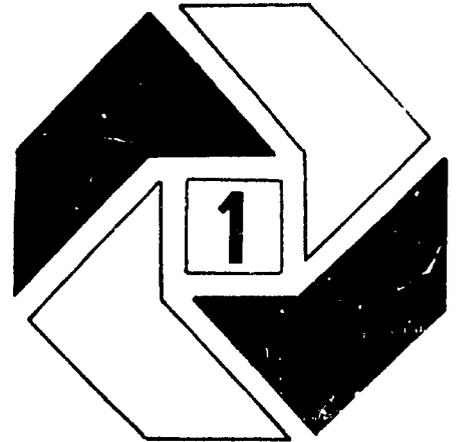


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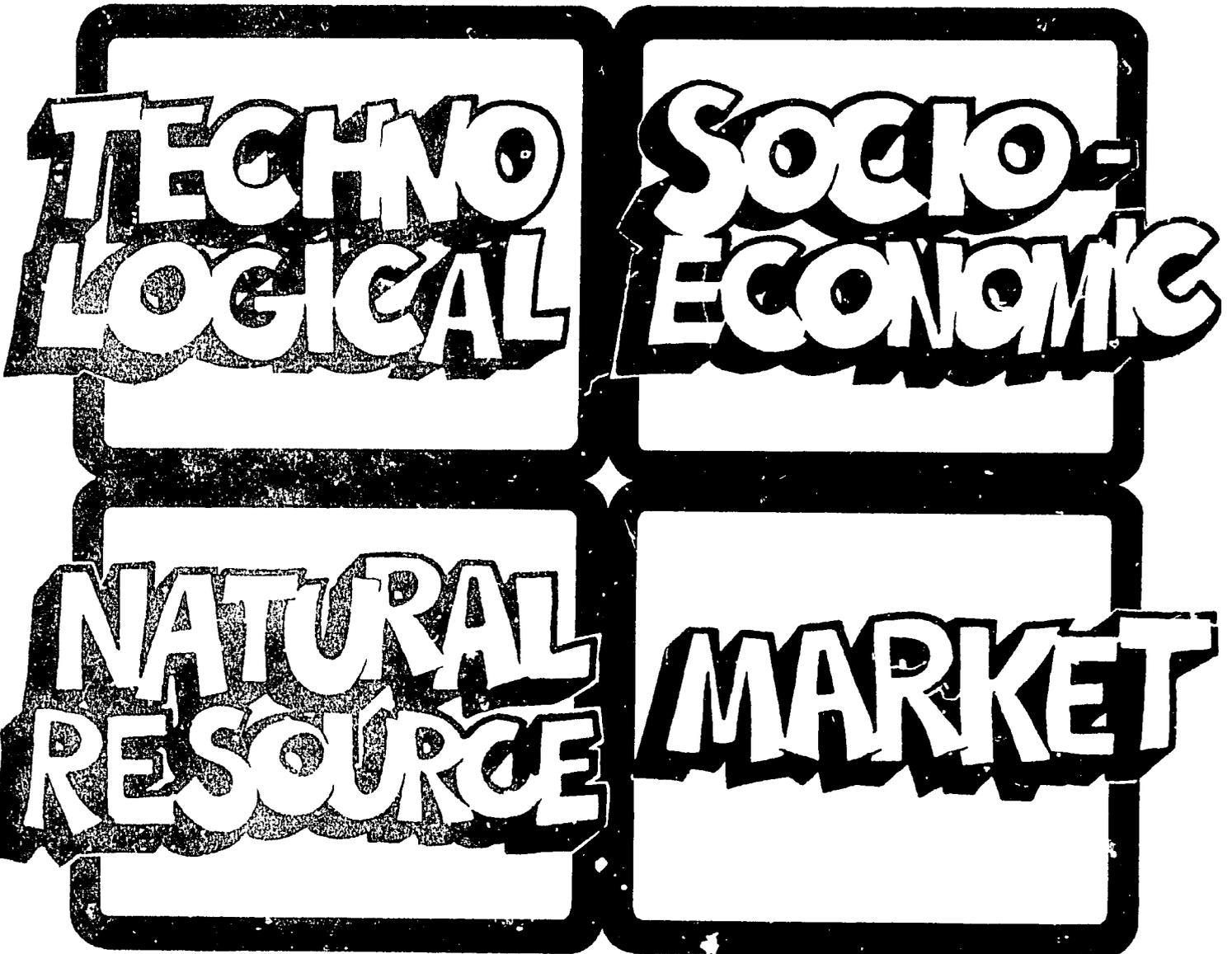
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PIADIC
Information Management Series



Rural Area Profiling

Management Information for Resource Development



1130
INSTITUTO INTERAMERICANO DE COOPERACION PARA LA AGRICULTURA

Rural Area Profiling

Text prepared by Franklin E. Rosales



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The methodology for rural area profiling presented in this publication is a result of the combined efforts of the PIADIC staff during the years from 1979 to 1981. Among those who contributed were:

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Preface

In 1974, the Central-American information systems for agriculture were examined in a cooperative diagnostic study involving all of the Central-American countries, the Regional Office for Central American Programs of AID (ROCAP), and the Interamerican Institute For Cooperation on Agriculture (IICA). Analysis of over 120 institutions showed severe deficiencies in availability, organization, and use of agricultural information, that severely restricted the design and execution of rural development projects.

These findings prompted the development of the Agricultural Information Project for the Central American Isthmus (PIADIC) in a cooperative agreement between IICA and ROCAP. IICA was established as the executive agency for the Project in 1975.

The immediate goal was to create a system and flow of information that would ensure (1) that all information could be identified and retrieved when needed, and (2) that it be delivered in understandable and acceptable format. This would be possible only if the links and blocks of the Central American region could be properly interrelated and adjusted.

The rural area profiling process described on the following pages is both a product *of* the information system as well as a product *for* the information system. Current area profiling data feed off the available information, while the profiling process generates new information or updates old information that, in turn, feeds into the profiling system.

While the organization and description of this information flow is neither new or revolutionary, perhaps the approach to information processing in general — and the division of the information mass — is somewhat novel.

About this Publication

Experience gained by PIADIC in Central America and Panama should prove useful as a guide in identifying some of the basic components and methodologies available to other developing countries with long-term planning objectives. Thus, our aim here is to provide an outline or guide for administrators or policy makers who have responsibilities in rural area development similar to those of PIADIC.

Our intended reader is the professional planner, and members of his staff, who are already well aware that study findings *par se* cannot provide a solid foundation for their development strategies. Thus, the examples of methodology and field experience described here have been selected to assist in developing the data bases, skilled personnel, and analytical processes required for *continuing institutional capabilities* in area development. We have found that the profiling process itself can help select and strengthen national and regional capability for planning, analysis, and overall development.

The contents of the following pages are organized in sequence of operational development: Section 1 deals primarily with institutional management of personnel, facilities, and budgets required for rural area profiling, Section 2 provides a brief sketch of the operational components, including some examples of both theoretical and practical considerations in the profiling process. The table of contents can serve as a sort of checklist for quick review of this process, and PIADIC Manual No. 4 provides a bibliography of relevant reference materials provided by the Project.

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Section I
System Organization and Administration

Background

Integrating national systems

Early PIADIC efforts focused on obtaining the cooperation of key national institutions involved in rural development. In-depth surveys were conducted in each country of the region, and national priorities were established to develop national plans for national agricultural information systems. During this same period (1976 to 1978), national technicians were being trained as a step toward implementing national systems. Special projects also were designed to accommodate national and institutional requirements, and inter-institutional agreements were drafted to facilitate acquiring, processing, and transferring of agricultural information.

Field work began in 1979 with the basic aim of creating national-level, integrated information systems that could: (1) identify information needs; (2) collect, manage, and analyze information; from (3) the agricultural/rural sector in general and the farm population in particular; and (4) deliver reliable and timely information; to (5) planners, decision makers, and researchers. This system would serve many purposes, but the requirements of planners and researchers were to receive special attention and have paramount importance in the design of the system, in its format, and in its method of data handling and storage. The earlier surveys had shown that the majority of Central-American countries were continuously developing and adjusting overall national plans for rural development. Sectoral planning offices developed these detailed plans to be implemented at regional and township levels. Thus, the Project methodology was designed to identify information down to at least township level, with the capability of aggregating information at levels ranging from the various political geographical divisions up to national level coverage.

The system concept at the national level consisted of a series of specialized, but integrated, data bases in various locations, managed by responsible national institutions. The basic strategy was to operate independently of the big bureaucratic monolithic organizations where all information might be gathered and stored in one central data base. Unification would be achieved by cooperative agreements between national institutions and the application of compatible formats in data base design and retrieval methodology.

For simplicity, the mass of information needed by the agricultural sector was divided into two classification systems: one containing all scientific and technical information and the other containing all socio-economic information. Each system was then subdivided into two macro-descriptors. Within the scientific/technical system, the macro-descriptor "Natural Determinants" included soils, climate, and other natural resource information, while "Technical Determinants" covered research information, germoplasms, production methodology, and plant and animal protection information.

The socio-economic system was divided into "Intrinsic Socio-Economic Determinants", which included information about the rural family unit, production methods, use of resources and level of life information; and "Extrinsic Socio-Economic Determinants", which covered basic services, credit, extension service, health services, education, business, prices, and infrastructure.

This division of information, however artificial, made it easier to visualize and explain the organization of data base and administrative structures. In the same manner and for the same reasons, the flow of information was divided into a series of interrelated phases and each phase was treated as a separate objective. The three main phases were:

Phase 1 - "Input" which treated acquisition, specifications, coverage, and timeliness of information flow.

Phase 2 - "Storage", which dealt with problems of classification, analysis, transcription, data processing, and data base creation.

Phase 3 - "Usage", which addressed retrieval and delivery of information, as well as all aspects of providing and establishing services to users.

The area frame sampling methods and general survey, and traditional library practices were selected, and appropriate manuals and explanations were prepared, during Phase 1.

For storing and managing data, it became necessary for the first time to consider numerical and documentary data as two distinctly different types of data requiring different methodology. It was decided that "Natural Determinants" information should be presented in the form of maps. As a result, processing and management packages had to be developed for:

- Statistical information
- Natural resource information
- Documentary information

For statistical information, the SAS software package was chosen, because it is a very strong and versatile package. Unfortunately, there are only a few computer installations in Central America capable of mounting SAS, thus the SPSS package was chosen as an alternative for smaller installations. However, SPSS can be controlled by SAS, so as computers are upgraded to handle SAS, all work on SPSS would not be lost.

To store natural determinants, the CRIES geographical information system was selected. The CRIES system is based on a grid system and information is entered square-by-square, this information is presented in the form of maps.

To handle documentary information, the Project required both an automated computerized system and a manually operated system. The automated system would operate on national level and the manual system would be used at the institutional level. Fortunately, IICA-CIDIA had previously developed a software package to handle documentary information for its hemispheric agricultural information system, AGRINTER. Thus, the AGRINTER software system could be continued and complemented by the ISIS software package that served as an alternative to AGRINTER. To handle the manually operated system at institutional level, the optical coincidence system was chosen, with the Uniterm System as an alternative.

To manage the information for the system prototype, data bases were developed for the various macrodescriptors and their subdivisions. These prototypes could be developed by subject specialists in each area and the data base construction adapted to national conditions and priorities, without changing the basic design.

For the "Usage" phase of information flow, procedures for selective dissemination of information profile writing were established, along with general library user services.

Basic profiling concepts

In designing a strategy for developing a specific rural area, our basic aim is to combine all human and natural resources, technologies, and services of the area to improve the general well-being of its people. Often, however, we do not have a clear picture of the factors that limit such development, and without this knowledge we cannot make use of known development strategies.

In any rural area, the social, economic and technological variables are complex and interacting; we usually find that obtaining complete and precise information is both difficult and expensive. Thus, an essential planning task is that of identifying and assigning priorities to the minimum key variables that can provide an adequate description of an area.

Rural area profiling is a process that allows systematic assessment and analysis of agricultural production and associated social and environmental factors. The public service sectors of a region or country can use these diagnostic tools to plan, implement, control, and evaluate development policies. Profiling is basically an aid to decision-making, much like the medical doctor's process of examining a patient, making a diagnosis, and maintaining a medical history. Given the data from initial area profiling investigations, plus additional data from later monitoring, a case history (data base) can be developed that provides a very comprehensive picture of the "health" of an area and serves as a basis for further recommendations and treatment — the development strategy.

In general terms, then, *rural area profiling* can be defined as a continuing process to more efficiently identify, organize, and manage the resources of a specific rural area.

We have defined a *rural area* as "a geographic unit of manageable size", which in operational terms means a planning unit that can be administered with the institutional resources (human, physical and financial) offered by the public service sector of the economy. The minimum size of such units is not based on physical area, but upon ultimate administrative use of the information.

Thus, *planning*, according to our definition, can be oriented toward an integrated development program, a specific project, or a service such as agricultural research or extension. The planning units can be a valley, an area served by an extension agency, a township, a district, etc. For example, the land area for the profiling in Honduras covered four valleys with great agricultural potential — Yoro, Yorito, Sulaco and Victoria. The area of study in Panama was a District within a Province — Renacimiento, Chiriquí. In Costa Rica, the study area was an agricultural region defined by the Ministry of Agriculture and Livestock (MAG) — specifically, the Region of the South Pacific.

The methodology developed to profile rural areas was based on four general parameters called *determinants*: natural resources, technological, socio-economic, and marketing. The strategy and techniques outlined in Section II of this document were planned and developed in the agricultural sector. However, they can be adapted for other fields of study and the methodology could be totally or partially implemented, depending on the information available in the area of interest and the final objective of the study.

General strategy

Profiling requires continual multi-disciplinary participation for technical analysis of all variables. In Central America, analysis of the four basic determinants (natural resources, socio-economy, technological and marketing) required technical specialists in soil, climate, economics, sociology, agronomy, livestock, computing, area frame sampling, etc.

In operation, our profiling strategy consists of five major stages:

Stage 1: Selecting, describing, and compiling of primary and secondary information—First, we select variables depending on our basic objective(s) or interest(s). After describing the required level of study of the different variables, we begin compiling and evaluating secondary information from existing documents, maps, censuses, etc.

Following this initial evaluation, primary information is generated using both informal and formal interviews (surveys), data from local technicians, etc.

Stage 2: Data processing and statistical analyses—Our processing can be done manually or by computer. The information is organized and the required statistical analyses are based on groups of *determinants*.

Stage 3: Rural area interpretation and description—Processed data is interpreted and critiqued in this stage as the preliminary documents are organized and edited.

At the same time, the data are technically reviewed by multi-disciplinary groups in the initial drafts and for final editing. We construct a profile document that serves as an organized and updated information base for the study area.

Stage 4: Analysis—In this process, we synthesize the information and identify the obstacles and potential for area development.

Stage 5: Selective Processing—Information generated by the profiling is organized and analyzed to satisfy the needs of policy-makers at the national level, regional research and extension services, and other specific users. Potentially, it can be used to:

- supplement existing information
- develop production alternatives (first approximation)
- plan rural development projects
- compare and evaluate existing services
- input data banks or information systems

The methodology presented here was developed to encompass both practical and theoretical training. Both kinds of training are necessary to take into account the rapid job turnover and general lack of stability of technical and administrative personnel in the public service sector in most developing countries.

From the outset, technicians work within multi-disciplinary teams and their special knowledge is used for data organization, statistical and conceptual analysis, etc. Developmental costs depend on several factors, including: available information, level of detail required in the study, size and type of the sample, accessibility in the study area, objectives of the study, and kinds of support services. Access to a computing equipment programming is desirable, although not essential, for more efficient management and storage of data. Some activities, such as in the formal field survey require especially strong support in personnel, vehicles, office supplies, and general services.



Section II

Program Operations for Rural Area Profiling

Administrative Check List

Because the area profiling in the Central American Isthmus was planned and developed to emphasize agricultural components, our concepts and basic procedures are based on experiences in this sector. However, the outline presented below can be thought of as a check-list or guide for general administration and scheduling.

Minimum requisites for rural area profiling (RAP)

The directing institution leaders should clearly define the profiling objectives for presentation in a working document. The RAP methodology must be clearly understood, including operational development and scope and limitations. Since the methodological phases require considerable training, good coordination should be maintained with the directing institution's training department. Teaching skills, editing capabilities, and other communications components are helpful in all aspects of the RAP.

Coordination of technical personnel

A minimum group of 12 to 15 technicians is suggested for the coordination and operation of RAP in a country. Make up of this group is based on the four main parameters (determinants) of the study.

A typical group could consist of:

- a general coordinator and an assistant (2 persons)
- 1 coordinator and 2 assistants for each of the four determinant groups (12 persons)
- 1 data processing specialist (1 person)

This basic overall team should be multi-disciplinary, preferably integrating technicians from several programs (research, extension, planning, credit, etc.) Although the RAP methodology has been adapted to use at several academic levels, team members should preferably have some college-level experience. The results of the RAP effort will directly reflect the level of experience and training of the team members.

A full-time schedule should be maintained by team members, and they should be supported by a consultative group with specialists in: soils, climate, socio-economics, agronomy, livestock, and marketing. If possible, a specialist in sampling and surveying should be available. Such help can often be obtained from national statistical operations or in sector planning offices.

The consultative specialists are not required full time; however, they are indispensable as the study gets underway and the variables are defined. They are also vital for later stages of analysis, review, and evaluation of the final RAP documents.

Responsibilities of the coordinators

The general coordinator of the RAP team is directly responsible for the operations and quality of the final product. Thus, he should be free to work independently and with authority to make decisions. Nominations for the position of coordinator could normally include candidates such as directors of programs or departments, or equivalent executive levels.

Within the four teams of specialists, the coordinator and assistant are responsible for guiding the activities for that "determinant" area; that is, for identifying and describing variables, for gathering of secondary information and its evaluation and organization, for supervising and coordinating the survey, for analyzing and tabulating data, for editing, preliminary documents, and for presenting the formal results and observations.

The data processing specialist cooperates in the design of the survey form and its pre-coding. He also participates in the critique and evaluation of the survey results. As the data base is developed, the specialist is responsible for overall design. If the data bank is computerized, he supervises the input, as well as data editing and storage on magnetic tape or discs. If the data base work is done manually, the specialist directs the organization of data for statistical analysis.

The processing specialist uses the tabulation plan to coordinate data analysis and help in the interpretation of the computer output.

General services support staff (secretaries, statisticians, copying and mailing staff) are essential for tasks such as developing the survey form, checking answers after the survey, data tabulation, editing and reproduction of final and preliminary documents, as well as assistance with seminars and workshops.

Operational facilities

During profile development, some of the facilities required are:

- Meeting rooms for seminars and workshops, as well as for work teams that require more time and working space.
- Vehicles, especially during the survey and compiling of secondary information.
- Typewriters, copying machines, mimeograph, and audiovisual aid equipment.
- Access to a computer or small calculating devices.
- Stationery and office equipment.

Program plan and evaluation

The operational plan should clearly define the objectives and expected results, along with names of participating organizations and technicians. Activities of the full-time personnel should be scheduled, and each activity should be evaluated as completed. This evaluation can be based on both quality and time required for completion.

Costs

The total cost of the profiling process depends mainly on the type and size of the sample and the length of the questionnaire. The amount and quality of the secondary information is also an important cost factor. Moreover, the number of technicians available directly affects survey operations. Costs should be estimated for each activity, including materials, equipment, and hours of work required. (Examples of some programs used in Central America are shown in Appendixes A and B.)

Parameter selection and description

Identification, selection, and description of parameters and variables are crucial steps requiring the participation of a multi-disciplinary team, including specialists. Description of the project objectives and level of detail required can be especially difficult. Our experience indicates that seminars and workshops can be useful in such work. For maximum effectiveness, several such meetings should be scheduled, rather than in a single block.

Technical orientation seminars and workshops

A seminar and five or six workshops or informal meetings should be scheduled to prepare the technical groups for field work. The operations discussed will range from methodology and strategy to development of the final questionnaire. The initial "general overview" seminar can be covered in one work week, if complemented by thorough study in the workshops and practical field training. Content would include a rapid introduction to the methodology involved in obtaining and use of rural information. The phases and strategy are discussed in general terms. (Basically, the aim is to present all aspects of RAP that are discussed in Section II of this manual.)

Instructional materials related to parameter and variables used in RAP are based on the "Content Outline for Rural Area Profiling" (see Appendix C). This outline is divided into the four general groups of determinants, with each determinant sub-divided into micro-descriptors, etc. The specialists' participation in these presentations is crucial for providing a detailed and objective view of the relative importance of each variable—and of the possible interactions among the different disciplines represented.

The general discussion also treats the accessibility and credibility of the various information sources available. Specialists in soils, climate, marketing, general agriculture, livestock, socio-economics, etc., provide specific knowledge and experience for this work. Other general discussion related to sampling and field work is needed, as well as the development of survey forms and questionnaires.

Workshops for selecting and obtaining information

These workshops initiate the teamwork and multi-disciplinary interaction. During the workshop process, two types of work groups are formed:

- by discipline, with four groups formed according to the four determinants studied
- by geographical study area

The work groups (generally limited because of lack of personnel) are formed to discuss specific multi-disciplinary issues of a specific profiling interest.

Detailed study of variables

A specialist joins the work group, according to his discipline, for detailed study and analysis of each variable being considered. His job is to ensure that the participants know to make an efficient selection of variables; the working instrument is the Outline of Contents (Appendix C). As the variables are studied, a list is prepared of information sources that may prove useful for secondary information.

In this overall process, vigorous selection must be made of *only* those variables that are relevant to the study objectives. The level of detail for the study is determined by the kind of user for whom the profiling is being done (for example, political officers, planners, field technicians, etc.).

Obtaining and evaluating secondary information

The technical specialists for the work groups collect the necessary secondary information, using the list of information sources developed in the previous phases. This work requires vehicles, travel expenses, and distribution of funds for buying maps and other printing needs. (For the Central American projects, this stage required two weeks, depending on the information source available.)

When the collection of secondary information is complete, an inventory can be made, using the Content Outline for tabulation (Appendix D). This list accounts for the ordering, description, and identification of the information source. The inventory also provides a bibliographical listing of all documents obtained.

Secondary information can be evaluated on the basis of indices such as quality, and quantity of personnel and institutional input. Based on this evaluation, information can be deduced and survey questions developed to complete the basic data needs. The person in charge of the work group should now be able to begin summarization of the secondary information and to tabulate or use existing charts (see examples, Appendix E).

Information that cannot be located, or that cannot be obtained through the survey (soil studies, climate, production costs, etc.) can be identified for further study as a recommendation of the profiling document.

Development of the questionnaire

As noted, the secondary information can serve as a guide for constructing the questionnaire. An outline of the questionnaire can be designed by the individual work groups, so as to obtain an idea of the form and detail required for the questionnaire, as well as to determine question content. Each question should have a specific intended function. (See Appendix F for an introductory guide to all groups.) The *use* of each question must be carefully considered, and this process will help screen unnecessary questions. Because this initial work is done by separate teams, many questions will probably be repeated. However, the redundancy can be eliminated later.

Following the initial drafting phase, a small team is formed (consisting of at least one member of each group) to structure the questionnaire and write questions. Technicians from the area to be profiled are useful in writing questions adapted to the level and style of vocabulary in the area. After the questionnaire is drafted, all groups can review the total document and make necessary adjustments.

Questionnaire format: The questionnaires will usually consist of three general sections for: (1) family, (2) farm, and (3) technology. The section for technology can be sub-divided into crops and livestock sections.

An ideal procedure would be to make a specific questionnaire for each activity of interest; for example, a particular crop. Our experience indicated that this would be impractical due to increased costs and size of questionnaire. For some crops (primarily perennials) a special section may be required. For livestock, a section can be included for each activity outlined (poultry, swine, cattle). All sections should be coded, along with an identification of the home or unit surveyed. Appendix G provides examples of structure and questions used in the Project.

Field testing the questionnaire

The field test is much like the formal survey, only on a small scale. The field test is conducted by those who selected the variables and developed the questionnaire, including the coordinator and the specialists.

The aim of such tests is to know — before the final survey — how the questionnaire will perform in field use. The test can indicate interview time required, badly worded or difficult questions, adequacy of the various sections, etc.

Testing should not be done in the actual area to be surveyed, but in a region with similar characteristics. Thus, it can serve as a preliminary training exercise for those involved in the final survey. Each group member should conduct at least two interviews to discover the strengths and weaknesses of the questionnaire.

All group members help in the evaluation of the field test. An average interview time is established and adjustments made to the final draft of the questionnaire.

Questionnaire pre-coding and tabulation planning

Pre-coding the questionnaire allows for more efficient grouping and analysis of the survey answers. Well structured or “closed” questions speed up the coding, as well as the analysis after the information is collected (see questionnaire in Appendix G). The data processing specialist can prove especially useful at this stage, particularly if he has participated in all previous stages of questionnaire development.

The tabulation plans can continue at this stage also. Once again, the four “determinant” work groups are formed to develop the output forms according to the needs of each study objective. Thus, simple tables or cross-tabulations are produced for one or more variables (interactions) to accommodate the primary data analysis.

Informal visit to study area

Previous to the actual survey, an informal visit can be made to obtain a general view of the area and to become acquainted with transportation facilities, housing, etc. The visit facilitates the use of maps and helps locate houses or units to be surveyed.

Following this step, the formal rural area survey can begin in the field.



Field Operations to Obtain Primary Information

Field logistics and strategy

Although the objectives in developing a field survey may remain the same, the methods for conducting a survey can vary greatly due to the many variables in the system. Because there are many published articles on this topic, discussion here deals only with some examples of our field experiences in Central America and Panama.

Definition of the sample and its field location: When we sample a population, our basic aim is to obtain knowledge about it, without having to study all of its units. A statistically representative sample is indispensable if we want to use the results obtained in the sampled units to make inferences about the total population. The reliability of our results, as well as the inferences made from them, are directly correlated with the size and type of the sample.

In Central America, the types of samples, rather than their sizes, varied greatly among the five participating countries. This variation was related to the availability of the basic instruments for sampling (sampling frame, list frame, census segments, available maps, etc.) or to the lack of an institutionalized system for this work.

In two of the five countries, census segments were used and a certain percentage of the population was interviewed within each area segment. The home was the basic sample unit in both countries. In Country A, approximately 10% of the population of the entire area was interviewed. A non-random sample was used, since updated house listings were not available. Country B used a 15 to 17% random sample, but interviews were made only in those segments within certain valleys of interest. The segments or houses outside the lowland areas of these valleys were not considered as part of the population.

Country C used the area sampling frame as a reference and, since the frame segments were too big for our studies, it was necessary to design special segments for the area profile. In this country, the interviews were made in a 10 to 15% of the *segments*; within these segments, all of the population was interviewed. A house listing was used and the location of each house was given to the interviewer. Maps also were available for the supervisors and coordinators.

In Country D, no census segments were available; the unit equivalent to a segment was a small district. Replicated sampling was used here; therefore, a small initial study was necessary to determine the size of the ideal sample. In some areas, 800 questionnaires were required; these were distributed among 20 districts, with subsamples of 40 questionnaires in each. In most of the districts, lists of farmers were available and the interview was conducted only within the rural sector without taking the populated centers into consideration.

Country E did not obtain a true statistical sample. Instead, a verification test was given to certain farmers selected from a list provided by the agricultural extension service. In this case, a specific study had previously been made for certain crops by interviewing a small number of "successful" farmers. The aim was to determine the zone's realistic productive potential, as well as the technological level related to that potential. Under these conditions the purpose of the area profile was to become better acquainted with a group of farmers who were to receive some production alternative recommendations derived from the previous study. Thus, interviews were made with only those producers who cultivated one or more of the previously selected crops of interest.

Each country conducted its sampling to meet its immediate needs. In some cases, sampling was closer to the statistical ideal than in others — but, most importantly, the results were useful and met the requirements of the interested sectors. (Additional details concerning sampling methodology can be found in publication # 2 of this series.)

Programming (time, personnel, resources, etc., for an ideal survey): Our experience has suggested a strategy for an overall survey that could be conducted within a relatively short period: in general, two weeks would be considered as the maximum, with one week as the ideal. However, personnel availability, number of questionnaires required, and existing support services often pose problems that prolong the survey. The number of interviewers and vehicles available represent the programming base for all field work.

The survey route could be designed using the maps of the segments in accordance with the sample developed. The number of questionnaires to be done per day and per interviewer will depend on the time necessary for completion of a questionnaire and the distance from one interview to the next. These factors also determine the total time and cost of the survey. Cost refers to the traveling expenses of the technical personnel, as well as the contracting expenses of professional interviewers (if used).

Formation of the interviewer teams takes into account the number and type of vehicles available, as well as the topography of the area and its population density. Each team would have one supervisor and a specific number of questionnaires would be assigned to each interviewer.

In the ideal survey, a coordinator manages the supervisors who are responsible for the execution and quality of the survey in their zone. Working with the supervisors, the coordinator develops a supervision schedule that reflects the efforts planned by the supervisors and interviewers in each zone. Each supervisor contacts his interviewers regularly (every day or so) to review their work (questionnaire-by-questionnaire) to resolve any problems, to provide materials, or to accompany them to interviews, etc. For this work, he must plan and schedule a place and time for their meeting. To monitor the general progress of the survey, a control sheet must be designed that contains the names and number of the interviewers, by zone.

A small identification card should be placed at the main door of each surveyed house. This card provides a means for the supervisors to confirm information or to complete a questionnaire, if necessary. The interviewer's work can also be evaluated by visiting the person interviewed.

The completed interviews (by zone) should be recorded on the control sheet, which helps to schedule the work and indicate progress in each of the zones. (Appendix H is a small guide that can be used to help plan the field work.)

Training the interviewers: The technical and academic level, as well as the talents and experience, of the persons serving as interviewers in the different Central-American countries was rather heterogenous. Even within a country, this level varied greatly, as did the degree of knowledge concerning the actual survey operations. The training of the interviewers was conducted through a seminar-workshop (2 or 3 days) that was designed to accommodate the different levels and situations of each country. Usually, this seminar was divided into three basic parts:

- (1) lectures on techniques for conducting interviews
- (2) detailed explanation of the questionnaire's content, its importance and the objective of the study
- (3) practice interviews

The theoretical lectures made use of small documentary guides as shown in Appendix I. The workshop to explain the questionnaire, and its application in the field, also made use of a manual or guide for the interviewer (Appendix J).

The development of these manuals, as well as the discussion of the field strategy, was done immediately after producing the final questionnaire and before the training of the interviewers. At the end of this training session, a full group discussion was conducted in which the previously designed field strategy was outlined and the area teams were formed to distribute the interviewers and their vehicles, equipment, etc. Also, the work schedule was drafted for the first week of the actual survey.

The training of interviewers was found to be a crucial step. Badly trained teams can cause problems in every phase of the field survey (and thus affect the quality of information obtained).

Field supervision and coordination: The strategy followed in the supervision and coordination of the field survey has been described above, along with operations and results in different countries. Our most serious problems stemmed from lack of supervision, i.e. the interviewers were not managed efficiently or the questionnaires were not reviewed in the field. Thus, inconsistent data were obtained and many variables were eliminated because of the lack of information. Since the errors or incomplete questionnaires were detected only after completion of the survey, it was not possible to return to the field to verify or complete the necessary information.

Only two countries reflected this lack of supervision, but the situation was magnified in one country due to lack of interest of some technicians recruited for the survey. This lack of interest was caused by several factors, including:

- (1) ineffective presentation of the objectives of the study causing a lack of motivation from the participating technicians,
- (2) non-voluntary recruiting of interviewers. Such personnel were interested only in finishing the survey as soon as possible so as to return to their regular work, and,
- (3) inadequate programming of time and personnel. Because interviewers were sometimes assigned too many questionnaires, there were cases of false interviews or other evidence of irregular data collection. These lapses were closely related with the lack of supervision.

As a positive side of these experiences, there was a confirmation of the basic operational procedures that specify coordination and supervision in the field as vital parts of the total process; the quality and quantity of data collected directly reflected the level of field supervision.

Our experiences emphasized that field operations require careful and objective planning. If the work team does not fully accept its responsibilities, it is preferable to delay the work or hire professional interviewers who are generally employed by census and statistical offices. Hurried recruiting of technicians just as the survey gets underway can only generate problems, especially when there is no direct control. For example, personnel may come from different programs or institutions, thus the field coordinator or supervisor may not have direct authority. Discipline and commitment are difficult to obtain under such improvised circumstances.

Two approaches in forming interviewer teams

Who are the members of the interviewer team? What should be their background, experience, or skills? These are useful and logical questions in organizing the field program. Thus, putting aside considerations of the theoretical ideals and concentrating on the kinds of "real world" situations of the government institutions that usually participate in such surveys, two basic approaches can be derived from our experiences in forming interviewer teams:

Approach 1: using technicians from participating institutions or programs.

Approach 2: contracting professional inquirers from specialized offices in surveying.

Approach 1 was used in four of the five countries, because of its capabilities for training of technical personnel, for efficient use of the existing human resources, and for more efficient access to agricultural knowledge in developing the questionnaire.

In most cases, the teams were composed of technicians from several disciplines (not necessarily agricultural disciplines). Agricultural technicians were hired in one country's survey because of its specific objectives related to the producers of a number of selective crops. The overall approach proved successful and the quality of the data obtained during the survey was more dependent on the type of supervision than on the type and level of the participating technicians.

If one of the main objectives of the area profiles is the training of the technical personnel, and if the work teams are composed of volunteer, responsible technicians, Approach 1 seems most appropriate. (Approach 1 often carries an unconscious bias in that the interviewers may indirectly suggest answers for the interviewed persons.)

However, if the executive institution or office does not have a sufficient number of technicians to take the survey, or if training does not receive high priority because of the high turnover and instability among the personnel, then Approach 2 (contracting of professional interviewers) is the best alternative.

Our experience suggests that costs are not greatly different for Approach 2, since the daily salary of a professional interviewer is equivalent to a technician's per diem traveling expense. An advantage of this Approach 2 is that greater efficiency and quality can be expected from the technician. Approach 2 technicians have a working knowledge of the techniques and the art of inquiry; they know how to use the census maps and are familiar with the working areas and the people. Survey results using Approach 2 were very consistent, and the number of questions without answer was very low.

No definitive recommendation can be made in use of the two approaches; both are considered efficient in their application. The main consideration is field coordination and supervision. Each country must adapt these, or other, approaches to their objectives, needs, and quality of the expected output.



Data Processing and Statistical Analysis

Information collected in the survey requires further treatment for area profiling analysis. We call this transformation and analysis "data coding and processing"; tasks that are usually very difficult and time consuming. Problems that occurred in the countries that first initiated surveys were often avoided in those that started later (processing time decreased and reliability of the data increased).

Coding is the method by which answers to the survey questions are transformed into a numerical format for statistical analysis. In four countries, coding was done after the formal survey; all codes were defined after the responses were available. In two of these countries, coding was done by the technical experts who participated in the survey. Thus, they had the advantage of field experience with responses to the questionnaires when forming the codes and using them with the questionnaires. In the other two countries, coding was done by computer center staff supervised by the technical experts who were familiar with the questionnaires.

To facilitate coding work by personnel who were not familiar with the questionnaire, a coding manual can be used, similar to that in Appendix L.

Pre-coding of the questionnaire was done in only one country (Appendix G). When this questionnaire was outlined, questions were formulated so that all possible answers would have a predetermined code. Then, when the surveys were completed in the field, they were essentially ready for processing, thus saving time and human and financial resources. (Pre-coding also eliminates many errors that can affect the level of reliability of the results.)

"Processing" of data involves the statistical analysis of the information according to the tabulation plan. Two methods were used for the mechanical data processing in the PIADIC operations: one country used small manual calculators, the other countries used larger computers.

Tabulation plan

In all countries, the statistical analysis was performed according to a tabulation plan that described the type of analysis required for the different variables. In four countries, the tabulation plan was made *after* the survey by technical experts who had worked on the outline of the questionnaires. (Except in one country where the expert in data processing was in charge of the plan outline.)

The tabulation plan often demanded a type of analysis that could not be made because the outline of the questionnaire could not be adapted. In the country where the processing expert designed the tabulation plan, the expert often did not include the types of analyses wanted by those who outlined the questionnaire. (These omissions stemmed from the fact that the expert had not participated in the questionnaire development, thus he was not aware of the intentions of the survey designers. This case underlines the need to include a processing expert on a full-time basis during the complete process of the profiling.)

Only one country designed its tabulation plan while preparing its questionnaire. Information wanted from the questionnaire, and ultimate use of this information, was decided upon during the development of the questions, thus eliminating the kind of problems experienced in the other countries. When the survey in this country was finished and revised, some tabulations could be discarded, as several variables were eliminated during the final examination of the questionnaires.

Based on our experiences, the best alternative is to prepare the tabulation plan when outlining the questionnaire. This process forces the designer to deal thoroughly with each question and with potential use of information generated. The results are an improved, shorter questionnaire and greater reliability in the processed information.

Manual processing

Only one country manually processed the data collected; this team used small pocket calculators or desk calculators. Although tedious, this manual processing allowed the team to get a better "feel" of the information. The tabulation plan, the data processing, and the interpretation were done by the same team, thus, they were able to identify and resolve errors made during the coding. When the manual analysis is done directly from the coding sheets, such errors are easier to spot.

The manual method has many limitations — it is time-consuming, each operation requires re-introduction of data, and calculations are usually made twice to ensure that the input data contains no errors. Manual processing also restricts the types of analysis that can be made. The more complex the analysis, the greater the chances for error and the more time required. Thus, human resources costs are high.

When this technique is used, tabulations are limited to simple forms; analysis does not include cross-tabulations or combinations of two or more variables. For example, no analysis can be made of the production effects due to fertilizer use that might be related to the size of a farm. Such limitations are serious, since many variables are highly correlated and their related effects are an important consideration.

Another severe limitation is that the manual method has no "memory"; an institution that wishes to use this information in the future must repeat the entire process. From a practical standpoint, such re-use of data is unlikely, because of the time and labor involved and the lack of accessibility to the information stored in this way. Such data is usually neglected or lost.

Electronic processing

Data processing was done electronically in four countries having access to a computer. Two countries provided a data processing specialist from a national institution to work with the team that developed the area profile. The other two countries provided specialists from outside the directing institution. One of these specialists was an expert in programming, but had no experience in data processing, a factor that served to increase the overall costs and time required. In two countries, the staff members in charge of the processing were not dedicated exclusively to this work, which also caused considerable delay.

To input their data into the computer, two countries first put their data on punch cards and the information was later transferred to magnetic tape. A third country first registered its data on discs and then on magnetic tapes; the fourth country registered its information directly on a disk through an interactive terminal. In each case, the method chosen was determined by availability of equipment within the country.

Data bases were created in all four of these countries using computerized processing; that is, the records were organized to facilitate future use of the data. In three countries, the data banks were created using Statistical Analysis System (SAS) packages. The other base was formed with EBCDIC characters, which allows references to other packages available.

The data base configuration was determined by the availability of the "software" in each country. (Appendix M is an example of a manual used to create such a data base.) The SAS data base is limited in that the SAS package is needed for its use and analysis; however, it offers exceptional capabilities in the handling of the data.

A test of data for consistency, logic, and order must be made for each observation or questionnaire that enters the data base. If the test is satisfactory, the questionnaire enters the data base. All errors must be corrected before entry. Only two countries made this test. In the other two countries, the tests were made only after the base was developed. Thus, the errors made on entry were reflected in all results and caused considerable delay and extra costs for additional computer time.

The statistical analyses were more easily done in the four countries that were able to place their information in the computer data bases and their data is now available for immediate use.

Key problem areas of data processing

In summary, the basic problems that most often cause additional costs and delays are:

- Failure to pre-code the questionnaire;
- Lack of review for inconsistency, logic and order;
- Development of the tabulation plan *after* the questionnaire was made;
- Unavailability or lack of participation by qualified data processing specialists.



Interpretation and Description of Rural Areas by Multi-Disciplinary Workshops

Inter- or intra-disciplinary teams are used in the rural area profile interpretation and description—preferably these teams are made up of the personnel involved in the previous phases. Specialists and consultants should join the team for critical review and editing.

Interpretation and review begins with the "raw" information provided in the data processing. If a computerized process has been used, instruction is provided for use of the computer printout sheets. The role of the data processing specialist is crucial at this stage, as he is responsible for the coding, organization, and formation of the data base that is to be analyzed.

Within the workshop, various disciplinary teams (marketing, socio-economics, etc.) work as analyzing units. After the teams are familiar with the printout sheets, the quality of the data is analyzed (for consistency, number of answers, frequency, etc.) and the pre-planned tabulation charts are filled in with this data.

Ideally, the tabulation charts will have been developed in previous phases; however, additional analysis can be done at this point, if necessary.

Organization and editing of the preliminary documents

The teamwork continues with technical editing, including initial discussion of ideas for organization of the final profile document. Before editing, each group should have a clear idea of the organization of the document and its contents; this will ensure greater cohesion in the initial drafts.

Within the teams in Central America, the specialists worked on specific topics: for example, in socio-economics, one specialist would write primarily on the family, another on the farm, etc. In agronomy, one specialist dealt with corn crops, another with rice, etc. This procedure streamlined the editing and focused individuals on specific writing tasks. Ideally, each team member should be given an outline or lists of contents so that all editing follows the same format.

Before assignment of teams to specific editing tasks, there should be joint discussion of the pre-planned tabulation charts to note comments or ideas for interpretation of the data. This discussion also can serve as a review of the charts already produced, as well as to detect the need for new charts or to discuss the integration of several charts.

The organization of the final area profile documents varied in Central America; some were published as a unit (a unique document with several volumes) and some as separate volumes.

The initial chapters or volumes are usually a general description of the area profiling activities in the country, including major concepts, methodology, scheduling, a basic description of each area, plus conclusions and recommendations.

Each area profile describes a specific study area, thus there are separate chapters or volumes to describe each of these profiles in detail. The last sections contain the numerical data base and annexes necessary for documentation.

Our experience suggests that the volumes be printed separately when funds are limited or the document is extremely large. Volume 1 is reproduced and distributed in larger quantities because it summarizes all work done. It also can guide interested readers in locating the specific or detailed information in the other volumes. The final volume is usually the largest because it often contains all the charts produced by the study, as well as the maps and other materials that are difficult to reproduce. Thus, its printing and distribution are more limited.

Each publication should include the complete table of contents for all volumes to facilitate the reference from one volume to another.

Technical review by multi-disciplinary groups

Initial drafts submitted by the writing and editing teams are reviewed in a workshop attended by all the groups that have worked independently (organized according to macro-descriptors or disciplines).

Each team makes a formal presentation to the assembled workshop to provide background and to promote discussion and critical review of the draft. Discussions include the limitations of the information analyzed and of the study itself, the methodology used, and general results and observations. Each member of the team contributes to the formal presentation, as each has participated in the entire process of generation and analysis of the information.

With this general knowledge of the process and description of the area studied, the workshop members are equipped to critique the profile drafts.

Final critical review of the profiles

All specialists who have collaborated during the initial phase of the area profiling should critically evaluate the preliminary drafts. Discussion and evaluation of the documents is again done within multi-disciplinary groups that examine the prepared documents one-by-one. (Each member should have a copy of the draft to motivate individual participation and to obtain specific response to the content of each document.)

An editing and style committee is required to further refine the documents after the technical evaluation and changes have been made to the text content. This committee is responsible for the final editing of the document, as well as for the corrections and unification of the criteria developed during the technical evaluation workshop.

This committee should probably consist of no more than three or four persons to ensure effectiveness and flexibility within the editing process. One of the participants should be the general coordinator of the profiles who is acquainted with the complete profiling process and with the people who have participated. The coordinator also should be able to rely on a moderator, a secretary-reporter, and one or two assistants to the secretary for the handling of group discussion in workshop. Preferably, there should be a moderator for each different topic discussed; a specialist on this subject is a desirable candidate, as he can guide the technical discussion.

A secretary-narrator is appointed to take note of all the changes and suggestions agreed upon after group discussion. Since the discussion and exchange of ideas can be a remarkably dynamic process, this support for the secretary is essential, and one or two assistants may be necessary. (The secretary and assistants are also excellent candidates for the editing and style committee.)

A successful procedure used in guiding the committees requires that each suggested change be submitted in written form (clearly and precisely) for discussion by the committee. These notes are delivered to the secretary and filed for future consideration by the editing and style committee.

Results and conclusions of study

The multi-disciplinary technical evaluation of the preliminary drafts is designed to develop conclusions and general recommendations for the study. Preliminary drafts of conclusions and specific recommendations by section or topic discussed can be summarized later by the editing and style committee.



Final Drafting and Organization

Editing and style

The process of final drafting and editing includes an extensive review of the preliminary documents to improve their organization and to clarify the concepts discussed. This work is the responsibility of the editing and style committee. In addition to selection criteria mentioned previously, the committee should have some expertise in editing and publishing procedures. Our experience has been that few countries allow sufficient time or funds for these tasks; they are usually done "after hours", or at irregular times during the work day.

Although the editing and style committee actually begins work during the final stages of profiling methodology, its coordinator should be named as the project gets underway. His functions as leader of the writing and editing will begin before the groups start drafting the preliminary documents.

To speed the process, the work can be distributed among the different members of the committee (three or four persons) according to their expertise or knowledge of the different sections of the questionnaire. The condition of the preliminary drafts directly affects the time devoted to editing. (That is, the authors' writing quality and physical presentation affect the amount of editing and rewriting needed.)

The editing work is far more complicated when the different sections or chapters of the drafts have been written by several persons with different styles and proficiencies. This aspect is magnified by the nature of the multi-disciplinary work that characterizes the area profile teams.

A standard format should be followed, with attempts to use a consistent technical writing style. Mechanical style can follow that of the directing institution; but in general, there are no strict guides. (This is clearly seen when comparing the documents prepared in the different countries, and should probably be expected in a multi national project.)

Basically, editing focuses on technical content; that is, on reduction of document bulk, verification of data accuracy, conversion of measures to the metric system, and identification and correction of the inconsistent use of symbols, etc.

The job of the editing and style committee, and particularly that of its coordinator, is an extremely challenging task. The coordinator's work includes participation in planning meetings, in preparing the budget, and in compiling data to document costs. Moreover, he coordinates the logistical support provided by the parent institutions; that is, the use of photocopies, secretarial support during working hours and overtime, purchase of supplies, etc.

This total process must be scheduled and managed, including preliminary drafting, editing and publication, distribution, etc., with time for the evaluations and adjustments. A record of the different activities and people participating is needed for the introduction or acknowledgment sections of the final document.

Some guidelines that might prove useful to inexperienced members of an editing and style committee would include:

- A review of the table of contents, its summary or compendium, page numbering, figure and chart titles, references, unification of measuring units, etc. measuring units, etc.
- The table of contents should agree with the titles of the different sections, and with figures and charts.
- Each chart, figure, footnote, and annex mentioned in the text should be checked, and each quotation identified with a chart, figure, footnote or annex. Such checks would include sequence and style of numbering, or alphabetical ordering, and documents mentioned as references.
- Spelling, subject-verb agreement, sentence construction, etc., are also part of a more detailed copy-reading process.
- If a specific format and style are used, the review should also include checks on spacing, column width, title position, paragraph and section titles, position of figures and charts, etc. The mechanical aspects of the chosen style must also be followed (use of capital letters, abbreviations, reference sequences, figures and charts, notations, etc.).
- A thorough review should be made by other specialists to obtain their opinion of the ideas expressed in the document. This would include a critique of content and organization as well as polishing of the language used, grammar and syntax, punctuation, fluency and conciseness, etc. The review should precede actual printing of the document.

Publication, distribution and documentation

An estimate of the cost of publication should be obtained, based on the reviewed manuscript. In most cases, costs of production will determine the number of complete documents to be printed.

Ideally, all interested users would receive a copy of the documents, but costs usually preclude such wide distribution. The organization of the documents mentioned previously was devised, so that Volume I of the document would contain general information concerning all the activities and would be concise and manageable. This volume would be distributed in quantities to inform potential users of the total document and to guide their search for details contained in the other volumes with more restricted distribution.

Complete profile documents should be sent to the library of area concerned, as well as to the participating organizations. Of course, these documents are also integrated into the national or regional documentation and information system. This ensures systematic storage and retrieval.



Use of Rural Area Profiling

Analysis

The development of the area profile document is completed with the stages outlined in the previous chapter. However, the methodological process of profiling does not end there; the document publication represents only one intermediate product for the administration of the existing resources of the area. The essence of the profiling process is that it is never static; rather, it is a very dynamic technique that must be constantly modified and updated by qualified professionals.

The area profile documents should be considered as the fundamental instruments in making decisions — not only in the planning stage of the projects or programs, but also in follow-up and evaluation. They also represent a benchmark study for measuring the changes that occur in an area over a given period of time.

We are strongly convinced that profiling must be a long term, future-oriented process with multiple and continuous use. Profiling will be institutionalized only if there is an information system available that can synthesize and analyze the information generated by the profiles, —and that, in turn will provide the basic data needed to develop additional profiling information for the data base.

Future considerations

Rural area profiling is a dynamic activity that can be most effectively done when integrated into a national or regional information system. Profiling is not completed when specific data is compiled and organized into a document; rather the process continues with feedback of new data and with adjustment and updating of existing data. Profiling gains consistency and acceptance if developed with the participation of all institutions within the sector under study. Such contributions can substantially increase the amount of secondary information and feedback for the system.

If a national information system does not exist, a small system should be designed to preserve the information generated by the profiling. To date, in Central America, we are just beginning to develop policies and norms for user access and for maintenance and feedback to a system of information. This aspect of profiling deserves a great deal of additional study to assure greater and more effective use of the data generated by rural area profiling.



APPENDIX

APPENDIX A

MINISTRY OF AGRICULTURAL DEVELOPMENT
INTER-AMERICAN INSTITUTE OF AGRICULTURAL SCIENCES - OEA
PROJECT OF AGRICULTURAL INFORMATION
OF THE CENTRAL AMERICAN ISTHMUS

OPERATIONAL PLAN FOR DEVELOPING
RURAL AREA PROFILES AND AGRICULTURAL
PRODUCTION ALTERNATIVES IN PANAMA

SANTIAGO DE VERAGUAS, PANAMA

SEPTEMBER, 1980

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OPERATIONAL PLAN FOR DEVELOPING RURAL
AREA PROFILES AND TECHNOLOGICAL
ALTERNATIVES FOR AGRICULTURAL
PRODUCTION IN PANAMA

1. INTRODUCTION

The Inter-American Institute of Agricultural Sciences -IICA- is a specialized organization of the OEA, established by the American governments with the purpose of helping the countries to stimulate and promote rural development, and thus the general development and welfare of the people.

The Inter-American Center of Documentation, Information and Agricultural Communication (CIDIA) is a specialized Center of IICA whose objective is to stimulate, promote and cooperate with the member countries in the strengthening of the institutions and programs of information for rural development. The Center is involved in several projects at the hemispheric, regional, and national levels, including the Project of Agricultural Information of the Central-American Isthmus (PIADIC). This project is a joint effort by the countries of the region, the Inter-American Institute of Agricultural Sciences (IICA), and the Regional Office of the AID for Central America and Panama (ROCAP). PIADIC was designed to generate a permanent flow of useful, factual and updated information for use in more efficient planning, execution and evaluation of the agricultural development in the countries of the Central-American Isthmus. A central objective of the PIADIC is to improve the capacity of national organizations to store, analyze, and use relevant data from the agricultural rural sector.

For this task, PIADIC must cooperate with the national entities in the training of a group of technicians in the theoretical and practical aspects of a methodology for the development of profiles and technological alternatives of agricultural production. The execution and coordination of this activity is a responsibility of the National Office of Sectoral Planning of the Ministry of Agricultural Development for the Republic of Panama.

2. OBJECTIVES:

2.1 General Objectives

To train Panamanian technicians in the use of a methodology to locate, describe and develop specific areas in the agricultural sector.

- 2.2 Specific Objectives
 - 2.2.1 To describe two areas using the rural area profiling methodology.
 - 2.2.2 To develop agricultural production alternatives at a planning level.
 - 2.2.3 To train technical personnel in:
 - Identifying, compiling, managing and analyzing primary and secondary information related to four general types of determinants of agricultural production. (1) natural resources, (2) technological, (3) socioeconomic, and (4) marketing.
 - Describing the rural area profiles and developing agricultural production alternatives.
- 3. EXPECTED FINAL PRODUCTS
 - 3.1 Twenty-five national technicians trained in the use of rural area profiling methodology.
 - 3.2 Identification, compilation, and organization of agricultural information in the Districts of Renacimiento and Barú of the Province of Chiriquí.
 - 3.3 Two Rural Area Profile Documents
 - 3.4 Agricultural production alternatives at a rural planning level.
- 4. INSTITUTIONAL ORGANIZATION
 - 4.1 Implementing and Coordinating Organization: National Office of Sectoral Planning - MIDA
 - 4.2 Supporting Organizations
 - Statistics and Census Office
 - CATIE
 - Other institutions of the public and private sector.
 - 4.3 Technical Cooperation:
 - IICA/PIADIC
 - IICA/Panama
 - Technicians:
 - Ing. Santander Jaramillo (soils)
 - Ing. Michel Eldin (climate)
 - Dr. Raúl Soikes (cattle)
 - Dr. Antonio Ibarra (sociology)
 - Lic. Armando Espinoza (marketing)
 - Lic. Jaime French (agricultural economy)
 - Dr. Franklin Rosales (agronomy)
 - 4.4 National Coordination Team:
 - Lic. José Morcillo (General Coordinator)
 - Dr. Carlos Orrego (Technological Descriptors Coordinator)
 - Lic. Nemecio Donoso (Socioeconomic Descriptors Coordinator)
 - Lic. Ubaldo Núñez (Natural Resources Descriptors Coordinator)
 - Ing. Celso Coto (Natural Resources Descriptors Coordinator)

5. GEOGRAPHIC LOCATION OF THE STUDY
Province of Chiriquí
Districts of Renacimiento and Barú
6. EXECUTING PERIOD
September 1980 - February 1981
7. DETAIL OF ACTIVITIES AND PRODUCTS
Activity 1
Identification and collection of secondary information
Products:
 - Documents, maps, aerial photographs, and other sources of information about natural resources, technology, socioeconomy and marketing.
 - Lists of information sources
 - Organization of data collectedActivity 2
Design and construction of the area sample for the survey with the help of the technical personnel of the Census and Statistics Department of the General Controllership.
Products:
 - Design of the area sample for the survey, including:
 - a. Precision
 - b. Size
 - c. Distribution
 - d. Indexing of the sample units
 - e. Route of the surveyActivity 3
Orientation and training course for national technicians on methodology of Rural Area Profiling (for more details, see item 8 of the Operational Plan).
Products:
 - Twenty-five national technicians trained in Rural Area Profiling methodology.
 - Preliminary review of the secondary information.
 - Definition and selection of the necessary variables for the construction of the profiles.
 - Identification of the type of primary information needed.
 - Development of output format.
 - Development, testing and final adjustment of the questionnaire.
 - Work plan to conduct the survey.
 - Guide for interviewersActivity 4
Training of interviewers
Products:
 - Fourteen national technicians trained in conducting surveys.

Activity 5

Conducting of the survey

Products:

- Approximately 500 complete and reviewed questionnaires.
- Critique of the questionnaire and of the survey process.

Activity 6

Processing of the survey data.

Products:

- Coded primary information
- Information transferred to punched cards or magnetic tapes (Data Bank).
- Indicators, statistical processes, and calculations requested.

Activity 7

Analysis, interpretation, synthesis of the primary and secondary information and formulation of the area profile documents.

Products:

Profile Document for Rural Area for Renacimiento and Barú (Draft).

Activity 8

Analysis of the document of the rural area profiles and development of production alternatives.

Products:

Production alternatives

Activity 9

Technical review and final editing of the rural area profile document and agricultural production alternatives

Products:

- Review of area profile document.
- Review of agricultural production alternative documents.

Activity 10

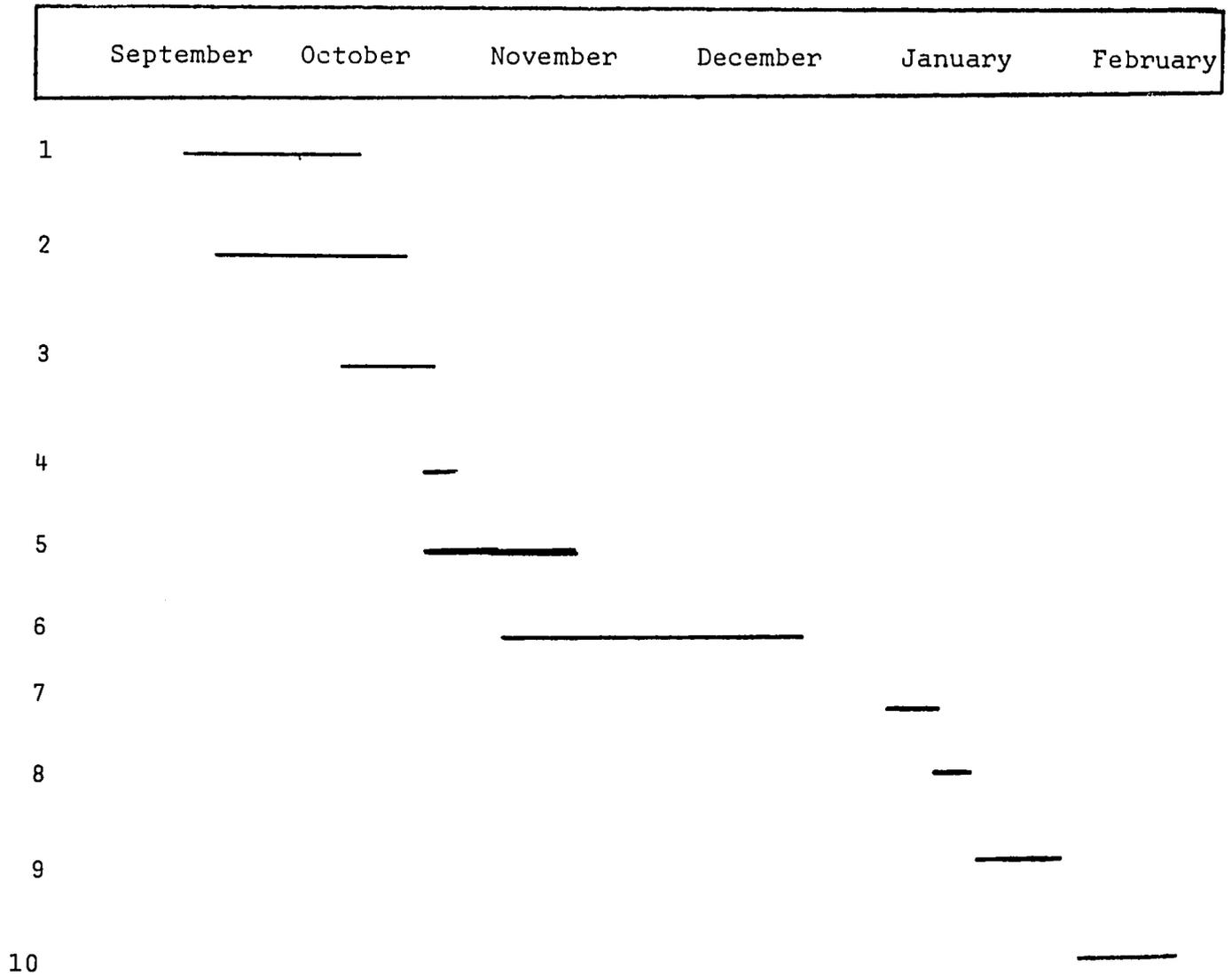
Publication and distribution of the rural area profile and agricultural production alternative documents.

Products:

All copies of the area profile and distributed production alternatives printed and delivered.

8. PROGRAM OF THE COURSE ON METHODOLOGY FOR THE PREPARATION OF RURAL AREA PROFILES.

ACTIVITY CHRONOGRAM - RURAL AREA PROFILE, PANAMA 1980 - 1981



MINISTRY OF AGRICULTURAL DEVELOPMENT - MIDA
INTER-AMERICAN INSTITUTE OF AGRICULTURAL SCIENCES - IICA
PROJECT OF AGRICULTURAL INFORMATION
OF THE CENTRAL-AMERICAN ISTHMUS - PIADIC

COURSE ON METHODOLOGY FOR THE
PREPARATION OF RURAL AREA PROFILES
SANTIAGO DE VERAGUAS, PANAMA
OCTOBER 6-15, 1980

PARTICIPANTS: TECHNICIANS OF THE NATIONAL OFFICE OF
SECTORAL PLANNING (MIDA)
INSTRUCTORS: TECHNICIANS OF THE IICA/CIDIA/PIADIC

Objectives:

1. To train participants in the principles, techniques and use of the Rural Area Profiling.
2. To define and select the necessary variables for the construction of the profiles.
3. Discussion and conclusions on the operative plan for the sampling implementation and data utilization.
4. To design and test the primary data compilation instrument (questionnaire); prepare the needed instructives and the outlet data charts.

Program:

Phase I

October 6

1. Opening Words - 10:00 a.m.
 - a. MIDA (Dr. Reynaldo Pérez or Lic. Rafael Tirado)
 - b. IICA Ing. Francisco Sylvester (or his representative)
2. Introduction - 10:30 a.m.
 - a. Backgrounds and objectives of PIADIC in Rural Area Profiles. Lic. Jaime French.
 - b. Methodology of the Rural Area Profile and its utilization in the agricultural sector. Dr. Franklin Rosales.
3. Natural Determinants of the agricultural production
 - a. Natural Resources. Ing. Santander Jaramillo - 2:00 p.m.
Recess - 3:00 p.m.
 - b. Climate: Ing. Michel Eldin - 3:30 p.m.

October 7

4. Social determinants. Lic. Jaime French - 8:00 a.m.
Recess - 10:00 a.m.
5. Technological determinants
 - a. Cattle. Dr. Raúl Soikes - 10:30 a.m.
 - b. Agronomy. Dr. Franklin Rosales - 1:30 p.m.
Recess - 2:30 p.m.
6. Economic Determinants. Lic. Jaime French - 2:45 p.m.
7. Marketing Determinants. Lic. Armando Espinoza - 3:45 p.m.

Phase II

October 8 - 9 8:00 a.m. - 4:30 p.m.

- a. Introduction to the survey methodology
- b. Review of the secondary information
- c. Identification of required primary information
- d. Development of output format

October 10 8:00 a.m. - 4:30 p.m.

Survey Methodology

- a. Design and development of questionnaires.
Dr. Montie Wallace.
- b. Fieldwork. Dr. Montie Wallace.
- c. Coding the information. Lic. Jaime French.
- d. Developing the Data Bank. Lic. Jaime French.

October 13

Constructing the questionnaire.

October 14

Testing the questionnaire in the field.

October 15

8:00 a.m. - 4:30 p.m.

Final adjustment of questionnaire.

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Appendix B
RURAL AREA PROFILE - RENACIMIENTO AND BARU - CHIRIQUI, PANAMA
Operational Plan and Costs (1980-81)

PRODUCTS	ACTIVITIES	RESOURCES	TIME	UNIT COST (\$)	TOTAL (\$) COST
Discussions on the possibility of fulfilling the cooperative activity IICA/MIDA	1. Preliminary meeting IICA-PIADIC		10/IX/80		
Initial agreement on the performance of Rural Area Profiles in Panama	2. Formal meeting DNPS-MIDA, IICA-PIADIC		11/IX/80		
Agreements on working areas, identification of national personnel(s) responsible for the profile activities, development of initial budget and beginning dates for joint works	3. Formal meeting DNPS-MIDA, IICA-PIADIC		16-17/IX/80		
Guides for the implementation of Rural Area Profiling	4. Review and adjustment of concepts and documents on Rural Area Profiles		18-20/IX/80		
Data on natural resources, socio-economic and technology	5. Collection of secondary information	2 Technicians travel expenses	18/IX/-3/X/80 (10 days)	15.00/day	300.00 300.00

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PRODUCTS	ACTIVITIES	RESOURCES	TIME	UNIT COST (\$)	TOTAL (\$) COST
Outlining of the sample area for survey - size, distribution, indexing of sampling units, survey route and quality control	6. Meeting with the technical personnel of the Census and Statistical Department for the design and development of the sample - definition of the precision required	Statistical and census Personnel Materials	22-27/IX/80		300.= 300.=
Fifteen to 25 trained national technicians - instructions and questionnaires for the survey - final plan of the survey - out frames	7. Orientation and training course for national technicians in methodology of Rural Area Profiling	12 technicians travel expenses 1 secretary materials Fuel & 4 vehicles	6-17/X/80 (10 days) 10 days 6-17/X/80	15.00/day 10.00/day 35.00/day/veh.	1,800.00 100.00 140.00 2,040.=
Fourteen (14) trained technicians for the surveying	8. Inquirers training Participants collecting field data	10 technicians travel expenses 4 supervisors 1 secretary materials Fuel - 2 vehicles	20-24/X/80 (5 days) 20-24/X/80 (5 days) 5 days 1 day	15.00/day 15.00/day 10.00/day 20.00/day/veh.	750.= 300.= 50.= 200.= 40.= 1,340.=
Approximately 500 questionnaires filled and reviewed	9. Surveying	10 technicians travel expenses 4 supervisors travel expenses Fuel - 3 vehicles	27/X-14/XI/80 (15 days) 27/X-14/XI/80 15 days 27/X-14/XI/80	15.00/day 15.00/day 25.00/day	2,250.= 900.= 1,125.= 4,275.=
500 Transcribed and verified questionnaires in cards and tapes	10. Codification, enumeration, and verification	Two alternatives 1. Contract of services per unit	3-21/XI/80		700.=

PRODUCTS	ACTIVITIES	RESOURCES	TIME	UNIT COST (\$)	TOTAL COST (\$)
	11.	Punched and verified card; 2. Contract per product			700.=
Validated records	12. Correction and validation of all the information	Computer and Program	24/XI-5/XII/80		400.= 400.00
Generation of Data Banks	13. Apply program of data organization in magnetic device	Computer and Program	8-12/XII/80		700.= 700.00
Output tables, coefficients and summaries	14. Information Analysis	Computer and Program	begins 15/XII/80 (2-3 weeks)		1000.= 1000.=
Rural Area Profile Document	15. Analysis and Description of the Information	5 Technicians Expenses Technical Personnel Secretary	5 days January/81 (1 week) 5 days	\$15/day \$10/day	375.= 50.= 50.= 475.=
Alternatives (Planning, Production)	16. Rural Area Profile Analysis	MIDA and IICA-PIADIC Materials	5 days January 81/ (15 weeks) 5 days	\$15/day \$10/day	375.= 50.= 50.= 475.=
Publication of 500 copies of Rural Area Profile	17. Interpretation of the results, revision of literature, writing, editing	2 Technicians MIDA 2 Technicians IICA Printing	February/81 (4 weeks)		2,000.= 2,000.=
					Great Total = \$ 15,005.00

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APPENDIX C

CONTENT OUTLINE FOR A SPECIFIC RURAL AREA
PROFILE IN THE DEVELOPMENT OF AGRICULTURAL
PRODUCTION ALTERNATIVES

Jorge Castillo Velarde, Editor

(Editor's Note - These translations are non-technical versions of the original Spanish language documents. They are intended as guides to format and general structure, rather than as definitive translations. They should prove especially useful to the multi-disciplinary teams that design, operate and analyze the rural area profiling in other developing countries.)

Collaborators in the development of this document were:
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Manuel Villasuso, Montie Wallace and Antonio Ybarra.

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tics of Guatemala was of great use in developing the indicators
of natural resources, as well as in studies to identify and
define the elements that comprise the National System of
Agricultural Information of Guatemala.

JCV

MACRODESCRIPTORS

The profile of a specific rural area is defined as an instrument used for planning, performing and evaluation of research projects in agricultural production.

Profiling consists of gathering all available information about all kinds of conditions under which the research is done and results obtained. Therefore, it should include -- besides a correct geographical information of the area -- an analytical description of all determinants of the production, both natural and those provided by man.

This outline classifies these determinants in four broad groups:

- 01 NATURAL
- 02 MARKETING
- 03 TECHNOLOGICAL
- 04 SOCIO-ECONOMIC

The general outline divides the four large groups into the macrodescriptors listed below:

- 01 Natural Determinants of Production
 - 011 Natural resources
 - 012 Meteorological and telluric factors
- 02 Determinants of Agricultural Marketing
 - 021 Domestic market
 - 022 Foreign market
 - 023 Marketing conditions
- 03 Scientific and Technological Determinants
 - 031 Level of agricultural technology
 - 032 Level of livestock technology
 - 033 Other technological aspects
 - 034 Costs of production and productivity
- 04 Selected Socio-economic Determinants
 - 041 Social aspects
 - 042 Economic aspects

The macrodescriptors also appear in the general outline with sub-divisions by information topic and subject matter.

GENERAL OUTLINE BY
SUBJECT MATTER

GENERAL OUTLINE

---TOPICS---

---SUBJECT MATTER---

- 01 Natural Determinants of Production
 - 011 Natural Resources
 - 0111 Agrologic Resources
 - 0111.1 Soil taxonomy classification
 - 0111.2 Land utilization classification
 - 0111.3 Physiography-Geomorphology
 - 0111.4 Topographic configuration
 - 0111.5 Erosion
 - 0111.6 Stony-Rocky
 - 0111.7 Flood
 - 0111.8 Originative Matter
 - 0111.9 Effective Depth
 - 0111.10 Texture
 - 0111.11 Structure
 - 0111.12 Natural Drainage
 - 0111.13 Physical characteristics of the soil
 - 0111.14 Chemical characteristics of the soil
 - 0111.15 Intensity of land use
 - 0111.16 Legislation on land use
 - 0112 Water Resources
 - 0112.1 Hydrologic resources
 - 0112.2 Hydrogeologic resources
 - 0112.3 Legislation on water use
 - 0113 Forest resources
 - 0113.1 Total area and classification of forests
 - 0113.2 Forest inventory
 - 0113.3 Forest development
 - 0113.4 Phytosanitary conditions of the forest
 - 0113.5 Reforestation
 - 0113.6 Forest legislation
 - 0114 Fishery resources
 - 0114.1 Fishing industry
 - 0114.2 Fishery development
 - 0114.3 Fishery legislation
 - 0115 Mineral resources
 - 0115.1 Mines
 - 0115.2 Hydrocarbons
 - 0115.3 Development projects
 - 0115.4 Geological maps and studies
 - 0115.5 Mining and hydrocarbon legislation
 - 012 Phenological aspects
 - 0121 Meteorological factors
 - 0121.1 Climatic elements
 - 0121.2 Maps and climatic studies
 - 0122 Bioclimatic factors
 - 0122.1 Bioclimatic characteristics
 - 0122.2 Maps and phenological studies
 - 0123 Telluric factors
 - 0123.1 Volcanic activity
- 02 Determinants of Agricultural Marketing
 - 021 Local markets of the study area
 - 0211 Supply
 - 0211.1 Food products
 - 0211.2 Farm industry
 - 0211.3 Agricultural inputs
 - 0212 Demand
 - 0212.1 Food products
 - 0212.2 Agriculture industry products
 - 0212.3 Agricultural inputs
 - 0213 Prices
 - 0213.1 Prices paid to producer
 - 0213.2 Prices paid wholesale dealer
 - 0213.3 Prices paid retail dealer
 - 022 Extent of Market Area
 - 0221 Supply
 - 0221.1 Food products
 - 0221.2 Agricultural industry products
 - 0221.3 Agricultural inputs
 - 0222 Demand
 - 0222.1 Food products
 - 0222.2 Agricultural industry products
 - 0222.3 Agricultural inputs
 - 0223 Agricultural product prices in trade outside local area
 - 0223.1 Paid to producer
 - 0223.2 Paid by producer
 - 023 Conditioners of marketing
 - 0231 Merchandising practices
 - 0231.1 Identification of channels of commerce
 - 0231.2 Contractual forms
 - 0231.3 Supply patterns
 - 0231.4 Pricing patterns
 - 0231.5 Distribution patterns
 - 0232 Commercialization Margins
 - 0232.1 Gross margins
 - 0232.2 Costs of aggregate value
 - 0233 Norms
 - 0233.1 Quality norms
 - 0233.2 Marketing legislation
- 03 Technological Determinants
 - 031 Level of Agricultural Technology
 - 0311 Planting
 - 0311.1 Seeds and vegetative material used
 - 0311.2 Planting methods
 - 0311.3 Planting recommendations for the area
 - 0312 Fertilization
 - 0312.1 Application of major elements
 - 0312.2 Application of trace elements
 - 0312.3 Soil and foliage analysis
 - 0312.4 Fertilizer recommendations for the area
 - 0313 Cultural Practices
 - 0313.1 Soil-related
 - 0313.2 Water-related
 - 0313.3 Crop-related
 - 0313.4 Cultural practice recommendations for the area
 - 0314 Pest control and agricultural diseases
 - 0314.1 Incidence of pests and diseases
 - 0314.2 Techniques for pest and disease control
 - 0314.3 Pest and disease control recommendations for the area
 - 0315 Other labors
 - 0315.1 Harvest and post-harvest
 - 0315.2 Storage and conservation
 - 0315.3 Crop rotation
 - 0315.4 Other agricultural-technique recommendations for the area

032 Level of livestock technology

- 0321 Genetic improvement of the animals
 - 0321.1 Selection of progenitor
 - 0321.2 Reproduction
 - 0321.3 Animal types
 - 0321.4 Animal genetic improvement recommendations for the area
- 0322 Animal feeding and nutrition
 - 0322.1 Feeding systems
 - 0322.2 Nutrition levels
 - 0322.3 Animal feeding recommendation for the area
- 0323 Animal raising and management
 - 0323.1 Identification and records
 - 0323.2 Prenatal stage
 - 0323.3 Postnatal management
 - 0323.4 Growing stage
 - 0323.5 Production stage
 - 0323.6 Quality of the facilities
 - 0323.7 Animal breeding and management recommendations for the area
- 0324 Animal Health
 - 0324.1 Disease and mortality
 - 0324.2 Disease prevention and control
 - 0324.3 Animal health recommendations for the area
- 0325 Other Livestock Techniques
 - 0325.1 Techniques for livestock products
 - 0325.2 Primary processing techniques for the products
 - 0325.3 Storage and merchandising methods for the livestock products
 - 0325.4 Other livestock technique recommendations for the area

033 Other Technological Aspects

- 0331 Use of manpower
 - 0331.1 Unpaid labor
 - 0331.2 Paid labor
- 0332 Use of farm credit
 - 0332.1 Bank credit
 - 0332.2 Non-bank credit
 - 0332.3 Credit insurance and guarantees
- 0333 Use of technical assistance
 - 0333.1 Agricultural
 - 0333.2 Financial
 - 0333.3 Marketing
 - 0333.4 Non-specified classes
- 0334 Transportation methods for production
 - 0334.1 For people
 - 0334.2 For inputs
 - 0334.3 For products
- 0335 Other inputs
 - 0335.1 Raw materials for home-industry
 - 0335.2 Other materials and supplies for production
- 0336 Infrastructure
 - 0336.1 Agrarian infrastructure
 - 0336.2 Road infrastructure

034 Production Costs and Productivity

- 0341 Costs for products
 - 0341.1 of annual and transitory crops
 - 0341.2 of permanent crops
 - 0341.3 of livestock products
 - 0341.4 of other farm products
- 0342 Productivity
 - 0342.1 Total of all productivity factors
 - 0342.2 Productivity per manpower unit
 - 0342.3 Productivity per area unit

- 0343 Productivity per surface area unit
 - 0343.1 Estimation of the productivity index, by surface area unit, by product, according to area developed, type of tenancy and level of technology

04 Socio-economic Determinants

- 0411 Population
 - 0411.1 Population density
 - 0411.2 Population structure
 - 0411.3 Population growth
 - 0411.4 Family structure
 - 0411.5 Fertility
 - 0411.6 Migration
- 0412 Collective activity
 - 0412.1 Social organization
 - 0412.2 Level of association
 - 0412.3 Socialization levels
 - 0412.4 Social activity
 - 0412.5 Decision-making processes
- 0413 Education
 - 0413.1 Educational level
 - 0413.2 Access to education
 - 0413.3 Education services
- 0414 Health
 - 0414.1 Health level
 - 0414.2 Nutrition
 - 0414.3 Access to health services
 - 0414.4 Health services
- 0415 Housing
 - 0415.1 Housing quality
 - 0415.2 Housing level
 - 0415.3 Housing services
- 0416 Other social infrastructure
 - 0416.1 Drinking water
 - 0416.2 Sewage system
 - 0416.3 Electricity
 - 0416.4 Transportation and communications
 - 0416.5 Government and private costs of services
- 042 Economic Aspects
 - 0421 Work
 - 0421.1 Economically active population
 - 0421.2 Manpower supply
 - 0421.3 Employment movement
 - 0421.4 Attitudes and values at work
 - 0422 Land availability
 - 0422.1 Area availability
 - 0422.2 Land tenure rules
 - 0423 Land use
 - 0423.1 Land for tillage
 - 0423.2 Other forms of development
 - 0423.3 Other uses
 - 0424 Landed capital
 - 0424.1 Animal inventory
 - 0424.2 Installations related to water resources
 - 0424.3 Agricultural facilities
 - 0424.4 Machinery and equipment
 - 0424.5 Vehicles
 - 0424.6 Other facilities
 - 0425 Production
 - 0425.1 Agricultural production
 - 0425.2 Animal production
 - 0425.3 Other products
 - 0426 Family income
 - 0426.1 From agricultural enterprise
 - 0426.2 From off-farm activities
 - 0426.3 Distribution of the net family income per stratum

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INDICATORS

In the following pages, the subject matter of the general outline is sub-classified by indicator category. Some indicators that require further description have been subdivided into variables that are considered relevant for the specific area profile.

In particular, we have given this more detailed treatment to the selected socio-economic determinants (code 04), so as to more clearly define those aspects that are more closely related with agricultural production.

01

NATURAL

DETERMINANTS

01 Natural determinants of production

011 Natural resources

0111 Agrologic resources

- 0111.1 Taxonomic classification of the soils
 - 0111.1.1 Large group or subgroup (USDA)
 - 0111.1.2 Family
 - 0111.1.3 Series
- 0111.2 Land use classification
 - 0111.2.1 Land capability soil class
 - 0111.2.2 Land capability soil sub-class
 - 0111.2.3 Land capability unit
 - 0111.2.4 Aptitude for irrigation class
- 0111.3 Physiography and/or geomorphology
 - 0111.3.1 Physiographic units
 - 0111.3.2 Geomorphologic units
- 0111.4 Topography
 - 0111.4.1 Form of slope
 - 0111.4.2 Gradient of slope
- 0111.5 Erosion
 - 0111.5.1 Erosion potential
 - 0111.5.2 Water erosion
 - 0111.5.3 Eolic erosion
- 0111.6 Stoniness or rockiness
 - 0111.6.1 Class and degree of restriction by stones
 - 0111.6.2 Class and degree of restriction by rocks
- 0111.7 Flood
 - 0111.7.1 Type of flood
 - 0111.7.2 Degree of restriction
- 0111.8 Parent material
 - 0111.8.1 Type of material
 - 0111.8.2 Origin of material
- 0111.9 Effective depth
 - 0111.9.1 Range of depth
 - 0111.9.2 Type of limiting material
- 0111.10 Texture
 - 0111.10.1 Texture class
- 0111.11 Structure
 - 0111.11.1 Form
 - 0111.11.2 Size
 - 0111.11.3 Degree of development
- 0111.12 Natural drainage
 - 0111.12.1 Drainage classes
- 0111.13 Physical characteristics
 - 0111.13.1 Permeability
 - 0111.13.2 Infiltration
 - 0111.13.3 Available Moisture
 - 0111.13.4 Consistency
- 0111.14 Chemical characteristics
 - 0111.14.1 pH reaction
 - 0111.14.2 Organic matter
 - 0111.14.3 Cation exchange capacity (CEC)
 - 0111.14.4 Percentage base saturation Available phosphorus and potassium
 - 0111.14.5 Toxicity (aluminum, iron, alofan, etc.)
 - 0111.14.7 Salinity (CE x 10³)
 - 0111.14.8 Alkalinity (PSI)
- 0111.15 Intensity of land use
 - 0111.15.1 Total cultivated area (per agricultural year and crop)
 - 0111.15.2 Degree of use and land condition (as base of area sample)
- 0111.16 Legislation on land use
 - 0111.16.1 Agrarian legislation
 - 0111.16.2 Territorial tax legislation
 - 0111.16.3 Administration and land development regulations

0112 Water resources

- 0112.1 Hydrologic resources (surface water)
 - 0112.1.1 Hydrologic evaluation of the riverbasin
 - 0112.1.2 Historical records of water movement
 - 0112.1.3 Availability of surface water
 - 0112.1.4 Surface water demand per type of use
 - 0112.1.5 Time projection for water availability
 - 0112.1.6 Time projection of water demand
 - 0112.1.7 Quality of water
 - 0112.1.8 Floodable areas
- 0112.2 Hydrogeologic resources (underground waters)
 - 0112.2.1 Well location maps
 - 0112.2.2 Usable volume of underground water
 - 0112.2.3 Development regulations
 - 0112.2.4 Quality of water
- 0112.3 Water use legislation
 - 0112.3.1 Laws and rules on water use
 - 0112.3.2 Administration and development regime for water resources

0113 Forest resources

- 0113.1 Total area and classification of forests
 - 0113.1.1 Total area of natural forests
 - 0113.1.2 Total area of managed forests
- 0113.2 Forest inventory
 - 0113.2.1 Area of conifers, by species
 - 0113.2.2 Total area of deciduous forests, by species
- 0113.3 Forests in development
 - 0113.3.1 Area and density of productive forests
 - 0113.3.2 Quantity of growing trees, by species in the developing forests, by year
 - 0113.3.3 Quantity of trees cut in developing forests (per year), by species
 - 0113.3.4 Quantity of wood harvested, by species
 - 0113.3.5 Annual forest development projects
- 0113.4 Phytosanitary condition of the forests
 - 0113.4.1 Identification of pests and diseases, by species
 - 0113.4.2 Incidence of pests and diseases by species
 - 0113.4.3 Infested areas, by pest and disease
 - 0113.4.4 Infested and healthy trees, by species
- 0113.5 Reforestation
 - 0113.5.1 Identification of areas that can be reforested
 - 0113.5.2 Reforested areas, by species, and number of plants according to public and private projects
- 0113.6 Forest legislation
 - 0113.6.1 Laws and rules for forest development
 - 0113.6.2 Forest administration regime

0114 Fishery resources

- 0114.1 Fishery enterprises
 - 0114.1.1 Number of national fishing vessels, classification according to size and propulsion system

- 0114.2 Fishery Development
 - 0114.2.1 Volume of fishery development, the country (in units, by product: shrimp, lobster, fish, etc.)
 - 0114.2.2 Weight live and unloaded of fish caught during the year, classified by species, by port, and by month
 - 0114.2.3 Destination of the fish caught (internal market or for exportation) classified by species and by month
- 0114.3 Fishery legislation
 - 0114.3.1 Laws and regulations related to the development of aquatic products
 - 0114.3.2 Fishery administration and development regulations
- 0115 Mineral resources
 - 0115.1 Mines
 - 0115.1.1 Inventory of mining resources by type of mineral
 - 0115.1.2 Useful life, by type of mineral and deposit
 - 0115.1.3 Potential capacity, by deposit
 - 0115.1.4 Development, by deposit
 - 0115.2 Hydrocarbons
 - 0115.2.1 Inventory of the hydrocarbon resources, by type
 - 0115.2.2 Useful life, by deposit and by type
 - 0115.2.3 Potential capacity, by deposit
 - 0115.2.4 Development, by deposit
 - 0115.3 Development projects
 - 0115.3.1 Public projects
 - 0115.3.2 Private projects
 - 0115.3.N.1 Social capital generated
 - 0115.3.N.2 Total jobs generated
 - 0115.4 Geological maps and studies
 - 0115.4.1 Geological information about mines
 - 0115.4.2 Geological information about hydrocarbons
 - 0115.4.3 Other maps and geological studies
 - 0115.5 Legislation on mines and hydrocarbons
 - 0115.5.1 Laws and rules on mines and hydrocarbon development
 - 0115.5.2 Regulations for administration and development of mines and deposits
- 012 Phenological aspects
 - 0121 Meteorological factors
 - 0121.1 Climatic elements
 - 0121.1.1 Rain
 - 0121.1.2 Temperature
 - 0121.1.3 Humidity
 - 0121.1.4 Solar radiation
 - 0121.1.5 Solar brightness
 - 0121.1.6 Wind
 - 0121.1.7 Evaporation
 - 0121.1.8 Other climatic elements
 - 0121.1.9 Atmospheric disturbances
 - 0122 Bioclimatic factors
 - 0122.1 Bioclimatic characteristics
 - 0122.1.1 Life zones
 - 0122.1.2 Transitions
 - 0122.1.3 Associations
 - 0122.2 Maps and phenological studies
 - 0123 Telluric factors
 - 0123.1 Volcanic activity
 - 0123.1.1 Type and frequency of eruptions

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02

AGRICULTURAL MARKETING

DETERMINANTS

Agricultural marketing determinants

021 Domestic market

0211 Supply

- 0211.1 Food product supply within the study area
 - 0211.1.1 Volume of production in the area, by product and by farm year
 - 0211.1.2 Production forecast, by product, for next farm year
 - 0211.1.3 Estimates of farm consumption and inventory increments, by product
 - 0211.1.4 Estimates of post-harvest loss by product, by year, and by cause of loss
 - 0211.1.5 Estimates of leakage in storage, maintenance and transportation to market, by product, by year, by measurement unit, and by cause
 - 0211.1.6 Estimates of inventories, by product, before harvest
- 0211.2 Agricultural-industry products supply within the study area
 - 0211.2.1 Volume of production, by product and by crop year
 - 0211.2.2 Product forecast, by product, before the harvest
 - 0211.2.3 Estimates of inventories, by product, before harvest
 - 0211.2.4 Estimates of post-harvest loss and wastes, by product, by measurement unit, by year, and by cause
- 0211.3 Supply of agricultural inputs within the study area
 - 0211.3.1 Location of traders in agricultural inputs
 - 0211.3.2 Volume supplied, by product, and by year
 - 0211.3.3 Seasonal aspects of the input supply
 - 0211.3.4 Payment facilities in the supply of inputs

0212 Demand

- 0212.1 Food product demands within study
 - 0212.1.1 Consumption estimates, by product of the permanent or floating population of the study area, by month and by year
 - 0212.1.2 Consumption estimate for animal feeding in the study area, by product, month and year
 - 0212.1.3 Index of seasonal demand, by product and by month
 - 0212.1.4 Location of wholesale dealers, warehousemen and merchants in food products in study area
 - 0212.1.5 Estimates of the volumes demanded by the established commercial channels, by product and by month
- 0212.2 Demand for farm-industry products produced in the study area
 - 0212.2.1 Location of agricultural industries and raw material merchants, that supply the study areas

- 0212.2.2 Apparent demand, by product
 - 0212.2.3 Actual demand, by product, year, and month; historic series
- 0212.3 Demand for farm inputs obtained in study area
 - 0212.3.1 Apparent demand, by input, crop, and year
 - 0212.3.2 Actual demand, by input, crop, year, and month; historic series

0213 Prices

- 0213.1 Prices for farm products paid to the producer in study area
 - 0213.1.1 By product, month, and year; historic series
- 0213.2 Prices of farm products paid to the wholesaler in study area
 - 0213.2.1 By product, month, and year; historic series
- 0213.3 Prices of farm products paid to the retailer in study area
 - 0213.3.1 By product, month, and year; historic series

022 Foreign market

0221 Supply

- 0221.1 Supply of food products from outside study area
 - 0221.1.1 Identification of national food products from outside study area, by product (whether human or animal consumption)
 - 0221.1.2 Location of the wholesalers and merchants of the products identified in 0221.1.1, by product, volumes supplies and year
 - 0221.1.3 Location of the wholesalers and merchants of foreign food products supplied to study area, volume of supply by product and by year
- 0221.2 Supply of agricultural industry products from outside of study area
 - 0221.2.1 Identification of agricultural-industry and national products from outside of study area, by product
 - 0221.2.2 Location of the wholesalers and merchants of the products identified in 0221.2.1, by product, volume supplied and year
 - 0221.2.3 Location of the wholesalers and merchants of foreign agriculture-industry products, that supply the study area, volume offered, by product and year
- 0221.3 Supply of agricultural inputs from outside of study area
 - 0221.3.1 Location of the wholesalers and merchants of agricultural inputs that supply the study area from outside, by type and class of input, and by year
 - 0221.3.2 Facilities for payment for inputs supplied from outside of the study area

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0222 Demand

- 0222.1 Demand of food products from outside of study area
 - 0222.1.1 Identification of the national and foreign food products consumed in the study area and obtained from outside of the area
 - 0222.1.2 Apparent demand of the products identified in 0222.1.1, by product, and by year
- 0222.2 Demand for agricultural-industry products obtained outside of study area
 - 0222.2.1 Identification of raw materials used in the study area and obtained outside of the area
 - 0222.2.2 Apparent demand for the products identified in 0222.2.1, by product, and year
- 0222.3 Demand for agricultural inputs obtained outside of the study area
 - 0222.3.1 Identification of agricultural inputs used in the study area and obtained outside of the area
 - 0222.3.2 Apparent demand for inputs identified in 0222.3.1 per crop, per input, per year

0223 Prices

- 0223.1 Prices paid to producers outside of the area
 - 0223.1.1 Equivalent price on the farm, of prices obtained by the food product producer, outside of study area
 - 0223.1.2 Equivalent price on the farm, of the prices obtained by the agricultural industry producer located outside of study area, by product and market
- 0223.2 Prices paid to the producer outside of the area
 - 0223.2.1 Cost and freight of the agricultural products obtained by the producer outside of the study area, by product and market
 - 0223.2.2 Cost and freight of the agricultural inputs obtained by the producer outside of the study area, by type and class of input

023 Market conditions

0231 Marketing practices

- 0231.1 Identification of the channels of commerce
 - 0231.1.1 Structure and width of distribution of the channels, by product (whether in or outside of study area)

- 0231.1.2 Flow of the products, by destination and product
- 0231.2 Contractual forms
 - 0231.2.1 Typical degree of development for sale, by product
 - 0231.2.2 Typical method(s) for payment to the producer, by product
 - 0231.2.3 Typical weight and measures for sale, by product (equivalents in SMD)
- 0231.3 Supply patterns
 - 0231.3.1 Frequency of purchase by the producers of the area, by product, month, and year
 - 0231.3.2 Average volume of purchase, by product, month and year
- 0231.4 Price setting patterns
 - 0231.4.1 Factors that affect the producers pricing decisions, by product
 - 0231.4.2 Factors that affect the buyers pricing decisions, by product
- 0231.5 Distribution patterns
 - 0231.5.1 Distribution functions of agricultural products that go outside study area, by product
 - 0231.5.2 Distribution functions of farm products consumed in study area, whether local or foreign production

0232 Business margins

- 0232.1 Gross business margins
 - 0232.1.1 Business margin of the producers, by product
 - 0232.1.2 Business margin of the intermediary, by product and level of commerce channels
- 0232.2 Costs of aggregate value
 - 0232.2.1 Typical costs of business, by channel levels, and product

0233 Standards

- 0233.1 Quality standards
 - 0233.1.1 Minimum quality requirements in the traditional local market, by product
 - 0233.1.2 Official, national, regional or local quality requirements, by product
 - 0233.1.3 Quality requirements in international market, by product
- 0233.2 Legislation that affects commerce
 - 0233.2.1 Legal regulations related to agricultural commerce
 - 0233.2.2 Legal regulations related to agricultural product transportation
 - 0233.2.3 Forms of administration of agricultural production at farm level

03

TECHNOLOGICAL

DETERMINANTS

03 Technological determinants

031 Level of Agricultural technology

0311 Planting

- 0311.1 Use of seeds and vegetative material
 - 0311.1.1 Variety and quality of reproduction material, by crop, crop use, quantity used (by area and total), value and source
- 0311.2 Planting methods
 - 0311.2.1 Planting date, by crop and crop purpose
 - 0311.2.2 Plant density, by crop and crop purpose
 - 0311.2.3 Planting system, by crop
 - 0311.2.4 Method of planting (direct or transplant), by crop
 - 0311.2.5 Replanting practices, by crop
- 0311.3 Planting recommendations for the area

0312 Fertilization

- 0312.1 Application of trace elements
 - 0312.1.1 Use of fertilizers, whether chemical and organic, foliage or soil, by class, quantity, application period, method of application, number of applications, area fertilized, crop, type of soil, and size of farm. Value and source of the fertilizers used
 - 0312.1.2 Application levels of primary elements (N,P,K,) in the chemical fertilizers, by crop and by type of soil, soil reaction to the primary elements
- 0312.2 (Fertilization) Application of trace elements
 - 0312.2.1 Use of trace elements (Ca, Mg, B, S, Mn, etc.), by quantities used, time and method of application, area covered, crop and type of soil. Value and source of the elements used
- 0312.3 Soil and foliage analysis for fertilization
- 0312.4 Fertilizer recommendations for the area

0313 Cultural practices

- 0313.1 Cultural practices related to the soil
 - 0313.1.1 Common practices used by farmers (slashing, burning, surface and sub-soil plowing, harrowings, leveling, desinfecting) in the preparation and treatment of the soil for planting, by crop and size of farm
 - 0313.1.2 Common practices used by farmers (contouring, crop rotation, barriers, terraces, etc.) for soil conservation, by type of soil and size of farm

- 0313.2 Cultural practices related to water
 - 0313.2.1 Sources of water used by the farmers and methods of containment or extraction (river, pond, lagoon, well)
 - 0313.2.2 Irrigation systems used by the farmers, irrigated areas, crops and size of farm, with estimates of equipment costs, operation and distribution
- 0313.3 Cultural practices related to crop
 - 0313.3.1 Common practices used by the farmers in thinning, hilling, weeding, etc., by crop, and size of farm
- 0313.4 Recommendations on cultural practices for the area

0314 Pest and disease control

- 0314.1 Incidence of agricultural pests and diseases
 - 0314.1.1 Insect species and pathogenic agents affecting roots and leaves, hosts, time of year of major incidence of each species, by crop
- 0314.2 Agricultural pest and disease control
 - 0314.2.1 Common methods for the biological and cultural control of pests and diseases, pests controlled by these methods
 - 0314.2.2 Chemical pest controls, species by crop, chemical products used, quantity, area covered, method and number of applications, value of the product-used chemical, by unit area covered, farmer's source of supply
- 0314.3 Recommendations on agricultural pests and disease control in the area

0315 Other tasks

- 0315.1 Harvest and post-harvest
 - 0315.1.1 Common practices used by farmers before and during harvest for protecting and collecting the products, by product and size of farm
 - 0315.1.2 Common practices used in the area in the preparation of agricultural products for storage and/or marketing (drying, selection, ginning, canning, etc.), by product and size of farm
- 0315.2 Storage and conservation
 - 0315.2.1 Common practices used by the farmers to reduce post-harvest waste and loss (moisture control, pest and disease control, etc.), by product and size of farm
 - 0315.2.2 Common practices used by farmers for storage of agricultural products, by product and size of the farm
 - 0315.2.3 Common practices used by farmers to preserve stored products, by product, type of storage, and size of farm

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- 0315.3 Technological recommendations for the area
- 032 Livestock technology level
 - 0321 Genetic improvement of animals
 - 0321.1 Selection of progenitors
 - 0321.1.1 Percentage of farms where selection is based on the physical appearance of the animals.
 - 0321.1.2 Percentage of farms where selection is based on parameters relative to the animal productivity
 - 0321.1.3 Principal parameters of production used as a base for selection of progenitors, by species, race, function and sex.
 - 0321.2 Reproduction
 - 0321.2.1 Percentage of farms where mating is controlled by species and function. Whether sires are owned or obtained elsewhere (public or private)
 - 0321.2.2 Percentage of farms where artificial insemination is used, fresh or frozen semen, public or private service
 - 0321.3 Types
 - 0321.3.1 Types of animals predominating on the farm, (pure, native, or various crosses), by species, breed, and function
 - 0322 Animal feeding and nutrition
 - 0322.1 Feeding systems
 - 0322.1.1 Percentage of operations where the animals are grazed exclusively by species and function, natural or cultivated pastures, improved or not, varieties, fertilization methods, rotation, weed control and use of irrigation
 - 0322.1.2 Percentage of operations where (as indicated in 0322.1.1) grazing is supplemented by nutrients (regular salt, mineral salts, proteins, molasses, urea, cutting grasses, silages, hay, stubble or concentrated feeds), by species and function, cost of the supplementary nutrients and source
 - 0322.1.3 Percentage of operations where feeding is totally controlled (confinal cattle, for example), by species, function and types of feed used, cost of feed and source
 - 0322.2 Nutrition levels
 - 0322.2.1 Average weight of the animals when born, by species and breed
- 0322.2.2 Average weight of the animals at slaughter, by species, breed and age
- 0322.2.3 Average weight of the animals at selected ages, by species, breed and purpose
- 0322.3 Recommendations for animal feeding in the area
- 0323 Animal raising and management
 - 0323.1 Identification and record keeping
 - 0323.1.1 Methods commonly used by farmers to identify their animals (for example, brands, earrings, notches, etc., for cattle, rings or tatoos for birds)
 - 0323.1.2 Percentage of farmers who keep production and health control and genealogical records of their animals, by type of records
 - 0323.2 Prenatal stage
 - 0323.2.1 Special care that farmers give to animals during pregnancy (for example, special feeding, physical protection, etc.), by species
 - 0323.2.2 Percentage of farmers who group the pregnant animals in lots for special management
 - 0323.3 Management at early age
 - 0323.3.1 Methods commonly used by farmers to provide special care for viviparous animals from birth to weaning, by species
 - 0323.3.2 Average age at weaning, by species
 - 0323.3.3 Methods commonly used by farmers for feeding and protection of young domestic fowl, by species
 - 0323.4 Growth stage
 - 0323.4.1 Percentage of farmers who usually separate the animals in lots according to age and sex, by species
 - 0323.4.2 Average age for mating, by species
 - 0323.4.3 Methods commonly used by farmers for the care, feeding and protection of their growing animals, by species
 - 0323.5 Production stage
 - 0323.5.1 Age at which reproductive stage begins, by species
 - 0323.5.2 Duration of the productive stage of animals in the farm, by species
 - 0323.5.3 Interval between parturitions and birth rate, by species
 - 0323.6 Quality of facilities
 - 0323.6.1 Degree of adequacy of the predial land installations for management, feeding, water supply, preservation of feed, and animal health, by species
 - 0323.7 Technical recommendations for animal raising and management within the area

0324 Animal health

- 0324.1 Disease and death rate
 - 0324.1.1 Main infectious and parasitic diseases (and incidence) of the animals in the area, by species, sex and age
 - 0324.1.2 Death rate, by species, breed, sex, age, and cause of death
- 0324.2 Prevention and control of diseases
 - 0324.2.1 Methods commonly used by farmers (such as vaccination or environmental hygiene) for the prevention of infectious parasitic diseases of the animals, by species and disease
 - 0324.2.2 Methods commonly used by farmers (medication, anti-parasitic agents, etc.) for the control of infectious and parasitic diseases of the animals, by species and disease
 - 0324.2.3 Animal health campaigns conducted in the area, by time of the year and pests that are controlled
 - 0324.2.4 Percentage of farmers indicating that the public animal health campaigns are beneficial
 - 0324.2.5 Permanent animal health services available in the area, by public and private services
- 0324.3 Animal health recommendations for the area

0325 Other livestock techniques

- 0325.1 Methods used to obtain livestock products
 - 0325.1.1 Methods commonly used by farmers for slaughtering and preparing the meat of the cattle, pigs, goats, sheep, fowl and rabbits, as well as by-products of the slaughter
 - 0325.1.2 Methods commonly used by the farmers to collect the eggs, wool, honey, wax and lard
 - 0325.1.3 Traditional, modernized and improved methods used to obtain milk, cheese and butter
 - 0325.1.4 Traditional, modernized or improved methods used by the farmers to obtain the skins and hides of animals such as cattle, goats, sheep and rabbits
- 0325.2 Methods for primary processing of the livestock products
 - 0325.2.1 Principal, traditional, improved or modernized methods used by the farmers for the primary processing of the livestock products as preparation for their use

- 0325.3 Methods for storing and marketing of the products
 - 0325.3.1 Main traditional, improved or modernized methods used by the farmers for the storage and preservation of the livestock products, by product
 - 0325.3.2 Main methods used by the farmers for the marketing of the livestock products, by product and commercial channel
- 0325.4 Additional technical recommendations for the area

033 Other technological aspects

0331 Use of manpower

- 0331.1 Use of unpaid manpower
 - 0331.1.1 Wages earned on the farm by the head of the family, by farm year, activity, and product, amount of wages
 - 0331.1.2 Wages earned on the farm by other members of the family, by farm year, activities, and products, amount of wages
 - 0331.1.3 Wages received by the farm for the interchange of farm hands or other agreements not paid for with money, by farm year, activity, and product, amount of wages
- 0331.2 Use of paid manpower
 - 0331.2.1 Wages earned by permanently hired skilled laborers, per farm year, by activity and product, amount of wages
 - 0331.2.2 Wages earned by permanently hired unskilled laborers, by farm year, activity and product, amount of the wages
 - 0331.2.3 Wages earned on the farm by temporarily hired laborers, by farm year, activity, and product, amount of wages

0332 Use of agricultural credit

- 0332.1 Banking credit
 - 0332.1.1 Institutions and banking credit lines obtainable by producers of the area
 - 0332.1.2 Amounts granted in the area, by type of creditor and term, interest rates
 - 0332.1.3 Percentage of farmers who have used these banking credit lines, by mortgage warranty, collateral or fiduciary
- 0332.2 Non-banking credit
 - 0332.2.1 Non-banking credit sources available to producers of the area
 - 0332.2.2 Regular interest rates for non-banking credit
 - 0332.2.3 Percentage of farmers who have used non-banking credit, by type of security
- 0332.3 Credit insurance and bonds

- 0332.3.1 Percentage of farmers who use the credit insurance, either governmental or private
 - 0332.3.2 Percentage of farmers who use a burdensome business bond, whether banking or non-banking, governmental or private
 - 0332.3.3 Price of the insurance premiums and/or bond paid by the farmers, per unit of the total amount insured or warranted
- 0333 Use of technical assistance
- 0333.1 Agricultural technical assistance
 - 0333.1.1 Inventory of institutional and human resources of technical assistance available for agricultural activities in the area, whether public or private
 - 0333.1.2 Estimate of the average (in man/days) of agricultural technical assistance received by farmers in area, activity and product
 - 0333.2 Financial technical assistance
 - 0333.2.1 Inventory of institutional and human resources for technical assistance in agricultural financing available in the area, whether public and private
 - 0333.2.2 Estimate of the average man/days of technical assistance received in agricultural credit or financing by the farmers of the area, by product and specific activity (negotiation or use of the credit, etc.)
 - 0333.3 Technical assistance in marketing
 - 0333.3.1 Inventory of the institutional and human resources for technical assistance in agricultural marketing available in the area, public and private
 - 0333.3.2 Estimate of the average man/days of the technical assistance in marketing, received by the farmers of the area, product and specific activity (storage, preservation, manipulation, conditioning, commercialization, etc.)
 - 0333.4 Unspecified technical assistance
 - 0333.4.1 Inventory of other institutional and human resources available for technical assistance with agricultural activities of the area, public and private
 - 0333.4.2 Estimate of the average man/days of other technical assistance received by the farmers of the area, by product and activity
- 0334 Transportation methods for production
 - 0334.1 Transportation for people
 - 0334.2 Input transportation
 - 0334.3 Product transportation
 - 0334.N.1 Mobilization
 - 0334.N.2 Transportation costs (including input and product losses)
 - 0334.N.3 Average distance from the the community to the closest marketing place for inputs and products
 - 0334.N.4 Average distance from the community to the nearest main road
 - 0335 Other inputs
 - 0335.1 Raw material for cottage industries
 - 0335.2 Other materials and supplies for production
 - 0335.N.1 Quantities, costs, and locations for obtaining other materials, and supplies (including fuels for the production, minor implements, etc.)
 - 0336 Infrastructure
 - 0336.1 Agricultural infrastructure
 - 0336.1.1 Facilities related to water resources
 - 0336.1.2 Facilities for the storage, preservation and/or marketing of agricultural products
 - 0336.1.3 Agricultural industry facilities
 - 0336.1.4 Other agricultural facilities
 - 0336.1.5 Infrastructure of the agricultural technical services
 - 0336.2 Transportation infrastructure
 - 0336.2.1 Highways and roads
 - 0336.2.2 Railroads
 - 0336.2.3 Waterways
 - 0336.2.4 Airlines
 - 034 Production and productivity costs
 - 0341 Production costs
 - 0341.1 Costs of annual and/or transitory crops
 - 0341.1.1 Production of annual and transitory crops, by marketing measuring unit, product, size of the farm, and technology level
 - 0341.2 Costs of permanent crops
 - 0341.2.1 Costs of permanent crop production, by product, quantity of productive plants, and technology level
 - 0341.3 Costs of livestock products
 - 0341.3.1 Animal production costs, by species, product, size of farm, technology level, and measuring unit for marketing
 - 0341.4 Costs of other products
 - 0341.4.1 Costs of other products of the farm (forest products, processed agricultural, etc.), marketing unit and technology level

0342 Productivity

0342.1 Total productivity factor

0342.1.1 Relationship of production value of a product to total production cost, and area unit and technology level, by product

0342.2 Productivity per manpower unit

0342.2.1 Relationship between the total production value of a product and the minimum man/days required in production, by land area unit, technology level, size of farm and form of land tenure

0342.3 Productivity per land area unit

0343.3.1 Estimate of the productivity index, by land area unit, product, size of the farm, form of land tenure, and technology level

04

SELECTED SOCIOECONOMIC
DETERMINANTS

04 Selected socioeconomic determinants

041 Social aspects

0411 Population

- 0411.1 Population density
 - 0411.1.1 Number of inhabitants per km²
- 0411.2 Population structure
 - 0411.2.1 Percentage by sex
 - 0411.2.2 Percentage by age groups and sex
 - 0411.2.2.1 Younger than 5 years, by single years
 - 0411.2.2.2 From 5 to 9 years, by single years
 - 0411.2.2.3 From 10 to 14 years, by single years
 - 0411.2.2.4 From 15 to 39 years, by single years
 - 0411.2.2.5 From 40 to 64 years and more by single years
 - 0411.2.2.6 From 65 years and more, by single years
 - 0411.2.3 Percentage by level of concentration
 - 0411.2.4 Percentage by ethnic group
- 0411.3 Population growth
 - 0411.3.1 Gross growth rate
 - 0411.3.2 Gross birth rate
 - 0411.3.3 Gross mortality rate
- 0411.4 Family structure
 - 0411.4.1 Percentage of families, by size stratum
 - 0411.4.1.1 Families consisting of up to 3 members, 4 to 5 members, 7 to 9 members, 10 to 14 members, of 15 and more
 - 0411.4.2 Average number of family members, by age
 - 0411.4.3 Dependents
 - 0411.4.3.1 Average dependents index by family
 - 0411.4.3.2 Percentage of families with index of dependents less than 2, from 2 to 4, from 4 to 6, more than 6
- 0411.5 Fecundity
 - 0411.5.1 Family growth
 - 0411.5.2 Fecundity rate
 - 0411.5.3 Maternity index by age
- 0411.6 Migration
 - 0411.6.1 Percentage of immigrant families

0411.6.1.1 Number of families with less than a year of living in the area, 1 year, 2 years, and 2 to 5 years

0411.6.2 Percentage of families in which one or more members left home permanently during the last two years

0411.6.3 Percentage of heads of family who plan to change residence

0412 Group activities

- 0412.1 Social organization
 - 0412.1.1 Number, type, age, membership, and geographic coverage and number of meetings during the last three months, of guild associations, rural organizations, community enterprises, community groups, and their federations
 - 0412.1.2 Number, type, age, geographic coverage and membership of first-class cooperatives and their federations, number of meetings held during the last three months
- 0412.2 Association level
 - 0412.2.1 Percentage of families in which one or more members have participated in associations and that are not active, by cause
 - 0412.2.2 Percentage of families in which one or more members participate actively in associations, by type of association, and intensity and kind of participation
- 0412.3 Socialization levels
 - 0412.3.1 Percentage of families in which nobody belongs to associations, but the head of the family would like to join, by type of association
 - 0412.3.2 Average number of leaders of formal groups which the heads of family say they know within the community, by type of group
 - 0412.3.3 Percentage of heads of family who say they have satisfactory experiences in associative activities, by type of experience meant

- 0412.4 Social activity
 - 0412.4.1 Percentage of heads of family that have attended social meetings of any type during the last three months, by frequency
 - 0412.4.2 Percentage of heads of family who attended religious services during the last month, by frequency
 - 0412.4.3 Percentage of families in which one or more members are interested in taking part in educational programs, (agricultural production, etc.) next year, by type
 - 0412.4.4 Percentage of families in which one or more of their members are ready to devote part of their free time this year, together with their neighbors, to improvement of their community
- 0412.5 Decision-making process
 - 0412.5.1 Percentage of heads of families that consider that the decisions concerning crops and production of the farm should be made only by him and his wife, by both of them and their eldest children, or by the whole family
 - 0412.5.2 Percentage distribution of the families according to sources of advice received this year about their crops or agricultural production
- 0413 Education
 - 0413.1 Education level
 - 0413.1.1 Literacy
 - 0413.1.1.1 Average number of family members older than 10 years who can read and write
 - 0413.1.1.2 Average age of the members of the family older than 10 years, who can read and write group and sex
 - 0413.1.1.3 Literacy rate among children older than 10 years by age group and sex
 - 0413.1.2 School class level
 - 0413.1.2.1 Percentage of children between the ages of 5 and 18 who attend school, by grades, age, and sex
 - 0413.1.1.2.2 Percentage of persons older than 5 years according to educational level reached, by grade in elementary school, high school, and higher education, and by age
 - 0413.1.2.3 Percentage of persons older than 18 years who participate in education programs, by sex and type of program
- 0413.2 Access to education
 - 0413.2.1 Percentage of families whose school-age members go to school, by time required traveling to school
 - 0413.2.2 Percentage of families that do not send their children to school, the reasons (for the children younger than 18 years) by age, sex, and reason for not attending
 - 0413.2.3 Percentage of persons older than 18 years who do not participate in the educational programs this year, by reason for not attending
 - 0413.2.4 Percentage of families that listen to the radio regularly
 - 0413.2.5 Percentage of families that watch TV regularly
 - 0413.2.6 Percentage of families that regularly read daily newspapers, weekly publications, or other papers
 - 0413.2.7 Percentage of families with one or more of their members who frequently go to the movies once a month or more
 - 0413.2.8 Percentage of people older than 18 years who are satisfied with the educational programs in which they are participating this year, by reason for satisfaction, and kind of program
- 0413.3 Education services
 - 0413.3.1 Number and type of public and private educational buildings and total of classrooms per grade
 - 0413.3.2 School registration rate, by level and type of education, public and private schools

- 0413.3.3 Average number of students per classroom, by level and type of education, public and private schools
 - 0413.3.4 Percentage of families that make use of the educational services and are not satisfied, by reasons for dissatisfaction and type of service
 - 0413.3.5 Number of teachers per 5 to 18-year-old persons, by type and level of education, public and private
 - 0413.3.6 Students per teacher, according to type and education level, public and private
 - 0413.3.7 School promotion rate, by level and type of education (public and private) and by sex
 - 0413.3.8 School drop-out index, by grade, sex, and education level, public and private schools
- 0414 Health
- 0414.1 Health level
 - 0414.1.1 Gross death rate
 - 0414.1.2 Infant death rate
 - 0414.1.3 Neo-natal death rate
 - 0414.1.4 Infant death rate during pregnancy
 - 0414.1.5 Neo-natal death rate at birth
 - 0414.1.6 Life expectancy at birth
 - 0414.1.7 Average age of death of population
 - 0414.1.8 Sickness level
 - 0414.1.8.1 Percentage of families in which one or more members suffered from an illness that required and received medical attentions during the month, by disease and by age of the patient
 - 0414.1.8.2 Incidence of the diseases in the family, by disease and by months
 - 0414.2 Nutrition
 - 0414.2.1 Weight index at birth
 - 0414.2.2 Percentage of families with children younger than 10 years who drink milk daily
 - 0414.2.3 Percentage of families that believe they have more and better food than last year
- 0414.3 Access to health services
 - 0414.3.1 Percentage of families that use family-planning methods
 - 0414.3.2 Percentage of families that say they regularly use preventive medical services, public and private
 - 0414.3.3 Percentage of families who say they regularly use the maternity and infantile health services, public and private
 - 0414.3.4 Percentage of families that have drinking water at home
 - 0414.3.5 Percentage of families that have a sewage system for their home
 - 0414.3.6 Percentages of families that do not make use of the health services, by reason for not using
 - 0414.3.7 Average time required (using normal transportation method) for the families to reach the nearest health center
 - 0414.3.8 Percentage of families that have access to drinking water sources that, to obtain the water and return to their homes require less than 5 minutes, from 5 to 15 minutes, from 15 to 30 minutes, and more than 30 minutes
 - 0414.4 Services
 - 0414.4.1 Infrastructure
 - 0414.4.1.1 Hospitals and centers for health assistance, by type, public and private
 - 0414.4.1.2 Hospital beds per capita, public, private and total
 - 0414.4.1.3 Percentage of patients who have been cared for by health services, by type of disease or operation, public, private, total
 - 0414.4.1.4 Percentage of the total population taken care of in health centers, public and private

- 0414.4.2 Medical and Paramedical staff
 - 0414.4.2.1 Number of physicians per inhabitant
 - 0414.4.2.2 Number of nurses per inhabitant
 - 0414.4.2.3 Number of dentists per inhabitant
 - 0414.4.2.4 Other paramedical staff and health agents, per inhabitant, public and private
- 0414.4.3 Sickness and death records
 - 0414.4.3.1 Percentage distribution of the principal diseases treated by the public and private services
 - 0414.4.3.2 Morbific level by months, in public and private centers
 - 0414.4.3.3 Percentage of children born weighing less than 2.5 kg, public and private facilities
- 0415 Housing
 - 0415.1 Housing conditions
 - 0415.1.1 Percentage distribution of the houses, by predominant material of walls, floor, and roof
 - 0415.1.2 Percentage distribution of the houses, by level of adequacy (acceptable and inadequate) and by specific criteria for the study area
 - 0415.1.3 Percentage of families that plan to fix and improve their houses, by type of improvements
 - 0415.2 Housing level
 - 0415.2.1 Percentage distribution of the houses, by number of occupants per bedroom
 - 0415.2.2 Percentage distribution of the houses, by type of possession: owned, mortgaged, rented, etc., with average monthly amount of the rent or mortgage payment
 - 0415.2.3 Percentage of the houses that have electricity
 - 0415.2.4 Percentage of houses that have toilet facilities, by type
- 0415.3 Housing services
 - 0415.3.1 Percentage of families who benefit from housing programs, public and private
 - 0415.3.2 Percentage of families that do not take part in housing programs, by reason for non-participation
- 0416 Other social infrastructure
 - 0416.1 Drinking water
 - 0416.1.1 Installed potable water capacity in m³/month for average family
 - 0416.1.2 Percentage of families that receive drinking water through home plumbing
 - 0416.1.3 Percentage distribution of the families that do not receive drinking water as a public service, by reason for not receiving
 - 0416.2 Sewage system
 - 0416.2.1 Installed drainage and sewage systems as public service
 - 0416.2.2 Percentage of families who use public sewage through home toilet facilities
 - 0416.2.3 Percentage distribution of the families that do not use the public sewage, by reason for non-use
 - 0416.3 Electricity
 - 0416.3.1 Percentage of families that receive electric energy in their homes through public or private services
 - 0416.3.2 Percentage distribution of the families that do not make use of electricity service, public or private, by reason for non-use
 - 0416.4 Transportation and communications
 - 0416.4.1 Description of public and private facilities of the area for collective transportation
 - 0416.4.2 Percentage distribution of the heads of family according to frequency of use of the collective transportation, by type of transportation: twice a day or more, once a day, four times a week or more, three times a week or less, less than once a week, never or rarely
 - 0416.4.3 Percentage distribution of the heads of family who use their own vehicles for their personal transportation, according to the type of vehicle: automobile (includes truck, station wagon, jeep, etc.) motorcycle, bicycle, ox cart, horses and mules, none

- 0416.4.4 Description and average distance between user families and services such as post office, telephone, telegraph, and radio communication systems
- 0416.5 Private and public expenses for services
 - 0416.5.1 Per capita expenditures budgeted during the last year, (for the population studied) for the programs and projects for sanitation, education, recreation, communal development and other services of social benefit, public and private

- 0421.3.1.1 Percentage of economically active population that maintain the occupation of the father
- 0412.3.1.2 Percentage of economically active population that hopes that at least one of their offspring will maintain the occupation of the father

- 0421.3.2 Occupational change
 - 0421.3.2.1 Percentage of economically active population that has changed occupation during the last two years
 - 0421.3.2.2 Percentage of the economically active population that hopes to change occupation in the future

042 Economic aspects

0421 Work

- 0421.1 Economically active population
 - 0421.1.1 Economically active population by sex
 - 0421.1.2 Economically active population by age
 - 0421.1.3 Economically active population by activity
 - 0421.1.4 Economically active population by occupation category
 - 0421.1.5 Participation rate
 - 0421.1.6 Average amount of time in the year during which the head of the family was employed
 - 0421.1.7 Average amount of time in the year during which the head of the family was looking for employment
- 0421.2 Manpower supply
 - 0421.2.1 Employee supply by sex
 - 0421.2.2 Employee supply by activity
 - 0421.2.3 Employee supply by months of the year
 - 0421.2.4 Percentage distribution of heads of family by main occupation
 - 0421.2.5 Percentage distribution of the members of the family older than 10 years, by main occupation
 - 0421.2.6 Average number of people older than 10 years (per family) that work permanently or temporarily in paid off-farm jobs, by months
- 0421.3 Occupational mobility
 - 0421.3.1 Intergenerational mobility

- 0421.4 Attitudes and values at work
 - 0421.4.1 Percentage of families whose heads indicate that they are not satisfied with incomes generated by the agricultural production, by reasons for dissatisfaction
 - 0421.4.2 Percentage of families whose heads indicate they are not satisfied with the payment obtained from off-farm work, by reason for dissatisfaction
 - 0421.4.3 Percentage of farm families whose heads indicate they are not satisfied with level of production, by causes attributed, product, and size of operation
 - 0421.4.4 Percentage of families in which one or more of their members would like to have an occupation different from that of the head of the family
 - 0421.4.5 Percentage distribution of the heads of families who consider their circumstances to be better than, equal to, or worse than those of their neighbors, by size and form of land tenure of the land they work
 - 0421.4.6 Percentage of families whose heads say that general economic conditions are better than last year's

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0422	<u>Land availability</u>		
0422.1	Area available		
0422.1.1	Size of the operations (number and percentage)	0422.2.2.2.1	Number of operations
0422.1.1.1	Less than 1 ha	0422.2.2.2.2	Total area
0422.1.1.2	1 to 3 ha	0422.2.2.3	Percentage with leased land and other types
0422.1.1.3	3 to 5 ha	0422.2.2.3.1	Number of operations
0422.1.1.4	5 to 10 ha	0422.2.2.3.2	Total area
0422.1.1.5	10 to 20 ha	0422.2.2.4	Percentage with other mixed tenure types
0422.1.1.6	20 to 50 ha	0422.2.2.4.1	Number of operations
0422.1.1.7	50 to 100 ha	0422.2.2.4.2	Total area
0422.1.1.8	100 to 200 ha	0422.2.3	Land costs
0422.1.1.9	200 ha or more	0422.2.3.1	Mean value of the land per ha
0422.1.1.9.1	up to 500 ha	0422.2.3.2	Mean cost annual land leasing, per ha
0422.1.1.9.2	up to 1000 ha	0422.2.3.3	Costs of other burdensome types of land tenure
0422.1.1.9.3	up to 2500 ha	0422.2.3.3.N	By type of tenure
0422.1.1.9.4	more than 2500 ha		
0422.1.2	Fragmentation of the operations		
0422.1.2.1	1 parcel		
0422.1.2.2	2 and 3 parcels		
0422.1.2.3	4 and 5 parcels		
0422.1.2.4	6 to 9 parcels		
0422.1.2.5	10 or more parcels		
0422.1.3	Producer's dwelling place (percentage)		
0422.1.3.1	The producer lives on the farm		
0422.1.3.2	The producer does not live on the farm but a manager does		
0422.1.3.3	Neither producer nor manager lives on the farm		
0422.2	Types of land tenure		
0422.2.1	Simple types		
0422.2.1.1	Percentage of own land operated		
0422.2.1.1.1	Number of operations		
0422.2.1.1.2	Total area		
0422.2.1.2	Percentage of leased land operated		
0422.2.1.2.1	Number of operations		
0422.2.1.2.2	Total area		
0422.2.1.3	Percentage of operations with other simple types		
0422.2.1.3.1	Number of operations		
0422.2.1.3.2	Total area		
0422.2.2	Mixed types		
0422.2.2.1	Percentage with owned and leased land		
0422.2.2.1.1	Number of operations		
0422.2.2.1.2	Total area		
0422.2.2.2	Percentage with own land and other types		
		0423	<u>Use of the land</u>
		0423.1	Arable land
		0423.1.1	Area dedicated to annual or transitory crops
		0423.1.2	Area dedicated to orchards and greenhouses
		0423.1.3	Fallow lands
		0423.1.4	Other arable lands
		0423.2	Other types of operations
		0423.2.1	Area dedicated to permanent crops
		0423.2.2	Area dedicated to harvest of forage crops
		0423.2.3	Area dedicated to grazing
		0423.2.4	Area dedicated to "silviculture"
		0423.3	Other uses
		0423.3.1	Area covered with wood land and brush, not in use
		0423.3.2	Area covered with native vegetation not suitable for use
		0423.3.3	Area built or fitted for physical plant
		0423.3.4	Other areas
		0424	<u>Predial capital</u>
		0424.1	Inventory of animals
		0424.1.1	Inventory of cattle, specified by breed, type (pure, native or cross breeds), sex and age:
			-Females:
			less than 1 year
			1 - 2 years
			2 years and older according to function
			-Males:
			less than 1 year
			1 - 2 years
			2 years or older, classified as sire bulls, bullock, and oxen

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- 0424.1.2 Inventory of pigs, specified by breed, type (pure, native, or cross breeds), sex, and age:
 - Females:
 - less than 6 months
 - 6 months to 1 year
 - 1 year or older
 - Males:
 - less than 6 months
 - 6 months or older
- 0424.1.3 Inventory of stallions and mares, according to function and by age (younger than 3 years and 3 years and older)
- 0424.1.4 Inventory of other horses, by species
- 0424.1.5 Inventory of cocks and hens younger than 6 months: cocks, 6 months old and older; productive laying hens, 6 months old or older; other hens, 6 months old and older, specified by breeds
- 0424.1.6 Inventory of other domestic fowl, by species
- 0424.1.7 Inventory of other productive species (sheep, goats, etc.), by species
- 0424.1.8 Inventory of apiaries, in boxes
- 0424.1.9 Inventory of ponds or bodies of water for fish farming
- 0424.2 Facilities related with water as a resource
 - 0424.2.1 Predial irrigation activities and drainage
 - 0424.2.1.1 Channels and reservoirs
 - 0424.2.1.2 Drainage systems
 - 0424.2.2 Wells in use, according to type
 - 0424.2.3 Pumping equipment, by type
- 0424.3 Farm facilities
 - 0424.3.1 Facilities for the processing of agricultural products
 - 0424.3.1.N By facility type
 - 0424.3.2 Facilities for the storage and preservation of agricultural products
 - 0424.3.2.N By facility type
- 0424.4 Machinery and equipment belonging to the producer (not including hand tools)
 - 0424.4.1 Motorized farming equipment and accessories
 - 0424.4.2 Draft animal powered farm equipment
 - 0424.4.3 Portable farm equipment for manual use
 - 0424.4.4 Livestock equipment
 - 0424.4.5 Other equipment
- 0424.5 Vehicles belonging to the producer
 - 0424.5.1 Motorized vehicles
 - 0424.5.2 Animal powered vehicles
 - 0424.5.3 Human powered vehicles
- 0424.6 Other facilities in the farm
 - 0424.6.1 Livestock facilities
 - 0424.6.2 Miscellaneous agricultural facilities
- 0425 Production
 - 0425.1 Farm production
 - 0425.1.1 Annual or transitory crops, by product (including harvested forage):
 - sown area
 - harvested area
 - yield
 - total production
 - unit price on farm
 - amount sold
 - inventory increase
 - animal nutrition
 - family consumption on farm
 - 0425.1.2 Greenhouse garden products, by product:
 - area sown
 - area harvested
 - yield
 - total production
 - unit price on farm
 - amount sold
 - inventory increases
 - animal nutrition
 - family consumption on farm
 - 0425.1.3 Permanent crops by-product:
 - area (N^o of plants) sown
 - production area
 - output (per plant)
 - total production
 - unit price on farm
 - amount sold
 - inventory increases
 - family self-consumption on farm
 - 0425.2 Animal production
 - 0425.2.1 Sale of live animals, by species:
 - Number of head of cattle on hoof (or per kilo)
 - Price on farm per head (or per kilo)
 - 0425.2.2 Slaughtered, by species:
 - total in kg of meat sold
 - price on farm per kilo
 - total in kg of meat used at home
 - number of hides sold
 - average price on farm per hide
 - hides for domestic use
 - hides for home industry
 - 0425.2.3 Other livestock products
 - 0425.2.3.1 Milk: total quantity (liters) by species:
 - price on farm per liter
 - total liters used at home
 - 0425.2.3.2 Total of cheese sold by kg
 - price on farm per kg
 - total of kg used at home

0425.2.3.3	Total kg of butter sold, by species: -price on farm per kg -total kg used at home	0425.3.2.1.1	Total extension leased
0425.2.3.4	Eggs, total quantity produced -total number sold -price on farm per unit -total number of eggs used at home	0425.3.2.1.2	Rent value per area unit
0425.2.3.5	Wool, total kg sheared -total sold by kg -price on farm per kg -total kg used at home -total of kg for artisan use -total sold by kg	0425.3.2.2	Rent of facilities, total amount received
0425.2.3.6	Honey, total kg sold -price on farm per kg -total kg used at home	0425.3.2.3	Rent of equipment and machinery, total amount received
0425.2.3.7	Other livestock products (for example, wax, fish, propagative material, etc.), by product: -number of units sold -unit price on farm -number of units used at home -number of units used by artisans	0425.3.3	Handicraft sale
0425.3	Other products of the farm	0425.3.4	Miscellaneous
0425.3.1	Processed farm products (for example: preserves, ground coffee, spices, lumber, unrefined brown sugar, etc.), by product, total quantity produced: -number of measuring units sold -price of measuring unit on farm -number of measuring units used at home	0426	<u>Family Income</u>
0425.3.2	Rent	0426.1	Net income generated by farming enterprise
0425.3.2.1	Land leasing, total area rentable	0426.1.1	Net agricultural income
		0426.1.2	Net livestock income
		0426.1.3	Distribution of net agricultural income
		0426.2	Net income generated by extrapredial activities
		0426.2.1	Wages
		0426.2.2	Other income
		0426.3	Income distribution
		0426.3.1	Distribution of aggregated income, agricultural plus wages
		0426.3.1.N	By strata
		0426.3.2	Total net income
		0426.3.2.N	By strata

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APPENDIX D
PUBLIC AGRICULTURAL SECTOR
MINISTRY OF AGRICULTURE
SECTORIAL UNIT OF AGRICULTURAL PLANNING-USPA
INTER-AMERICAN INSTITUTE OF AGRICULTURAL SCIENCES - OAS

IDENTIFICATION AND ORGANIZATION OF
INFORMATION COLLECTED, AS FIRST STAGE
FOR PREPARATION OF A SPECIFIC AREA
PROFILE FOR THE IXCAN SECTOR OF THE
NORTHERN TRANSVERSE FRINGE.

Prepared by: ING. AGR. HIRAM PEREZ SINGER
In Collaboration with: PIADIC (IICA/ROCAP Agreement)

Guatemala, April 1980

This report is based on the document "Content Outline For a Specific Area Profile for the Development of Agricultural Production Alternatives" ("Esquema de Contenido para un Perfil de Area Específica Destinado al Desarrollo de Alternativas de Producción Agropecuaria"). The base outline was prepared by a multidisciplinary technical team of the Agricultural Information Project of the Central-American Isthmus -PIADIC- and edited by the Lic. Jorge Castillo Velarde, in October 1979. The PIADIC work seeks to analytically describe the natural determinants of production, as well as those provided by man. For this purpose, the determinants are divided into four large groups:

- 01 Natural determinants of production
- 02 Agricultural marketing determinants
- 03 Techno-scientific determinants
- 04 Selected socioeconomic determinants

These main determinants are sub-divided into macro-describers, which in turn are sub-divided as indicators.

Another subdivision is made into variables, depending on relevance or scope of some indicators.

This document follows the proposed organization and coding suggested in the PIADIC content outline, adding only some relevant indicators.

ABBREVIATIONS USED IN THE IDENTIFICATION OF THE INFORMATION

AID:	Agency for International Development
DGE:	General Statistical Office
DIGESEPE:	Livestock Services General Office
FTN:	Northern Transverse Fringe
ICTA:	Agricultural Science and Technology Institute
INAFOR:	National Forest Institute

INDE: Electrification National Institute
INDECA: Agricultural Marketing National
Institute
INSIVUMEH: Seismology, Vulcanology, Metereology,
and Hydrology National Institute
INTA: National Institute for Agricultural
Transformation
PMDIA/FTN: Master Plan for Integrated Agricultural
Development in the Northern Transverse
Fringe
SGCNPE: General Secretariat of the National Council
for Economic Planning
USPA: Agricultural Planning Sectorial Unit

PUBLICATIONS LISTING

- 01 EVALUATION OF THE NATURAL RESOURCES TO DETERMINE THE POTENTIAL USE OF THE LAND IN THE NORTHERN TRANSVERSE FRINGE OF GUATEMALA
- Ing. Rodolfo Perdomo. Contract No. AID-520-81. Guatemala, March 1975.
- General description of the physical and socioeconomic characteristics as well as specific studies proposed for the FTN.
- Maps at the FTN level:
- Geological; scale 1:1,335,000
 - Type of land; scale 1:1,335,000
 - Hypsometric; scale 1:1,335,000
 - Climatological; scale 1:1,335,000
 - Classification of soil; scale 1:1,335,000
 - Location of perforations and aerial observations; scale 1:1,335,000
 - Potential land use; scale 1:1,335,000
 - Land tenure; scale 1:1,335,000
 - National parks with proposed moratorium; scale 1:1,335,000
 - Roads; scale 1:1,335,000
 - Zones influenced by proposed road; scale 1:1,335,000
 - Topographic; scale 1:1,335,000
 - Identification of the area by aerial photography at scale 1:30,000; scale 1:1,335,000 (1973)
 - Regions of possible agricultural interest for studies of soil resource at semi-detailed and detailed levels, according to standard scales; scale 1:335,000
 - Population distribution; scale 1:1,335,000
 - Indian languages; scale 1:1,335,000

02 DEVELOPMENT STUDY OF THE CHIXOY RIVER BASIN

Prepared for the Electrification National Institute -INDE-, by Lamarre Valois International Limitée Lavalin. Guatemala, June 1979.

This study deals with the Chixoy River basin, that comprises 40% of the Ixcán sector. However, the information sources mentioned in the study provide data at a national level, or sometimes for townships, that are considered as very general information for the specific area of Ixcán. The townships that form the Ixcán sector are densely inhabited in the southern part, but only sparsely inhabited in the northern area that are of interest to this study.

The study includes:

- Volume I: Introduction, demography and economy, socio-cultural and ethnic overview; climate and hydrology.
- Volume II: Agriculture, forest sector; parks and reserves.
- Volume III: Aquatic ecology, handicraft and small industry, tourism.
- Volume IV: Transportation, mines and quarries physical planning.
- Volume V: Synthesis and development plan
- Annexes: four documents
- Maps at the scale of the Chixoy River basin
 - + Territory, regions and sub-regions, scale 1:250,000
 - + Isogloss, scale 1:250,000
 - + Location of hydrometric and meteorological stations, scale 1:250,000
 - + Isoyetas of average precipitation in dry season; scale 1:250,000
 - + Isoyetas of average precipitation in rainy season; scale 1:250,000

- + Average temperature isotherms in the dry season; scale 1:250,000
 - + Average temperature isotherms in the rainy season; scale 1:250,000
 - + Proposed hydrometric network; scale 1:250,000
 - + Climatic zones; scale 1:250,000
 - + Current land use; scale 1:250,000
 - + Soil, climatic zones, sectors of management, and potential land use; scale 1,50,000, six maps on pages: 164-II, 1936-I, 1963-II, 2064-III, 2063-IV, 2063-III.
 - + Priority areas for reforestation study; scale 1:250,000
 - + Tentative mixture of species for reforestation projects; scale 1:250,000
 - + Accepted and proposed national parks. Life zones and proposed biotypes. Map of the Republic, scale 1:342,500
 - + Landscape units and study areas for proposed parks; scale 1:250,000
 - + Existing roads; scale 1:250,000
 - + Recommended roads; scale 1:250,000
 - + Traffic on the main route; scale 1:500,000
 - + Geology; scale 1:250,000
 - + The system of central locations; scale 1:250,000
 - + Potential location of new M and G centers; scale 1:250,000
 - + Proposed central locations; scale 1:250,000
- 03 MASTER PLAN FOR THE INTEGRAL DEVELOPMENT OF THE NORTHERN TRANSVERSE FRINGE SGCNPE. 1979. Draft.
Information at sectoral and township level.
- 05 MASTER PLAN FOR THE AGRICULTURAL INTEGRAL DEVELOPMENT FOR THE TRANSVERSE FRINGE
USPA, subcommission PMDIA/FTN. 1979. Draft.

- 40 LEGISLATIVE ACT No. 11-53 (Taxation Law).
LEGISLATIVE ACT No. 80-74 (Reforms to the Taxation Law).
Ministry of Public Finance. General Office of State
Revenues. Territorial Tax Division.
- 41 LEGAL GUIDE ON IMPORTATION AND EXPORTATION RESTRICTIONS
Ministry of Economy, Local and Foreign Commerce Office,
1980.
- 42 COMPILATION OF LAWS RELATED WITH HYDRAULIC RESOURCES
OF THE COUNTRY
Ministry of Agriculture. DIGESA-DIRENARE.
Guatemala, July 1977.

01 Natural Determinants of Production

	LOCATION OF INFORMATION									
	EXISTS		IN		IDENTIFICATION NUMBER					
	Yes	No	Yes	No	01	02	04	06	09	19
0111.8 <u>Raw Material</u>										
0111.8.1 Type of material	x		x		x	x				x
0111.8.2 Origin of material	x		x		x	x				x
0111.9 <u>Effective depth</u>										
0111.9.1 Depth range	x		x			x			x	
0111.9.2 Type of limiting material	x		x			x			x	
0111.10 <u>Texture</u>										
0111.10.1 Textural class	x		x		x	x			x	
0111.11 <u>Structure</u>										
0111.11.1 Shape	x		x		x				x	
0111.11.2 Size	x		x		x				x	
0111.11.3 Degree of Development	x		x		x				x	
0111.12 <u>Natural Drainage</u>										
0111.12.1 Drainage classes	x		x		x	x		x	x	
0111.13 <u>Physical characteristics</u>										
0111.13.1 Permeability	x		x		x	x			x	
0111.13.2 Useful humidity	x		x			x			x	
0111.13.3 Consistency	x		x						x	
0111.13.4 Others	x		x						x	
0111.14 <u>Chemical characteristics</u>										
0111.14.1 pH reaction	x		x						x	x
0111.14.2 Organic material	x		x			x			x	x
0111.14.3 Catlonic interchange capacity (CIC)	x		x			x			x	
0111.14.4 % of basis saturation	x		x						x	
0111.14.5 Assimilable phosphorus and potassium	x		x						x	x
0111.14.6 Toxicity (aluminum, iron allophane, etc.)	x		x						x	
0111.14.7 Salinity (CE x 10 ³)	x		x						x	
0111.14.8 Alkalinity (PSI)	x		x			x			x	
0111.14.9 Fertility	x		x			x				

02 Agricultural Marketing Determinants

LOCATION OF INFORMATION

IN
EXISTS USPA IDENTIFICATION NUMBER
Yes No Yes No 23 39

021	Local Market				
0211	<u>Supply</u>				
0211.1	<u>Nutritive products supply within the study area</u>				
0211.1.1	Production volumes in the area, by product, by agricultural year	x	x	x	x
0211.1.2	Production forecast, by product, next agricultural year	x	x	x	x
0211.1.3	Consumption estimates and inventory increases, by product		x		
0211.1.4	Post-harvesting loss estimates, by product, by year, by cause	x	x	x	
0211.1.5	Estimates of losses in storage, conservation and transportation to the market; by product by year, by unit of measure, by cause		x		
0211.1.6	Inventory estimates, by product, before harvesting	x	x	x	
0211.2	<u>Agro-industrial products within the study area</u>				
0211.2.1	Production volumes, by product, by agricultural year		x		
0211.2.2	Production forecast by product, next agricultural year		x		
0211.2.3	Inventory estimates, by product, before harvesting		x		
0211.2.4	Post-harvesting loss and losses, by product, by unit of measure, by year, and by cause		x		

03 Techno-scientific Determinants

LOCATION OF INFORMATION

	IN		IDENTIFICATION NUMBER		
	EXISTS	USPA	02	08	12
	Yes	No	Yes	No	

031 Agricultural Technology levels

0311 Sowing

0311.1 Seeds and vegetative material use

0311.1.1 Variety and quality of the reproductive material; by crop and crop use, amount used by surface area and total value, and where obtained

x x x x x

0311.2 Planting methods

0311.2.1 Planting dates, according to crop and purpose of the crop

x x x

0311.2.2 Plant density, according to crop and crop use

x x x

0311.2.4 Planting method (direct or transplant) by crop

x x x

0311.2.5 Replanting practices, by crop

x

0311.3 Planting recommendations for the area

0312 Fertilization

0312.1 Basic nutrients applied

0312.1.1 Use of fertilizers: (organic and chemical, foliar and soil); class quantity, application time, method of application, number of applications; fertilized area by crop, type of soil, tilled area. Value and place where fertilizers obtained.

x x x x

04 Selected Socioeconomic Determinants

LOCATION OF INFORMATION

	EXISTS		IN		IDENTIFICATION NUMBER							
	Yes	No	USPA	Yes No	2	24	26	02	03	12	26	27
0425.3.2 <u>Rents:</u>												
0425.3.2.1 Land rent, total rentable area				x								
0425.3.2.1.1 Total area rented				x								
0425.3.2.1.2 Rent value per area- unit				x								
0425.3.2.2 Installment rent, total obtained				x								
0425.3.2.3 Equipment and machin- ery rent, total ob- tained				x								
0425.3.3 Handicraft sales	x										x	
0425.3.4 Miscellaneous	x										x	
0426 <u>Family Income</u>												
0426.1 <u>Net income from the agri- cultural business</u>												
0426.1.1 Agricultural net income				x								
0426.1.2 Livestock net income				x								
0426.1.3 Agricultural net income distribution				x								
0426.2 <u>Net income from the extra- predial activities</u>												
0426.3.1 Distribution of the added income (agricultural plus salary)				x								
0426.3.1 N. by strata				x								
0426.3.2 <u>Total net income</u>												
0426.3.2 N. by strata				x								

APPENDIX E
RURAL AREA PROFILE: RENACIMIENTO
AND CENTRAL AND EASTERN CHIRICANO

MINISTRY OF AGRICULTURAL DEVELOPMENT - MIDA
INTER-AMERICAN INSTITUTE OF
AGRICULTURAL SCIENCES - PIADIC
INSPECTOR GENERAL OF THE REPUBLIC
OFFICE OF STATISTICS AND CENSUS

RURAL AREA PROFILE: RENACIMIENTO AND
CENTRAL AND EASTERN CHIRICANO

FAMILY SECTION
CONFIDENTIAL QUESTIONNAIRE

Name of the Interviewer:

Signature

Name of the Supervisor:

Date of the Survey:

HOUSING LOCATION

District: V0010 _____

"Corregimiento": V0020 _____

Populated Place: V0030 _____

Segment: V0040 _____

Number of House: V0050 _____

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SECTION 1 - GENERALITIES OF THE FAMILY

I. GENERAL IDENTIFICATION

1. Note the name of the head of the family and of the informant
(if not the same person)

Name of the head of the family. V0060 _____ (30)

Name of the informant. V0070 _____ (30)

2. Note the relationship between the informant and the head of
the family (if not the same person)

Relationship between the informant and the head of the family:

a. spouse ____ V0080

b. son (daughter) ____

c. brother (sister) ____

d. father or mother ____

e. Other, specify: _____

3. Note the main occupation of the head of the family

Agricultural 1 ____

Cattle 2 ____

Non-agricultural 3 ____

II. POPULATION

1. Write in the appropriate section the number of persons that live permanently in the house, according to their age and sex.

Age	Masculine	Feminine
0 - 5	V0100	V0101
6 - 11	V0102	V0103
12 - 14	V0104	V0105
15 - 17	V0106	V0107
18 - 29	V0108	V0109
30 - 46	V0110	V0111
47 - 64	V0112	V0113
65 or more	V0114	V0115

87.

MINISTRY OF AGRICULTURAL DEVELOPMENT - MIDA
INTER-AMERICAN INSTITUTE OF
AGRICULTURAL SCIENCES - PIADIC
INSPECTOR GENERAL OF THE REPUBLIC
STATISTICS AND CENSUS OFFICE

RURAL AREA PROFILE - RENACIMIENTO AND
CENTRAL AND EASTERN CHIRICANO

GENERAL SECTION
OF THE FARM

Name of the Interviewer:

Signature

Name of the Supervisor:

HOUSING LOCATION

District: _____

"Political Subdivision": _____

City/Town: _____

Segment: _____

Number of House: _____

SECTION 2 - GENERAL USES

I. LAND ACCESS

If this section is to be filled out by the person interviewed as administrator, write 2; if it is by owner, write 1. V20040

1. How large is the Farm according to the following tenure types?

		<u>Area (ha.)</u>
A. Ownership with title	V20450	_____
Ownership without title	V20460	_____
Rented	V20470	_____
Other forms of tenure	V20480	_____
Total A	V20490	_____
B. Rented to others	V20500	_____
Given or occupied by others	V20510	_____
Total B	V20520	_____
Land extention possessed:		
Total A - Total B _____	V20530	_____

2. Note the different land uses made on your farm this year; note area of each.

<u>Type of use</u>		<u>ha.</u>
Annual crops	V20540	_____
Vegetables	V20550	_____
Perennial crops	V20560	_____
Pastures	V20570	_____
Forests	V20580	_____
Marshy sands	V20590	_____
Fallow or non-planted lands	V20600	_____
Construction and facilities	V20610	_____
Other uses	V20620	_____
Total	V20630	_____

Important: The total of this question should correspond to the total of the previous question.

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MINISTRY OF AGRICULTURAL DEVELOPMENT - MIDA
INTER-AMERICAN INSTITUTE OF AGRICULTURAL
AGRICULTURAL SCIENCES - PIADIC
INSPECTOR GENERAL OF THE REPUBLIC
STATISTICS AND CENSUS OFFICE

RURAL AREA PROFILE - RENACIMIENTO AND
CENTRAL AND EASTERN CHIRICANO

CROP SECTION

Name of the Interviewer:

Signature

Name of the Supervisor:

HOUSING LOCATION

District: _____

"Political Subdivision": _____

City/Town: _____

Segment: _____

Number of House: _____

SECTION 3 - CROPS

I. AGRICULTURAL V 30820

1. Do you use irrigation? Yes _____ No _____
If the answer is No, continue with question No. 4.
2. What type of irrigation do you use? V30895
Spray _____ By Gravity _____
3. What crops do you irrigate? (Name 3)

Crops	Irrigated Area (ha)
V30900	V30901
V30902	V30903
V30904	V30905

4. Do you use soil conservation practices in your farm? V30910
Yes _____ NO _____

If the answer is No, continue on the following page.

5. Which of the following practices do you use?
V30920 Contour line__ planting against the slope__ V30921
V30922 Living Fences__ Lateral ridges__ V30923
V30924 Fences__ Terraces__ V30925

SECTION 3 - CROPS

NAME OF THE CROP: _____ V30930

I. SOWING

1. Which of the following cultural practices are used on the land after the crop is harvested?

	Yes 1 _____	No 2 _____	Month _____
Burning	V30940		V03941
Cutting	V30942		V03943
Plowing	V30944		V03945
Harrowing	V30946		V03947
Others, specify the method and month of execution			
	V30948		V30949
	V30950		V30960

2. When do you plant? _____ V30960
3. What method of planting do you use? V30970
Pole ___ 1 Broadcast ___ 2 Machine ___ 3
4. What type of seed do you use?
V30980 Creole ____, V30981 Improved ____, V30982 Hybrid ____
5. How much seed do you use per hectare? _____ V30990

II. FERTILIZATION

1. Do you use fertilizers? Yes ___ 1 No ___ 2 V31000
If the answer is No, continue with question No. 3
2. How much money did you invest in fertilizing this crop?
_____ V31010

COFFEE

1. Do you produce your own scions?

Yes ____ 1 No ____ 2 V31300

If the answer is Yes, continue with question No. 2.

1.1 Where do you get your scions? V31310

- MIDA Vivaries 1

- Private nurseries 2

- Others, specify 3 _____

1.2 How much do you pay for each scion? _____ V31320

2. What varieties do you plant?

V31330 "Caturra" "Mundano" V31330

V31332 "Borbón" "Geisha" V31333

Others, specify V31334 _____

V31335 _____

3. How many scions do you plant per hectare? _____ V31340

4. Do you fertilize your coffee plantation?

Yes ____ No ____ V31350

If the answer is No, continue with question No. 7.

5. How many times do you fertilize per year? _____ V31360

6. How much money did you invest this year in fertilizers?

_____ V31370

7. Reason for not fertilizing your coffee plantation? V31380

- No fertilizer available 1

- Insufficient resources 2

- Not needed 3

- Lack of information 4

- Other, specify 5 _____

6

8. How many times did you weed your coffee plantation
this year? _____ V31390

9. How do you weed it? V31400

Manually 1 With chemicals 2

APPENDIX F

CHECKLIST FOR DESIGN FOR A QUESTIONNAIRE

- I. Background
 - A. Editing of existing information
 - B. Identification of information required
 - C. Objectives of information required
 - D. Definition of survey units
 - 1. Person interviewed
 - 2. Family
 - 3. Farms
 - 4. Specific activities
- II. Questionnaire format
 - A. Introduction
 - 1. Summary
 - 2. Purpose of the interview
 - 3. Organization Responsible
 - B. Identification of items
 - 1. Purpose-identification of each questionnaire as a distinct unit
 - 2. Identification of location, Province district, segment, house
- III. Types of questions
 - A. Fact questions
 - 1. Group classification keys
Example: Sex, ages, farm size

2. Glossary of group terms
Example: by type of farm, corn production
by hectare

B. Opinion questions

Example: What do you think about the quality
of school education?

C. Knowledge questions

Example: Are there any agricultural credit
sources in your area?

D. Filter or guide questions

Example: 1. Are you a member of any agri-
cultural group? If your answer is NO, go
directly to question No. 3. 2. Which is
the name of this group?

E. Consistency question

Example: Which is the end use of the corn
production?

- | | |
|------------------------------------|-------|
| 1. Home-consumption | _____ |
| 2. Storage | _____ |
| 3. Seed | _____ |
| 4. Animal feed | _____ |
| 5. Sale | _____ |
| Total (Sum of 1, 2, 3, 4
and 5) | _____ |

(This total must be equal to the total given
in question No. 5 - the amount of corn produced.)

IV. Types of questions

A. Open or non-structured questions

Example: What problems do you have in producing
corn?

1. Usefulness

- Limited knowledge of the answers
- Possible wide range of answers
- Requires detailed answers

2. Disadvantages
 - a. Much time needed to note the answers
 - b. Requires much space in the questionnaire
 - c. Coding problems
- B. Closed or structured questions
 1. Type of closed or structured questions
 - a. YES - NO
 - b. Multiple choice (suggested)
 - c. Preclassified
 - d. Numerical
 2. Advantages
 - a. Easy for interviewer
 - b. Easy for person interviewed
 - c. Easy to codify
 3. Disadvantages
 - a. Limited information
 - b. Biased multiple choice
- C. Logical format
 1. General structure of questionnaire
 - a. Family
 - b. General farm
 - c. Specific farm
 1. Specific Crops
 2. Specific livestock work
 3. Other specific agricultural activities
 2. Question structure
 - a. From more-complicated to less-complicated questions
 - b. From less-confidential to more-confidential questions
- D. Other aspects of format
 1. Enumeration for clarity
 2. Sufficient space between questions

V. Question wording

A. Methods for wording questions

1. Directed to the person interviewed

Example: How many hectares of corn did you plant in the last twelve months _____?

2. Directed to the interviewer

Example: Ask the farmer how many hectares of corn he planted last year?

B. Suggestions for wording the questions

1. In accord with the level of the person interviewed

Example: How many acres of corn did you plant last crop season?

2. Words that suggest different interpretations

Example: Do you have problems with infestations on your farm?

3. Clear and direct questions

Did you plant corn in your farm?

4. Answers must not be biased

Example: Is cultivated area of your farm very bad? YES _____ NO _____

How is the cultivated area of your farm?

VI. Other general suggestions

A. Precoding

B. Questions

1. Necessary
2. Can be answered
3. Do not require estimates

C. Additional space

1. Observations
2. Name and signature of interviewer
3. Date of the survey

APPENDIX G
Examples of Summarization and Tabulation of Secondary Information

CHART No. 16.4.B

SUPPLY OF FOOD PRODUCTS BY
VOLUMES OF PRODUCTION

CODE: 0211.1.1

AREA	TOTAL PRODUCTION			
	BANANA (KGS)	PLANTAIN (KGS)	SQUARE GUINEA (BANANA) (KGS)	SUGAR CANE (TON)
Limitation	12.235	7.579	288	6.170
Area Total	12.235	7.579	288	6.170
Total of South Pacific Region	3.859.795	447.420	91.142	51.051
National Total	11.981.128	828.115	292.460	2.246.111

Source: NATIONAL CENSUS 1973 AGRICULTURAL P: CR62-CR99

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CHART No. 28.1 A

FERTILIZER IN THE FOLLOWING CROPS
 ACCORDING TO: SIZE, NUMBER OF FARMS, FERTILIZED EXTENSION (IN HECT.)
 AND QUANTITY OF CHEMICAL FERTILIZER USED. (IN KGS)
 CODE: 0312.1.1

SIZE	COFFEE		
	No. of Farm	Fertilized Ext.	Quantity of Chemical Fertilizer
Farm without land	-	.0	-
Farm with land	2.494	6.895.4	2.670.198
Less than 0.2 HA	33	4.0	2.980
From 0.2 to less than 0.5	30	9.4	4.232
From 0.5 to less than 1	151	86.4	35.972
From 1 to less than 2	224	197.5	72.726
From 2 to less than 3	229	270.9	89.217
From 3 to less than 4	147	213.4	76.774
From 4 to less than 5	188	309.2	107.249
From 5 to less than 10	438	837.8	272.228
From 10 to less than 20	406	1.207.4	435.896
From 20 to less than 50	426	1.540.4	541.328
From 50 to less than 100	129	749.5	301.392
From 100 to less than 200	57	579.3	278.392
From 200 to less than 500	30	359.0	156.860
From 500 to less than 1000	4	123.3	64.860
From 1000 to less than 2500	3	53.2	28.980
2500 HA or more	3	354.0	201.112
Total of South Pacific	2.494	6.895.4	2.670.198
Total of Costa Rica	17.156	58.587.4	37.291.496

Source: FARM NATIONAL CENSUS 1973, AGRICULTURAL REGIONS
 Pags. 337, 338, 339 and FARM NATIONAL CENSUS 1973
 Pags. CR174, CR175

CHART No. 33.1.A

WAGES PER HECT. OF LAND IN PRODUCTION (APPROX.)
CODE: 0331.2

	PEREZ ZELEDON				BUENOS AIRES			
	Wages per year/ HA	HA Har- vested	Wages per year	Average Wage/HA year	Wages per year/ HA	HA Har- vested	Wages per year	Average Wage /HA/ year
<u>Annual Crops</u>								
Rice	49	1.052.9	51.592.1	-	-	-	-	-
Corn	38	5.032.9	191.250.2	-	-	-	-	-
Beans	34	3.187.8	108.385.2	-	-	-	-	-
Potatoes	178	21.3	3.791.4	-	-	-	-	-
TOTAL	-	9.294.9	355.018.9	38.2	-	-	-	-
<u>Permanent Crops</u>								
Banana	206	465.6	95.913.6	-	-	-	-	-
Plantain	36	66	2.376	-	-	-	-	-
Square								
Guinea	36	36.6	1.317.6	-	-	-	-	-
Pineapple	151	23.5	3.548.5	-	-	-	-	-
Orange	80	7.3	584	-	-	-	-	-
Coffee	155	8.718.7	1.351.398.1	-	-	-	-	-
Cocoa	43	24.1	1.036.3	-	-	-	-	-
Sugar								
Cane	76	1.187.2	90.277.2	-	-	-	-	-
TOTAL	-	10.529	1.546.401.7	146.9	-	-	-	-
Pastures	6	57.621.6	345.729.6	6	-	-	-	-
GRAND TOTAL	-	77.445.5	2.247.150.2	29.0	-	-	-	-

Source: RESUMENES CANTONALES DEL PACIFICO SUR (IFAM), 1976

APPENDIX H

MINISTRY OF AGRICULTURAL DEVELOPMENT
INTERAMERICAN INSTITUTE FOR AGRICULTURAL SCIENCES - OAS
AGRICULTURAL INFORMATION PROJECT
OF THE CENTRAL AMERICAN ISTHMUS (PIADIC)

COURSE ON METHODOLOGY FOR THE
PREPARATION OF RURAL AREA PROFILES
(THE SURVEY AND FIELD WORK)

SANTIAGO DE VERAGUAS, PANAMA

OCTOBER, 1980

THE SURVEY AND FIELD WORK

After the questionnaire has been designed, the survey must be conducted in the field. A detailed strategy for the survey plans and organization must be closely related to the survey development.

Preliminary test of the questionnaire

After the questionnaire has been reviewed and made suitable for use, we are ready to test the results. The preliminary test is one of the most important phases of the survey development. It allows us to test weaknesses of the questionnaire before actual field use.

The test procedure is used with a small number of people to determine if the questions have been correctly worded, if the language used is appropriate, and if there is sufficient space for the answers. Also, it offers an opportunity to estimate the time necessary for completely filling out the questionnaire and to test the survey system we have chosen.

The questionnaires are not ready to be used in a survey until they have been tested under conditions similar to those to be found during the survey. For surveys at the national level, the test must be conducted in more than one place. It is recommended that the supervisors of the survey make some preliminary tests to determine how the interviewer will handle the responses and their completion times. These findings help in planning the work or daily tasks per interviewer.

After the preliminary tests, all answers must be tabulated. The type of answers obtained are edited to make sure that the questions have the expected effect. Non-productive sections are edited again or eliminated, and confusing instructions or words are changed.

Field Procedures

After the final questionnaire has been developed and the size and sampling area for the survey is known, we must prepare the strategy for conducting the survey.

Suggestions

1. The interviews must be conducted in a relatively short period. In general, two weeks is considered the maximum and one week, the ideal. (This will depend greatly

- on personnel available, number of questionnaires required, and supporting services available.
2. The survey route is designed according to the sampling method used.
 3. The groups of interviewers are made up by taking into account the type and number of vehicles available and the general characteristics of the area to be surveyed, as well as its population density.
 4. Each interviewer is given a specific number of questionnaires.
 5. Decisions are made as to procedures to follow in case the person chosen as informant is not available at the time of the visit.

NOTE: As soon as the final questionnaire and the field procedures have been completed, a procedure manual can be designed. This manual should be written in a logical order, taking into consideration each step of the field work and the sequence in which it will be done during the survey. The manual should also include a section to provide the interviewer with general knowledge concerning the survey procedures. The sampling and the techniques used in conducting the survey should be explained.

Equipment for the interviewers

1. Area map
2. Drawing board
3. Additional questionnaires
4. Red-ink pens
5. List of people to be interviewed or places to be visited.

Conducting the survey

The field supervisors have the responsibility for coordinating and maintaining well trained and well motivated inquirers in the field.

Coordinator-Supervisors' tasks

1. TRANSPORTATION. Transportation costs can be reduced if a single vehicle is used for each group of interviewers. Necessary arrangements must be made to transport several interviewers to each place or address.
2. CONTROL. A master control sheet is useful to list the names and numbers of the interviewers by zone, as well as the number of cases or interviews assigned to each interviewer. Other columns of the control sheet can be used for maintaining control of completed interviews, assigning interviewers to diverse zones to fulfill

pending appointments and determining the number of faulty interviews and the problems encountered.

To make sure that the field work is progressing as programmed, each inquirer should report at the end of the day and present to his supervisor a summary of his activities so that the supervisor can reassign inquirers to zones that have not been completed.

3. TIME. Most of the interviews must be conducted in a relatively short time to reduce possible variations in information.

The time of the day chosen to conduct the interviews also is very important and must be adjusted to the informants' activities. Saturdays, Sundays or rainy days offer good opportunities of finding people at home.

4. SUPPORTING GROUP. Although our goal is to complete all the questionnaires within the scheduled time and with the interviewers initially assigned, such goals represent the ideal; some delays usually occur due to health problems or irresponsibility among the interviewers. Thus, planning should provide for a small supporting group to be sent to those problem areas.
5. QUESTIONNAIRE EDITING. Immediately after each interviewer's work has been completed, it must be edited by his supervisor. The questionnaires are carefully tested to determine if the appropriate persons were interviewed, and if all completed questionnaires have been returned.

At this stage, each questionnaire should have the required identification and the correct and completed information. Should we find any deficiencies in the information or any other work, we will have an opportunity to correct such problems with the assistance of the supporting group.

Techniques for conducting an interview

Some important aspects to be considered when interviewing:

1. Personal introduction or first contact

Show self confidence, and know what and how you will talk to the informant to create a good first impression.

2. Confidentiality

All the information gathered is confidential, and it is used only with the other data gathered to make the necessary official estimates.

3. The questionnaire
Conduct each interview in accordance with the questionnaire. The questionnaire should be almost completely memorized.
4. Testing or probing
The inquirer obtains or tries to obtain a more precise information from the informer by explaining additional questions.
5. The answers
Each answer should be noted in the space provided in the questionnaire.
6. Ending the interview
After the required information has been obtained, the interview should end quickly and smoothly. The informer should be thanked for his assistance, leaving a good impression for future or return visits.
7. Questionnaire editing
Immediately after leaving the informant, the questionnaire should be edited carefully. Sometimes a return visit is necessary, and this is the most appropriate time.
8. Unwilling informants
Listen patiently, and do not argue.

ANNEX No. 2
Activity No. 5
Daily Supervisor Programming
(Week 5)
Nov. 10 to Dec. 6

Supervisors	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Ernesto Vergara	Caizán	Caizán	B.Chiriquí		Sta. Cruz		Caizán
Ramón de la Lastra		Sta. Cruz	R.Sereno		Sta. Cruz	P. Canoa	
Ubaldo Iñez		Sta. Cruz	R. Sereno		Sta. Cruz		
Juan Corella	P. Canoa	Peladero	S. Juan	Remedios	Lajas	S. Juan	
Bienvenido Núñez	S. Lorenzo	Portugal	S. Juan	S. Félix	J. Vaca	S. Juan	
Nemesio Donoso	Juay	L. Huacas	S. Juan	El Jobo	C. Yuca		
Jorge Arosemena			Gualaca	Alanje	E. Rico	Bijagual	Bijagual
Aquilino Sanjur	L. Lomas	L. Lomas	Chiriquí	L. Lomas	E. Rico	Bijagual	
Carlos* Orrego		Sta. Cruz	B. Chiriquí		Sta. Cruz		
Armando* Espinosa	L. Lomas	Caizán	S. Juan	R. Sereno	Lajas		

Renacimiento: Caizán, Bajo Chiriquí, Sta. Cruz, Río Sereno, Paso Canoa.

Oriente: Peladero, San Juan, Remedios, Lajas, San Lorenzo, Portugal, San Félix, Juan Vaca, Juay, Las Huacas, El Jobo, Cerro Yuca.

Centro: Gualaca, Alanje, Estero Rico, Bijagual, Las Lomas, Chiriquí.

*Coordinators

APPENDIX I

MINISTRY OF AGRICULTURAL DEVELOPMENT
INTERAMERICAN INSTITUTE FOR AGRICULTURAL SCIENCES - OAS
AGRICULTURAL INFORMATION PROJECT
OF THE CENTRAL AMERICAN ISTHMUS (PIADIC)

COURSE ON METHODOLOGY FOR
THE PREPARATION OF RURAL AREA PROFILES
(INTERVIEWER TRAINING)

SANTIAGO DE VERAGUAS, PANAMA

OCTOBER, 1980

SURVEY PLANNING

1. Choosing the themes to be included in the survey
2. Sample design and selection
3. Preparation of the operational calendar
4. Questionnaire design
5. Preliminary testing of questionnaire and procedures in the field
6. Preparation of the instructions for the interviewers
7. Printing of questionnaires, instructions, etc.
8. Training of the interviewers
9. Conducting the survey
10. Correcting and reviewing the questionnaires
11. Data tabulation and synthesis
12. Data analysis and sample expansion
13. Publication of results

Topics

To determine the topics to be included, the following questions are useful:

- a. What information is needed?
- b. Why is it needed?
-How will it be used?
- c. Which are the tabulation plans?
-What is the best time of the year to obtain the information?

Questionnaire design and construction

When determining the questionnaire format, consideration should be given to the best arrangement of the questions for the convenience of the interviewer and the informant as well as from the point of view of synthesis and tabulation of data. A well designed questionnaire simplifies and speeds the interview. Questions about past activities that may be difficult to remember should be avoided.

Avoid asking the informant for percentages, if it is easier for him to give concrete numbers.

The questionnaire must be as brief as possible (not more than one hour). The forms should be of a size that can be easily managed; and it should be printed with a large type style. It must have sufficient space for writing the answers and the interviewer's notes.

Preliminary testing of the questionnaire in the field

Questionnaires should not be considered ready for use in a survey until they have been tested under conditions similar to those that will be found during the survey. In a survey at the national level, the test must be conducted in more than one locality.

Training of the interviewers

The preparation of the instructions for the interviewers should begin after completion of the final sample design, the procedures to be followed in the field, and the questionnaire content.

An instruction manual should be written in a logical order, taking into consideration each sequential step of the survey field work. The manual should also provide the interviewer with general knowledge about the survey procedures, with an explanation of the sampling theory and the techniques used in the survey.

Interviewer training checklists

- a. Clearly explain the importance of his work.
- b. Remind him of his obligations as a government employee.
- c. Explain the basic concepts of the survey.
- d. Explain the interviewer's tasks.
- e. Demonstrate the steps necessary to successfully complete his work; how to introduce himself to the informant; how to establish a good relationship with an informant; how to probe to obtain more accurate answers; how to finish the interview; and how to edit the questionnaire.

Data analysis

The type of analysis and the procedures to be used should be determined before conducting the survey.

Techniques for conducting a survey

An interview is a conversation that has defined purpose. The survey interview is simply a friendly conversation about certain aspects of the agricultural operations and the socio-economic status of the informant.

The only difference between a survey interview and an ordinary conversation is that all of the questionnaire questions must be answered. Thus, the questionnaire must be tested and revised to avoid questions that are difficult to answer or to understand. Pre-testing also provides the interviewer with greater knowledge of the survey material and its meaning.

Purpose of the survey

Each survey is designed to obtain specific information with a specific purpose. Collection of primary information together with the existing secondary information, will help produce a rural area profile document. This document is simply a series of descriptors that are logically arranged to provide an approximate idea of the current status of the survey area. The estimates shown in the area profile document can help develop specific or integrated projects, as well as agricultural production alternatives at the research level.

Interviewer's first contact with informant

In his first meeting with the informant, the interviewer should show self-confidence. He must know what he will say, and how to speak with confidence and clearness to create a good impression. An example: "Good morning. My name is Francisco Guerra, and I work for the National Office for Sectoral Planning of the Ministry of Agriculture. My visit is part of a series of interviews that are being conducted in this zone to compile information concerning crops and live stock. We have chosen a certain number of people with a broad knowledge of this region to help us with the information we need. Our technical personnel will use this information to prepare more and better agricultural projects in this region. So, the information you provide us is of great value. All information is strictly confidential and will be used only for these technical purposes."

When introducing himself, each interviewer should give his name, the name of his organization and the general purpose of the survey.

Confidentiality

All the information obtained is confidential and will be used only in combination with the data collected by others for the official estimates. This point should be stressed to each informant.

The interview should be conducted in private, since some of the questions are personal. If the informant is busy when the interviewer arrives, another meeting date can be suggested. An interview should not be conducted in the presence of a third party (unless the person interviewed agrees to continue the interview, after he clearly knows the nature of the survey).

A questionnaire should never reflect answers from more than one person (i.e. interviewing a group), since the questionnaire was not designed for that purpose. (Also, persons within a group tend to answer less precisely because they fear criticism from the other members of the group. Such influences are more evident when discussing economic aspects and the use of "improved" practices in the crops.)

The questionnaire

Interviewers should almost completely memorize the questionnaire. They must CAPTURE the informant's interest and KEEP it to assure maximum cooperation.

Most of the questions will be asked as they appear in the questionnaire. Sometimes, additional questions are required, depending on the development of the interview. Nevertheless, all the questions should have a written answer in the questionnaire before the interview is closed.

Testing or probing

Probing questions are used to obtain more precise information from the informant. This technique is frequently used in interviews; a sudden pause or an interrogative expression as well as specific comments or questions may be sufficient reason to inquire further. The technique to be used depends on the specific situation.

If the informant does not answer a question directly, or if he seems not to have grasped the idea, it should be repeated. The next step would be to explain the question in different words, being careful to neither change its meaning or to suggest an answer. If his answer does not seem reasonable, a natural expression can be used such as "Tell me more about that," or "I don't understand that part very well."

NOTE: A question should not be pushed so as to embarrass the informant.

///

Examples of good and bad probing techniques:

- Interviewer: "Let's talk first about the swine you have for breeding. How many female animals do you have for that purpose? Include the mated ones, as well as those to be mated."
- Informant: "Well, I am not sure. That depends on the market."

Badly worded probe:

- Interviewer: "Are they the five we saw in the pasture ground?"
- Informant: "Yes, those are my female swine for breeding."

Well phrased probe:

- Interviewer: "Taking into account the present marketing situation, what is your best estimate of the number you have for breeding?"
- Informant: "I will probably use the five female swine in the pasture again, and also about two young ones, at least, from that new batch of 14 that I have."
- Interviewer: "Two of them?"
- Informant: "Yes, I will observe the 6 females of the group and perhaps I will choose the three best ones in about a month."
- Interviewer: "Are you going to choose for breeding only those 5 big female swine and the other 3?"
- Informant: "Yes, those eight. I don't want to take care of more."

Observe that, within the informant's answering frame, the well phrased questions slowly led him to a direct answer of the initial question. The interviewer then proceeded with two more simple, but effective probes before writing down the answer in the questionnaire. The bad probe limited the scope of the original question, and it suggested an answer immediately accepted by the informant. When trying to help the informant, the interviewer must carefully avoid suggesting or biasing the answers. The informant often supposes that the interviewer knows the information to be obtained and will agree with a suggestion.

Another example:

- Interviewer: "Could you mention the most important corn infestations of this area?"
- Informant: "Well, we really don't have any problem with infestations here."

Poor probe:

The inquirer notes in the questionnaire that there are no infestation problems without inquiring about the validity of the answer.

Good probe:

- Interviewer: "Has a small worm that penetrates the ear of corn and makes holes in the leaves caused damage to your crops?"
- Informant: "Worms! We do have a lot of those. Last year my neighbor lost his entire maize crop and I would have lost mine if I hadn't fumigated it."
- Interviewer: Notes in the questionnaire that problems caused by plagues do exist (in this case, worms at least).

The "I do not know" type of answer is the one that requires more probing.

Frequently, the informant gives a "don't know" answer to allow an opportunity to think better about the question, or to avoid a direct answer. In the latter case, it may be necessary to reestablish a friendly and cooperative relationship with the informant. The purpose of the survey can be repeated or more information given about it. This step may be followed by the probe most commonly used against the "I don't know" answer. The interviewer says, "I just want your best estimate." Since this probe is not direct, it does not suggest an answer, and if done properly, the informant will usually think about the question carefully. Having been asked for his best estimate makes him feel secure and, at the same time, allows the interviewer to obtain an adequate estimate when he does not know the exact answer. When the informant answers in terms of a numerical scale, a specific number should not be suggested. If he answers that he has planted between 40 and 45 hectares of corn, he might be asked "Which is your most precise estimate within that scale?" Or first, the probe could limit this scale by asking: "Is it closer to 40 or to 45 hectares?" The difference between exact and inexact data usually depends on the interviewers' capacity to probe correctly.

The answers

Carefully write down each answer in the appropriate space on the questionnaire. If, after probing, there are still doubts about an answer, write an explanation in the margin. Before ending the interview, a check should be made to see that all the questions are answered.

Ending the interview

After the necessary information has been obtained, the interviewer should quickly and politely thank the informant and leave. A cordial farewell insures a courteous welcome if a return visit is necessary.

Questionnaire editing

Immediately after leaving the informer, each questionnaire should be edited carefully. Check the notes written in the margin to review incomplete answers. An answer must be noted for each question, except for those that have been purposely omitted. In some cases, it may be necessary to visit the informant again - this is the appropriate time.

Some inquirers do not edit their questionnaires immediately, however, it is advisable to do the editing while the details of the survey are clearly remembered. This is an essential part of the work. Past experience suggests that most of the problems involving incompleting questionnaires are due to the fact that the inquirer did not edit the questionnaire before handing it in to his supervisor. So, a WORKING PLAN should be arranged to allow time to edit the questionnaires.

A detailed explanation must be made for any unexpected answer that appears in the questionnaire. These notes should describe any factors that might be considered erroneous or inconsistent. They will be of great value for the analysis of the results, the statistician can only analyze the results that are given him. The omission of necessary notes makes the testing and interpretation of the questionnaire difficult, and demands that the analyst make a decision based on his own judgment, which can be a source of error in the results. The final results of the survey can be no better than the data given by the farmer, and noted in the questionnaire.

Unwilling informants

In areas that have been surveyed often, some people may be unwilling to cooperate in the interviews, although seldom does an informant refuse outright. When negative attitudes are found, usually they can be traced to a faulty introduction, or an incorrect explanation of the purpose

of the interview. The informant who says he does not have time for an interview only wants to discourage you. Usually however, a comment such as "This will not take much time," or "May I ask you some questions while you work?" will initiate an interview. Honest appraisals of time needed are most productive. If the informant really does not have time, the best thing to do is make an appointment for the next visit, instead of trying to have a fast or shortened interview. Once an appointment has been made, it is important to arrive at the time agreed upon. Being late or early may be inconvenient for the informant. Be punctual. If the informant indicates that he is against all interviews, or that he does not sympathize with the government, or that for one reason or another is hostile, the most productive thing to do is let him talk. Listen patiently, and do not argue. Care must be taken in dealing with controversial themes, however, and if an informant remains unwilling to cooperate, the interviewer should repeat the purpose of the survey and the importance of his cooperation. Rarely all efforts may fail. As a government representative, the interviewer must leave in a courteous and friendly way. A pleasant impression left at this point may result in the informant's willingness to cooperate in the future.

APPENDIX J
MANUAL FOR CODING AND REVIEW OF
AREA PROFILE SURVEY QUESTIONNAIRE FORMS

JULY - AUGUST 80

I. Background

The Planning and Evaluation Area of PROCAMPO-INRA was responsible for processing of the Area Profile Survey made by staff of that institution during July and August, 1980, thus, the Area administrative leader evaluated the amount of time that would be required for the processing of the survey forms so that total results of the processing would be available by November 30, 1980. As a result of that evaluation, it was decided that a minimum period of one month would be necessary to review and code the survey forms. This deadline could not be met, however, because sufficient trained staff were not available.

For that purpose, it was necessary to develop a handbook or manual that would provide these persons with a clear and systematic development of the process of review and coding.

If followed carefully, this manual could make the work of a new team of reviewers more accurate, homogeneous and reliable. Obviously, however, delivery of this manual alone to the new reviewers would not be sufficient. A first requirement would be careful study of the manual by each of the members of the Review Team (RT), followed by practical training given by those with a deeper knowledge of the questionnaire, or who (preferably) had already participated in a review of questionnaires (without the manual).

As a final step, the RT would be evaluated in a practical test involving review and coding of a form. This evaluation would be designed to locate the deficiencies in the manual and to make revision and recommendations. The Review Team would consist of five (5) members, devoted full time to the task; or a larger group that would provide for the man/days necessary to carry out the work in the time specified.

II. Purpose

The basic purpose of this manual is to provide the RT with the procedures necessary to code and review the Area Profile questionnaire forms obtained by PROCAMPO-INRA during July and August, 1980.

The manual also serves to document the content of the questionnaire and to describe the different values for each of the variables to be considered. Thus, this manual also serves as an aid for tabulating data and for verification, as well as an additional instrument for the interpretation of the printed outputs of the Computer (tabulations).

III. Organization

The manual consists of two sections: (1) all of the instructions and necessary charts to code the open questions and options; and (2) instructions for the reviewers and for the input staff to control the validity of the answers.

IV. General notes for the use of the manual

The first section of the manual includes a series of charts that will help in the coding of a series of responses.

The coding of responses will be developed by the RT, the Tabulation Team, (TT) which will have the necessary instructions in the manual and the "P.E.D." The charts with an asterisk are those to be used by the RT; the rest will be used by the "P.E.D." in the Tabulating Program.

The first task to be done by the reviewer besides codifying the answers to the open questions, is to transfer the coded answers to the location on the form predetermined by the person in charge of the RT. This transfer of the responses expedites the transcription work to the chosen storage medium. The tabulation (taping of diskettes) is full-time work for a two-person team for 1 month.

If possible, the coded answer will be located near the ordinal corresponding to the question. In other cases, the location can be determined by reviewing the master questionnaire that will contain the whole of the cases to be considered, whether they be transferred or generation of new fields.

The second section of the manual provides step-by-step instructions for checking the results, as well as suggested corrections, if needed. Obviously, this section does not treat all possible faults in the data. Thus, during review, some cases may arise that are not included in the manual, but which may be solved through discussion by the reviewer and the person in charge of the RT.

The manual is oriented toward these common errors:

1. Answers with incorrect codes
2. Complete or partial omission of information
3. Incorrect use of units
4. Incorrect calculations
5. Illegible information
6. Incongruent answers
7. Unacceptable values (exaggerated or too small) according to maximum and minimum values permissible

CODING AND TRANSFER OF ANSWERS
ACCORDING TO THE MASTER QUESTIONNAIRE

V-A. General Aspects

1. Location of the Farm
Code the state and township for the location of the farm according to the GEOGRAPHIC LOCATION CHART (Chart No. 1). Transfer those codes to the place assigned by the Master Questionnaire. Complete that information with the prescribed number.
2. Family Structure
Relationship. Code the relationship in the assigned place (see Master Questionnaire), according to RELATIONSHIP CHART (Chart No. 2).
Sex. Code in the blank frame:
1 = Masculine; 2 = Feminine

Birthplace. Code to the extreme right of the response space, according to the following conditions:

- 1 = was born in the region where he lives
- 2 = was born in another region within the township
- 3 = was born in another township

This code is obtained by comparing the birthplace with the location of the farm. To make this comparison, consult the REGION CHART (Chart No. 3); (Regions of the townships where the survey was taken).
Do You Read? Code in the blank frame.

- 1 = Do you know how to read?
- 2 = You don't know how to read?

Are You Being Taught to Read and Write?
Code in the blank space.

- 1 = being taught to read and write.
- 2 = not being taught to read and write.

Goes to School, Grade finished...

In the space designated for marking the answer about school attendance, the answers to the following questions should be coded: Goes to school, Grade finished, Main occupation, Additional occupation and Place of work.

The coding of these lines is done by means of a single figure as follows:

<u>Digit</u>		<u>Represent</u>
(1st)	=	School attendance
(2nd and 3rd)	=	Grade finished
(3rd and 4th)	=	Main occupation
(5th and 6th)	=	Additional occupation
(7th)	=	Place of work

School attendance. Takes value of:

- 1 = Goes to school
- 2 = Does not go to school

Grade Finished Takes values according to the CHART OF LEVELS OR GRADES FINISHED (Chart No. 4).

Main Occupation Coded according to CHART OF OCCUPATIONS

Place of Work Coded as follows:

- 01 = Does not work
- 02 = In the region where he lives
- 03 = In the township where he lives
- 04 = Out of the township
- 05 = Does not apply

This code is obtained by comparing the location of the farm with the work region, using Chart No. 3.

3. Education
P. 177. Why are the children between 7 and 15 years of age not going to school?

TABLE No. 1 Table of Geographical Localities

NUEVA SEGOVIA

<u>REG</u>	<u>DEPT</u>	<u>COMMUNITY</u>	<u>NAME OF COMMUNITY</u>
4	14	01	Ocotal
4	14	02	Ciudad Antigua
4	14	03	Dipilto
4	14	04	Jalapa
4	14	05	Macuelizo
4	14	06	Jícaro
4	14	07	Mozonte
4	14	08	Murra
4	14	09	Quilalí
4	14	10	Sn. Fernando
4	14	11	Sta. Maria
4	14	12	Wiwilí

RIO SN JUAN (15)

6	15	01	Sn. Carlos
6	15	02	Morrito
6	15	03	Sn. Juan del Norte
6	15	04	Sn. Miguelito
6	15	05	El Castillo
6	15	06	El Almendro

ZELAYA (16)

6	16	01	Bluefields
6	16	02	Corn Island
6	16	03	La Cruz de Río Grande
6	16	04	Prinzapolca
6	16	05	Pto. Cabezas
6	16	06	Rama
6	16	07	Cabo Gracias a Dios
6	16	08	Waspám
6	16	09	Siuna
6	16	10	Muelle de los Bueyes
6	16	11	Bocana de Paiwas

TABLE No. 2 Table of Relationship with Head of Family

1. Head of family
2. Spouse (husband - wife)
3. Son, daughter, daughter and son-in-law
4. Parents, mother and father-in-law, grandparents
5. Grandchildren
6. Brother or sister-in-law
7. Other relatives
8. Employees
9. Other non-relative

TABLE No. 3 List of Regions by Communities

<u>Place</u>	<u>Community</u>	<u>Place</u>
Tastasli	Jalapa	Colonia Ramos
Tauquil	Jalapa	Zacateras
Río Abajo	Jalapa	La Ceiba
El Limón	Jalapa	Los Pavones
El Carbón	Jalapa	Col. Germán Pomares
Sta. Rosa	Jalapa	La Garita
Buena Vista Chiquita	Jalapa	La Pita
La Providencia	Jalapa	Sn. Judas
Las Mercedes	Jalapa	El Porvenir
Sto. Domingo	Jalapa	El Guineo
Sn. Antonio	Jalapa	Monte Frío
Los Encinos	Jalapa	Col. José Juarez
Sn. Rafael	Jalapa	Las Pampas
Sábana Larga	El Jícara	La Fragua
Buenos Aires	El Jícara	El Arado
Guanacastillo	El Jícara	El Quebracho
Muyuca	El Jícara	Siapalí
Las Vueltas	El Jícara	Sn. Pedro de UHLA
Sn. Gregorio	El Jícara	Potrerrillos
Casas Viejas	El Jícara	El Arenal
Sn. Pedro	El Jícara	Sn. Jerónimo
Sn. Albino	El Jícara	La Montañita
Sábana Grande	El Jícara	Las Dantas
Sn. Carlos	Sn. Carlos	Las Mariás
La Azucena	Sn. Carlos	Palo de Arquito
La Trocha	Sn. Carlos	El Papayo
Sn. José	Sn. Carlos	El Limón
Melchora	Sn. Carlos	La Bodega

TABLE No. 3 (Con't.) List of Regions by Communities

<u>Place</u>	<u>Community</u>	<u>Place</u>
Boca de Sábalos	Sn. Carlos	Mata de Caña
Buena Vista	Sn. Carlos	Papaturro
Guineal	Sn. Carlos	Pueblo Nuevo No. 1
Laguna Blanca	Sn. Carlos	Pueblo Nuevo No. 2
Gordiana	Sn. Carlos	Valle de Guadalupe
Selva de Oro	Sn. Carlos	Nueva Armenia
Pije Valle	Sn. Carlos	El Danubio
El Pavón	Sn. Carlos	La Unión
La Venada	Sn. Carlos	El Consuelo
Buena Vista de la Azucena	Sn. Carlos	México
Sta. Cruz	Sn. Carlos	El Fajardo
Sta. Crucita	Sn. Carlos	El Ventura
Poco Sol	Sn. Carlos	Sn. Agustín
Los Chiles	Sn. Carlos	Sn. Isidro
Monico	Sn. Carlos	Monte Piedad
El Delirio	Sn. Carlos	La Palmera
Los Chorros	Sn. Carlos	Sn. Luis
El Areño	Sn. Carlos	La Bandera No. 2
Poza Redonda No. 1	Sn. Carlos	Las Minas
Poza Redonda No. 2	Sn. Carlos	Sn. Ramón
Sta. Isabel	Sn. Carlos	El Espejo
Laurel Galán	Sn. Carlos	Las Marias
Melchorita	Sn. Carlos	La Ceiba
Isla Venada	Sn. Carlos	Mata de Maíz
Nva. Esperanza No. 1	Sn. Carlos	Nva. Esperanza No. 2

TABLE No. 4 Table of Levels or Attended Grades

01	None
02	Before primary school
03	1st grade
04	2nd grade
05	3rd grade
06	4th grade
07	5th grade
08	6th grade
09	7th grade
10	8th grade
11	9th grade
12	10th grade
13	11th grade
14	Professional
15	Doesn't apply

TABLE No. 5 Table of Occupations

01	Without occupation	16	Driver
02	Farmer	17	Tractor Driver
03	Housewife	18	Motorist
04	Day-laborer	19	Artisan
05	Bricklayer	20	Professionals
06	Carpenter	21	Paintors
07	Animal Owner	22	Fishermen
08	Trader, wholesale dealer	23	Barber
09	Laborer chief	24	Barber
10	Foreman	25	Tailor
11	Laborer	26	Quack
12	Cowman	27	Accauteur
13	Cheesemaker	28	Others
14	Student	29	Doesn't apply
15	Mechanic		

APPENDIX K

MANUAL FOR ORGANIZING
COMPUTER FILE INFORMATION
(DATA BANK)

RURAL SURVEY, PACIFICO SUR, COSTA RICA

1. Introduction

A rural survey of Pacifico Sur, Costa Rica, was conducted in March, 1980, to gather information for the development of rural profiles and production alternatives for the region.

A first manual "Compilation of Primary Source Information" dealt with the design of the survey questionnaires, training of the inquirers, sample design, operational plan of the survey, and field surveying.

Analysis, review and tabulation of the information are discussed in a third manual.

This second manual deals with the organization of the information to facilitate the analysis, control, and retrieval of such information in computer (data bank) files.

In the following pages, the reader will find a general description of the SAS data set files, detailed description of the variables in each of the files, and the necessary procedures for using the information.

Appendix 1 shows examples of range validation and of the assigned values of the variables.

Appendix 2 is a table of Geographic Codes used to code variable No. 1 (residence of the person interviewed) for all files.

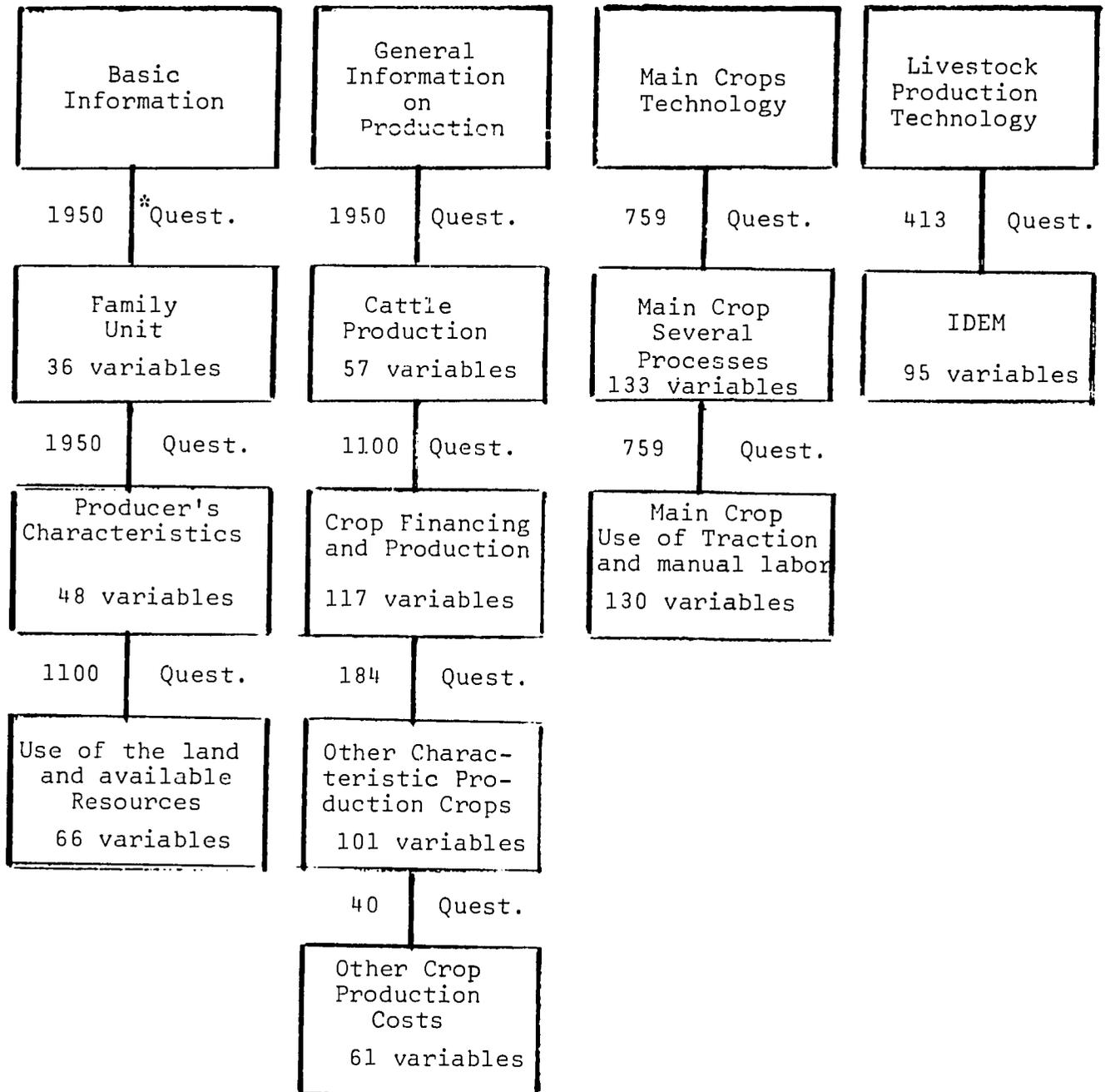
2. Methodology

Information contained in the SAS data set magnetic files is designed as a data bank to facilitate the handling and use of the information. For organizational purposes, the survey returns are divided into:

- * the main questionnaire that contains basic information about: family unit, characteristics of the producer, and use of the land and available resources. General information is included about cattle production, crop production, and financing, and regarding characteristics and costs of secondary crop production (depending on main activities of the farm).
- * the zootechnics questionnaire that contains detailed technological information on the livestock activity, when this is one of the most important activities of the farm.

To facilitate data transfer and handling, the SAS data set files divide the information as shown in the following sections. For processing and analysis of the information, each one of the files may be processed separately, or two or more files can be put together forming other files with all the variables or with selected variables.

2.1 General Description of the SAS Data Set Files



* Questionnaires

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2.1.1 Main questionnaire (1950 questionnaires)

Consists of:

- Family Unit file with basic information about the family; from 1950 questionnaires and composed of 36 variables.
- Producer Characteristics file with basic information about the producers; from 1950 questionnaires and composed of 48 variables.
- Use of the land and available resources file with basic information about the tenure system, land use, machinery and equipment, problems of manual labor, credit and technical assistance, from the 1100 questionnaires and composed of 66 variables.
- Cattle Production file with general information about domesticated animals, from 1950 questionnaires and composed of 57 variables.
- Crop production and financing file with general information about production data, financing, and technical assistance, from 100 questionnaires and composed of 117 variables.
- Other crops-production characteristics file with general information about several production characteristics of secondary crops, as long as they are not the main activities of the farm, from 184 questionnaires and composed of 101 variables.
- Other Crops-production costs file with general information about production costs of secondary crops, as long as they are not the two main activities of the farm, from 40 questionnaires and composed of 61 variables.

2.1.2 Main Crop Technology Questionnaire (759 questionnaires)

This consists of:

- Main Crop-general activities file with information about the technological level used in general activities dealing with the two most important crops of the farm, from 759 questionnaires and composed of 133 variables.

- Main Crop-traction and manual labor use file with technological information about the use of traction and manual labor in general man crop activities, from 759 questionnaires and composed of 130 variables.

2.1.3 Zootechnics questionnaire (413 questionnaires)

This questionnaire and the Livestock Production Technology file contain the information about livestock production, when this is one of the two most important activities of the farm, from 413 questionnaires and composed of 95 variables.

2.2 Detailed description of the variables

All file variables are derived from the survey questions, and all are represented by numerical values.

Some variables have a number assigned for each possible answer. For example, variable number 2 (Farm Ownership Classification of the producer) of the Family Unit File has six possible answers, thus, the variable will have the value that corresponds to the appropriate classification.

The selection of these variables is straightforward and does not require any additional explanation.

Other variables are represented by a code: for example, variable number 1 of all the files (which is the Residence of the Person Interviewed and also the common key to the files) will have the value that corresponds to the code of:

Province - Canton - District - Segment No. - House No.

The code tables annexed to the questionnaires are used to assign codes. For example, the code: 60201870001 is the only key that identifies house No. 1 of segment 8700 of Boruca District, of Buenos Aires Canton, of the Province of Puntarenas.

Other examples: variable number 12 (name of the planted variety) of the Main Crop-General Activities file may have values such as 01 = "fortuna," 13 = "tico-B1," etc. Variable number 19 (period of planting) of the Main Crop file may have values

represented by a three-digit code, for example, 207 = the second week of July. Variable number 5 (qualities for progenitor selection) of Livestock Production Technology file may have values of 1-8, for instance, 1 = color, 2 = size, 3 = size and color, etc.

NOTE: Variable number 1 (Residence of the Person Interviewed) of all the files is a "common key", and the variables P = Province, C = Canton, D = District, S = Segment No. and H = House No. of all the files combinations and classifications necessary for the information processing and analysis. See Appendix 2 (Geographic Code Table) for the values of such variables.

2.2.1 Dataset File (Family Unit)

<u>Variable</u>	<u>Description</u>
ITEM 1	<u>Residence of the person interviewed</u> From left to right (see Appendix 2) 1 digit = Province 2 digit = Canton 2 digit = District 4 digit = Segment No. 2 digit = House No.
ITEM 2	<u>Producer's ownership classification</u> 1 = Individual 2 = Cooperative 3 = Temporary Association 4 = Permanent Association 5 = Other 6 = Does not have farm
ITEM 3	<u>Total number of people living in his house</u> (99) = Number of people
ITEM 4	<u>Years living in the place or farm</u> (99) = Number of years
ITEM 5	<u>Condition of the place of residence</u> 0 = Rural 1 = Urban
ITEM 6	<u>Are you planning to live here for the following 5 years?</u> 0 = No 1 = Yes 2 = Does not know
ITEM 7	<u>Condition of the place of future residence</u> 0 = Rural 1 = Urban
ITEM 8	<u>Do you read any newspapers?</u> 0 = No 1 = Yes

- ITEM 9 Do you read any magazines?
0 = No
1 = Yes
- ITEM 10 Do you read any bulletins?
0 = No
1 = Yes
- ITEM 11 Frequency of readings
0 = Seldom
1 = Weekly
2 = Daily
- ITEM 12 Did you/family require medical
attention in 1979?
0 = No
1 = Yes
2 = Does not know
- ITEM 13 Do you know of any organization/group
in this place?
0 = No
1 = Yes
2 = Does not know
- ITEM 14 Type of dwelling
1 = Common
2 = Ranch
3 = Marginal
4 = Movable
5 = Collective
- ITEM 15 Occupation, tenure and/or rent of house
0 = Other
1 = Own
(9999) = Rented (¢)
- ITEM 16 Predominating materials in external walls
1 = Wood
2 = Concrete
3 = Adobe
4 = Other

- ITEM 18 Predominating materials in roof
1 = Clay tile
2 = Metallic plate
3 = Asbestos concrete
4 = Concrete
- ITEM 19 House condition
1 = Good
2 = Regular
3 = Poor
- ITEM 20 Total number of rooms
(99) Quantity
- ITEM 21 Number of bedrooms
(9) Quantity
- ITEM 22 Water supply
1 = Public - this house
2 = Public - this/others
3 = Private - this house
4 = Private - this/others
5 = Well
6 = Public fountain
7 = Other
- ITEM 23 Bathroom Facilities
1 = Water pipe - this house
2 = Water pipe - this/others
3 = Other mediums
4 = Does not have
- ITEM 24 Type and use of bathroom facilities
0 = Sewer - this house
1 = Sewer - this/others
2 = Septic - this house
3 = Septic - this/others
4 = Cesspool Plate EC
5 = Cesspool Plate EC
6 = Cesspool Wood EC
7 = Cesspool Wood EC
8 = Other type - this house
9 = Other type - this/others
10 = Does not have

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- ITEM 25 Type of lighting
1 = Public electric
2 = Private generator
3 = Other electrical source
4 = Camphene
5 = Other
6 = Does not have
- ITEM 26 Fuel for cooking
1 = Electricity
2 = Propane gas
3 = Camphenes
4 = Charcoal
5 = Firewood
6 = Other
7 = Does not cook
- ITEM 27 House appliances - 1
0 = None
1 = Radio
2 = Television
3 = Both
- ITEM 28 House appliances - 2
0 = None
1 = Stove
2 = Refrigerator
3 = Both
- ITEM 29 House appliances - 3
0 = None
1 = Washing machine
2 = Bathroom heater
3 = Both
- ITEM 30 House appliances - 4
0 = None
1 = Electric iron
2 = Electric sweeper
3 = Both
- ITEM 31 Telephone
0 = No
1 = Yes

- ITEM 32 Paid off--farm worker
0 = No
1 = Yes
- ITEM 33 Permanent job off your farm U/F
0 = No
1 = Yes
- ITEM 34 Occasional job off your farm U/F
0 = No
1 = Yes
- ITEM 35 Other type of profitable job-you/family
0 = No
1 = Yes
- ITEM 36 Access to your own workable land
0 = No
1 = Yes

P Province
C Canton
D District
S Segment No.
H House No.