to the trails construction activity.

Phase III: Final Evaluation Period

The final evaluation period is scheduled to last 8 weeks. During that time the contractor will complete the field investigations and prepare the final report. Activities will include meetings with AID and GOH officials in Tegucigalpa and Santa Rosa de Copan and field work in all the case study areas.

b. Evaluation Personnel

A senior level anthropologist with rural development case study experience will be required to conduct this impact evaluation. The

evaluator should have substantial experience in Latin America highlands with rural development activities, preferably with experience in coffee growing communities. The individual must be fluent in Spanish and have a demonstrated capacity for developing data collection instruments and writing reports in Spanish.

c. Evaluation Scope-of-Work

A detailed scope-of-work that the USAID Mission can use to procure the evaluation contractor to implement the proposed short-run evaluation is included as Exhibit IV-1 at the end of this Section. This scope contains additional details about the proposed phases of the evaluation and the contractor specifications.

d. Evaluation Implementation Schedule

An implementation schedule that the Mission can follow in contracting for the short-run evaluation is included as Exhibit IV-2 to this Section.

e. Short-Run Study Cost Estimate

A cost estimate for the short-run evaluation is included as Exhibit IV-3 to this Section.

D. PROPOSED LONG-RUN EVALUATION PLAN FOR THE RURAL TRAILS PROJECT

The need for a long-run impact evaluation is mentioned in the Project Paper, but no provisions are made for its design or funding. The evaluation plan discussed here is included because Mission personnel and GOH staff requested the consultancy team to propose a feasible approach to measuring long-run impact which would extend beyond the 2 year life span of the project. There was substantial concern that the short-run evaluation would not adequately address the key GOH

and USAID evaluation issues due to its limited time frame. USAID personnel indicated that financing should not be considered as a constraint in the long-run evaluation plan.

The design presented here builds upon and supplements the short-run evaluation plan. It addresses the same evaluation issues--with a change in emphasis--and continues to rely on the case study approach to data collection. In addition, it involves the analysis of supplemental, roads-related survey data currently being collected by GOH agencies. The consultancy team views the long-run evaluation plan as illustrative. Emphasis is given to general research concepts and strategies; detail is minimized.

Step One: Specify Key Evaluation Issues and Decision-Makers

The scope of the long-run evaluation differs from the short-run study in two respects. First, the priority attached to the important evaluation issues alters. Second, the geographical coverage is expanded to encompass several additional types of rural access roads.

a. Priority Evaluation Issues

The key evaluation issues in the long-run evaluation are those that require a substantial period of time to observe and understand.

The following issues, identified by their position in Table IV-1, should receive priority attention in the long-run impact study:

- Issue 1. What changes in socio-economic status have occurred in isolated rural communities and to what extent are these changes attributable to the rural trails?
- Issue 3. To what extent are the types of economic and social impacts and their distribution among isolated rural communities affected by the type of rural road construction?
- Issue 4. For different ecological conditions, what is the durability of different types of rural roads?

Issue 5. What is the effect of different maintenance systems on the durability of different types of roads?

Issue 7. Given the different social, economic, and organizational characteristics of different communities, what is the most effective and least expensive way of maintaining rural roads?

For Issue #1 above, the long-run study should also emphasize secondary effects which may occur as a result of the transportation network. A list of Honduras specific potential secondary effects is presented in Table IV-2.

b. The Setting of the Long-Run Impact Study

In our visits to the Southern and Western regions of Honduras, we observed that differences in rural roads benefits are frequently related to differences in communities. Community differences occur both between and within regions and are related to such factors as tenure patterns, land use, commercialization of produce, population density, employment composition, income distribution, access to social services, community organization and participation practices. For instance, in the South, due to Hurricane Fifi and repeated drought, the small farmer population has lost much of its productive and commercial capacity. Payment for work on roads is eagerly received both in cash and in food, and there is a surplus of manpower willing to participate in roads construction activity. Although hilly, the soil conditions and shorter rainy season are favorable for year round road construction. Local patronato institutions are relatively strong in this region and can be used to facilitate community road construction and maintenance.

By contrast, the West has a wider range of agricultural activities, geographical conditions and community types. Small farmers appear to be economically better off than in the South, especially the coffee producers. In this area, wage and food payments from road work are less of a work incentive. Some of the more affluent

TABLE IV-2

POTENTIAL SECONDARY EFFECTS OF RURAL ROADS
IN HONDURAS BY TYPE OF EFFECTS

<u>List of Effects</u>	<u>Type of Effect</u>
I. Migration (age, sex, and economic status) <ul style="list-style-type: none"> A. Out-migration (to where) <ul style="list-style-type: none"> 1. Effects on locally available labor 2. Effects on marriages and community stability B. In-migration (from where) <ul style="list-style-type: none"> 1. Effects on availability of labor 2. Effects on wages received by local labor 3. Purchasing of local lands, ect. <ul style="list-style-type: none"> a. Bolster economy b. Displacement of local residents c. Favorable or negative effects of competition 	(+ = positive) (- = negative) (+, -) (+, -) (+, -) (+, -) (+) (-) (+, -)
II. Focus of decision-making within community <ul style="list-style-type: none"> A. Reinforcement of existing structure <ul style="list-style-type: none"> 1. Organizations 2. Social, economic, political groups B. Shifting of influence among organizations/groups <ul style="list-style-type: none"> 1. New organizations/groups 2. Elimination of existing organizations/groups 3. Factionalism 4. Conflict 5. Competition 	(+, -) (+, -) (+, -) (+, -) (+, -) (+, -) (+, -)
III. Control over resources <ul style="list-style-type: none"> A. Land tenure B. Existing intermediaries (e.g., mule train owners) C. New Intermediaries D. New sources of employment <ul style="list-style-type: none"> 1. Within community 2. Elsewhere (e.g., temporary or part-time jobs) E. Use of services <ul style="list-style-type: none"> 1. Existing influential groups 2. Other groups (e.g., women) 	(+, -) (+, -) (+, -) (+, -) (+, -) (+, -)
IV. Awareness and perception of opportunities <ul style="list-style-type: none"> A. Community plans B. Personal plans 	(+, -) (+, -)

farmers prefer to pay for rural road construction rather than work on the roads themselves. In addition, the topography of the upper valleys makes road penetration difficult (e.g., los Higuitos). The soil composition in the area (soft and largely clay) coupled with the longer rainy seasons slows down road construction and increases the need for adapting work schedules and methods to climatic variations. The different crop cycles (coffee, corn, rice, beans) increase the variability in the manpower available for road work. In addition, the patronato is reportedly not as strong in lower valley areas where asentamientos and cooperatives have taken hold. Conflicts between community organizations are also reported. In general, the potential for economic benefits appears to be greater in the West than in the South.

In summary, rural transportation strategies need to fully consider the characteristics of an area. Because of such differences, the types and degree of impact of roads should be expected to vary within and between regions. A meaningful impact study design should allow for such variations.

Interviews in Recursos Naturales, CONSUPLANE, SECOPT, and AID confirm that the GOH is moving toward the development of a regional strategy for coordinated planning of rural activities. Our team members met with regional and sectoral planners from CONSUPLANE in Tegucigalpa. In the Western region, the team met with the Director of PRODERO, two representatives from different development agencies (SECOPT, Ministerio de Salud) operating within the region responsible for coordinating planning through PRODERO and the regional leaders from two of the development agencies (IHCAFE and Ministerio de Salud). The following points summarize what was discussed during the sessions:

- A spatial planning procedure, referred to as "central place theory", is being applied in setting up 11 "sub-polos de desarrollo" within the region. These "sub-polos" appear to represent population concentrations each having a major market and service center. The extent to which they correspond to ecologically discrete areas has not been verified.

- PRODERO has facilitated the establishment of regional development objectives based on a "diagnostico regional" and program inputs from the majority of development agencies operating in the region. These objectives include:
 - decrease out-migration through increasing income producing activities;
 - avoid attraction of labor from outside of the region by keeping the scale of new agro-industrial projects small and focused on satisfying local markets (e.g., brushes, school desks, and benches);
 - orient commercial flows to "sub-polos" by strengthening them as service centers and interconnecting them with secondary roads;
 - increase the utilization of social services (e.g., secondary schooling, health services);
 - generate increased production primarily for regional consumption (e.g., cereals, fruits, pork production and processing).
 - generate long-run sources of income (e.g., reforestation, tourism).
- PRODERO does not appear to be managing development activities-- it provides the opportunity for development agencies to coordinate their plans in support of regional objectives.
- The regional road plan currently focuses on completing the inter-connecting network of secondary roads to "sub-polo" centers. Although not an immediate priority in this plan, IHCAFE, and Caminos por Mano de Obra access/penetration road projects are highly valued by the participating agencies. Their leadership has consistently expressed that road access is the key factor that will enable broad extension of social and economic service benefits within the region.

In our discussions with regional personnel, it was obvious that various agencies and institutions valued the impact evaluation study for different reasons related to their areas of decision-making responsibility. A list of the key evaluation issues by agency is provided in Table IV-3. Some additional issues raised by the regional decision-makers that can be influenced by the impact study include:

- Can increases in agricultural productivity and commercialization be induced through extension services with the presence of a rural road? Without the presence of a rural road? If production increases require the presence of both a road and extension services, then selection criteria should reflect this relationship.

TABLE IV-3

KEY EVALUATION ISSUES OF IMPORTANCE TO DECISION-MAKING AMONG INSTITUTIONS CONTACTED

ISSUES	U.S. GOVERNMENT			GOB			OTHER
	AID/W	USAID	CMO	PROGRESO/CONSUPLANE	RECURSOS NATURALES	SALUD PUBLICA	INHCAFE
1. What types of roads will cost-effectively meet the development needs of what types of communities?	Guidelines for LA road projects & programs	Clarification of terms of Trails Grant, Modification of Trail Selection Procedure & Criteria, Trail Construction as complementary element to regional road building	Appropriate mix of road projects w/in West Capitalizing on economies between road projects-	Sources of roads building coordinated Scheduling of other projects (ag, industry, health, ed)	-----	(Same as below)	Role in road construction Relationship to other road builders
2. To what extent are social and economic development activities accelerated by the introduction of roads?	Agency investment implications	Ag Sector II portfolio determination Timing of health & nutrition investments	Extent to which manual labor makes sense in West (employment objective as getting the road built)	Investment mix and timing to meet regional objectives (Delicate: employment opportunities vs access to outside)	Investment mix & Timing	Readjust delivery strategy - Extension of coverage - Facility Support capacity - Logistical Support	(Same as above)
3. How can road construction plans be effectively incorporated into regional development strategies?	Integrated rural development program guidelines for LA countries	Coordination of investments & timing on a regional basis	Road selection & construction w/in regional context and timetable National Division of responsibilities among agencies	Role in site selection Strength of role strategy linked to roads & politically expedient	Coordination of investments & timing on a regional basis Role in site selection	(Same as above) Role in Site Selection	Same as above Role in site selection

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- Will a greater percentage of patient referrals as compared to direct treatment be made by guardianes de salud in areas where roads are available? If so, this may have implications for health center demand and for the skill requirements of the guardianes de salud working in different rural areas.
- Will a greater percentage of school-age children from isolated communities continue their education through the sixth grade if a rural road is present (i.e., easier access to upper grades in the municipal center)? If so, this may influence the scheduling of new school construction and the desired location of nonformal rural education interventions.

A central issue requiring investigation before making investments in additional schools, health centers, grain storage facilities, etc. has been clearly stated by one of the persons interviewed:

What will bring more service benefits to the greatest number of people at the lowest cost: building additional service facilities or constructing roads?

The challenge facing PRODERO (on which the impact study can perhaps shed some light) is whether a road intervention is sufficient in itself to bring about desired benefits or whether other complementary socioeconomic programs must accompany road construction and maintenance.

One of the recurring questions to be tested by this study is whether a 3 meter jeep trail can bring the same benefits to an isolated community as a more expensive 4 meter access road or tractor-blazed road. An alternative question is under what ecological, economic, and social conditions is each type of road most appropriate? Answers to these questions are vital in determining "appropriate investment doses" to make the best use of limited resources. These questions have also been raised by the people promoting and building rural roads who have expressed a need to understand what road options are feasible and under what conditions each is most suitable. These questions stem from the fact that different types of rural roads have been and are being constructed in the Western region by different implementing agents. These types include:

- Tractor-blazed roads to coffee producers in upper valleys-- IHCAFE
- Jeep trails to isolated upper valley communities--CMO/AID
- Access roads to isolated lower and upper valley communities-- CMO/IBRD, SECOPT.

Two other issues were mentioned frequently and deserve special attention. First, the development of low-cost community based maintenance schemes is an integral component of the pilot Trails Project. These schemes should receive priority attention throughout the long-run evaluation. Second, the long-run evaluation team should give high priority to the measurement and analysis of road related benefit-incidence.

Step Two: Determine When Decision-Makers Need Evaluation Results

The long-run impact evaluation is scheduled for a period of four years. We would propose that the evaluation study begin in the mid-part of 1980, soon after the short-run evaluation is completed-- and be completed in 1983. The study should include an interim impact assessment in 1981 and the final assessment in 1983. The 4 year period is sufficient to compare short-run and long-run socio-economic impact.

Step Three: Specify What Evaluation Information is Required

The specific information required to address each of the key long-run evaluation issues is presented in Table III-1 as supplemented by the indicators listed in Table II-2.

Step Four: Select An Evaluation Research Design

a. Research Design

We propose that eight communities in the Western and Southern regions be selected as the principal case study units. One of the criteria to be used in selecting the cases is the economic/ecological nature of the geographic area: four communities should be selected from upper-valley coffee areas and four from lower-valley grain producing areas. The other variable is the type of rural road serving the communities. For both the coffee area and grain area, one community should be selected that has a 3-meter jeep trail (hand labor), another with 4-5 meter tractor-blazed access road (minimal hand labor), a third with a 4 -meter hand labor access road, and a fourth with no road. To the extent possible, each community, except the "control" communities, should have had the use

of the road for approximately one year prior to the commencement of the study (see Figure IV-3 for a depiction of this design). The case study areas in the western region should include the same areas which were used in the short-run impact evaluation. This will allow the long-run evaluation to build on and benefit from the results of the short-run assessment. The other aspects of the research design and strategy for the long-run evaluation are similar to those presented earlier for the short-run evaluation.

As a practical matter, coordination with PRODERO and related agencies will be essential in the development and implementation of the long-run impact study. Selection of cases should be a joint endeavor. In this way, "contamination" of control and treatment communities can be avoided. For instance, a road may not exist in an area at the time of selection, but may be planned for the study period in which case it would be inappropriate for inclusion as a control area.

b. Data Analysis Plan

The analysis plan for the long-run evaluation is a more detailed version of that presented for the short-run evaluation. A detailed analysis design should be completed at the early stages of the long-run effort. This will allow sufficient time to influence data collection requirements and the development of an appropriate questionnaire.

c. Data Collection Approach

A case study approach relying on use of available data, on-site interviews, and observation is proposed for the long-run study.

	COFFEE AREA	GRAIN AREA	TOTAL
JEEP TRAIL	1	1	2
TRACTOR BLAZED ROAD	1	1	2
4 METER ACCESS ROAD	1	1	2
NO ROAD	1	1	2
TOTAL	4	4	8

FIGURE IV-3

CHARACTERISTICS OF COMMUNITIES TO BE SELECTED FOR STUDY

The data sources for different indicators are similar to those discussed in relation to the short-run study. Additional attention should be given to identifying and using available survey information collected in conjunction with other GOH activities. For example, supplementary longitudinal data on roads communities should be available from cadastral surveys.

Step Five: Prepare An Evaluation Implementation Plan

a. Study phases

The long-run impact is divided into seven phases.

Phase One: Retrospective Case Study

During this phase, the eight case study communities will be studied and baseline data assembled. Aerial photographs should be considered as an important baseline option. Existing data sources will be evaluated, and where possible, adopted for evaluation purposes. Using the baseline data, study hypotheses will be refined; short-run indicators adjusted, data collection strategies and instrumentation developed, and a first draft of the detailed study design will be completed.

Phase Two: Study Follow-Up

Follow-up on the case studies from the original eight communities will be carried out to detect changes over time. Process data regarding road related changes will be collected from the six areas where rural roads are located. Study design, indicators, and evaluation instruments will be refined during this period. Qualitative and

quantitative findings from case studies will be assembled and integrated with quantitative data from available secondary sources.

Phase Three: Case Study Follow-Up and Preliminary Analysis

Follow-up on the eight case study communities will be completed. All data will be analyzed, significant changes will be reported, and the study design will be refined.

Phase Four: Interim Evaluation, Analysis, and Redesign

After completing the follow-up and tabulation, indicators will be analyzed and hypotheses "tested". Information gaps will be identified. Additional hypotheses and indicators will be incorporated into a revised study design along with a modified collection plan. This plan may include the selection of additional communities (6-8) for participation in modified case studies, if necessary to fill gaps and/or demonstrate representativeness. An interim report will be submitted.

Phase Five: Case Study Follow-Up and Analysis

In Phase 5, the Phase 3 activities will be updated. Long-run indicators of change and impact will be examined.

Phase Six: Case Study Follow-Up and Analysis

The Phase 3 activities will be repeated.

Phase Seven: Final Evaluation

After completing follow-up on the eight case study communities, all qualitative and quantitative data will be analyzed and key issues will be addressed. Policy and program recommendations will be made based on study findings and conclusions. In addition,

a set of "Guidelines for Rural Road Planning, Construction, Maintenance and Evaluation" will be prepared.

b. Study Team

The recommended evaluation team would include:

- an anthropologist (team leader) with substantial field experience in rural areas, preferably in Latin America, highlands, agriculture, and rural infrastructure development. This individual must be fluent in Spanish (equivalent of FSI 3+) and be able to develop data collection instruments and write reports in Spanish.
- an agricultural economist with substantial experience in field research and data collection strategies. This person should have fluency in Spanish with an FSI rating of 3 and be capable of analyzing secondary data sources in Spanish. Experience in using aerial photography for research is desirable.
- a social science researcher (e.g., rural sociologist, sociologist, economic anthropologist) with extensive research design and analysis ability. Also required are program or project design skills and fluency in Spanish with an FSI 3 rating or equivalent. Field experience in Latin America is desirable.
- an anthropologist (research assistant) with minimum of two years of field experience in rural Latin America and fluency in Spanish with an FSI rating of 3 or equivalent. Individual must have case study experience as well as quantitative data collection and analysis skills.*

c. Actions for Completing the Long-Run Impact Evaluation Plan

A detailed scope of work is needed before the long-run evaluation can be procured. The tasks involved in completing the detailed scope include:

* It is important that at least one of the evaluation team members have professional civil engineering credentials and rural road construction experience. As an alternative, the civil engineer might replace the anthropologist research assistant.

1. Reviewing and modifying the study design
 - a. evaluation issues
 - b. specific indicators
 - c. research design, approach, and methods
 - d. study schedule and budget
2. Critiquing the existing data base available in Honduras and indicating specific uses of data from available sources;
3. Developing first drafts of case study protocols, monitoring techniques, mini-survey interview forms, and other data collection instruments;
4. Developing a tentative qualitative and quantitative analysis plan;
5. Specifying how nationals are to be included in the study and what kinds of skill transfers are important and realistic;
6. Reviewing and incorporating USAID/Honduras and CMO critiques of this consultancy report.

d. Implementation Schedule

An illustrative implementation schedule for the long-run evaluation is attached as Figure IV-4.

e. Estimated Long-Run Study Cost Estimate

The estimated 4 year budget for the long-run study is attached as Table IV-4.

STUDY PHASES	SUMMARY CHARACTERISTICS	STUDY SCHEDULE			
		1980	1981	1982	1983
PHASE 1: Retrospective Case Studies	Baseline and implementation of study design	█			
PHASE 2: Case Study Follow-Up Monitoring Process Studies	Detrarily change and analyze process where roads in construction.		█		
PHASE 3: Follow-Up, Preliminary Analysis and Refinement	Monitor and analyze changes, adjust design and data collection instrumentation		█		
PHASE 4: Interim Evaluation, Analysis, Redesign	Analysis, study and sub-study reports relationship between quantitative analyses, identification of limits and gaps in data, redesign		█		
PHASE 5: Follow-Up, Analysis and Study Adjustment, Additional Case Study Communities	Monitor long-term changes anticipated, examine generalizability of findings to other areas			█	
PHASE 6: Follow-Up on All Case Study Communities	Monitor and analyze long-term changes, adjust design and data collection instrumentation			█	
PHASE 7: Final Evaluation	Analysis, evaluation, policy and program recommendations, documentation				█

FIGURE IV-4

(ILLUSTRATIVE) PHASING OF LONG-RUN IMPACT EVALUATION STUDY:
1980-1983

TABLE IV-4

ESTIMATED BUDGET FOR FOUR YEAR COMPREHENSIVE EVALUATION

(IN U.S. DOLLARS)

	DAILY RATE	YEAR 1		YEAR 2		YEAR 3		YEAR 4		TOTAL COST
		DAYS	COST	DAYS	COST	DAYS	COST	DAYS	COST	
A. DIRECT LABOR										
1. Anthropologist	160	150	24,000	50	8,000	70	11,200	70	11,200	54,400
2. Agricultural Economist	135	35	5,100	-	-	-	-	-	-	5,100
3. Social Scientist	145	55	7,975	10	1,450	-	-	36	5,220	14,645
4. Research Assistant (Anthropologist)	80	170	13,600	60	4,800	60	3,200	60	3,200	24,800
Sub-Total			50,675		14,250		14,400		19,620	98,945
Overhead (100%)			50,675		14,250		14,400		19,620	98,945
B. OTHER DIRECT COSTS										
1. International Travel	400	8	3,200	5	2,000	2	800	2	800	6,800
2. Secretarial Support (local)	35	40	1,400	30	1,100	15	600	15	600	3,700
3. Local Travel			4,500		4,000		2,000		2,000	12,500
4. Per Diem at: \$ 49/day (Tegucigalpa) ^{aver.} \$ 35/day (other) } 342		517	21,714	151	6,362	130	5,838	184	7,728	41,622
5. Miscellaneous			3,000		2,000		1,000		1,000	8,000
Sub-Total			135,164		43,942		39,038		51,358	269,512
Inflation Factor (10%)			-		4,394		3,904		5,137	13,435
Sub-Total			135,164		48,336		42,942		56,505	282,947
Fee (8 1/2%)**			8,615		2,665		2,693		3,569	17,642
Total Cost			143,779		51,001		45,635		60,174	300,589
*Note: We assume 90% of time spent in Honduras at minimum										
**Note: Fee is calculated on direct labor, overhead and a 10% annual inflation factor for those two cost categories										

EXHIBIT IV-1

SHORT-RUN IMPACT EVALUATION SCOPE OF WORK FOR THE
HONDURAS RURAL TRAILS PROJECT (#522-0137)

EXHIBIT IV-1

SHORT-RUN IMPACT EVALUATION SCOPE OF WORK FOR THE HONDURAS RURAL TRAILS PROJECT (#522-0137)

A. INTRODUCTION

IMPACT EVALUATION OBJECTIVES

The Impact Evaluation of AID Rural Trails Project #522-0137 will determine:

- a. What changes in socio-economic status have occurred in isolated rural communities and to what extent are these changes attributable to the rural trails?
- b. To what extent are the economic and social services received by isolated rural communities and their distribution within communities affected by the construction of a rural road?
- c. To what extent are the types of economic and social impacts and their distribution among isolated rural communities affected by the type of rural road constructed?
- d. For different ecological conditions, what is the durability of different types of rural roads?
- e. What is the effect of different maintenance systems on the durability of different types of rural roads?
- f. Given the different social, economic, and organizational characteristics of different communities, what is the most effective and least expensive way of constructing rural roads?
- g. Given the different social, economic, and organizational characteristics of different communities, what is the most effective and least expensive way of maintaining rural roads?
- h. What is the least expensive way of selecting priority trail sites from among the isolated rural communities in need of rural roads?

2. GENERAL STATEMENT OF REQUIRED WORK

The Evaluation contractor shall work collaboratively with the Government of Honduras and the USAID Mission to perform a three-phase evaluation of the Rural Trails Project. The specific evaluation tasks include: (1) refining the evaluation plan during Phase One to assure that it is complete, and that sufficient evaluation data will be collected and processed to permit the evaluation; (2) conducting four in-depth case studies during 1979/1980; and (3) preparing required evaluation reports.

3. OPERATING PREMISES

- a. The Government of Honduras (and other donors supporting the Government Rural Trails Project) is interested, along with AID, in determining the socio-economic impact of the rural trails which it constructs and maintains. The Trails Project is a pilot project and all parties view the impact evaluation as a feasibility test for improving access to and from isolated rural communities by constructing low cost easily maintained three meter jeep trails.
- b. AID's purpose in supporting project evaluations is to provide useful information about the effects of project actions. The commitment to obtaining useful information demonstrates that AID is primarily interested in constructive evaluations which are forward looking, and which focus on improving the chances for project success. Thus, evaluation is viewed as a practical management tool for increasing relevant knowledge which permits better decisions that lead to more successful projects. In this sense, evaluation allows optimum use to be made of limited development resources by securing the highest beneficial impact for the least cost.

B. BACKGROUND INFORMATION

The Directorate of Highways of the Ministry of Communications, Public Works and Transportation (SECOPT) has the responsibility for constructing and maintaining the country's rural access roads. SECOPT has recently undertaken several programs for improving rural accessibility, one of which is this labor-intensive trails project. Many international assistance donors, including AID and the World Bank, are assisting the government of Honduras with these rural roads projects. AID, under project #522-0137, is supporting the construction and maintenance of the 165 km. of rural trails in the Western region of Honduras.*

The Government of Honduras recognizes that the resources it has available for improving rural infrastructure are very limited. Thus it is anxious to assure that the trails which it selects for inclusion in the program have the highest potential for stimulating rural development. To reflect this concern, the Government, with the assistance of the several donor countries, has identified a series of criteria for selecting high priority rural trails. The Government feels that these criteria, as currently established, are appropriate given the existing state-of-the-art and local conditions in Honduras. Yet they would also like to verify the accuracy of these criteria. Thus, the evaluation is organized in such a way that it will validate the current road selection procedure.

* A detailed description of the AID-sponsored Rural Trails Project, as contained in the Project Paper, should be referenced in the scope-of-work and enclosed when an RFP is issued.

C. EVALUATION TASK REQUIREMENTS

1. Refine the Evaluation Plan

Using the Rural Trails Evaluation Plan (a revised version of what is currently included as Section II of this report should be enclosed with the RFP as an attachment), the contractor shall specify evaluation hypotheses and assure evaluation data is being correctly gathered and processed during the initial evaluation in Phase One in 1979. In doing this, the contractor will be expected to work with SECOPT officials and visit the rural trails sites. The contractor, during the initial Phase One evaluation, shall also prepare baseline information tables for areas where data is being collected. The contractor shall develop descriptions and comparison tables for indicating project area changes over time,

2. Conduct Project Evaluation Case Studies

The contractor shall conduct an intensive evaluation of the Rural Trails Project in three phases beginning in 1979. The estimated time for conducting the evaluations will be approximately 1 1/2 years, with Phase One beginning in 1979 and lasting for 8 1/2 weeks; Phase Two beginning in late 1979 and lasting 5 weeks; and Phase Three beginning in mid-1980, lasting 5 weeks.

At the end of Phase I, the contractor will have:

- established a working relationship with GOH and AID officials;
- selected (with USAID approval) communities for the study
- completed collection of baseline data
- developed a framework for monitoring change

The estimated time frame for completion of Phase One is 8 1/2 weeks.

By the end of Phase Two, the contractor will have:

- monitored changes in the four research sites
- completed case studies on access road construction

The estimated time frame for completion of Phase Two is 5 weeks.

By the end of Phase Three, the contractor will have:

- completed all field investigations
- completed final comprehensive evaluation report

The estimated time frame for completion of Phase Three is 8 weeks.

3. Required Reports

The following reports are required of the contractor:

1. Phase I Report

The contractor will prepare a descriptive report, identifying key indicators for future examination. A revised study design may also be included if considered necessary. Interested officials in Santa Rosa and Tegucigalpa should receive briefings on project activities as appropriate.

The report is to be completed on-site in Honduras.

2. Phase II Report

The contractor will prepare a descriptive report of the field visits to the study and control sites. Interested GOH and USAID officials should receive oral briefings on the field visit results.

This report is to be completed on-site in Honduras, and is due five weeks after contractor starts Phase Two.

3. Phase III Report

The contractor will prepare a final report on the impact evaluation. A draft of the report will be submitted to USAID prior to the contractor's departure from Honduras at

the end of Phase Three (approximately seven weeks after start of Phase Three).

The final report will be submitted one month following submission of the draft. The report should clearly present, in addition to a review of methodology used, the study findings, with supporting data, conclusions and recommendations. An Executive Summary will also be required.

D. REQUIRED PROFESSIONAL SERVICES

The professional services to be provided by the contractor for the Rural Trails Project short-run impact evaluation in Honduras include:

- one Anthropologist

The qualifications, duties and responsibilities attached to the post are outlined below:

Anthropologist

The Anthropologist should have a graduate degree in Anthropology with experience in impact measurement of evaluations in the rural areas of developing countries. This individual should be familiar with the Congressional requirements implied in Section 102 (A). S/he should have participated in previous socio-economic evaluation of trails/roads in developing countries.

The Anthropologist would be responsible for conducting all phases of the research/evaluation project. S/he would make contact with the appropriate AID and GOH officials, secure local transportation, arrange housing, and contract for secretarial assistance in Honduras, and, if required, in the US. The field work and report writing will cover all issues outlined in Chapter II, Selection Procedures and Impact Evaluations: An Overview. In addition, the Anthropologist

will be responsible for sharing with AID and GOH officials the preliminary results of each phase of the study. In this capacity s/he will function as an applied anthropologist providing the officials with information that might be useful in planning, organizing, implementing, evaluating this and other road construction projects. S/he would assist them operationalize and modify the selection process for choosing among communities needing access roads. S/he would also assist in the training/orientation of individuals responsible for data collection from the candidate communities.

The Anthropologist would also prepare a draft of the final report before leaving Honduras and discuss finding and recommendations in detail with AID and GOH officials.

E. REQUIRED SUPPORT SERVICES

The contractor shall also provide support services for the annual evaluations. These will include: (1) international and in-country transportation; (2) administrative and secretarial support in the U.S. and Honduras to prepare evaluation tables and reports; and (3) arrangements for communicating between the field and the contractor's home office. The USAID will provide for office space and supplies in Honduras. The contractor shall consider other support services which may be required and include them in the proposal.

F. SPECIAL CONSIDERATIONS

1. The contractor shall demonstrate the willingness and ability to carry out collaborative evaluative research in developing country contacts.
2. The contractor shall work closely with both AID and Government of Honduras personnel.

EXHIBIT IV-2

ESTIMATED BUDGET FOR SHORT-RUN EVALUATION (INCLUDES OPTIONS)

EXHIBIT IV-2

ESTIMATED BUDGET FOR SHORT-RUN EVALUATION (INCLUDES OPTIONS)

(in U.S. Dollars)

	DAILY RATE	YEAR 1		YEAR 2		TOTAL COST
		Days	Cost	Days	Cost	
<u>A. Direct Labor</u>						
Anthropologist	160	85	13,600	47.5	7,600	21,200
Overhead (50%) ¹			5,800		3,800	7,600
<u>B. Other Direct Costs</u>						
1. International Travel (3 RT-Washington/Tegucigalpa)		2	1,000	1	500	1,500
2. Local Travel (jeep rental=\$750/mo x 6 mo.)			3,000		1,500	4,500
3. Per Diem (\$50/day)		112	5,600	56	2,800	8,400
4. Secretarial Support (\$30/day)		42	1,260	45	1,350	2,610
5. Supplies			500		500	1,000
6. Miscellaneous			500		500	1,000
Sub-Total			32,250		18,550	50,810
Inflation Factor (10%)					1,855	3,560
Sub-Total			32,260		20,405	54,370
Fee (8 1/2%) ²			1,734		1,066	2,800
Total Cost			33,994		21,471	55,465

1) Assumes this will be an Associate of a company--not full-time staff.

2) Fee is calculated on direct labor, overhead, and a 10% inflation factor for those two costs.

EXHIBIT IV-3
SUMMARY AND SCHEDULING OF THE SHORT-RUN EVALUATION PHASES

EXHIBIT IV-3

SUMMARY AND SCHEDULING OF THE SHORT-RUN EVALUATION PHASES

TASKS	MONTHS AFTER USAID RECEIVES PROPOSED IMPACT EVALUATION SCOPE-OF-WORK																							
	1*	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1. USAID reviews, modifies, and accepts impact evaluation scope-of-work.	XX																							
2. Carry out contracting procedure and negotiate contract.		XXXXXXX**																						
PHASE ONE: 1-17 Weeks																								
3. Contractor prepares specific work plan, and carries out preliminary on-site planning visit with selection of study and control sites.				XXX																				
4. Collect baseline data from study and control sites.					XXX																			
5. Prepare report for Phase One.						XX**																		
PHASE TWO: 5-11 Weeks																								
6. Conduct visits to study and control sites to monitor progress.									XXXX															
7. Prepare and present case studies; review with USAID/AFIC/H.										X**														
PHASE THREE: 1-12 Weeks																								
8. Conduct third round of site visits (re-plotting all field investigations)														XXXX										
9. Prepare draft comprehensive eval. report (on-site)																XX**								
10. Complete final report (in US)																				XX				
11. USAID review report/His. with OSI officials																				XXX	XXXX			
12. Monitor implementation of evaluation recommendations																							XXX)XXXXXXXXXX	

* Initial date of start up: February 1979

** Report due at the end of this week

APPENDIX A: MAJOR ACTIVITIES COMPLETED DURING CONSULTANCY

APPENDIX A

MAJOR ACTIVITIES COMPLETED DURING CONSULTANCY

1. Briefing with USAID Officials - October 25, 1978
 - a. Obtained agreement on scope of work
 - b. Identified priority people to interview in Mission and GOH
 - c. Set up tentative schedule of field trips

2. Site Visit to Ojojona Trail - October 26, 1978

Don Bridwell explained how this crude trail was built, the costs, and about the evolution of jeep trail designs.

3. Site Visit to Empedrado Trail - October 27, 1978

Roberto Díaz (Director, CMO) explained CMO program and rural road concepts.

4. Field Trip to Southern Region - October 31, 1978

Ing. Stange (IBRD/GITEC) and Roberto Díaz showed us access road construction process. Visited Linaca and Moro Pacay projects.

5. IHCAFE Investigation

Interviewed individuals related to overall coffee program in the Región Occidental and persons specifically working with coffee roads.

6. Three-day Field Trip to Región Occidental - November 1 - 3, 1978
 - a. Team visited La Labor jeep trail project with Regional Field Supervisor, Sergio Canales. Spoke with road crew, capataces, some community leaders in Pachapas
 - b. One team member accompanied Canales on 350 km. circuit of access and secondary roads visiting different areas in southern and central part of region. Interviewed town leaders and aldea residents in La Virgen, La Virtud, and Mapulaca. Also spoke with Promotora Social from the Junta Nacional de Bienestar Social.
 - c.1. Second team member interviewed Noe Pineda (Director, PRODERO) and Melvin Tomé (Representative to PRODERO from MOH) about PRODERO program, activities, and data base.
 - c.2. Second team member interviewed key regional MOH personnel about program, activities, and information system and data base. Accompanied Margarita Cáliz, Regional Nurse Supervisor, on visit with auxiliar de enfermería of La Labor health center. Three persons then went to speak with community health worker (guardiana de Salud) in isolated aldea without road access that pertains to La Labor municipality.
 - d. Both members interviewed with regional director of IHCAFE in Santa Rosa de Copán.

(Third member continued interviewing and examining data base in Tegucigalpa)

7. Analysis, Development of Research Designs and Selection Procedure Recommendation, and Preparation of Consultancy Report - Nov. 10, 1978

8. Debriefing with USAID Officials - November 10, 1978

Interviewing was conducted throughout consultancy. Refer to Appendix for list of persons interviewed or consulted.

APPENDIX B: PERSONS INTERVIEWED AND CONSULTED

APPENDIX B

PERSONS INTERVIEWED AND CONSULTED

SECOPT

Ing. Carlos Alvarado
Subsecretario de Obras Públicas

Ing. Roberto Díaz
Director
Camino por Mano de Obra (CMO)

Ing. Wolfgang Stange
Coordinador de Asesores
Camino por Mano de Obra

Ing. Helmut Wetzig
Asesor
Camino por Mano de Obra

Lic. Reinaldo Romero
Analista Económico
Camino por Mano de Obra

Ing. Sergio Canales
Ingeniero, Región Occidental

Motorista Mecánico
Camino por Mano de Obra
Región Occidental

CONSUPLANE/PRODERO

Ing. José Angel Bobadilla
Director de Planificación
de Infraestructura
CONSUPLANE

Ing. Carlos Panameño Mejía
Jefe
Departamento de Transporte
CONSUPLANE

Lic. Manuel López Luna
Director
Planificación Regional
CONSUPLANE

Marvin Brant
Asesor Económico
Infraestructura
CONSUPLANE

Dr. Noé Pineda
Director
Proyecto de Desarrollo de la
Región Occidental (PRODERO)

Sr. Melvin Tomé
Representante de Salud
PRODERO

Sr. Carlos
(Asesor OEA)
Dirección de Planificación Regional
CONSUPLANE

USAID

Ken Schofield
Chief
Agriculture and Rural
Development Section
OPCR, AID/Honduras

Mr. Aaron Williams
ORD
USAID/Honduras

Mr. Donald Bridwell
Engineering Office
AID/Honduras

Mr. Jim Callaway
Chief
Engineering Office
USAID/Honduras

Mr. John Kelley
Human Resources Development Office (HRD)
USAID/Honduras

Mrs. Anita Siegel
HRD
USAID/Honduras

Mr. George Moore
HRD
USAID/Honduras

Mr. Jimmie Stone
Chief, HRD
USAID/Honduras

Mr. William Janssen
Chief, Office of Rural Development (ORD)
USAID/Honduras

Mr. Robert Thurston
ORD - USAID/Honduras

AID/W

Benjamin Severn
LA/DR

William Kaschak
LA/DR

Bernice Goldstein
LA/DP

IHCAFE

Elizabeth de Turcios
Jefe de Estadística
IHCAFE, Tegucigalpa

Asistente,
Dirección de Estadísticas
IHCAFE, Tegucigalpa

Jefe
Dirección de Ingeniería
IHCAFE, Tegucigalpa

MINISTERIO DE RECURSOS NATURALES

Lic. Carlos Andrés Zelaya E.
Director
Dirección de Planificación Sectorial

MINISTERIO DE SALUD PUBLICA Y
ASISTENCIA SOCIAL

Dr. Alberto Hernández Sánchez
Director de Salud
Región Occidental

Guardiana de Salud

Enf. Margarita Cáliz
Supervisora Regional de Enfermería
Región Occidental

Lic. Jorge Euceda
Coordinador Regional
Plan de Honduras
Foster Parents Plan International, Inc.

Gilma de Tinoco
Sub Director
Programa de Extensión de Cobertura
Región Occidental

Yolanda
Auxiliar
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APPENDIX C: SUMMARY AND CRITIQUE OF GOH RURAL ROAD PRIORITIZATION APPROACH

APPENDIX C *

Summary and Critique of GOH Rural Road Prioritization Approach Developed Under World Bank Contract with German Firm - GITEC

In the first questionnaire there are 27 indicators that each receive a value ranging from 1-5 (some start as low as .5). (The 2nd revised questionnaire has a slightly higher number of indicators - though its exact number isn't clear).

The 27 indicators are broken into three groups for weighing the values received in the evaluation:

The first group contains 13 of the 27 indicators and receives no additional weighting, i.e. a weight equal to 1 for each indicator in this group. For the most part they are non-economic indicators.

The second group is composed of the remaining 14 indicators and are those that the various government agencies weighted. GITEC established a total of 72 weighting points for these 14 indicators. In order to give the government agencies a proper voice in the weighting, but not too much, it was decided that the government agencies could only apportion 30 points over 11 indicators and 24 points over the remaining 3 indicators with a maximum set for each indicator. These 54 points represent 75% of the total 72 potential points which GITEC and IBRD felt was the proper influence for the political groups. The group of 3 indicators with 24 total points to be decided are: total area; area cultivated; and number of inhabitants with 5, 11, and 16 maximum points, respectively. The 11 other indicators have maximum points in the 3-4 point range. GITEC clearly has designated these economic factors as most important.

The third group consists of 7 indicators which are a subset of the second group and were weighted by GITEC only. For the most part they are economic indicators with the maximum possible points for 2 being 8, for 4 being 3, and 1 being 5. There is thus a tendency to weight the economic indicators highly for the entire group of indicators. GITEC estimates that about 2/3 of the points result from economic indicators and the remaining 1/3 from social indicators.

Pre-Selection Screening

A. Solicitude for a specific road will be rejected if:

- (1) There are other good transport alternatives
- (2) Plans already exist for the construction of alternative roads that can be used.
- (3) The road itself is deemed in good condition.
- (4) The solicited road will serve only a few people.
- (5) The people to be served by the road are not disposed to help in its construction or maintenance.

*/ Drawn from the Rural Trails Project Paper.

- (7) Local authorities aren't disposed to help.
- (8) The solicitude was deficient or in error.

It is not clear how much manpower is needed to do this screening process. Apparently a trip has to be made to the site. Maps can be used especially for point 4 and possibly for points 1 and 2. Nevertheless, a trip would have to be made for each solicitude that passed the first 4 points in Tegucigalpa.

Valuation System

Presumably a second trip is made, or during the first one, if points 1-8 do not deselect the road, the engineering estimates are made and the questionnaire is filled out. Necessary census data is then collected in Tegucigalpa. From this information, the total points for the road are compiled. The same procedure is followed for all roads with the ranking done by the absolute number of points received. Type of economic data collected in questionnaire.

1. Total area of influence
2. Area cultivated
3. Additional lands for potential ag. production
4. Agricultural goods exported
5. Population
6. Land tenancy

In the questionnaire, no absolute values of production are obtained.

An excellent example of the questionable weighting system is the following: cultivated area can receive a maximum of almost 80 points and the area of influence 45 points, while cultivable area can receive a maximum of only 5 points.

Problems with GOH Approach

1. The initial valuation of giving points for each indicator (1-5) by the interviewer is somewhat subjective.
2. The weighting system seems highly subjective.
3. The evaluation process assumes that the benefits accruing from any type of road improvement (little, major, new construction) will be the same. Three of the most important indicators (in terms of points): (a) area of influence/km. of road cost; (b) area cultivated/km. of road cost; and (c) number of inhabitants/km. of road cost in fact bias the results toward roads that are less costly. To overcome this obvious shortcoming that really destroys the validity of their whole procedure, they have decided that monies should be divided, apparently equally,

between three types of road improvement: (a) that which requires little improvement; (b) that which requires substantial improvement; and (c) that which requires new construction. Since they make no claim as to B/C values of any road segment in any of the three above categories, they are satisfied with their approach. If one were concerned about meeting at least a minimum B/C=1 ratio, however, one ought to be concerned especially for category a. For the other two categories one might reason that significant change is being made in the road which should lead to substantial change in transport mode used, lands cultivated, technologies used, etc., that will assure a B/C greater than 1 per any road segment.

Because of this shortcoming alone, it is not recommended that this evaluative approach (at least not by itself) be used for prioritizing roads in a project that anticipates being involved with the three construction categories mentioned above.

For the Rural Trails Project, however, the GOH approach, even with the problems cited in paras 1 and 2 above, could be used to prioritize road segments since only new construction will be performed which implies that the resultant benefits should be of the same type and magnitude for the average farmer.

MEMORANDUM

TO: Distribution List

FROM: Molly Hageboeck, Project Manager, PCI

DATE: February 22, 1979

SUBJ: PCI Consultancy Report on Honduras Rural Trails Selection Criteria and Evaluation Designs



PCI undertook an evaluation planning consultancy this past fall to assist USAID/Honduras in modifying the selection procedure and developing an evaluation design for the Rural Trails Project in the Western Region. The consultancy was undertaken as part of DS/RAD's RURAL DEVELOPMENT DATA GATHERING AND ANALYSIS METHODS Project (Contract AID/ta-C-1469).

Attached you will find the consultancy report.

DISTRIBUTION

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