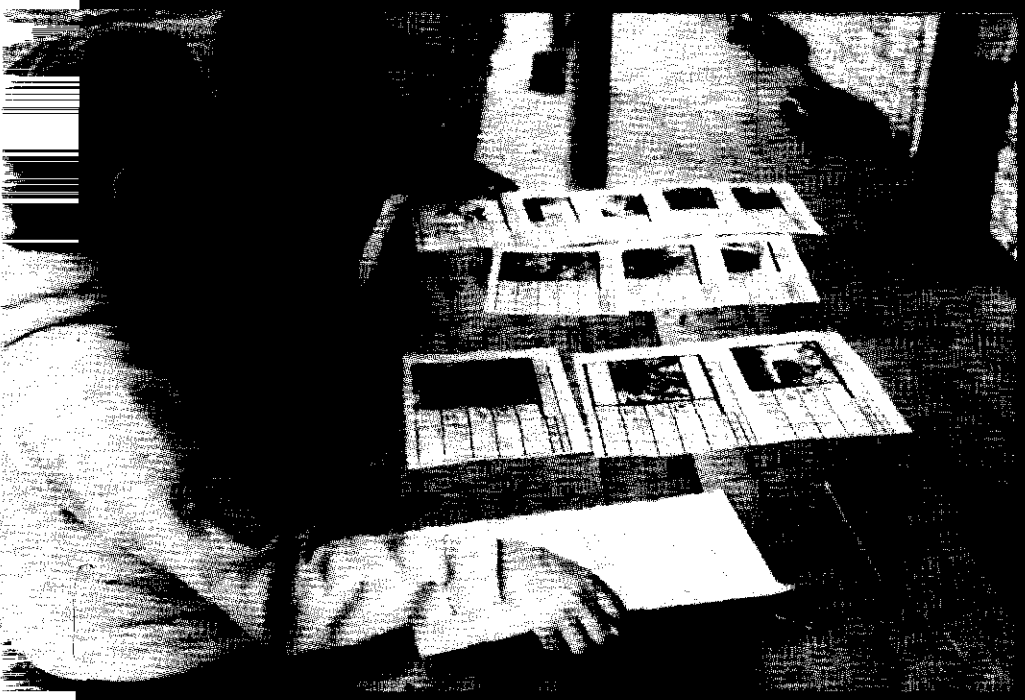
Methodologies for Decision Making in Natural Resource Management

CIAT
COLECCION HISTORICA



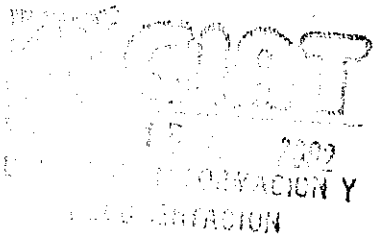
CIAT | SDC | IDRC | IDB

HF
5470
.O8i

Methodologies for Decision
Making in Natural Resource Management

7

Identifying and Assessing Market Opportunities for Small Rural Producers



Carlos F. Ostertag Gálvez

103193

CIAT SDC IDRC IDB

The material contained herein may be reproduced by any reprographic or visual means for non-profit purposes. CIAT appreciates users giving the corresponding institutional credit in those documents or events in which the material is used.

Centro Internacional de Agricultura Tropical
International Center for Tropical Agriculture
Apartado Aéreo 6713
Cali, Colombia

Fax: (57-2)445-0073
E-mail: c.ostertag@cgiar.org

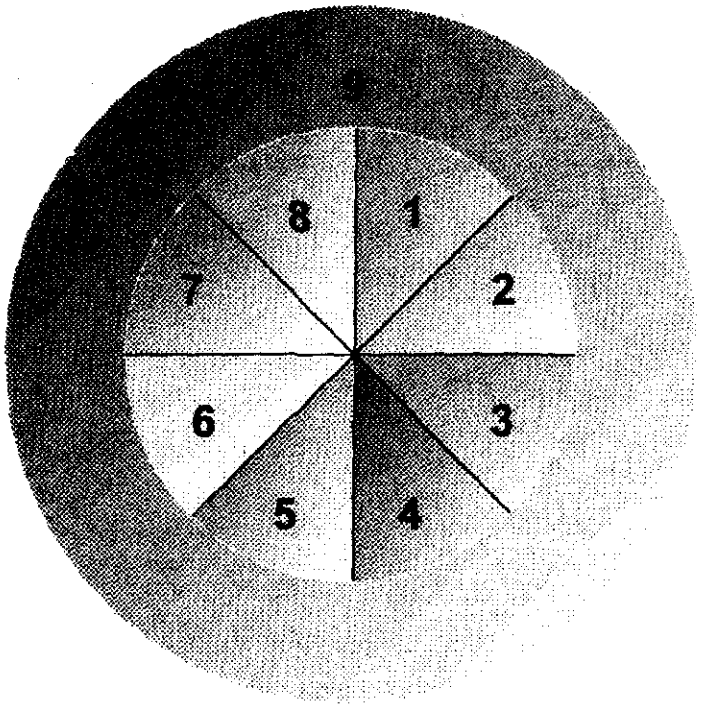
Printed in Colombia
November 1999

Ostertag Gálvez, Carlos Felipe.
Identifying and assessing market opportunities for small rural producers / Carlos Felipe Ostertag Gálvez. -- Series note: Tools for decision making in natural resource management. -- Cali, Colombia : Centro Internacional de Agricultura Tropical, 1999. 264 p. : Illus.

Includes 69 originals for transparencies.

1. Market research. 2. Rural agro-industry. 3. Rural agro-enterprise.
4. Integrated production project.

Tools for Decision Making in Natural Resource Management



This manual is the first of a series of nine to be translated from Spanish. The original series contains the following titles (all translated from Spanish):

1. Participatory method for identifying and classifying local indicators of soil quality at the microwatershed level

2. Photo-topographical analysis (PTA) of land use trends in hillsides

3. Participatory mapping, analysis, and monitoring of natural resources in a microwatershed

4. Methodology for analysing the stakeholders involved in collective land management at the microwatershed level

5. Identifying living standards for developing local rural poverty profiles

6. Atlas of Yorito and Sulaco, Department of Yoro, Honduras

7. Identifying and assessing market opportunities for small rural producers

8. Use of simulation models for ex ante evaluation

9.Development of local organizational processes for collective management of natural resources

The figure represents the set of tools for use in decision making in natural resource management. The tools, represented by the green sections of the figure and titles 1 to 3, help identify, analyse, and prioritize biophysical components, such as natural resources at the farm, microwatershed, or sub-basin levels.

Those tools in blue (titles 4 and 5) help identify relationships between the different users of natural resources. By identifying standards of living, the socio-economic components can be classified at the rural community, village, and regional levels.

The tool in yellow (title 6) helps standardize integration, analysis, and presentation by mapping data generated by the tools in green and blue.

The tools in orange (titles 7 and 8) help facilitate the design of alternative scenarios to plan production at the farm and microwatershed levels.

Encompassing these eight decision-making tools, the purple tool (title 9) helps (a) define the collective use of the other tools, and (b) disseminates results obtained from their application. This tool is useful for organizing communities to improve their decision-making processes during collective management of natural resources at the watershed level.

Contents

Page

Preface I
Acknowledgements II
Background Information 1
Who Can Use the Manual? 1
Learning Model 3
The Manual's General Structure 5
Self Evaluation 7
Feedback on the Self Evaluation 10
The Manual's Objectives 12
Originals for Transparencies 13

Section 1.Preparing the Biophysical and Socio-Economic Profile of a Microregion 1-1

Section Structure 1-2
Objectives 1-2
Orienting Questions 1-2

1.1 Why Prepare a Biophysical and Socio-Economic Profile 1-3
1.2 Structure of a Biophysical and Socio-Economic Profile 1-3
1.3 Preparing a Biophysical and Socio-Economic Profile 1-5

Exercise 1.1 Preparing a Simplified Biophysical and Socio-Economic Profile 1-7
Exercise 1.2 Timetable for Preparing a Biophysical and Socio-Economic Profile 1-10

Bibliography 1-13
Originals for Transparencies 1-14

Section 2.Designing and Executing a Rapid Market Survey 2-1

Section Structure 2-3
Objectives 2-3
Orienting Questions 2-4
Introduction 2-4

2.1 Defining Objectives and Strategies 2-4
2.2 Developing a Research Plan 2-10
2.3 Collecting Information 2-17
2.4 Processing and Analysing Data 2-21

Page

2.5 Final Report on the Market Survey 2-22

Exercise 2.1 Determining Research Tool Requirements 2-23
Exercise 2.2 Designing a Simplified Questionnaire 2-28
Practice 2.1 Observational Visit to a Supermarket 2-32

Bibliography 2-36
Originals for Transparencies 2-37

Section 3.Assessing and Selecting Market Options 3-1

Section Structure 3-2
Objectives 3-2
Orienting Questions 3-3
Introduction 3-3

3.1Characterizing Market Options 3-4
3.2 Participatory Evaluation of Market Options 3-15
3.3.Using a Linear Programming Model to Select Market Options: An Overview 3-25

Exercise 3.1 Agronomic Characterization of a Crop 3-27
Exercise 3.2 Designing a Product Card 3-30
Exercise 3.3 Preparing a Timetable for a Participatory Evaluation Meeting 3-33
Practice 3.1 Survey of Decision Criteria for Crop Selection 3-37

Bibliography 3-42
Originals for Transparencies 3-43

Section 4.Designing Integrated Production Projects 4-1

Section Structure 4-2
Objectives 4-2
Orienting Questions 4-3
Introduction 4-3

4.1Defining 'Project' 4-3
4.2 Key Aspects of an Integrated Production Project 4-4
4.3 Participatory Design of an Integrated Production Project 4-6
4.4 Sustainability Issues 4-7
4.5 Stages of an Integrated Production Project 4-10
4.6 Microregional Policy on Integrated Production Projects 4-11

Exercise 4.1Determining Priority Work Areas for an Integrated Production Project.. 4-11

Page

Exercise 4.2 Diagnosing Support Services for Rural Economies 4-15

Bibliography.....4-18
Originals for Transparencies 4-19

Appendices A-1

Appendix 1. The Final Test on What the Participants Know A-5
Appendix 2. Answers to the Participants' Final Test.....A-8
Appendix 3. Evaluating the Training Session A-10
Appendix 4. Assessing the Instructors' Performance A-13
Appendix 5. Evaluating the Training Materials A-17
Appendix 6. Glossary.....A-18
Appendix 7. Technical Appendices A-25
Appendix 7.1 Format for Preparing a Production System for a Crop.....A-25
Appendix 7.2 A Financial Profitability Model for a Product: The Example of the Naranjilla A-29
Appendix 7.3Format for Ranking Market Options.....A-33
Appendix 7.4 Mini-Directory of Alternative Trade Organizations A-35

Preface

This manual was translated from the original Spanish version because its content is considered to be quite pertinent for other continents and regions such as Africa and the Caribbean, where many small rural producers speak the English language.

Specifically, the new English version of this manual will be used for the first time in a training course on rural marketing to be held in Nairobi, Kenya from 22 27 November 1999. This marketing course has been organized by IITA, CIAT and CIP.

This English version of the manual is an improved version because it includes additional material. The basis for these additions have been the feedback obtained from colleagues and trainees in Latin America, specifically Colombia, Nicaragua, Honduras, Ecuador and Perú.

The manual has an innovative approach to rural development which stresses a greater business and marketing orientation. It also proposes a novel participatory approach that allows the rural producer to evaluate his/her market options.

Acknowledgements

The author wishes to express his thanks to the following people for their collaboration in preparing this manual:

Dr. Joyotee Smith for her support in the development of materials on the characterization of market opportunities, presented in Section III of this manual. Dr. Smith worked as Agricultural Economist at CIAT and is currently Distinguished Research Fellow at CIFOR, based in Bogor, Indonesia.

Sociologist Teresa Gracia of IPRA, who helped develop the methodology for the participatory evaluation of market options with small producers, discussed in Section 3 of this manual.

Sociologist Carlos A. Patiño for his collaboration in characterizing and evaluating market options, using a participatory approach, in a representative hillside area of Colombia.

Staff members of CIPASLA for their support in performing participatory evaluation in a representative hillside area of Colombia.

The Rural Agroindustry Committee of CIPASLA for its contribution in developing several concepts presented in Section IV of this manual.

Economists Rubén Darío Estrada and Luis Eduardo Girón for their contributions to the section on the linear programming model.

Dr. William Edwardson (IDRC, Canada), Dr. Jacqueline Ashby, and Dr. Rupert Best (both of CIAT) for their support during the development of the methodologies presented in this manual and during its production.

Background Information

The small rural producers in Latin America have traditionally been producers of staple foods. Originally, they aimed to supply their own food needs and some managed to produce surpluses for sale. Today, this sector is highly heterogeneous, differentiating according to well-being level and different grades of orientation toward the market.

The importance of linking small producers with markets is currently recognized in view of:

- The globalization and opening of the world economy, which makes it increasingly necessary to link small producers with markets, not only for the producer's sake but also for that of clients and consumers.
- It's strategic value in reducing the high poverty index of rural populations and increasing producers' income.
- The growing interest of developed markets in biodiversity issues, in products of small-producer economies on the grounds of justice and equity, in exotic products, and in organic and natural products.
- The sector's comparative advantage in producing certain products in growing demand.
- The need for a strategy that promotes improved natural resource management by rural producers.

The first three sections of this manual present a methodology developed and successfully implemented by CIAT in a pilot region located in a hillside ecosystem of the Cabuyal River watershed in northern Cauca, a department located in southwestern Colombia. Socio-economic profiles have also been prepared and rapid market surveys conducted for two other pilot regions, one in Yoro (Honduras) and the other in Pucallpa (Peruvian Amazon). Plans are to apply the same methodology in San Dionisio, (Nicaragua) and Ecuador.

'Section IV' deals with integrated production projects, and is based on the ample experience of CIAT and national institutions in the design and implementation of integrated cassava projects in several Latin American countries. This methodology has been enriched with the lessons learned from interinstitucional work on agro-industries in the rural areas of the Cabuyal River watershed.

Purpose of the Manual

Rural development has traditionally lacked a business and marketing orientation because effort was concentrated on traditional production, which is characterized by a rural market supply that did not respond to market demands. In other words, priority was given to seeking ways of marketing what was already being produced, rather than on studying market demands to propose additional alternatives of agricultural production.

This manual is a tool for promoting market orientation within the rural sector of small-scale producers. Not only will it promote the diversification of agricultural production, but it will also help detect opportunities for traditional products in rural economies. It can also be used to promote a business approach by including formal agronomic, commercial, and economic evaluations of potential market options. In addition, the manual proposes to include rural producers in the evaluation process through an innovative method known as 'participatory evaluation'.

Components

This manual describes a methodology to identify, evaluate, and take advantage of marketing opportunities for small producers living in a given microregion. Its components follow a logical sequence:

- Preparation of the microregion´s biophysical and socio-economic profile.
- Design and execution of rapid market surveys to identify market options.
- Evaluation and selection of market options:

  - Evaluation criteria of market options for small producers.
  - Agronomic, commercial, and economic characterization of market options.
  - Design and execution of participatory evaluation of market options with producers.
  - Use of a linear programming model.

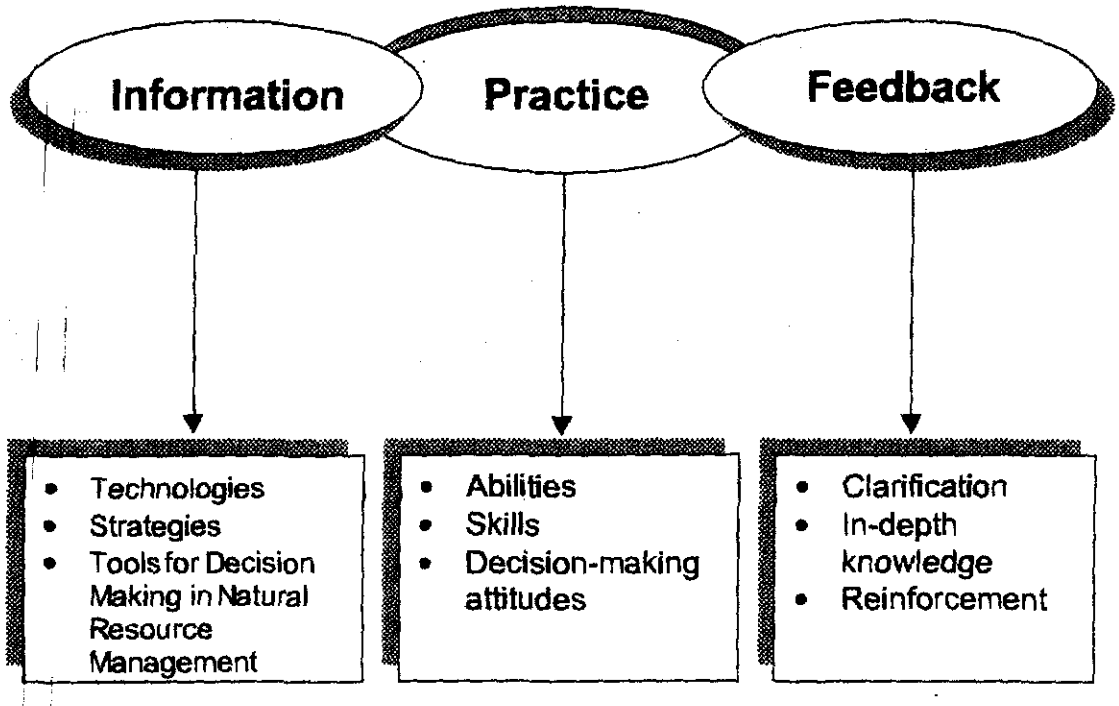
- Scheme for designing integrated production projects, with research and development components.

The last component (d) proposes an integrated form of intervention at the microregion level to facilitate the use of marketing opportunities and fully capitalize its potential as a rural development tool.

How to use the manual

The manual is designed for use in its entirety, because it describes a logical process. Or a selected section can be used independently of the others. Each section also includes exercises.

Learning Model



This manual (together with the other, Spanish-language, manuals of the series of 'Tools for Decision Making in Natural Resource Management') is based on a 'learning by doing' teaching model, shown below. This model presents trainers and multipliersthe immediate users of these manualswith a training scheme whereby they learn to use the information resulting from field research as input for developing the abilities, skills, and attitudes needed by end users to make appropriate decisions on natural resource management.

The methodological components of this manual differ from those of other materials on the dissemination of technologies. Each section is designed to help the trainer to facilitate learning.

Each section of the manual is guided by a group of objectives that help both instructor and participant direct the learning activities. Exercises are carried out in the field or other scenarios in which analysis and decision making are practiced through outings, simulations, dramatizations, and application of different tools for collecting and analyzing information.

Another methodological component comprises feedback sessions in which trainees and instructors examine the practices carried out and further examine those aspects that need strengthening. Feedback is the last activity of each section; it provides the necessary opportunity in which the instructor and participants can synthesize conceptually and methodologically each aspect studied.

To summarize, the model consists of three elements:

a. Technical and strategic information, generated by research and constituting the technological content required for decision making;

b. Practices in the form of exercises at the training sites and field activities directed towards developing abilities, skills, and attitudes for decision making; and

c. Feedback, which is a type of formative evaluation that ensures learning and the adequate application of the fundamental theoretical principles involved.

A practice is offered as the major learning activity. It simulates a real situation for trainees to use the decision-making tools learnt in this manual. Other exercises enable trainees to experiment with the use of the tools, face the difficulties arising from their application at the local level, and perceive the advantages and opportunities of introducing these tools into different decision-making environments at the local or regional level in whatever country.

The exercises included in the manual were drawn from the author's research experience in a microwatershed of Colombia. However, instructors from other countries and regions can draw excellent examples and cases from their own research projects and field work with which practices can be remodeled and tailored to the local context. This manual is a flexible-working tool that can be adapted to the needs of assorted audiences in different scenarios.

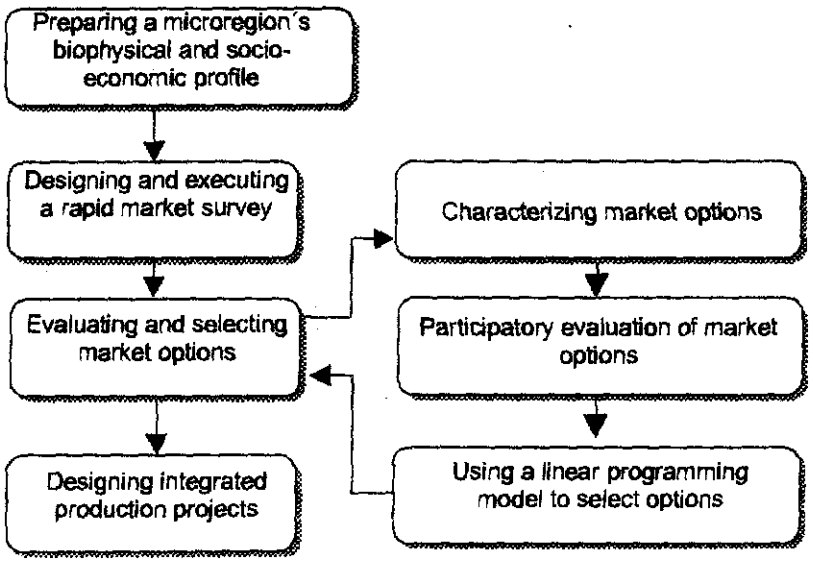
Uses and Adaptations of the Model

Users (instructors, multipliers) of this manual must be familiar with its didactic structure to use it advantageously to the benefit of end users. They will also be responsible for deciding whether to introduce these tools into the local development process.

Instructors must therefore use flow charts when they present the different sections. The *Orienting Questions* will enable instructors to establish a dialogue and motivate the participants before going deeper into theory. *Originals for Transparencies* are included; they can be adapted to different needs by adjusting their presentation. The *Appendices* cited in the text give further information on those aspects treated briefly within each section. As mentioned before, the suggested exercises and practice can be adapted or replaced by practices on site-specific problems. Feedback sessions can also include local, regional, or national data to help identify more relevant topics. The didactic appendices (A to E) help complement the training activities.

The training model followed by this manual stresses that if practice is central to learning, then training time should be sufficient for the trainees to have the opportunity to develop abilities, skills, and attitudes that reflect learning objectives. This is the only way that training will have the expected impact on decision-makers involved in natural resource management.

The Guide's General Structure



Preparing the microregion´s biophysical and socio-economic profile

Market identification begins with identifying the targeted microregion, followed by characterizing its biophysical and socio-economic nature. Profile preparation aims to:

a. Ensure that key background information is available to continue the process, and

b. Provide a reference document in which pertinent information is summarized and organized.

Designing and executing rapid market surveys

Survey objectives and strategies are initially defined. Then, a practical method directed towards local, regional, national, and even international marketsif so warranted by the microregion's production potentialis proposed. The method usually concentrates on contacting agents and institutions participating in the marketing chain of agricultural and agro-industrial products. As long as it is economically feasible, primary market data should be collected, although, in some cases, secondary data can be useful. This information will help identify marketing opportunities by collecting useful information for characterizing market options and conducting participatory evaluation with producers.

Evaluating and selecting market options

The evaluation criteria of market options identified in the previous phase are defined, including business attractiveness, viability on small farms, and contribution to production sustainability. Subsequently, the market alternatives under study are submitted to agronomic, commercial, and economic characterization. For practical effects, summary matrixes should be used as working tools. The economic characterization implies the evaluation of production systems appropriate for small producers and the development of financial profitability models. It can also imply the discard of several market options.

The next step, the participatory evaluation of market options, combines techniques for testing product concepts, used in market research, and participatory research. This exercise aims to determine producer preferences regarding market options and agricultural and agro-industrial products, and to detect producers decision criteria. This process implies, among other aspects, that producers be categorized according to an associated variable such as the degree of market orientation or level of well-being, the subdivision of the microregion, the design of product profiles, and conducting of several meetings to perform participatory evaluation. This exercise is important for evaluating the viability of the options under study in the small-farm context.

Subsequently, by using a linear programming model, a balance is looked for between two parallel, but conflicting, objectives such as increasing producer income and conserving natural resources.

This evaluative process yields a portfolio of agricultural, livestock, forest, or agro-industrial products with market potential that are profitable, acceptable to producers, and contribute in some way to natural resource conservation.

Designing integrated production projects

Once a portfolio of products is designed for the microregion, and assuming that a certain degree of institutional presence existslocal government, local non-governmental organizations, and community organizationsthe next step is to establish integrated projects, whether of primary production, agro-industry, or research. An integrated production project consists of a series of coordinated activities in the areas of production, post-harvest handling and processing, marketing, or business organization. Research projects, in their turn, are proposed for the study of one or more of the aforementioned topics, according to the main constraints of the agro-industrial chain.

Self Evaluation

Instructor's guidelines

This introductory part presents several questions directed to participants to help the facilitator explore their general knowledge about the different topics that will be discussed in the manual. At the same time, these questions serve as introduction to the different topics that will be studied.

When directing the questions, the instructor should make clear to the participants that this is not a test to assess knowledge, but rather a means of determining what they know as a starting point for training. This way, by comparing these results with those of the final test given at the end of training, the level of knowledge attained by the participants can be determined.

Questions are written so instructors can make the best use of them. They can be asked directly or the instructor can give each of five groups a question for them to discuss collectively. By doing so, a plenary discussion session, or other form of presentation, can be organized to study each group's answers to the questions, taking into account the characteristics of the participants as a whole.

The instructor must warn the participants that, once they have answered the questions, he or she will share his or her own answers in a plenary session to compare them with those given by the participants.

Self Evaluation

Instructions for the participants

To the Participant:

The following seven questions refer to four essential components of this manual. We would appreciate your answering each of them according to what you know of these topics.

You may not know the correct answers to several of these questions, but don't worry, just do your best to answer them. The instructor will then share his or her own answers with you to start a discussion on the topics with all your companions.

Questions

What aspects should be included in a biophysical and socio-economic profile for a given rural region?

_____

_____

_____

_____

What you understand by the phrase 'market orientation'?

_____

_____

_____

_____

What is meant when a product is said to represent a 'market opportunity' for small producers?

_____

_____

_____

_____

4. What are some of the differences, in economic terms, between a large- or medium-scale producer and a small producer?

_____

_____

_____

_____

5. Do you think it's important that the small rural producers themselves should evaluate market options? Explain your reasons.

_____

_____

_____

_____

6. Do you believe that an agricultural technician would reach the same conclusions as a small rural producer?

_____

_____

_____

_____

7. What are some of the characteristics of an integrated production project?

_____

_____

_____

_____

_____

Feedback on Self Evaluation

Instructor's guidelines

Based on the previous explanations, the instructor will share with the participants the answers to the questions formulated above.

The instructor can use a series of strategies to conduct the session. For example, in an open discussion, the instructor's answers are compared with those of the participants, and brief explanations are given on the selected topics related to each question. Participants are given the opportunity to identify strengths and weaknesses in their knowledge.

Answers to questions

1. A biophysical and socio-economic profile of a region describes that region's physical, social, economic, and institutional characteristics.

2. 'Market orientation' means that producers, entrepreneurs, individuals, or institutions study market trends and demands before deciding what products or services to offer.

3. A market opportunity for small rural producers means that strong evidence exists for assuming that a product meets several requirements, for example:

- The product can be produced in the targeted microregion.
- The product and market requirements are compatible with the small farmer economy.
- There is a growing demand for the product.

If the product also presents price stability over time and the rural economy offers comparative advantages for its production, with even better reason, one can speak of a marketing opportunity.

4. Differences between large- or medium-scale producers and small rural producers include:

- Small producers usually live on their own property, while large- or medium-scale producers do not necessarily live on their own farms.
- Small producers have a smaller risk capacity and make smaller investments.
- Small producers have less access to rural services such as credit, technical assistance, and market information.

5. It's important that the small rural producers themselves should evaluate market options because the evaluation criteria used by small producers are specific to their socio-economic context. For example, experience and knowledge are important. Moreover, they usually avoid risks and prefer hardy or short-cycle crops. An almost-permanent flow of capital is fundamental. The potential for home consumption may be very important.

6. Technicians will probably have different criteria for making decisions, for example, in assessing risk or capacity to invest.

7. Integrated production projects are characterized by:

- A market orientation.
- The use of an integrated or systems approach.
- Being designed, through a participatory approach, with users, partners and stakeholders.
- Having identified priority areas of research and development.
- Being multidisciplinary and interinstitucional.
- Promoting sustainability of organizations and of results.

Objectives

General objective

- ✓ After studying this manual, the participant will be able to direct or carry out the process of identifying and evaluating market opportunities, then of designing an integrated production project to take advantage of these opportunities.

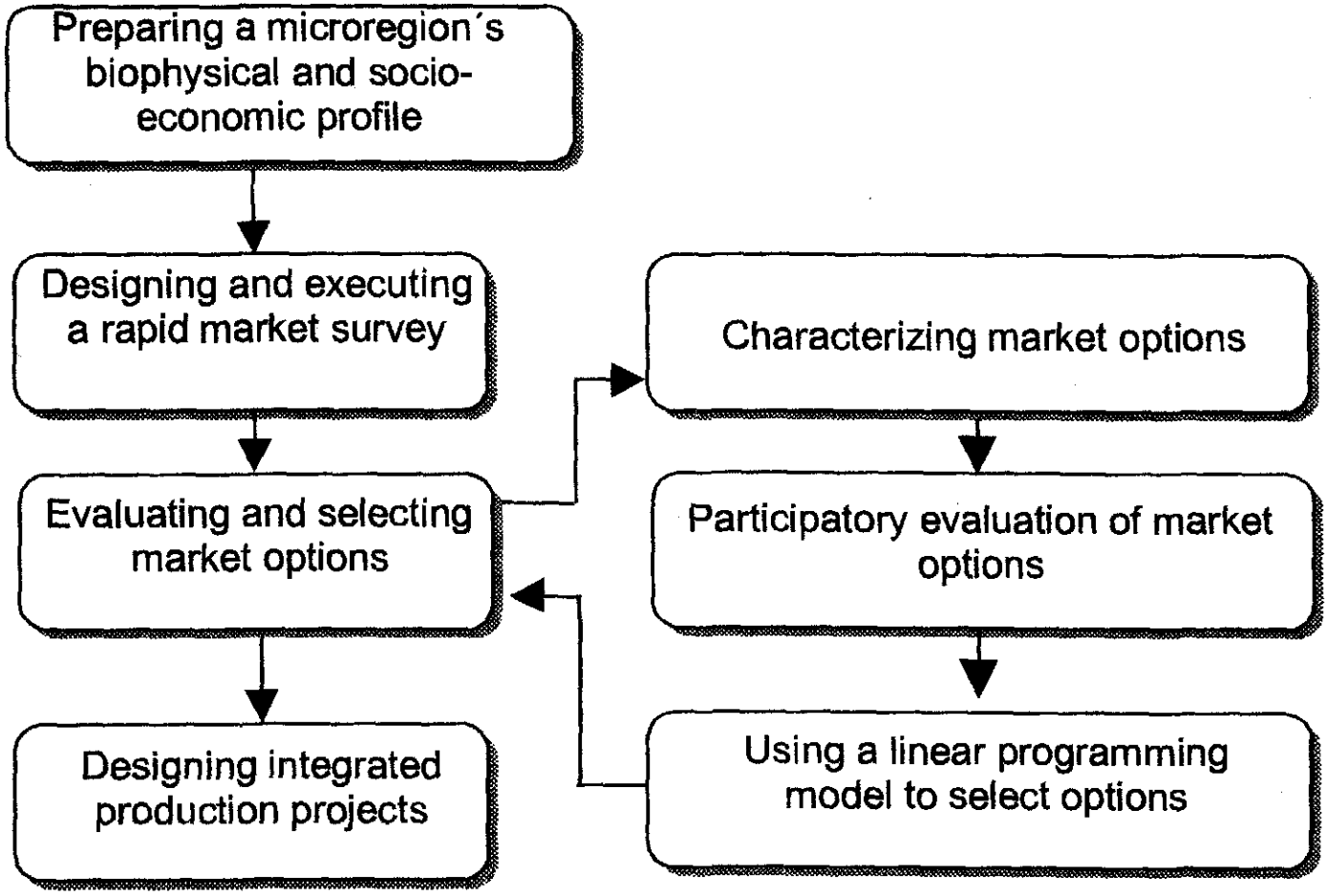
Specific objectives

After completing this manual, the participant will be able to:

- ✓ Prepare a biophysical and socio-economic profile for a microregion.
- ✓ Plan and execute a rapid market survey for a given microregion.
- ✓ Characterize the market options for a given microregion, then evaluate them using a participatory approach.
- ✓ Design an integrated production project for a rural area.

Originals for Transparencies

THE GUIDE'S GENERAL STRUCTURE



GENERAL OBJECTIVE

- To indentify market opportunities
- To design an integrated production project to take advantage of these opportunities

SELF EVALUATION

1. What aspects should be included in a biophysical and socio-economic profile for a given rural region?

2. What do you understand by the phrase 'market orientation'?

3. What is meant when a product is said to represent a 'market opportunity' for small producers ?

4. Describe some of the economic differences between a large or medium-scale producer and a small producer.

5. Do you think it is important for the producers themselves to evaluate market options? Give reasons. Do you believe that an agricultural technic ian would reach the same conclusions ?

6. Describe some characteristics of an integrated production project.

Section 1

Preparing the Biophysical and Socio-Economic Profile of a Microregion

Section 1. Preparing the Biophysical and Socio-Economic Profile of a Microregion

Page

Section Structure 1-2
Objectives 1-2
Orienting Questions 1-2

1.1 Why Prepare a Biophysical and Socio-Economic Profile 1-3

1.1.1 Profile objective 1-3
1.1.2 The profile and the system 1-3
1.1.3 Other uses of a biophysical and socio-economic profile 1-3

1.2 Structure of a Biophysical and Socio-Economic Profile 1-3

1.2.1 Major topics of a profile 1-3
1.2.2 Scheme for preparing a biophysical and socio-economic profile 1-4

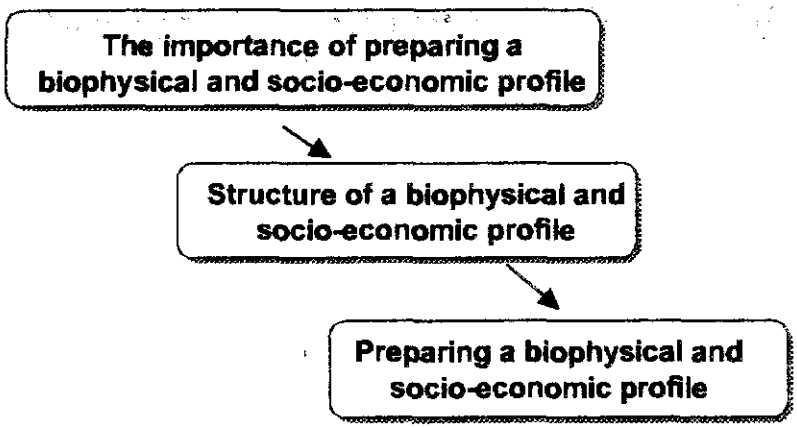
1.3 Preparing a Biophysical and Socio-Economic Profile 1-5

1.3.1 Information sources 1-5
1.3.2 Primary information or information gaps 1-5
1.3.3 Executing the profile 1-6

Exercise 1.1 Preparing a Simplified Biophysical and Socio-Economic Profile 1-7
Exercise 1.2 Timetable for Preparing a Biophysical and Socio-Economic Profile 1-10

Bibliography 1-13
Originals for Transparencies 1-14

Section Structure



Objectives

General goal

Once the participant has studied this section, he or she will be able to prepare a biophysical and socio-economic profile for a microregion.

Specific objectives

✓ The participant will be able to:

✓ Explain the importance of having a biophysical and socio-economic profile of a microregion before initiating any work.

✓ Describe the main aspects that should be taken into account in a biophysical and socio-economic profile.

✓ Propose a timetable to prepare a biophysical and socio-economic profile

Orienting Questions

1. Imagine that you are going to establish a company under two different conditions, one in a fertile valley close to a city and another one in a remote, scarcely inhabited rural area. Contrast the two situations in terms of the challenges you would have to face as an entrepreneur.

2. What do you understand by the word 'profile'?

3. What do you understand by the words 'biophysical and socio-economic'?

4. If you do not have secondary information on a region, what would you do to obtain this type of information?

1.1 Why Prepare a Biophysical and Socio-Economic Profile?

1.1.1 Profile objective

The proposed biophysical and socio-economic profile aims to present, in an organized and concise way, the most outstanding aspects of a microregion as a basis for subsequent work on issues related to rural development, production, market research, agro-industries, and others. The idea is to offer a general panorama of the microregion's socio-economic aspects that can be read in 2 or 3 hours, without delving further into a specific subject.

1.1.2 The profile and the system

Currently, reality must be seen from an overall or comprehensive viewpoint, and include concrete situations or specific problems. The partial or fragmented perspective of reality should, accordingly, be avoided. The concept of 'system' suggests that everything is related and linked, and that an intervention in any specific topic can have unexpected impact. The biophysical and socio-economic profile is a document that reviews, in general, multiple physical, social, and economic aspects within the microregion, thus giving an idea of the prevailing system.

1.1.3 Other uses of a biophysical and socio-economic profile

A well-prepared biophysical and socio-economic profile helps focus work topics better, avoid errors, and helps in decision making. In an interinstitutional context, this type of profile is used to promote a shared vision of reality. In addition, it is a practical time-saving tool. For example, a visitor or an official can quickly obtain an idea of the region.

1.2 Structure of a Biophysical and Socio-Economic Profile

1.2.1 Major topics of a profile

The content of a social and economic profile is influenced by the more general objectives of the work in which it is inserted. For example, if the objective is to improve health conditions in rural areas, then the profile would certainly contain several health-related topics. In this case, the interest lies in discovering new possibilities of economic activity to promote rural development.

Therefore, the profile should mainly include information on the region's production potential, characteristics of the inhabitants, community organizations, significant economic activities, and institutional presence in the area.

The broad topics covered by the profile include *physical, social, economic,* and *institutional* aspects. *Physical* aspects include geographic location, extension, relief, climate, and soil and water resources. *Social* aspects include information on the characteristics of the region's inhabitants, including demography and history. *Economic* aspects include information on outstanding economic activities, indicators of installed production capacity, descriptions of predominant production and marketing systems, problems encountered in conservation of natural resources, and data on existing commercial and community organizations. The support system for commerce and agro-enterprises is also described. Finally, *institutional* aspects covers information on the type of development organizations, both governmental and NGOs, and the history of their interventions.

1.2.2 Scheme for preparing a biophysical and socio-economic profile

Twenty-three proposed topics are listed below, separated according to themes:

A. Physical aspects:

1. Geographical location (including maps).
2. Extension.
3. Relief.
4. Climate, including temperatures, rainfall, and droughts.
5. Soil and water resources, including soil types, levels of fertility, and availability of water and irrigation.

B. Social aspects:

6. Population, including current characteristics and trends.
7. History of inhabitants, including changing ethnic groups, conflicts, and migrations.
8. History of changes in land use.
9. Pertinent current governmental policies.
10. Characterization of current inhabitants in terms of their ethnicity, land tenure, level of well-being, educational level, and degree of market orientation.
11. Description of government system.
12. Description of community organizations.

C. Economic aspects:

13. Major economic activities, together with current gross product and evolution, and employment.
14. Indicators of installed production capacity at the regional level in terms of agro-industries, production of electricity, livestock inventory, area under pastures, area under permanent crops, and sawmills.

15. Description of predominant production systems by subregion, levels of profitability, and constraints.
16. Description of use of agricultural inputs.
17. Problems encountered in the conservation of natural resources.
18. Description of marketing systems, including such characteristics as internal and external marketing channels, functions of intermediaries, terminal markets, payment systems, price levels, and constraints.
19. Description of existing agro-enterprises, cooperatives, and associations in terms of their products, technology, administration, and constraints.
20. Description of the support systems available for commerce and agro-enterprises, including the financial system, transportation, communications, market information, and mechanics, workshops, etc.
21. Needs and priorities as expressed by the community.

D. Institutional aspects:

22. History of institutional interventions.
23. Institutional settings, including their names, missions, and current projects.

1.3 Preparing a Biophysical and Socio-Economic Profile

1.3.1 Information sources

Information is divided into primary and secondary. Primary information as such is not available and has to be generated, whereas secondary information is already available in some document, for example, a book, newspaper, or journal. The existence of secondary information depends on many factors, for example, the importance of the targeted region or the degree of previous institutional intervention. The government can usually supply secondary information. Institutional presence, whether present or past, suggests the probable existence of reports, studies, and surveys that can contribute to the biophysical and socio-economic profile. However, secondary information often does not exist or is insufficient, which is why primary information is necessary. A well-done biophysical and socio-economic profile will include both primary and secondary information.

1.3.2 Primary information or information gaps

When information gaps exist, a very common situation in developing countries and especially in rural areas, primary information should be collected through *studies, surveys, group sessions, or interviews*. A study can involve the application of a questionnaire and data processing and analysis, which can imply high costs, depending on the size of the sample used. A survey is a less ambitious study, with a short questionnaire or guidelines for questions and a small sample. Group sessions or focal groups consist of group interviews where several people, regarded as key informants, exchange opinions and answer questions on one or more topics of interest.

Trained personnel direct the focal groups, while guiding participants through different topics and encouraging everyone to participate. Finally, people considered as experts on specific topics are also interviewed.

In general, the community itself should provide primary information, which can be collected by the strategies mentioned above (in boldface), or by using matrixes organized as simplified forms that help community members describe essential aspects of their microregion.

1.3.3 Executing the profile

The person most indicated to prepare the biophysical and socio-economic profile is a professional who knows the area well. This consultant can easily identify sources of secondary information and key informants. A consultant should be contracted to prepare the above-mentioned profile. The contract should specify time of delivery of the final document and the system of payment. The terms of reference for the consultancy should clearly specify the desired characteristics of the final document. The contract can be for two or three months, which is sufficient time for the consultant to collect secondary data and generate primary information with community participation. Work should be supervised occasionally to ensure that the consultant has understood his or her task. The final document may be between 20 and 30 pages long, and should include location maps, a bibliography, and an explanation of the methods used to obtain primary information. The consultant delivers the document on paper and on diskette as a computer file. That way, the required number of copies can be made. Final payment is not made until the final document is received to the entire satisfaction of the contracting party.

This biophysical and socio-economic profile can be provided as a reference tool to all stakeholders in rural development, for example, governmental organizations, NGOs, community organizations, and private enterprises.

Exercise 1.1 Preparing a Simplified Biophysical and Socio-Economic Profile

Objective

✓ The participant will develop a simplified biophysical and socio-economic profile for a targeted microregion.

Instructor's guidelines

To carry out this exercise:

1. Organize the participants into groups of five people each, and ask each group to nominate a coordinator, who will be responsible for presenting the group's discussion results in the plenary session.

2. Each group should prepare a simplified biophysical and socio-economic profile for the same microregion, following the outline illustrated in Part 1.2.2. The worksheet on page 27 can be used.

3. Select one group to present its work in the plenary session. Ask this group to use the flip chart.

4. All the other groups should contribute to the exhibiting group's profile so that the whole class obtains a more complete biophysical and socio-economic profile.

The participants should not only recognize the gaps that exist in the information but also the importance of investigating before initiating interinstitutional work.

Resources needed

- Outline indicated in Part 1.2.2 of this manual
- Worksheet for Exercise 1.1
- Flip chart, or overhead projector and transparencies
- Magic markers, or markers for the transparencies

Time required: 2 hours

Exercise 1.1 Preparing a Simplified Biophysical and Socio-Economic Profile

Instructions for the participants

To participate in this exercise:

1. Join a group of 5 people and nominate a coordinator, who will be responsible for presenting the group's discussion results in the plenary session.

2. Each group should prepare a simplified biophysical and socio-economic profile for the same microregion, using the outline discussed in Part 1.2.2.

3. Write the profile concisely, summarize the main points, and annotate the information gaps.

4. One group will then use a flip chart to present its work in the plenary session.

5. The other groups should contribute to this group's profile, thus helping to generate a more complete biophysical and socio-economic profile of the region.

Exercise 1.1Preparing a Simplified Biophysical and Socio-Economic Profile - Worksheet

Topics	Subtopics	Information
Physical		
Social		
Economic		
Institutional		

Exercise 1.1: Preparing a Simplified Biophysical and Socio-Economic Profile - Feedback

A biophysical and socio-economic profile should not be extensive. It should contain well-organized, concise information related to the local situation and be available for decision making. The profile should provide a fast and accurate idea of the targeted region and present a common picture to several institutions. It also should include topographical and location maps. An attempt should have been made to identify information gaps, which should be filled with either primary or secondary information.

Exercise 1.2: Timetable for Preparing a Biophysical and Socio-Economic Profile

Objective

The participant will design an effective timetable for preparing a biophysical and socio-economic profile.

Instructor's guidelines

1. Divide the participants into groups of four and ask each group to nominate a coordinator.

2. Each group should jointly work out a timetable, using the worksheet.

3. Explain that a timetable is a sequence of activities, including duration and people in charge, that should be followed if a given objective is to be achieved.

4. Mention that several activities can be carried out simultaneously or in parallel, but that others will require a specific sequence of procedures.

5. Ask the coordinator of each group to present that group's results at the plenary session. The different timetables can be placed side by side on a wall for comparison.

Resources needed

- Section I of this manual
- Worksheet for Exercise 1.2
- Flip chart, or transparencies and projector
- Magic markers for flip chart or for transparencies

Suggested time: 90 minutes

Exercise 1.2 Timetable for Preparing a Biophysical and Socio-Economic Profile - Worksheet

Instructions for the participants

1. Join a group of four persons and nominate a coordinator.

2. Develop a work timetable that covers all stages from the moment the decision was made to subcontract the preparation of a biophysical and socio-economic profile to the delivery of the profile to pertinent institutions.

3. Indicate the duration of each activity (in days, weeks, or months) and the person responsible. Remember that some activities can be carried out simultaneously or in parallel, but others will require a specific sequence of processes. At the end of the exercise, the coordinator of each group will present that group's results in a plenary session.

Activities	Duration	Person responsible
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		
9.		
10.		
11.		
12.		
13		
14.		
15.		

Exercise 1.2 Timetable for Preparing a Biophysical and Socio-Economic Profile - Feedback

A timetable for preparing a profile may include the following aspects:

1. Write the terms of reference, including the content of the profile (1 day).

2. Identify a skilled consultant (1 to 2 weeks).

3. Determine, with the consultant, the primary information needed (1 day).

4. Prepare the budget (1 day).

5. Prepare an employment contract for the consultant, indicating the deadline for delivering the profile (1 day).

6. Anticipate the honoraria and tools for the consultant and his or her first day of work (1 day).

7. Supervise the work occasionally (once or twice over a 2-month period).

8. Request a draft of the final document for revision (give the consultant 1 week to provide a draft copy).

9. Request changes, complementary information, and improvements to the profile's contents (1 week).

10. Receive the biophysical and socio-economic profile and ensure that it is to your entire satisfaction (1 to 4 weeks).

11. Cancel the balance of the contract (1 day).

12. Make copies of the biophysical and socio-economic profile and deliver them to stakeholders (1 to 2 weeks).

Bibliography

Hernández G. 1996. Perfil socioeconómico de la microcuenca del Río Cabuyal. Working document of FIDAR and the Rural Agroenterprise Project. CIAT, Cali, Colombia. 51 p.

Riesco A; Arroyo M. 1997. Perfil socioeconómico de la región de Ucayali (Perú). Working document of the CODESU and Rural Agroenterprise Project. CIAT, Cali, Colombia. 19 p.

Rodríguez R. 1997. *Perfil socioeconómico de la región piloto Yorito-Sulaco en Honduras.* Working document of AGRONET and the Rural Agroenterprise Project. CIAT, Cali, Colombia. 32 p.

Originals for Transparencies

SECTION STRUCTURE

The importance of preparing a biophysical and socio-economic profile

↘

Structure of a biophysical and socio-economic profile

↘

Preparing a biophysical and socio-economic profile

SECTION OBJECTIVE

Once the participant has studied this section, he or she will be able to prepare a biophysical and socio-economic profile for a microregion.

SPECIFIC OBJECTIVE

- ✓ The participant will be able to:
- ✓ Explain the importance of having a biophysical and socio-economic profile of a microregion before initiating any work.
- ✓ Describe the main aspects that should be taken into account in a biophysical and socio-economic profile.
- ✓ Propose a timetable to prepare a biophysical and socio-economic profile

ORIENTING QUESTIONS

1. Imagine that you are going to establish a company under two different conditions, one in a fertile valley close to a city and another one in a remote, scarcely inhabited rural area. Contrast the two situations in terms of the challenges you would have to face as an entrepreneur.

2. What do you understand by the word 'profile'?

3. What do you understand by the words 'biophysical and socio-economic'?

4. If you do not have secondary information on a region, what would you do to obtain this type of information?

WHY PREPARE A BIOPHYSICAL AND SOCIO-ECONOMIC PROFILE

- To present, in an organized and concise way, the general panorama of the prevailing 'system' within the targeted region.
- To provide a basis for subsequent work.
- To promote an overall or comprehensive viewpoint, and give an idea of the prevailing 'system' within the targeted region.
- To help better focus work topics and decision making
- In an interinstitutional context, to promote a shared vision of reality.
- To quickly give new staff an idea of the region.

ASPECTS OF A BIOPHYSICAL AND SOCIO-ECONOMIC PROFILE

A. Physical aspects

- Geographical location (including maps)
- Extension
- Relief
- Climate
- Soil and water resources

ASPECTS OF A BIOPHYSICAL AND SOCIO-ECONOMIC PROFILE

B. Social aspects

- Population
- History of inhabitants
- History of land use changes
- Pertinent current governmental policy
- Characterization of current inhabitants
- Descriptionof government system
- Description of community organizations

ASPECTS OF A BIOPHYSICAL AND SOCIO-ECONOMIC PROFILE

C. Economic aspects

- Major economic activities
- Indicators of installed production capacity at the regional level
- Description of predominant production systems
- Description of use of agricultural inputs
- Problems encountered in the conservation of natural resources
- Description of marketing systems

ASPECTS OF A BIOPHYSICAL AND SOCIO-ECONOMIC PROFILE

C. Economic aspects

- Description of existing agro-enterprises, cooperatives, and associations
- Description of the support systems available for commerce and agro-enterprises
- Needs and priorities as

ASPECTS OF A BIOPHYSICAL AND SOCIO-ECONOMIC PROFILE

D. Institutional aspects

- History of institutional interventions
- Institutional summary matrix

IDEAS FOR PREPARING A BIOPHYSICAL AND SOCIO-ECONOMIC PROFILE

- Identify primary and secondary information sources.

- Determine information gaps and fill with:
  - Studies
  - Surveys
  - Group sessions
  - Interviews with key informants

- Execute the profile
  - Find consultant who knows the area well
  - Establish terms of reference for consultancy
  - Draw up a 2-3 month contract
  - Receive final document (about 20-30 pages long)

TIMETABLE FOR PREPARING A BIOPHYSICAL AND SOCIO-ECONOMIC PROFILE

1. Write down the terms of reference, including the content of the profile.
2. Identify a skilled consultant.
3. Determine, with the consultant, what primary information is needed.
4. Prepare a budget.
5. Prepare an employment contract for the consultant, indicating the deadline for delivering the profile.
6. Pay 50% of the honoraria to the consultant to begin to work.
7. Supervise the work.
8. Request a draft of the final document for revision.

TIMETABLE FOR PREPARING A BIOPHYSICAL AND SOCIO-ECONOMIC PROFILE

9 Request changes, complementary information, ar improvements to the profile's contents.

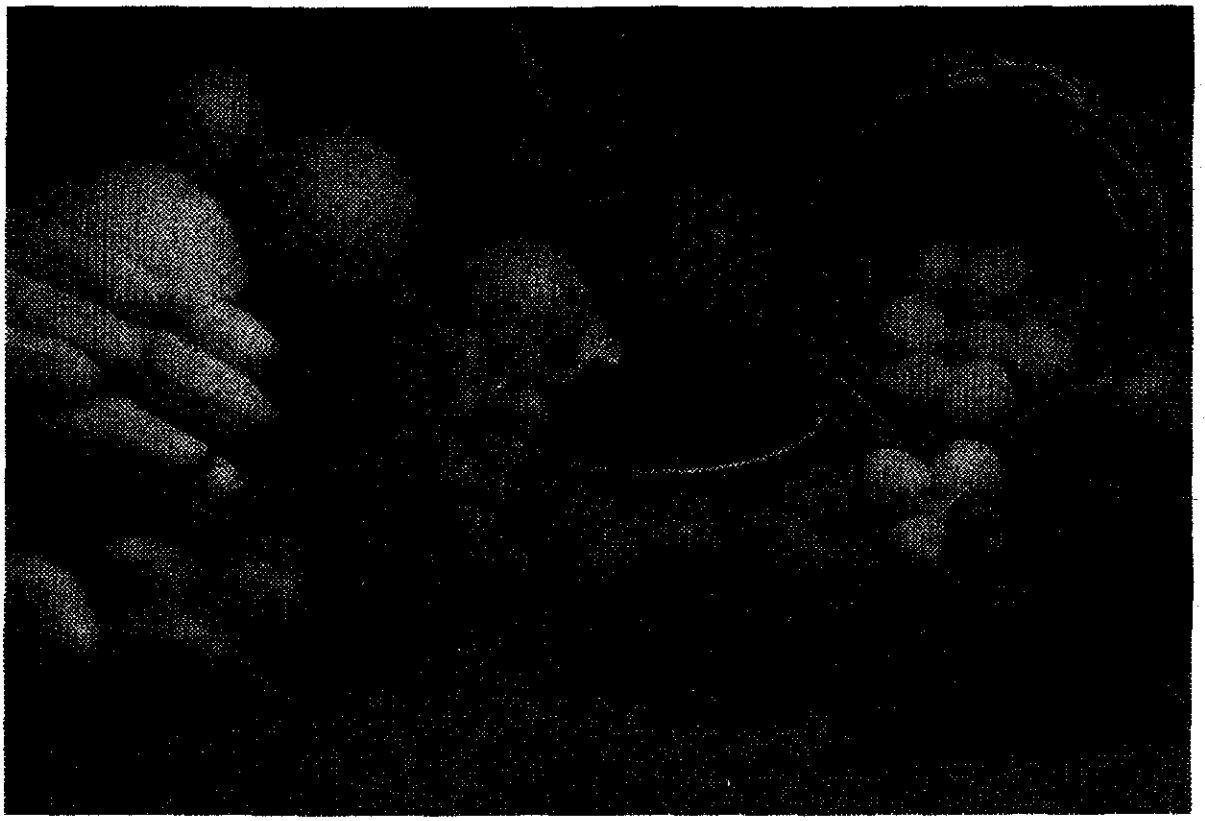
10 Receive the biophysical and socio-economic profi and ensure that it is to your entire satisfaction.

11 Cancel de balance of the contract.

12 Make copies of the biophysical and socio-econom profile and deliver them to stakeholders.

Section 2

Designing and Executing a Rapid Market Survey



Section 2. Designing and Executing a Rapid Market Survey

Page

Section Structure 2-3
Objectives 2-3
Orienting Questions 2-4
Introduction 2-4

2.1 Defining Objectives and Strategies 2-4
2.1.1 Objectives 2-4
2.1.2 Defining strategies 2-5
2.1.3 Detecting categories of agricultural products with a high growth in demand 2-7
2.1.4 Identifying agricultural products whose demand exceeds supply 2-7
2.1.5 Studying trends in demand for products associated with the conservation of natural resources 2-8
2.1.6 Studying trends in demand for products for which the targeted region Offers a comparative advantage 2-8
2.1.7 Studying trends in demand for traditional products (agricultural, forestry, and agro-industrial) of the targeted region 2-9

2.2 Developing a Research Plan 2-10
2.2.1 Secondary information requirements 2-10
2.2.2 Primary information requirements 2-11
2.2.3 Research approach 2-11
2.2.4 Methods of contact 2-11
2.2.5 Sampling plan 2-12
2.2.6 Research tools 2-12
2.2.7 Components of the research plan 2-14
2.2.8 Designing tools 2-15
2.2.9 Examples of key questions 2-16

2.3 Collecting Information 2-17
2.3.1 Sources of secondary information 2-17
2.3.2 Generalities on collecting primary information 2-18
2.3.3 Intermediaries and wholesalers 2-19
2.3.4 Wholesale supply centres and marketplaces 2-19
2.3.5 Purchase centres used by self-service stores (or supermarkets) 2-20
2.3.6 Agro-industries and food-processing companies 2-20
2.3.7 Other industries and retail stores 2-21

2.4 Processing and Analysing Data 2-21
2.4.1 Data processing 2-21
2.4.2 Data analysis 2-21

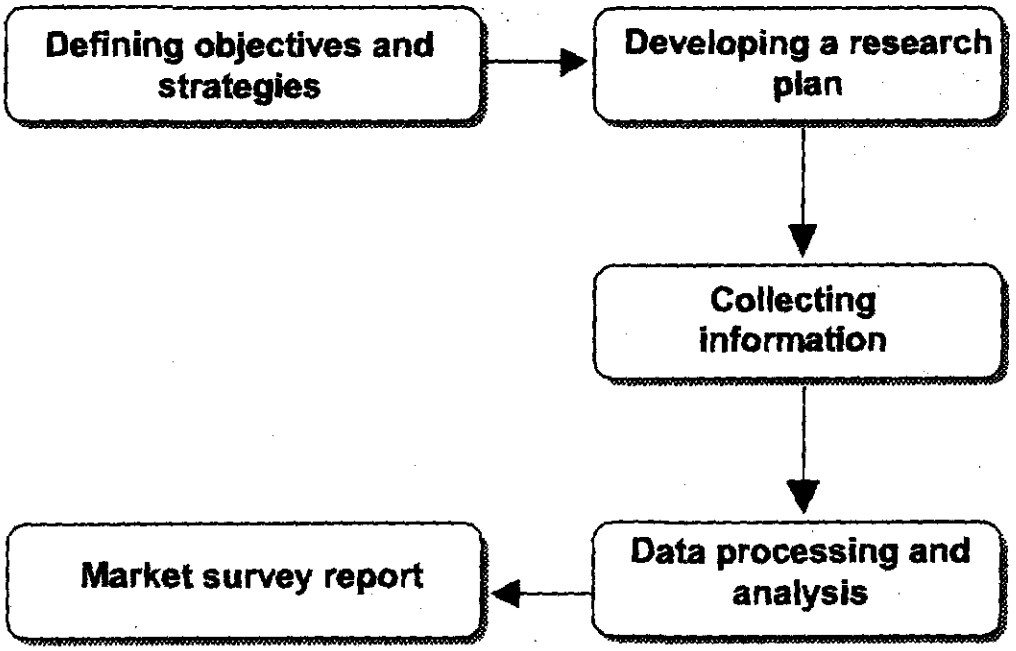
Page

2.5 Final Report on the Market Survey 2-22
2.5.1 Structure of the final report 2-22
2.5.2 Contents, and drafting the final report 2-22

Exercise 2.1 Determining Research Tool Requirements 2-23
Exercise 2.2 Designing a Simplified Questionnaire 2-28
Practice 2.1 Observational Visit to a Supermarket 2-32

Bibliography 2-36
Originals for Transparencies 2-37

Section Structure



Objectives

General objective

- ✓ After studying this section, the participant will be able to plan and execute a rapid market survey for a given microregion.

Specific objectives

- ✓ The participant will be able to:
- ✓ Explain the objective and strategies of a market survey.
- ✓ Describe the main aspects that should be considered when developing a research plan.
- ✓ Determine the number of research tools needed.
- ✓ Develop a questionnaire according to recommendations provided in this section.
- ✓ Explain the prerequisites and procedures for collecting primary and secondary information.
- ✓ Explain how the content of the final report of a market survey can be organized.

Orienting Questions

1. What is the purpose of market research?

2. Do you believe that a small farm is similar, in some ways, to an agro-enterprise?

3. Who should perform market research?

4. Is secondary information, by itself, sufficient for a market survey? Explain your reasons.

Introduction

As already mentioned in the 'Introduction' to the manual, several reasons can explain the growing importance of a sustainable link between the small rural producer economy with growth markets.

Market research is a tool that helps identify market trends and opportunities. This discipline is usually associated with large commercial companies, but the truth is that organizations working in rural development, rural communities, farmer organizations, and rural agro-enterprises can also benefit from its implementation. Market research can be projected in such a way that it adapts to the economic capacities of interested parties. That's why it's important that these sectors have access to information about the topic and conduct research according to their economic capacities.

The sequence we propose for this section is the same as that used for market research. It begins by defining objectives and strategies; continues with the establishment of a research plan, collection of primary and secondary information, and data processing and analysis; and ends with data interpretation and the final report.

2.1 Defining Objectives and Strategies

2.1.1 Objectives

The first objective of a rapid market survey is obvious: to identify market opportunities at both national and international levels. In our case, we search opportunities for agricultural, forestry, and agro-industrial products that are produced traditionally or can be produced in a given microregion.

The second objective aims to capture information on purchasing conditions for those products with marketing opportunities.

An agricultural product differs from an agro-industrial product in that the latter has aggregate value, in this case at the rural level. The aggregate value, or level of processing, can be of different complexity, ranging from levels I to III. Level I involves simple operations such as washing, cleaning, ginning, roasting, classification, bulk packing, and storage. Level II includes more complicated processes such as refrigerating, milling, cutting, mixing, dehydration, cooking, and packaging. Level III involves operations such as extraction, distillation, freezing, fermentation, extrusion, and enzymatic processes.

In times of economic aperture and globalization, it is vitally important to seek ways of linking rural economies to growth markets in a profitable and sustainable way. Among the first logical steps towards this goal is to convert an agricultural product to an agro-industrial product by adding to its value.

The final objective of rural development is, above all, to promote the diversification of rural production, rather than to replace traditional crops. Traditional production is key to food security at both urban and rural levels, which is why rural development aims to complement current production. Product diversification can be a strategy to generate higher income while reducing risks inherent to agricultural and forest production.

Neither should rural development seek to promote monoculture but, instead, associated cropping, which is more consonant with the needs of small rural producers and the current trends towards a more sustainable agriculture, with reduced use of agrochemicals.

2.1.2 Defining strategies

Once the objective is known, the question is how to achieve it. The answer is easy because a socio-economic profile of the targeted microregion is supposedly available, offering complete information on the area. If it doesn't, then the market study should be delegated to someone with sufficient knowledge of the region.

Before proposing research strategies, a preliminary study should be carried out on broad global trends of industrial purchasing patterns and consumer purchasing habits. For example, final consumers currently tend to prefer products that are practical and easy to use or prepare. There is great interest in health and balanced nutrition, including natural and organic products. In the United States and the European Union, the growth of markets for organic agricultural products has reached impressive figures: more than 20% per year. In addition, the consumption of dietary fiber, including fruits and vegetables, is increasing. Consumers of developed countries are showing great interest in exotic tropical and subtropical products, such as fruits and vegetables. There is renewed interest in natural medicine, which is based on the use of medicinal plants. In addition, the industry has shown interest in renewable raw materials and in responding to the consumer preferences already mentioned.

The product-growth growth matrix is a tool that helps plan a market survey for a given region (Table 2.1).

Table 2.1. Product-market growth matrix (Ansoff, 1957).

	Existing products	New products
Existing markets	Market penetration	Product development
New markets	Market development	Diversification

This matrix was proposed for classifying growth alternatives of an enterprise, but can also be used if the microregion presumably consists of a set of small farms that can be related to the concept of rural agro-enterprise. Growth opportunities of the microregion are explained below.

1. Market penetration means increased sales of products to current market segments, without changing the product offered. This can be obtained by reducing prices and increasing promotion and distribution.

2. Market development means identifying and developing new market segments for current products. These segments can be institutional markets and other geographical areas, including export.

3. Product development refers to the offer of new or modified products to current market segments. Products can be, for example, improved or packaged and labelled differently.

4. Diversification is the production of new products for new markets. The level of risk increases with the number of growth alternatives because the 'change' variable increases. For example, diversification represents greater risk than market penetration because the first implies more changes and new situations.

By keeping this reference framework in mind, strategies can be proposed to reach the established objective. These strategies can include:

1. Detecting categories of agricultural products presenting a high or intermediate growth in demand.

2. Identifying agricultural products whose demand exceeds product supply, and determining the causes of this shortage. Agricultural, forest, and agro-industrial products being imported should also be detected.

3. Studying trends of demand for products associated with the conservation of natural resources.

4. Studying trends of demand for products for which a targeted region offers a comparative advantage.

5. Studying trends of demand for traditional agricultural, forest, and agro-industrial products of the targeted region.

These strategies are pertinent for local, regional, national, and international markets. However, obtaining primary information on domestic markets is easier and less expensive than that on international markets, especially in the case of developed countries. Research on domestic markets should therefore be conducted separately from that on foreign markets. For the latter, research should be specifically focused on obtaining secondary information from specialized governmental agencies (foreign trade, promotion of exports) and the private sector. Or, if economically viable, consultants specialized in developed-country markets, should be contracted. Internet is another, increasingly useful, source of market data.

These strategies are described below in more detail.

2.1.3 Detecting categories of agricultural products with a high growth in demand

Products can present several growth trends. Growth is usually measured as a percentage of annual increase in sales or in demand for a product. Growth can be high (more than 6% per year), intermediate (from 4% to 6%), low (from 1% to 3%, which is similar to population growth rate), nil, or negative. Above all, we are interested in detecting those products presenting high or intermediate growth. This type of growth is usually found with innovative products that respond well to current trends in consumer habits.

Products such as fruits, vegetables, fresh and processed roots and tubers, and basic grains should be considered. Products characteristic of biodiversity, such as spices, aromatic and medicinal plants, essential oils, and natural colorants, should also be taken into account.

2.1.4 Identifying agricultural products whose demand exceeds supply

Difficult-to-obtain products because of short supply should also be identified. A product may be scarce because demand has surpassed product supply, it's off-season, or the product suffers problems such as diseases, pests, and drought.

Although shortage of a product can represent an opportunity, identifying underlying causes is important because they can be temporary, such as off-season demand or production problems, or they can be more permanent such as growth in demand.

The main agricultural, livestock, and forest categories that are imported should also be identified. The government usually has good information on these aspects. Domestic production of some of these products may be economically viable if they represent savings in freight.

2.1.5 Studying trends in demand for products associated with the conservation of natural resources

This strategy warrants special explanation because it is closely related with issues of sustainability and environmental conservation. A large percentage of small producers in Latin America inhabit fragile ecosystems such as hillsides and tropical rain forests, where the probability of erosion and environmental degradation is high. If products directly or indirectly related to conservation (e.g., live barriers, grasses, and cover crops) are available and represent a market potential, then the adoption of conservation practices by small rural producers is more viable. Many production systems have been proposed in the past, but their economic feasibility had not been studied. The producer, of course, cannot adopt sustainable production systems that do not guarantee his or her family's livelihood.

To continue with this strategy, a list should be made of the products directly or indirectly associated with several tools designed to conserve natural resources. For example, if the community prefers live barriers of forage grass, the local or regional demand for related products, such as milk and dairy products, should be studied. Studying the demand for a product involves:

1. Determining the annual growth rate of sales (high, intermediate, or low).
2. Determining the volume of sales.
3. Knowing purchasing conditions: prices, presentation, product quality, and competitors.
4. Identifying buyers and types of markets (local, regional, national, or international)

2.1.6 Studying trends in demand for products for which a targeted region offers a comparative advantage

First, 'comparative advantage' should be defined. If a region produces a better quality product, or a product that yields higher margins of profit, compared with other areas, then this region has a comparative advantage. In other words, the region could probably compete successfully in the market for that given product.

Comparative advantages are sometimes obvious. For example, many exotic native productsfruits, nuts, and raw materialsfound in the Amazon region are not produced in other regions. If efficient agro-enterprises, with adequate support systems, can be established, then the region would most likely have a comparative advantage for producing and marketing these native products.

However, the identification of comparative advantages for a region is not always so evident. The geographical location of the area, demand and availability of labor, existing production systems and rural agro-industries, microclimates, and population characteristics should therefore be studied to hypothesize the comparative advantages. For example, if the targeted microregion has good communication with an important urban centre and offers a variety of microclimates, most probably, it will have comparative advantages.

In addition, rural economies can present comparative advantages for some agricultural products such as fruits, vegetables, spices, medicinal and aromatic plants, roots and tubers, organic products, fibers, or small animals. For example, 80% of fruit production in Colombia is estimated to come from small producers (Asohofrucol 1998, personal communication). Comparative advantages may also exist for woven fabrics, handicrafts, and other similar items.

A study should also be conducted to determine whether the region presents comparative advantages for processing traditional small-producer products, such as coffee, maize, common beans, cassava, milk, and cacao. A related idea is the use of regional brands for typical products of a region; this strategy serves to differentiate the product from others offered on the market.

As already pointed out in Part 2.1.5, the study of the internal demand for a product helps determine that product's annual growth of sales (high, intermediate, or low) and sales volume. Sales price, and product presentation and quality should also be analysed, the competition ascertained, and buyers identified.

2.1.7 Studying trends in demand for traditional products (agricultural, forestry, and agro-industrial) of the targeted region

This strategy refers to the offer currently existing in the targeted microregion. It is important to ensure that the market survey includes existing agricultural, forest, and agro-industrial production. Interesting marketing opportunities for traditional products may be identified, including the generation of aggregate value and the use of regional brands. This strategy is related to growth alternatives of the Ansoff matrix (1957). For example, a coffee-producing region can produce its own coffee ready for consumption, using a regional brand.

One region in the hillside area of southern Colombia has two rural agro-industries: cassava starch factories and sugar mills. The former produces sour cassava starch, which is used to prepare a typical bread known as 'pandebono'. The sugar mills produce a brown rock sugar, known as 'panela'. When the demand for both products was studied, two market opportunities were found:

- A presentation of high-quality sour starch destined to the snack-producing industry.

- The development of a new product that involved pulverizing 'panela' to convert it into a type of natural, whole sugar.

Thus, a traditional product facing a static or diminishing market can be inserted into a modern, high-growth market.

At this point, it is also important to include uncommon products that are characteristic of the region's biodiversity. In this case, key informants (e.g., technicians, entrepreneurs, and professors) should be enlisted for help in preparing a list of the region's plants that can be useful as aromatic or medicinal plants, spices, colorants, oils, or essential oils. Senior community members can serve as key informants for identifying useful products that have disappeared from the region or are becoming extinct.

An example of this last case is the shrub *Myrica cerifera* (also called 'laurel de cera', bayberry, or wax myrtle). A type of natural wax is extracted from this shrub and used in the production of brown rock sugar and in the preparation of candles. This shrub has disappeared from large areas of the Department of Cauca, southwestern Colombia.

As already mentioned in Parts 2.1.5 and 2.1.6, the study of local demand for a product helps determine both growth and volume of sales. Sale prices, and product presentation and quality should also be analysed, and competitors and buyers determined.

2.2 Developing a Research Plan

Once the objectives and strategies are defined, research should be planned to ensure the efficient fulfilment of established objectives.

2.2.1 Secondary information requirements

Although secondary information contributes greatly to market surveys, primary information is probably more important. To take advantage of the potential of secondary information, the products corresponding to strategies c, d, and e, mentioned in Part 2.1.2, should be defined first. Then, the search for secondary information can be planned.

Secondary information is especially important when studying international markets, especially in the case of developed countries. Information should be up to date because market processes are dynamic and changing. This type of information should therefore not be more than 2 or 3 years old. A list of possible sources of secondary information is given below, in Part 2.3.1, among which Internet is now very important. Appendix 7.4 presents a mini-directory of organizations dedicated to alternative trade, and which can provide both primary and secondary information.

Furthermore, secondary information related to price series at either the wholesale or consumer level should be sought for targeted products. Such series can be used to determine the degree of stability of a product's prices, essential information for the small rural producer who, because of his or her economic fragility, has a very low risk capacity. The more stable a product's prices are, the lower the risks for the producer.

2.2.2 Primary information requirements

Primary information is more important in market surveys because secondary sources do not offer all the necessary up-to-date information. The strategies discussed in Part 2.1.2 require primary information.

Obtaining primary information for export markets is optional, depending on the feasibility of these markets for the targeted microregion and the availability of funds to carry out the research or contract a specialized consultant. The consultant should be familiar with the markets of at least the European Union, the United States, and Japan. Different organizations belonging to the so-called alternative trade (i.e., commercially related to rural economies) must also be contacted. As already mentioned in Part 2.2.1, Appendix 7.4 presents a mini-directory of active, alternative-trade organizations.

In the case of markets of neighbouring countries, primary information can be obtained at a moderate cost, for example, in Central America, where countries are relatively small and trade in agricultural and agro-industrial products between neighbouring countries is important. One way of accessing market information of neighbouring countries is through intermediaries who buy in one country, then sell in others.

A market survey is only one stage of a methodological process, as indicated in the 'General Structure'. Another objective of market surveys is to capture information for a later stage of characterizing market options. A marketing matrix is used for options selected in the market survey.

The type of commercial information that should be collected, and the matrix, is described in Part 2.1.4.

2.2.3 Research approach

Surveying is the most adequate research approach because descriptive data can be obtained. Not all surveys can be structured. Structured surveys use lists of questions that are asked in the same way to all interviewees. Unstructured surveys allow the interviewer to ask questions and thus direct the interview according to the replies. Research can also be conducted by observation, which consists of collecting primary information by observing people, events, and situations.

2.2.4 Methods of contact

Information can be requested by traditional and electronic mail, and phone, or in person. But we recommend the two last alternatives. A mailed questionnaire is inflexible and the reply rate low. Phone interviews can be a valid option to contact people you know or if they are not readily accessible. The personal interview is the best method of contact. Interviews can be conducted individually or in group (group sessions or focal groups). Individual interviews are more common because they are flexible and effective, even though more expensive.

2.2.5 Sampling plan

Because our market survey does not focus on consumers but on marketing channels and industry, the targeted population is not so extensive. Hence, the representative sample covers a larger proportion of the total population and the conclusions are likely to be more precise.

Several samples may have to be selected for the survey. When designing the sample, the following decisions must be made: (a) who should be interviewed (sample unit); (b) how many people should be interviewed (sample size); and (c) how will they be selected (sampling procedure). Selection can be done at random among the entire population (probability sample), or among people from whom it will be easy to obtain information (convenience sample). A specific number of people from different categories or groups (quota sample) can also be interviewed.

For our purposes, the sample will consist of a list of contacts that includes, among others, local and regional intermediaries, wholesalers and retailers in wholesale supply centres, heads of purchases for self-service stores or supermarkets at the regional or national level, officials of agro-industries and other companies, and retail stores. If contacts are few and relatively close to each other, then all can be interviewed. But if they are numerous or distant, then a representative sample should be chosen.

In addition, a list of contacts necessary for obtaining pertinent secondary information should be made. The list usually includes government officials involved in foreign trade, promotion of exports, or economic development; staff of related associations; and chambers of commerce (see Part 2.3.1).

2.2.6 Research tools

In our case, key tools are the questionnaire and the interview guidelines. The questionnaire consists of a series of carefully prepared questions that the interviewee should answer. A test interview should be conducted. Questions may be closed or open. Closed questions include all possible responses, which are chosen by the interviewee. Examples of closed questions are those of multiple selection or of scoring against a scale. Open questions allow the interviewee to answer the question with his or her own words. Questions should be simple, clear, and follow a logical sequence within the questionnaire.

Interview guidelines are used in unstructured surveys, which seek to direct the interview according to the replies. They usually consist of a list of issues that the interviewer should take into account, but without entering into much detail. This tool allows great flexibility.

Different toolsquestionnaires or interview guidelinesshould be prepared for each group of people to be interviewed. For example, interview guidelines should be prepared for intermediaries, while questionnaires should be prepared for heads of purchases for self-service stores, agro-industries, and food-processing companies. A different questionnaire or interview guideline may have to be developed for each agro-industry. Simple interview guidelines should also be prepared for use with contacts, such as government officials, officials of chambers of commerce, and members of associations, when secondary information is being sought.

To define the research plan and determine different questionnaires or interview guidelines to be developed, a research tool matrix can be prepared (Table 2.2.) Before building this matrix, remember to first define the products corresponding to strategies c, d, and e, mentioned in Part 2.1.2. This step is requisite for determining which products should be covered in the interviews and who are the corresponding contacts. This matrix can also be used to plan the search for secondary information.

The columns of the tool matrix represent the five different strategies of the market survey and the rows, the contacts who should be interviewed. The shaded cells indicate topics or strategies to be included in the tools directed towards each type of contact. For example, the questionnaire or interview guidelines directed toward intermediaries and wholesalers may not only include a section to identify high-growth or scarce products but also sections focused on identifying trends in demand for products related to other survey strategies: conservation, comparative advantages, and traditional products. Thus, the matrix helps visualize the number of tools and their content. In the corresponding cells you can add codes such as Q-1 for Questionnaire 1 or G-2 for Guidelines No. 2; or P for primary information to be collected and S for secondary information to be collected.

Table 2.2 Matrix to determine research tools.*

Contacts	Survey strategies				
	(a) Detect products with high sales growth	(b) Identify products whose demand exceeds supply	(c) Study demand for products associated with natural resource conservation	(d) Study demand for products for which a targeted region offers a comparative advantage	(e) Study demand for traditional products
Intermediaries and Wholesalers					
Wholesale supply centres and marketplaces					
Heads of purchases for self-service stores					
Agro-industries and food-processing companies					
Contacts with companies Strategy c					
Contacts with companies Strategy d					
Contacts with companies Strategy e					

*See also Worksheet no. 1 for Exercise 2.1

2.2.7 Components of the research plan

Table 3.3 indicates the broad work areas of the market survey, specified with capital letters. As mentioned before, the emphasis on components will depend on established priorities and on available funds. However, components A, B, and F are considered priority. In a case like that of Central America, component C would be added to this list. The other components would be regarded as optional and so appear in parentheses.

Table 2.3. Components of the research plan.

Type of market	Sources of information	
	Primary	Secondary
Domestic market	A	B
Markets of neighbouring countries	C	(D)
Markets of developed countries	(E)	F

2.2.8 Designing tools

A series of practical recommendations can be made on designing questionnaires and interview guidelines to obtain primary information (see Exercise 2.2).

- As already mentioned, some questionnaires and interview guidelines should be separated into sections corresponding to two or more survey strategies, as illustrated by the tool matrix in Table 2.2. Such tools would be used with intermediaries, heads of purchases for self-service stores, and agro-industries.

- In other cases, tools would focus on a single survey strategy. For example, let's analyse the tools for strategy e, which focuses on studying the demand for traditional products. Let's suppose that two traditional products of the regionmaize and cassavaare going to be studied. The shaded cells of the matrix suggest that specific instruments, oriented towards contacts and companies that sell, purchase, and process these products, should be designed. These tools may include intermediaries and agro-industries.

- Continuing with the previous example, the matrix also indicates that a section can be added to study maize and cassava trends in the tool for intermediaries, heads of purchases for self-service stores and agro-industries.

- As mentioned in Part 2.2.2, the questionnaires and interview guidelines should include, for all targeted products, questions on marketing to provide information for a later stage of commercial characterization of market options. These would include data on purchase conditions, such as prices, quality standards, packaging, varieties, and volumes of purchase.

- A tool should have a name or title identifying it, for example, 'Questionnaire for Intermediary', and a code if necessary.

- The first part of a tool should identify the contact or source of information; his or her position; the company's name, address, and phone; date of interview; and name of interviewer. This information is not only important for data processing but also for monitoring the survey.

- The different sections of a tool should be clearly identified and separated. Sections may correspond to survey strategies or to different products.

- All questions should have a number that identifies them.

- Sufficient space should be left below the questions so that the interviewer can write the answers.

- Questions will usually be open, although closed questions will, on occasion, be useful.

All the tools, and certainly the more important ones, should have been previously tested with one or two contacts.

The questionnaire should include precise instructions in **bold type** to avoid confusing the interviewer. Sometimes **Yes** or **No** questions will help the interviewer determine whether he or she should jump a question or set of questions. For example, an interviewer asks whether the interviewee buys or sells maize, and is told 'no'. The interviewer therefore does not need to continue asking about this product and goes on to another part of the questionnaire.

2.2.9 Examples of key questions

Usually, designing questions is not difficult, but neither is it as easy as one may think. The meaning of a question may be clear to whoever makes it, but confusing to other people. When planning a question, the ease of annotating the answer should also be taken into account. Likewise, the questionnaire should not be too lengthy. Several examples of questions oriented towards detecting products that either show interesting sales growth rates or are in scarce supply are given below. The questions may be asked for categories of products (such as fruits, vegetables, and flours) or for specific products (such as banana, string beans, and maize flour).

Sample questions for a questionnaire

a. Theme of questions: Products showing a good growth rate in sales.

- The volume of sales of _____ in your chain of self-service stores this year was greater (+), equal (=) or less (-) than last year's volume? _____
- More or less in what percentage?_____
- What products presented the highest increase in demand? Give the percentage in round figures.

1. _____ _____%
2. _____ _____%
3. _____ _____%
4. _____ _____%

b. Themes of questions: Products in scarce supply

- Is it now difficult to obtain any type of _____?
- Yes [ ] Go to Question No. ___

- No [ ] Go to Question No. ____

- What specific product or products are in scarce supply?

  1. _____

  2. _____

  3. _____

  4. _____

- Why is this product (or these products) scarce? (keep the same order.)

  1. _____

  2. _____

  3. _____

  4. _____

2.3 Collecting Information

Once the research plan has been developed, the questionnaires or interview guidelines designed and tested, the next step is to gather information.

2.3.1 Sources of secondary information

Before collecting secondary data, you should check that:

- The products corresponding to strategies c, d, and e in Part 2.1.2 have been defined;

- The priorities for the research plan, appearing in Table 2.33, have been determined; and

- The corresponding list of sources of secondary information has been prepared.

Table 2.4 presents a list of potential contacts for acquiring secondary information.

Information centres of wholesale supply centres, open-air markets, and marketplaces are good sources for obtaining price series at either the wholesale or consumer level for targeted products. Economic and agricultural publications and agricultural and livestock and economic sections of newspapers can be good sources of information on markets and prices. Finally, hiring a consultant to help acquire secondary information may be justified.

Table 2.4. Sources of secondary information

Domestic market	• Information centres of wholesale supply centres, open-air markets, and marketplaces • Chambers of commerce • Development agencies • Associations • National, departmental, provincial, or municipal governments • Press, specialized and standard publications, and journals • Private companies • Internet • Consultants
Markets of neighbouring countries	• Foreign trade agencies • Agencies promoting exports • Internet • Consultants
Markets of developed countries	• Foreign trade agencies • Agencies promoting exports • State agencies of developed countries • Development agencies • Internet • Consultants

2.3.2 Generalities on collecting primary information

Several recommendations are offered to ensure successful collection of primary information:

- This is not a comprehensive survey because it does not focus on consumers. No more than three reliable people are needed to gather this information, with the support, if necessary, of consultants.

- Interviewers must be informed of the survey's objective and be familiar with the tools developed.

- Interviewers must make appointments with contact people, then confirm and keep them. Appointments can be made by phone.

- Formal letters using stationery of the organization executing the survey should be used to identify and empower the interviewer. The letter should also inform of the survey's objectives and emphasize that all information will be handled confidentially.

- Interviewers should personally explain survey objectives to the interviewee and reassure him or her that all information will be handled confidentially.

- Interviewers must avoid influencing or suggesting replies.

- Where possible, interviews should not be very long, although, this may be, on occasion, unavoidable. An interview lasting 30 minutes is long. If it's likely to take longer, the interviewee should be previously informed. The interviewer may ask for more than one appointment so that the interview is conducted in several sessions.

- Supervision of interviewers is optional, depending on the degree of confidence that exists. Supervision is performed mainly by phoning interviewees to confirm that they were indeed contacted.

In Parts 2.3.3 to 2.3.7 below, different contacts are described. This type of information can be useful when programming information collection.

2.3.3 Intermediaries and wholesalers

The intermediary is important at both urban and rural levels for marketing agricultural and agro-industrial products. A sample should be selected, which can be by quota, according to the products handled. Interview guidelines should be used. Interviewees may have limited education and may not be articulate. Some intermediaries or rural wholesalers purchase field products and take them to other intermediaries or wholesalers in urban areas. Intermediaries and wholesalers usually specialize in a particular product, but can also inform about other products. Intermediaries and wholesalers will be key players in surveys on conservation-related products, products with comparative advantages, and traditional products (strategies c, d, and e).

2.3.4 Wholesale supply centres and marketplaces

For these sites, data collection should have two objectives:

- To use information centres, if they exist, to obtain primary and secondary information on products with high sales growth and on products corresponding to strategies c, d, and e.

- To interview wholesalers and retailers on products with high sales growth and on products corresponding to strategies c, d, and e.

Interview guidelines should also be used. Once again, interviewees may have limited education. Price series may be available at information centres; the degree of price stability can therefore be established.

2.3.5 Purchase centres for self-service stores (or supermarkets)

These sites can provide lots of information, particularly for identifying high-growth products or products in scarce supply. Other trends that can be determined are those concerning conservation-related products, products for which a targeted region offers a comparative advantage, and traditional products.

The heads of purchases are very busy people, and you will need to ask for an appointment well in advance. There may be several heads of purchases, each specialized in a different type of product. You should especially try to contact the head of purchases of fruits and vegetables because these products are closely related to the rural economy.

You must avoid making the interview long; if necessary, make more appointments. In this case, the use of a questionnaire will enable you to collect data on many products.

Several categories of agricultural products sold in supermarkets are listed below:

- Basic grains sold in bulk or packaged
- Fresh fruits
- Fresh vegetables
- Flours and starches
- Tinned products
- Products bottled in glass
- Frozen products
- Non-frozen, ready-to-eat products

2.3.6 Agro-industries and food-processing companies

If the survey is directed only towards local companies, you may be able to cover the entire population being sampled. If survey coverage is broader, you will have to select a sample by quota, according to marketed or bought products. Local companies use raw materials, including fruits, grains, cereals, roots, tubers, and vegetables, grown by small producers. They are a good source of information for all survey strategies. You may have to develop either a questionnaire or interview guideline for each type of company, according to the raw material purchased or product manufactured.

You must identify the most suitable person to interview. If the company is small, the ideal person may be the owner, general manager, or marketing manager. If the company is intermediate in size or large, then it is better to contact the head of purchases. These companies handle a great deal of confidential information and the interviewer must guarantee that all information given to him or her will be handled confidentially. Interviewees may be unwilling to give information on sales volumes, but it is even more important to obtain information on annual growth rates of sales for their products and on buying conditions.

2.3.7 Other industries and retail stores

The observations expressed in Part 2.3.6 also apply to other industries and retail stores. In addition, note that when studying trends for agricultural or agro-industrial products, whether (a) related to the conservation of natural resources, (b) grown in a targeted region that offers comparative advantages, or (c) fashionable or traditional in the region, then the survey must cover a broad range of companies that purchase the most varied raw materials to prepare their products. For example, in a market survey carried out in a pilot area in southern Colombia, a candle factory, flower shops, dairy industries, and fruit-pulp producers were interviewed, among others.

2.4 Processing and Analysing Data

After finishing the fieldwork and having collected primary and secondary data, this information is analysed to prepare reports and fulfill the initial objectives proposed.

2.4.1 Data processing

You must have already realized that the information generated by a market survey will be located in a great variety of questionnaires and interview guidelines, different among themselves and with many open questions. You will have tools that were used with intermediaries, wholesale supply centres, supermarkets, agro-industries, and other types of companies. There will also be documents, articles, and data on many types of products and export opportunities. These all indicate that a market survey has the characteristics of a qualitative study, which makes it difficult or impractical to process information, using an automated statistical package.

Accordingly, we suggest that data processing be carried out manually by one or more highly trained professionals, who understand the survey's objective and have a good capacity for analysis and synthesis. To facilitate information processing and analysis, you should, from the beginning, organize the information by strategy and/or by product (Table 2.3). Information on opportunities for domestic and export markets should also be separated.

2.4.2 Data analysis

The handling of data as proposed above means that data processing and analysis are almost simultaneous because the professional in charge should synthesize the primary and secondary information obtained, then order it by survey strategy. The type of information obtained can be classified into four broad categories:

- Opportunities in national and international markets.

- Market trends for products with high and average sales growth and for products in scarce supply.

- Market trends for products related to the conservation of the natural resources, products for which targeted regions offer comparative advantages, and traditional products.

- Buying conditions for all products of interest.

2.5 Final Report on the Market Survey

2.5.1 Structure of the final report

Table 2.5 proposes a structure for the final report, organized by market type and strategy. Note that the products corresponding to the first two strategies (a and b) of the survey are NOT determined beforehand, but are identified precisely during the study. In contrast, the products of strategies c, d, and e ARE chosen beforehand, as has already been explained.

The shaded cells in Table 2.5 correspond to the components of the final report that are considered as the most important, although this decision is left to each project's criterion. The matrix proposes a final report with a part focused on the domestic market and another on the international market. The two parts are divided into four reports (strategies a and b are combined into one part), one for each strategy of the market survey. Each part, in its turn, is divided into two sections.

As the final report can be extensive, a summary should be made of the most important conclusions in accordance with the market survey's objectives and original strategies.

2.5.2 Contents, and drafting the final report

Below are several suggestions on content and drafting of the final report:

- Organize the report by parts, reports, and sections.

- Only include information relevant to the objectives and strategies. Where possible, detail the information on products representing a marketing opportunity for the targeted microregion.

- Summarize as much as possible, and avoid being repetitive. Use matrixes and tables.

- Make sure your report has a title page, a page of contents, an executive summary, a bibliography, and a list or directory of contacts or buyers.

- Specify the dates on which fieldwork was performed.
Where possible, present information in a consistent manner, for example, matrixes should be in similar formats.

- Finish each section or report with conclusions to facilitate its reading.

Table 2.5.Suggested structure for a final report.

Components	Part 1: Domestic markets		Part 2: International markets	
Report 1 **Strategies a and b:** **Products with high and average sales growth and products in scarce supply**	Section A: List of products identified as having market potential	Section B: Information, by product, on trends in demand and buying conditions	Section A: List of products identified as having market potential	Section B: Information, by product, on trends in demand and buying conditions
Report 2 **Strategy c:** **Conservation-related products**	Section A: List of identified marketing opportunities	Section B: Information, by product, on trends in demand and buying conditions	Section A: List of identified marketing opportunities	Section B: Information, by product, on trends in demand and buying conditions
Report 3 **Strategy d:** **Products from microregion with comparative advantages**	Section A: List of identified marketing opportunities	Section B: Information, by product, on trends in demand and buying conditions	Section A: List of identified marketing opportunities	Section B: Information, by product, on trends in demand and buying conditions
Report 4 **Strategy e:** **Existing or traditional products**	Section A: List of identified marketing opportunities	Section B: Information, by product, on trends in demand and buying conditions	Section A: List of identified marketing opportunities	Section B: Information, by product, on trends in demand and buying conditions

Exercise 2.1 Determining Research Tool Requirements

Objective

The participant should be able to determine research tools and the different formats needed to obtain primary information in market surveys.

Instructor's guidelines

1. Organize the participants into groups of five and ask them to nominate a coordinator.

2. To do this exercise, the participant uses assisted by a tool matrix (Table 2.2) that appears as Worksheet no. 1 for Exercise 2.1.

3. The information most related to this topic can be found in Parts 2.1.3 through 2.2.6.

4. Participants should use the two worksheets included.

5. In Worksheet no. 1 (tool matrix), the participant must identify and list all the different tools he or she will need; the participant may use codes or abbreviations to identify them.

6. In Worksheet no. 2, the participant must copy the list of different formats for questionnaires and interview guidelines, and identify each format.

7. Once the exercise has been completed, the coordinator of each group will present the results in a plenary session.

8. The results may vary, but what's important is that the proposed tools cover all the requirements of the market survey.

Resources needed

- Section 2 of the manual
- Worksheets for Exercise 2.1
- Paper and pencils
- Flip chart, or overhead projector and transparencies
- Magic markers, or markers for the transparencies

Time required: 90 to 120 minutes

Exercise 2.1 Determining Research Tool Requirements

Instructions for the participants

Make believe that you are conducting a market survey, like the one described in this Section, for a microregion and that you already have a clear idea of the number of tools (questionnaires, guidelines) you will need. Assume that the products of survey strategies c, d, and e are as follows:

Strategy c - Products related to soil conservation: dairy products, chickens

Strategy d - Products for which a targeted region offers a comparative advantage: flowers (roses)

Strategy e - Traditional products: beans and maize

In the matrix format to determine research tools (Worksheet no. 1), identify the different tools you will need and write them down. You can use codes or abbreviations to identify the formats or tools.

Then, using Worksheet no. 1, fill out Worksheet no. 2.

The information most related to this topic can be found in Parts 2.1.3 through 2.2.6.

To complete this exercise, follow these steps:

1. Make a list of types of contacts you plan to make for each of the five survey strategies. Pay attention to the shaded cells in the tool matrix.

2. Decide, for each type of contact, whether you need a questionnaire or interview guidelines.

3. Decide, for each type of contact, whether the tool serves one or more strategies. Remember that strategies a and b can be included in the same section. The remaining strategies must each go in a separate section.

4. Identify and write down the different tools you need in the tool matrix (Worksheet no. 1). Use codes or abbreviations for each tool.

5. Then, in Worksheet no. 2, list the tool formats (if the tool serves for several strategies, then it should be separated into sections) with their respective description.

6. Make sure that the list of tools meets the needs of all the strategies.

Exercise 2.1 Determining Research Tool Requirements - Worksheet

Matrix to determine research tools.

Contacts	Survey strategy				
	(a) Detect products with high sales growth	(b) Identify products whose demand exceeds supply	(c) Study demand for products associated with natural resource conservation	(d) Study demand for products for which a targeted region offers a comparative advantage	(e) Study demand for traditional products
Intermediaries and wholesalers					
Wholesale supply centres and marketplaces					
Heads of purchases for self-service stores					
Agro-industries and food-processing companies					
Contacts / companies Strategy c					
Contacts / companies Strategy d					
Contacts / companies Strategy e					

a. See also Table 2.2, page 2-16.

Exercise 2.1 Determining Research Tool Requirements - Worksheet

Tool no.	Name or objective of tool	Questionnaire (Q) or interview guideline (G)	Type of contact	Strategies that tool includes	No. of sections

Exercise 2.1. Determining Research Tool Requirements - Feedback

Answers can vary markedly. Likely answers are given below, according to information presented in this Section (2). What becomes obvious is that tools can encompass several strategies, for example, tools 1, 2, and 3 in the following table, because the contact handles many product lines. Intermediaries and agro-industries usually specialize in one or two products, meaning that asking for many products will prove unproductive. You should contact agro-industries purchasing fruits and vegetables as part of strategies a and b. Note the number of tools specialized in a single product. As a rule, interview guidelines are used more with intermediaries and wholesalers.

Tool no.	Tool format: questionnaire (Q) or interview guideline (G)	Description of contact	Type of contact	Strategies that tool includes (a to e)	No. of sections of tool
1	Q	Self-service stores	Head of purchases	All	4
2	G	Wholesale supply centres and marketplaces	Information centre	All	4
3	Q	Agro-industries: fruits and vegetables	Head of purchases	a and b	1
4	Q	Agro-industries: milk and dairy products	Head of purchases	c	1
5	Q	Agro-industries: poultry	Head of purchases	c	1
6	Q	Agro-industries: maize	Head of purchases	e	1
7	Q	Agro-industries: beans	Head of purchases	e	1
8	G	Intermediaries: milk and dairy products	Intermediary and wholesaler	c	1
9	G	Intermediaries: beans	Intermediary and wholesaler	e	1
10	G	Intermediaries: maize	Intermediary and wholesaler	e	1
11	Q	Flower shops	Head of purchases	d	1
12	G	Intermediaries: flowers	Intermediary and wholesaler	d	1

Exercise 2.2 Designing a Simplified Questionnaire

Objective

The participant will design a simplified questionnaire directed to the head of purchases of fruits and vegetables for a chain of self-service stores.

Instructor's guidelines

1. Organize the participants into groups of five and ask each group to nominate a coordinator.

2. This exercise should help participants learn how to design a questionnaire directed to the head of purchases of fruits and vegetables for a chain of self-service stores.

3. The questionnaire will be simplified to include only questions on fruits for strategies a and b.

4. Information on this topic can be found in Parts 2.1.3, 2.1.4, 2.2.6, 2.-2.8, 2.2.9, and 2.3.5.

5. Participants should use the Worksheet for Exercise 2.2 to develop their questionnaires.

6. The type of questions can vary, but the questions must be well thought out, following the recommendations made in Part 2.2.8.

Resources needed

- Section II of the manual, especially the parts mentioned in points d and f above
- Worksheet for Exercise 2.2
- Paper and pencils
- Flip chart, or overhead projector and transparencies
- Magic markers, or markers for the transparencies

Time required: 60 minutes

Exercise 2.2 Designing a Simplified Questionnaire

Instructions for the participants

Join a group of five people and nominate a coordinator.

Make believe you are conducting a market survey, similar to the one described in this section, for a given microregion. Design a questionnaire directed to the head of purchases of fruits and vegetables for a chain of self-service stores.

Using the Worksheet for Exercise 2.2, propose a simplified questionnaire. Ask only about fruits for strategies a and b. Use fewer questions than normal, and exclude the remaining three strategies.

You will find information related to this topic in Parts 2.1.3, 2.1.4, 2.2.6, 2.-2.8, 2.2.9, and 2.3.5.

To prepare your questionnaire on fruits, do the following:

1. Study the Worksheet for Exercise 2.2, which contains the sections of a simplified questionnaire on fruits.

2. On a separate piece of paper, prepare the information and questions for each section, as follows:

- Title or name of questionnaire
- Section 1: four types of information
- Section 2: two questions
- Section 3: three questions
- Section 4: four questions

3. Complete the Worksheet.

Exercise 2.2 Designing a Simplified Questionnaire - Worksheet

Title of the questionnaire: _____

_____

Section 1. Information on contact and interviewer

1. _____
2. _____
3. _____
4. _____

Section 2. Strategy a: Fruits with either a high or intermediate sales growth

1. _____

_____

2. _____

_____

Section 3. Strategy b: Fruits in scarce supply

1. _____
2. _____
3. _____

Section 4. Strategies a and b: Buying conditions for fruits of interest

1. _____
2. _____
3. _____
4. _____

Exercise 2.2Designing a Simplified Questionnaire - Feedback

Title of questionnaire: Self-service stores: Fruits Date: _____

Section 1: Information on contact and interviewer

1. Person interviewed _____
2. Position _____
3. Name of self-service store _____
4. Interviewer _____

Section 2: Strategy 1: Fruits with either a high or intermediate sales growth

5. Was the volume of sales of fruits in your chain of self-service stores greater, equal, or less than last year's ?

   _____

6. Which fruits had the greatest increase in demand and by what percentage (in round figures)?

   a._____ % _____ b._____ % _____

   c._____ % _____ d._____ % _____

Section 3: Strategy b: Fruits in scarce supply

7. Is it currently difficult to obtain any type of fruit? If yes, go to Q. 2
   If no, go to Section 4, Q. 1

8. What type of fruit or fruits? a._____ b._____

   c._____ d._____

9. Why? (keep the same order) a._____ b._____

   c._____ d._____

Section 4: Strategies a and b: Buying conditions for fruits of interest

10. What is the minimum quantity of fruits discussed in Section 2 that you would buy?
11. At what price would you buy these fruits today?
12. What sort of quality do you expect the fruits discussed in Section 2 to have?
13. Would you be interested in establishing some type of contract with small producers?

Practice 2.1 Observational Visit to a Supermarket

Objective

Each participating group will make an inventory of the agricultural and agro-industrial products sold at a nearby self-service store.

Instructor's guidelines

1. This practice will help participants become more aware of the variety of agricultural and agro-industrial products being offered in a country.

2. Organize the participants into eight groups and assign a category of agricultural products to each group for identification and evaluation.

3. The instructor should obtain, in advance, permission from the store's management to visit the self-service store and take notes.

4. During the visit to the store, the instructor should check that the groups observe all the products of interest and use the Worksheet for Practice 2.1.

5. Once the visit has ended, the groups should meet in a plenary session. The coordinator of each group informs about the products the group observed as belonging to the assigned category.

Resources needed

- Worksheet for Practice 2.2
- Permission from the store's management to visit the self-service store
- Transportation to and from the store
- Note cards and pencils
- Flip chart, or overhead projector and transparencies
- Magic markers, or markers for the transparencies

Time required: 4 hours

Practice 2.1 Observational Visit to a Supermarket

Instructions for the participants

This practice will allow you to become acquainted with the variety of agricultural and agro-industrial products being offered in a country.

Where possible, note down or ask about the origin of the different products, and examine the quality of the product and the packaging used.

Before the visit, you will be assigned to one of eight groups; each group will be responsible for a category of product; for example:

Group 1	Basic grains sold in bulk or packaged
Group 2	Fresh fruits
Group 3	Fresh vegetables
Group 4	Flours and starches
Group 5	Tinned products
Group 6	Products bottled in glass
Group 7	Frozen and refrigerated products
Group 8	Non-frozen, ready-to-eat products

All participants will meet after the visit.

The participants will make a joint inventory of the products observed, each duly classified and annotated as to place of origin, quality, and packaging.

The notes should be transferred to the attached Worksheet for Practice II-1. In the 'Quality' column, rate quality as high, average, or low. Under 'Observations', make comments about the aspect and freshness of the product, condition of packaging, labelling, and any other aspect that attracted your attention.

Practice 2.1Observational Visit to a Supermarket - Worksheet

Group no.		Category of products:		
Product	Place of origin	Type of packaging	Quality	Observations

Practice 2.1 Observational Visit to a Supermarket - Feedback

A worksheet that is already processed by a group of participants can show the following information:

Group no. 4		Category of products: Tinned products		
Product	**Place of origin**	**Type of packaging**	**Quality**	**Observations**
Tuna	Ecuador	Tin	Good	Well-presented label. Visible trademark.
Sardines	Ecuador	Tin	Good	Well-presented label. Visible trademark.
Palm hearts	Colombia	Tin	Good	Damaged packaging.
Peas	Colombia	Tin	Good	Can't understand what's on label.
String beans	Guatemala	Tin	Good	Dented tins.
Baked beans	Mexico	Tin	Good	Attractive three-coloured label.
Vienna sausages	Colombia	Tin	Good	
Others				

Bibliography

Alternative Agriculture News. 1995. Vol. 13, no. 2, February.

Ansoff HI. 1957. *Strategies for diversification*. Harvard Business Review. Sept-Oct:113-124.

Kotler P; Armstrong G. 1991. Fundamentos de mercadotécnia. 2nd ed. Prentice-Hall Hispanoamericana, Mexico. 654 p.

Machado A. 1997. Agroindustria y desarrollo rural. ECOE Ediciones y Academia Colombiana de Ciencias Económicas, Bogotá, Colombia. 136 p.

Ostertag CF. 1995. Informe final del estudio rápido de mercados para la microcuenca del Río Cabuyal. Working document of the Hillsides Program, CIAT, Cali, Colombia.

Ostertag CF; Patiño CA. 1996. Identificación y caracterización de oportunidades del mercado. Working document of the Hillsides Program, CIAT, Cali, Colombia.

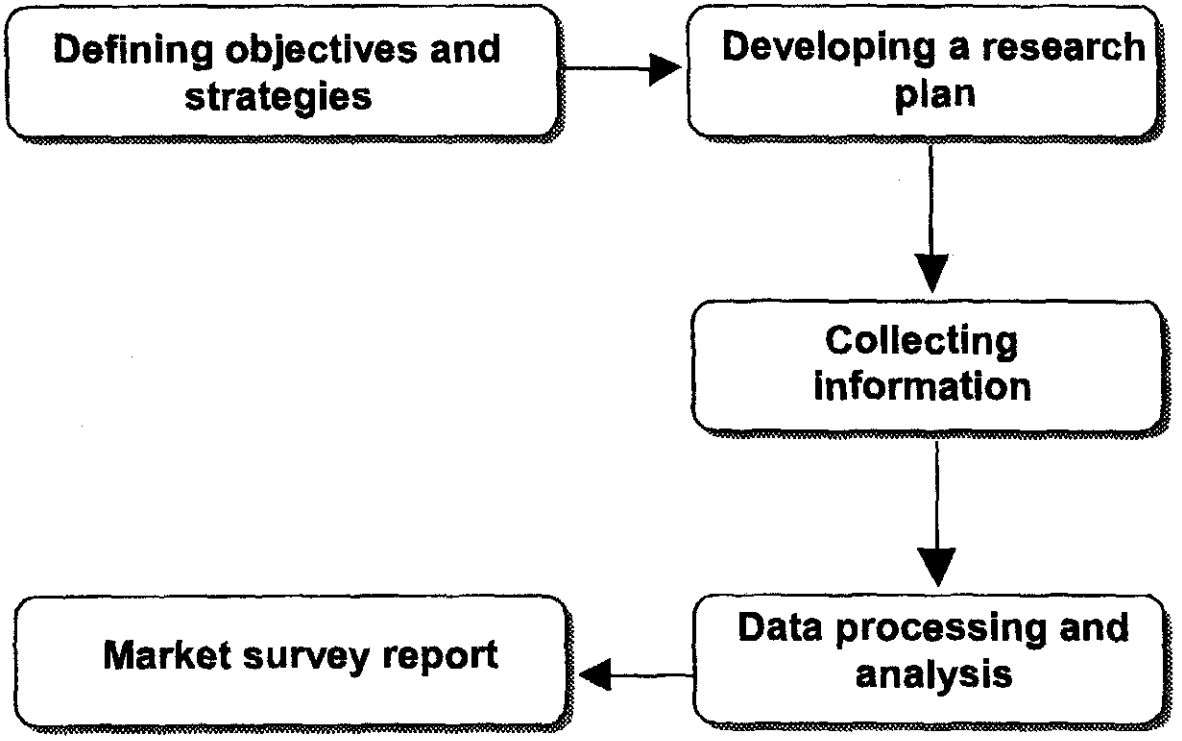
Pope JL. 1992. Investigación de mercados. Grupo Editorial Norma, Colombia. 348 p.

Siabato T. 1987. Algunas alternativas de desarrollo para la economía campesina. Coyuntura Agropecuaria, Colombia.

Villachica H. 1996. Frutales y hortalizas promisorios de la Amazonía. Tratado de Cooperación Amazónica, Secretaría Pro-Tempore, Lima, Peru. 367 p.

Originals for Transparencies

SECTION STRUCTURE



SECTION STRUCTURE

To explain the stages involved in planning and executing a rapid survey for a given microregion.

SPECIFIC OBJECTIVES

- ✓ The participant will be able to:
- ✓ Explain the objective and strategies of a market survey.
- ✓ Describe the main aspects that should be considered when developing a research plan.
- ✓ Determine the number of research tools needed.
- ✓ Develop a questionnaire according to recommendations provided in this section.
- ✓ Explain the prerequisites and procedures for collecting primary and secondary information.
- ✓ Explain how the content of the final report of a market survey can be organized.

ORIENTING QUESTIONS

1. What is the purpose of market research?

2. Do you believe that a small farm is similar, in some ways, to an agro-enterprise?

3. Who should perform market research?

4. Is secondary information, by itself, sufficient for a market survey? Explain your reasons.

SURVEY OBJECTIVES

- To identify market opportunities, at both national and international levels, for agricultural, forest, and agro-industrial products that are produced traditionally or can be produced in a given microregion.

- To capture information on buying conditions for the products identified as having market potential.

PRODUCT-MARKET GROWTH MATRIX

	Existing products	New Products
Existing markets	Market penetration	Product development
New markets	Market development	Diversification

Market Penetration

- Increased sales
- Current products, current market segments
- No change of product offered

Product Development

- New or modified products
- Current segments
- Improved products, packaging, labels

Market Development

- Identifying new market segments
- Current products

Diversification

- New products
- New Markets

SURVEY STRATEGIES

1. Detect categories of agricultural, forest, and agro-industrial products with high and intermediate growth in demand.

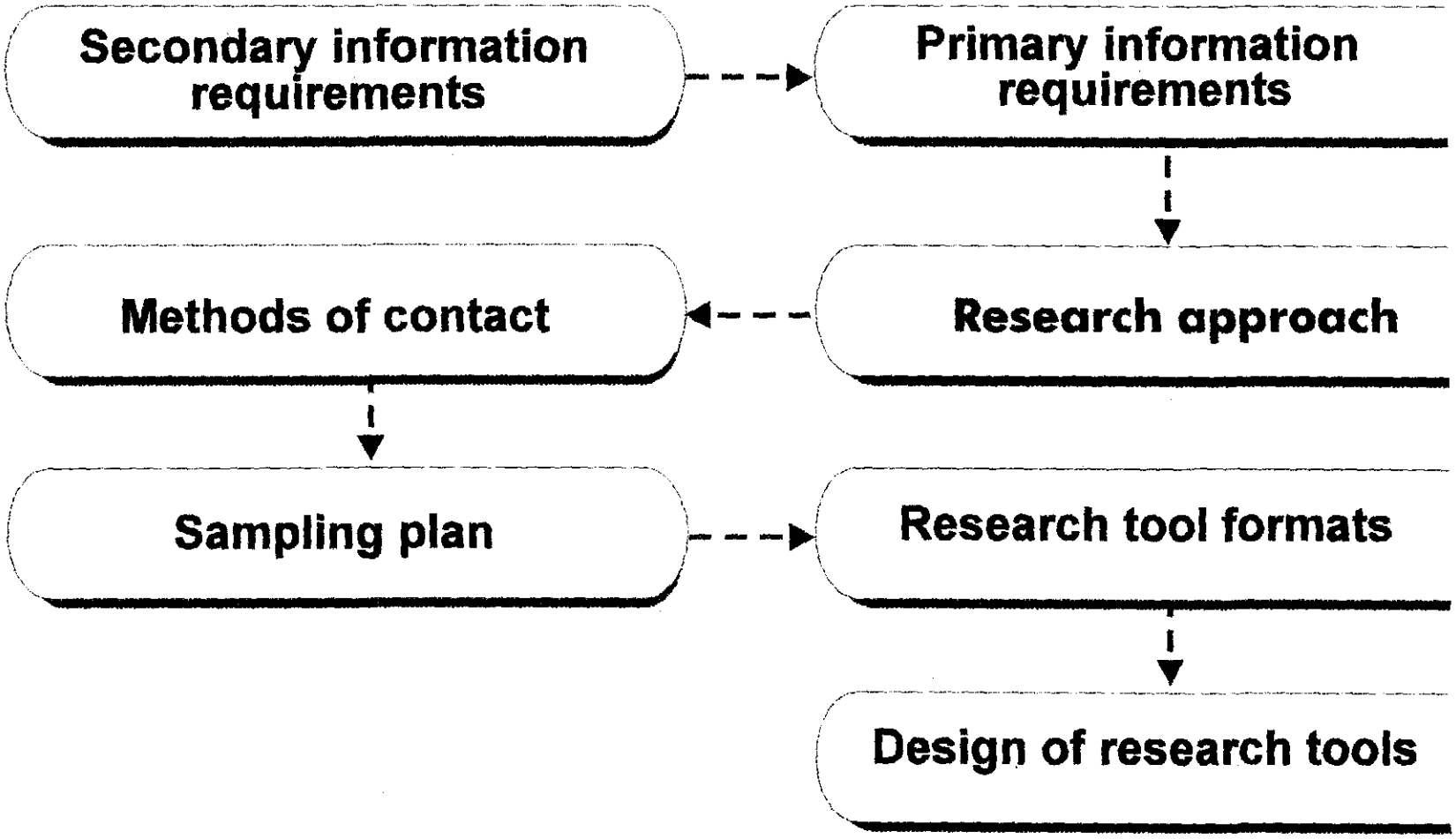
2. Identify agricultural, forest, and agro-industrial products that are in scarce supply (i.e., whose demand exceeds supply).

3. Study trends in demand for products associated with the conservation of natural resources.

4. Study trends in demand for products for which the given region has a comparative advantage.

5. Study trends in demand for traditional products (agricultural, forest, and agro-industrial) of the targeted region.

DEVELOPING A RESEARCH AGENDA



SOURCES OF SECONDARY INFORMATION

Domestic market

- Information centres of wholesale supply centres and marketplaces
- Chambers of commerce
- Development agencies
- Associations
- National, departamental or provincial, municipal governments
- Press, publication, specialized journals, and others
- Private companies
- Consultants
- Internet

Markets of neighboring countries

- Foreing trade agencies
- Agencies promoting exports
- Consultants
- Internet

Markets of developed countries

- Foreing trade and alternative trade agen
- Agencies promoting exports
- State agencies of developed countries
- Development agencies
- Consultants
- Internet

GENERALITIES ON COLLECTING PRIMARY INFORMATION

1. This is not a comprehensive survey because consumers are not contacted. Therefore 1, 2, or 3 persons can do the job.

2. Interviewers must be informed of the survey's objectiveand be familiar with the tools developed.

3. Interviewers must make appointments with contact persons, then confirm and keep them. Appointments can be made by phone.

4. Formal letters using stationery of the organization executing the survey should be used to identify and empower the interviewer.

GENERALITIES ON COLLECTING PRIMARY INFORMATION

5. The letter should also inform of the survey's objectives and emphasize that all information will be handled confidentially.

6. Interviewers must avoid influencing or suggesting replies.

7. Where possible, interviews should not be long.

8. Supervision of interviewers is optional and can be done by phone calls to contacts to confirm that they were indeed interviewed

Types of Contacts

- Intermediaries and wholesalers
- Wholesale supply centres and marketplaces
- Purchase centres and self-service stores
- Agro-industries
- Other industries
- Retail stores

MATRIX TO DETERMINE RESEARCH TOOLS

Research strategies / Contacts	(A) Products with high sales growth	(B) Products in scarce supply	(C) Demand for products associated with the conservation of natural resources	(D) Demand for products for which a given region has a comparative advantage	(E) Demand for traditional products
Intermediaries and wholesalers					
Wholesale supply centres and marketplaces					
Heads of purchases of self-service stores					
Agro-industries and food-processing companies					
Contacts/companies Strategy C					
Contacts/companies Strategy D					
Contacts/ companies Strategy E					

DESIGNING TOOLS

1. Some questionnaires or interview guides should be separated in sections corresponding to different survey strategies. Such tools would be used with intermediaries, heads of purchases of self-service stores, and agro-industries.

2. In other cases, tools would focus on a single survey strategy, but may have various sections for various products. This would be the case of traditional products.

3. Questionnaires and interview guides should include questions on marketing to provide information for the later stage of commercial characterization.

4. The tool should have a name or title identifying it.

DESIGNING TOOLS

5. The first part of a tool should collect information about the contact. This information serves for data processing and control.

6. The different sections of the tool should be clearly identified and separated. Sections may correspond to survey strategies or to various products.

7. All questions should have a number that identifies them.

8. Sufficient space should be left below the questions so that the interviewer can write the answers.

9. Questions will usually be open; closed questions are occasionally useful.

DESIGNING TOOLS

10. All the tools, and certainly the most important ones, should have been previously tested with one or two contacts.

The questionnaire should include precise instructions in bold type to avoid confusing the interviewer. Sometimes Yes or No questions will help the interviewer determine whether he or she should jump a question or set of questions.

EXAMPLE OF QUESTIONS

Products showing a good growth rate

- ☑ Was the volume of sales of _____ in your chain of self-service stores greater (+), equal to (=), or less than (-) last year's volume?

- ☑ More or less in what percentage?_____

- ☑ What products showed the highest increase in demand? Give the percentage in round figures.

.

a._____ %
b._____ %
c._____ %
d._____ %

EXAMPLE OF QUESTIONS

Products in scarce supply

☑ Is it now difficult to get any type of _____?
Yes ⟶ Go to Question No. XX
No ⟶ Go to Question No. XX

☑ What product or products are in scarce supply?

A._____
B._____
C._____
D._____

☑ Why is this product (or these products) in scarce supply? (Keep the same order of the previous question.)

A._____
B._____
C._____
D._____

SUGGESTED STRUCTURE FOR THE FINAL REPORT

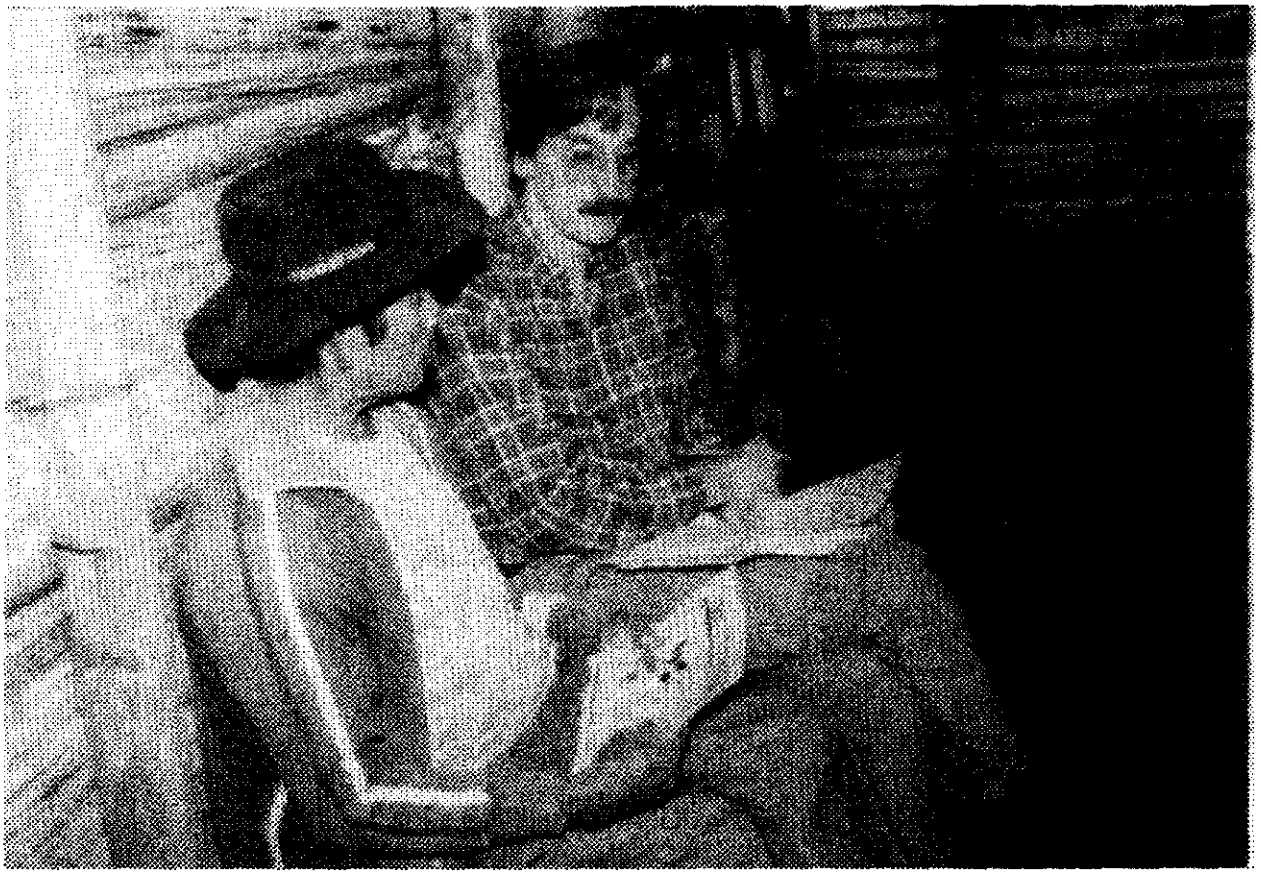
Components	Part 1: Domestic Markets	
Report 1 *Strategies a and b* Products with high and intermediate sales growth and products in scarce supply	*Section A* List of products identified as having market potential	*Section B* Information, by product, on trends in demand and buying conditions
Report 2 *Strategy c* Conservation-related products	*Section A* List of identified marketing opportunities	*Section B* Information, by product, on trends in demand and buying conditions
Report 3 *Strategy d* Products for which a given microregion has a comparative advantage	*Section A* List of identified marketing opportunities	*Section B* Information, by product, on trends in demand and buying conditions
Report 4 *Strategy e* Existing or traditional products	*Section A* List of identified marketing opportunities	*Section B* Information, by product, on trends in demand and buying conditions

SUGGESTED STRUCTURE FOR THE FINAL REPORT - 2

Components	Part 2: International Markets	
Report 1 *Strategies a and b* Products with high and intermediate sales growth and products in scarce supply	*Section A* List of products identified as having market potential	*Section B* Information, by product, on trends in demand and buying conditions
Report 2 *Strategy c* Conservation-related products	*Section A* List of identified marketing opportunities	*Section B* Information, by product, on trends in demand and buying conditions
Report 3 *Strategy d* Products for which a given microregion has a comparative advantage	*Section A* List of identified marketing opportunities	*Section B* Information, by product, on trends in demand and buying conditions
Report 4 *Strategy e* Existing or traditional products	*Section A* List of identified marketing opportunities	*Section B* Information, by product, on trends in demand and buying conditions

Section 3

Assessing and Selecting Market Options



Section 3. Assessing and Selecting Market Options

Page

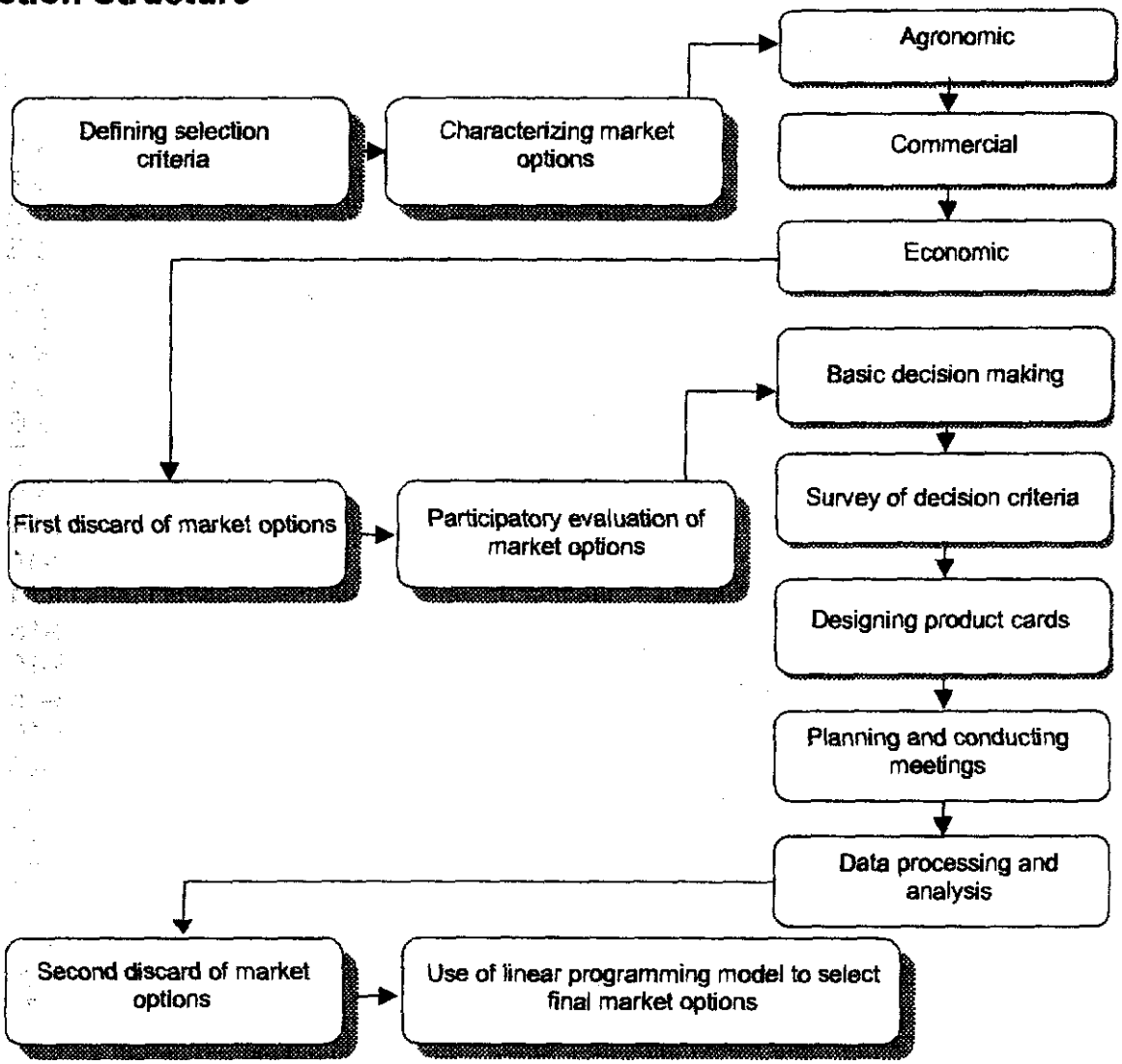
Section Structure 3-2
Objectives 3-2
Orienting Questions 3-3
Introduction 3-3

3.1 Characterizing Market Options 3-4
3.1.1 Objectives 3-4
3.1.2 Establishing evaluation criteria 3-5
3.1.3 Agronomic characterization 3-6
3.1.4 Commercial characterization 3-7
3.1.5 Economic characterization 3-9
3.1.6 Developing appropriate production and processing systems 3-10
3.1.7 Developing financial models 3-11
3.1.8 First discard of market options 3-14
3.2 Participatory Evaluation of Market Options 3-15
3.2.1 Objectives 3-15
3.2.2 Basic decision making 3-15
3.2.3 Survey of decision criteria used by small producers 3-16
3.2.4 Designing product cards 3-17
3.2.5 How to rank preferences 3-18
3.2.6 Planning and organizing an evaluation meeting 3-21
3.2.7 Defining a timetable of evaluation meetings 3-22
3.2.8 Inviting the producers 3-23
3.2.9 Processing and analysing data 3-24
3.2.10 Final report 3-25
3.2.11 Second discard of market options 3-25
3.3 Using a Linear Programming Model to Select Market Options: An Overview 3-25

Exercise 3.1 Agronomic Characterization of a Crop 3-27
Exercise 3.2 Designing a Product Card 3-30
Exercise 3.3 Preparing a Timetable for a Participatory Evaluation Meeting 3-33
Practice 3.1 Survey of Decision Criteria for Crop Selection 3-37

Bibliography 3-42
Originals for Transparencies 3-43

Section Structure



Objectives

General goal

✓ After studying this Section, the participant will be able to carry out the characterization and participatory evaluation of market options for a given microregion.

Specific objectives

The participant should be able to:

- ✓ Explain the objective of, and conduct, the characterization of market options.
- ✓ List the components of a model of financial profitability and interpret the different parameters.
- ✓ Give several reasons why market options need to be discarded.
- ✓ Explain the objectives of, and conduct, the participatory evaluation of market options.
- ✓ With the help of the manual, prepare a timetable for executing the participatory evaluation process.
- ✓ Design the different formats or tools used for participatory evaluation, including product cards.
- ✓ Explain the objective of the linear programming model.

Orienting Questions

1. What social and economic differences should be highlighted between small rural producers and large plantation owners?

2. What causes a crop to be more attractive than another for a small rural producer?

3. What type of information should be gathered to determine whether a crop or an agro-industrial process is feasible and attractive for small rural producers?

4. In what ways do the concepts or appraisals of a technician and a small rural producer differ?

5. How do small rural producers decide on what crops to plant?

Introduction

Section II presented a procedure for identifying marketing opportunities by conducting a rapid survey at the local, national, and international levels. This new Section deals with the evaluation of these market alternatives, whether agricultural or livestock products, or agro-industrial products, to select those that are most appropriate for small producers or for the rural economy.

Above all, evaluation criteria related to the conditions of the client, in this case the small rural producer, must be well defined. Once these criteria have been defined, then market options can be characterized; in other words, the information necessary for the evaluation can be collected and synthesized. This information is classified in three broad subject areas: agronomy, marketing, and economics, which are organized in matrixes to facilitate analysis.

Part of the information required, especially commercial information, may have been collected in the previous stage (rapid market survey), but, most probably, this characterization phase implies the additional search for primary and secondary information, especially related to agronomic and economic aspects.

In some cases, the information generated, whether agronomic, commercial, or economic in nature, clearly shows that a market option is not feasible in the context of the targeted region and/or the rural economy, and should therefore be discarded. However, the direct perspective of the client (i.e., the small rural producer) is of vital importance in the evaluation. A procedure, known as 'participatory evaluation', is therefore accordingly used. In this type of evaluation, different market options are presented to rural producers. The characteristics of each option are described on cards, which the producers organize in order of preference. This procedure is based on 'concept testing', commonly used in the field of marketing and product development. This exercise can also result in the clear rejection of some of the market alternatives.

Finally, the most promising options, according to previous stages, are incorporated into a multipurpose linear programming model, which seeks a balance between conflicting objectives, such as the generation of income for rural producers and processors and the conservation of natural resources. The model indicates those market options that hold greater interest for rural development projects, both in economic terms and natural resource management.

Integrated production projects can be organized around these market alternatives. These projects seek to develop social and economic potential through an integrated approach that involves aspects of production, post-harvest handling and processing, marketing, and business organization. Integrated projects are discussed in Section 4 of this manual.

3.1 Characterizing Market Options

3.1.1 Objectives

- ✓ To define criteria for evaluating market options according to the rural economy, and
- ✓ To gather and organize data on market options to make this evaluation possible.

3.1.2 Establishing evaluation criteria

Taking into account the end client's profile (in this case, the small rural producer) and the importance of production sustainability, the following evaluation criteria are proposed:

- Feasibility of production for the smallholder
- Attractiveness as a business
- Contribution to production sustainability

- **Feasibility of production for the smallholder**

Small producers can be distinguished from large and intermediate producers because, among other aspects, they have smaller risk capacity and less access to services and credit, lack sufficient working capital, and, above all, use family labour to a significant extent. The options or crops proposed must therefore be easy to implement, the technological level should be low to intermediate, and initial investment and production costs should be affordable by the producers. Because of rural producers' expertise, it is important to know their preferences, which can be determined during the participatory evaluation stage.

The application of this criterion is obviously closely related to official policies on the rural sector, because the feasibility of a project will depend on the degree of support that can be expected. In this case, we assume that the government will offer little support to the sector of small-scale rural production, a common situation during the 1990s.

- **Attractiveness as a business**

In Latin America, small producers can be classified into several types, depending on their degree of market orientation, for example, commercial producers who sell almost everything they produce; semi-commercial producers, who consume and sell what they produce; and, finally, subsistence producers, who consume almost everything they produce. However, all producers sell a percentage of their production. Some subsistence producers are forced to complement their income by selling manual labour, in other words, by working as 'labourers'.

Before proposing new crop alternatives, even though they complement traditional smallholder crops, their suitability should be studied from the industrial and commercial viewpoint. Aspects related to the production items under study, for example, existence of comparative advantages for the rural economy, levels of profitability on investment, growth rates of demand, level of price stability, type of market requirements, and quantity and type of competitors, should be determined.

- **Contribution to production sustainability**

A high percentage of small rural producers live in hillside areas and in humid tropical lowlands, both fragile ecosystems that are highly susceptible to degradation. Studying the production sustainability of new marketing opportunities is therefore important. Not only should the potential damage a given crop or agro-industry could cause to the natural resource base be determined but also the contributions of the new crop or agro-industry to environmental protection.

Once the evaluation criteria have been defined, market options can then be characterized on the basis of the agronomic, commercial, and economic information collected. This information can be organized and synthesized in the form of matrixes, similar to those presented later in this Section. Once characterized, market optionswhether agricultural, livestock, forest, or agro-industrial productscan be assessed according to already defined criteria.

3.1.3 Agronomic characterization

Agronomic characterization is important because we can determine whether a given crop or rural agro-industry is viable in the targeted microregion or under smallholder conditions. For example, if a region is characterized by low-fertility soils, developing agricultural alternatives requiring fertile soils would therefore be difficult. If a region presents limited precipitation and lacks infrastructure for irrigation, then production alternatives must be adapted to this climatic situation. Socio-economic profiles will also prove useful. Table 3.1 presents an agronomic characterization matrix.

Table 3.1 Agronomic characterization matrix.

Production alternative	Complete cycle (years)	Pre-production cycle (months or years)	Technical requirements (low, average, or high)	Soil requirements	pH	Water requirements (mm/year)

Production alternative	Need for irrigation (yes or no)	Altitude requirement (m.a.s.l.)	Major pests and diseases	Planting density (no./ha)	Annual yield (t/ha)

Complete cycle: Cropping period from planting to when productivity falls below 30% of the crop's maximum potential.

Pre-production cycle: Cropping period from planting to when productivity reaches at least 30% of the crop's maximum potential.

Technical requirements: Indicate whether the crop is tolerant, or requires improved technology, considerable management, and a high level of inputs.

Need for irrigation: Indicate whether the crop requires irrigation to reach production potential.

Sources of information on crop agronomy include institutions involved in training and/or technical assistance; agricultural publications such as books, technical manuals, and technical journals; key informants, for example, producers; and professionals of the agricultural sector. Different regions or neighbouring countries may have to be visited to gather information on experiences with targeted crops.

Also, secondary information available on planting density and productivity frequently refers to experiences of large commercial producers, who practice input-intensive agriculture. Accordingly, for production on small farms, information should be obtained from the producers themselves, or estimated as a percentage of commercial yields, even to as low as 10% or less, depending on the yields of the rural economy. This way, no false expectations of profitability are generated.

3.1.4 Commercial characterization

As mentioned before, a great deal of commercial information may have been gathered in the previous stage (rapid market survey). Commercial information includes data on the product, markets, and requirements of retail stores or clients. Table 3.2 presents the marketing characterization matrix.

Table 3.2. Marketing characterization matrix.

Production alternative	Current commercialization	Degree of perishability	Type of client	Services to the client	Type of market
	(yes or no)	(high, intermediate, or low)	SM = supermarket FI = food industry I = industry Res = restaurant	TA = technical assistance Cr = credit	L = local R = regional N = national Exp = export

Production alternative	Growth of demand (high, intermediate, or low)	Quality requirements (high, intermediate, or low)	Packaging requirements	Delivery requirements PA = delivered at zone PW = delivered at warehouse	Commercial relationship AG = agreement PA = partnership CO = contract

Current commercialization: Indicate whether the targeted region already produces the mentioned product.

Degree of perishability: Classify the product according to its shelf life in the storeroom or on the shelf, under normal environmental conditions.

Type of client: Specify the type of client forming part of the distribution chain of the mentioned product.

Services to the client: Indicate whether the client offers some type of service to the rural producer to promote production.

Type of market: Indicate whether the market is local, regional, national, or export.

Growth of demand: Classify growth according to an estimate of the annual growth rate of sales or of demand for the targeted product. Growth is high if the rate is above 6%; intermediate if it is between 4% and 6%, and low if it is between 1% and 3%.

Quality requirements: Rank quality according to the degree of client requirements, for example, if the product is for fresh consumption, then a higher quality is usually required than if the product is for processing.

Packaging requirements: Indicate whether the client wants the product to be delivered in some type of presentation or packaging, for example, a plastic or cardboard box, or in bags.

Delivery requirements: Indicate whether the client wants the product to be delivered to his or her warehouse, to a wholesale supply centre, or within the production area itself.

Commercial relationship: Indicate the type of formal or informal relationship that the client is willing to establish with rural producers. Three types of commercial relationships exist: (a) an informal 'agreement' whereby satisfactory product quality, price, and volume effect the negotiation; (b) a 'partnership', which is more formal, and implies greater commitment between both parties; and (c) a 'contract', which is a formal relationship supported by a legal document. A commercial relationship can evolve from one type to another.

3.1.5 Economic characterization

Economic characterization is important because it helps uncover financial parameters, for example, amount of investment and profitability, which are closely related to evaluation criteria in terms of 'suitability as business' and 'viability in the smallholder context'.

This type of characterization requires more work because, to complete the economic matrix, the financial models must be developed first. The columns in the economic matrix therefore indicate financial parameters derived from financial models. Furthermore, to develop a financial model, production technologies or systems, appropriate for the rural economy sector, must be studied and defined. These two topicsproduction technologies and financial models of profitabilitywill be discussed in the following two parts. Table 3.3 presents the economic characterization matrix.

Table 3.3 Economic characterization matrix ($ = national currency).

Production alternative	Level of technology	Price stability	Preproduction investment	Average no. of workdays per year	Sales per workday
	(high, intermediate, or low)	(high, intermediate, or low)	($ thousands/ha)		($)

Production alternative	Cash flow per workday	FRR without financing	FRR with financing	NPV without financing	NPV with financing
	($)	(%)	(%)	($ thousands)	($ thousands)

Level of technology: Classify the alternative product according to the technological complexity needed to develop it.

Price stability: Classify the option according to its price stability index, which is equal to the standard deviation of a deflated series of at least 18 monthly prices.

Pre-production investment: Estimate the amount of money needed for the crop's first harvest, or for its introduction into the market.

Average no. of workdays per year: Estimate the number of workdays required during the project's life, and divide it by the number of years of the project.

Sales per workday:	Estimate the total value of sales during the project's life, divide it by the total amount of wages.
Cash flow per workday:	Estimate the total cash flow (or net margin) during the project's life, divide it by the total number of workdays.
FRR without financing:	Obtain the financial rate of return (FRR) for the market option, a parameter of profitability that is calculated by the financial model. The FRR is an absolute measure of profitability because it excludes expenditures from financing.
FRR with financing:	In this case, include financing expenditures.
NPV without financing:	Obtain the net present value (NPV) for the market option, another parameter of profitability that is calculated by the financial model. Do not include financing expenditures.
NPV with financing:	In this case, include financing expenditures.

3.1.6 Developing appropriate production and processing systems

The definition of realistic production systems for targeted crops or raw materials for agro-industry is requisite for developing models of financial profitability. The selection of the appropriate technological level depends on several factors, such as crop requirements (i.e., its hardiness), soil and climatic conditions of the targeted region, the socio-economic conditions of the small rural producers, and market requirements.

Sources of information on this topic include key informants such as small and intermediate producers, professionals of the agricultural sector, institutions involved in agricultural training and technical assistance; and publications, such as manuals and technical journals. Where possible, however, technological packages should be based on primary information such as field observations and interviews with small producers. Sometimes you will need to visit other regions where producers are experienced with the targeted crop.

If only secondary information is available, remember that data on planting density, amount of inputs, and productivity will most often refer to trials conducted on experiment farms or by large commercial producers, who practice input-intensive agriculture. These figures must therefore be adapted to the reality of the rural economy, meaning that the use of inputs and productivity will be lower. Moreover, sophisticated technological components should be avoided and emphasis placed on those inputs already being used in the targeted region.

Yields per unit area of crops can vary widely. A useful exercise for determining an intermediate yield parameter is to write down the minimum and maximum yields for each production item. For example, a technified crop may yield up to 30 times more than a crop under semi-subsistence conditions. However, the idea is to present technological packages that will produce yields of an intermediate level on the production scale.

The information obtained in this process also helps complete the agronomic characterization matrix. Appendix 7.1 contains a special format that can be used to facilitate the collection and organization of information pertinent to the production system. This format comprises five parts:

Part 1 identifies the product and the technological level, and estimates productivity;
Part 2 documents the activities carried out before and during planting;
Part 3 specifies the number of applications or repetitions of each task during production;
Part 4 documents the rates of each different type of input applied per plant or tree; and
Part 5 provides a timetable of production activities.

Until now, we have referred to primary production. However, if the market option is an agro-industrial product, then we must also determine an appropriate post-harvest or processing technology. This means we must define production capacity, cost of infrastructure, equipment, machinery and supplies, inputs and labour requirements, conversion factors, and by-products obtained. By 'conversion factor' we mean the ratio or proportion relative to the amount of final products, or by-products, obtained from a given unit of raw material. For example, if we obtain 0.4 kg of dried cassava chips from each kilogramme of fresh cassava roots, then the conversion factor would be 0.4.

3.1.7 Developing financial models

Once the production packages are defined, the models of financial profitability can be developed, using an electronic sheet, such as those of Lotus or Excel. The financial model aims to classify each market option as to its profitability, whether high, intermediate, average, low, null, or negative. The model does NOT aim to obtain a precise datum about the level of profitability and other financial parameters of that option. The financial information generated by the model is transferred to the economic characterization matrix.

- **Theoretical information**

Many profitability parameters exist, but one of the commonest is the internal rate of return (IRR), which has two versions: the economic rate of return (ERR) and the financial rate of return (FRR). For the purposes of this manual, the second one is used because the FRR includes the entrepreneurial viewpoint, together with market prices and costs. The FRR is defined as the interest rate that discounts a series of annual cash flows in such a way that the present value of the series is equal to the initial investment. Figure III-1 illustrates this definition.

As shown in Figure 3.1, the investment project is assumed to cover 4 years, but the number of years can vary. In Year 0, an investment is made and each year this investment generates a cash flow, which is represented by the net profits. However, the value of money depends on the 'time' variable; that is, $100 now will cost more than $100 within 2 years. Therefore, the series of cash flows should be discounted towards Year 0 to compare their value with the initial investment. As expressed in the previous definition, the value of the initial investment and the present value of the cash flow should be equal.

The rate of discount or interest rate used to discount the series of cash flows is the same FRR. For the project to be economically appealing to the investor, the FRR should be greater than the opportunity cost of capital or money. The opportunity cost of capital is the interest rate that the financial system recognizes for savings, for example, fixed time deposits (FTD). If the FRR is lower than the opportunity cost of capital, then the investor is best off leaving his or her money producing income in the financial system.

The net present value (NPV) is another profitability parameter that is commonly used. The NPV is the value in Year 0 of the series of cash flows that is discounted, using an interest rate equal to the opportunity cost of capital.

For a project to be financially appealing to an investor, the NPV should be greater than the initial investment. If it is smaller, then the investor is better off leaving the money in the financial system to produce income.

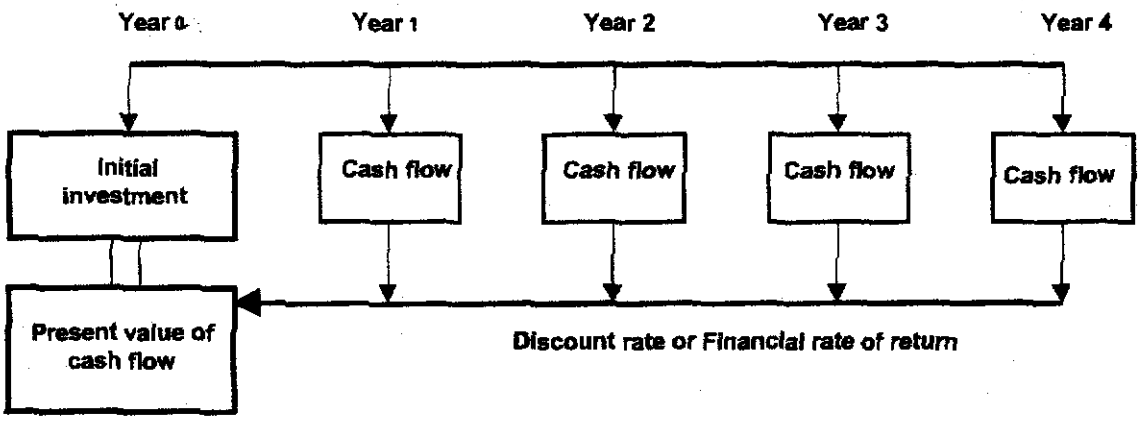


Figure 3.1Graphic interpretation of the Financial rate of return.

Financial models may or may not include inflation. If they do not, then they are deflated models and, in this case, the FRR should be greater than the opportunity cost of capital minus the annual rate of inflation.

Depreciation should not be considered when calculating the FRR because this item does not represent a cash disbursement. When estimating profitability, depreciation is only considered when calculating the amount of taxes to pay; producer associations or co-operatives are usually exempt from taxes.

You should be familiar with the terms used in cost accounting, for example, variable costs, fixed costs, gross margin, and net margin. Variable costs are those that vary directly with the volume produced, for example, raw material, packaging, or fuel. Fixed costs are those that do not vary with the volume of production, but remain relatively stable, for example, administration expenses. Gross margin can be expressed as a percentage or as a sum of money that is equivalent to sales minus variable costs. Net margin or net profit is equal to sales minus both variable and fixed costs.

However, the FRR and the NPV are the most suitable parameters of profitability for medium- and long-term projects (from 3 to 20 years). For short-term projects (from 1 to 24 months), other parameters can be used, for example, the time needed to recover the initial investment (payback), or a cost-benefit analysis. More details can be found in a financial textbook.

- **Assumptions**

To simplify the development of financial models, two unusual assumptions are made: that the planted area is 1 ha and that the crop is planted as a monocrop. Small producers are known to plant in lots smaller than 1 ha because of the lack of land and working capital. They also usually plant crops in association, as a strategy to reduce risk and increase the regularity of cash flow.

These assumptions do not eliminate the validity of the models because, as we explained before, the exercise does not aim to obtain precise financial parameters, but to classify different market options according to 'levels of profitability'.

- **Components of the financial model**

Appendix 7.2 presents a typical financial model for a given crop, as it would appear on the computer screen. The model consists of five main parts, namely: prices, quantity matrix, costs and income matrix, analysis of profitability without financing, and analysis of profitability with financing.

The prices section includes information on amount and breakdown of the initial investment, the cost of the different inputs used, the cost of the daily wage, and sale prices of different product qualities offered to the market. The quantity matrix quantifies the elements of investment, inputs, workdays, and production volume. The costs and income matrix uses information from the two previous matrixes to develop a financial statement, similar to a profit-and-loss statement, to obtain the series of annual cash flows.

The component 'profitability analysis without financing' contains the formulae used to calculate the different parameters and financial-statement ratios. The FRR and the NPV are estimated using the series of annual cash flows. Other financial parameters, which were already described in Table III-3 on the economic characterization matrix, are also calculated. The component 'profitability analysis with financing' is similar, but the calculations of financial costs corresponding to credits for investment are included.

The financial model just described can be used for agro-industrial products, but may be more complex because it will have to model the processing technology adequately. A separate section may be needed for parameters such as conversion factors, capacity utilization, and input requirements.

- **Preparing and using the financial model**

As mentioned before, the financial models are executed on electronic sheets and organized in the previously explained components. The electronic sheets consist of cells, where figures, formulae, or functions are keyed in. The model should be completely linked so that any change of a figure or formula will change the financial parameters estimated by the model. For example, if the sale price of a product increases, then the FRR should increase automatically.

The financial model serves many uses, but above all, it can be used to estimate levels of profitability and other financial parameters of interest. It can also help carry out sensitivity analyses, which aim to determine which variables affect a given financial parameter the most. A third use is to estimate minimum sale prices and maximum purchase prices, Finally, financial models serve as support for decision making on credits and strategies to reduce production costs.

3.1.8 First discard of market options

Based on the information generated by the characterization of market options and considering the three evaluation criteria originally proposed, some discarding should be done. This process is facilitated by the use of the agronomic, commercial, and economic characterization matrixes discussed in Parts 3.1.3, 3.1.4, and 3.1.5, respectively. All options that do not respond to one of the evaluation criteria should be discarded, thus increasing the probability of proposing market options that are really attractive for small producers. To illustrate this issue, several cases follow in which discarding should be done, without forgetting that the context of governmental policies towards the rural sector is important:

- When the level of profitability is negative or null.
- When the technology or infrastructure is too sophisticated, expensive, or not available in the region.
- When the required soil and climatic conditions do not exist in the region.
- When the initial investment is too high for most farmer associations.
- When the market option is demonstrated to have detrimental effects on the environment.
- When the sale price shows high fluctuations throughout the year.
- When the market exacts quality levels that are exaggerated or too strict for small rural producers.

Those market options not discarded can then continue to the next stage of participatory evaluation with small producers

3.2 Participatory Evaluation of Market Options

Participatory evaluation is an innovative procedure developed by the International Center for Tropical Agriculture (CIAT). It employs techniques for testing concepts, used in commercial product development, and participatory research, to obtain the end-user's (in this case the small producer) perspective on market options. Participatory evaluation is also crucial in determining whether a market option fulfils the first evaluation criterion, that is, viability under smallholding conditions.

In general terms, the procedure consists in holding meetings in various subregions to present small rural producers with different market options. Each option is exhibited to the audience with the aid of 'product cards', which carry key information on each product, obtained through a survey of producers' decision criteria that had been previously conducted. The presentation is followed by a question-and-answer session. Each participating producer then receives a set of cards of the exhibited products, which he or she ranks in terms of preferences, first on an individual basis, then on a group basis according to type of producer, and explaining each time the reasons for the preferences.

3.2.1 Objectives

✓ This component aims to:

✓ Determine the preferences of the small rural producer regarding market options, whether these be crops or agro-industries.

✓ Determine the decision criteria of the small rural producer when selecting new crops.

✓ Detect variations in decision criteria according to type of producer. 'Type' means the classification of small producers according to a given social or economic characteristic.

3.2.2 Basic decision making

The planning of participatory evaluation begins by taking a series of basic decisions described below. It is important to define a working team and assign responsibilities in advance, because this process is eminently multidisciplinary in nature and requires solid logistic support. An overall coordinator should also be designated.

- **Subdividing the region**

A pertinent variable should be sought to subdivide the region so that the proposed market options are compatible with the different subregions. For example, in hillside areas or in microwatersheds, the division may be made by temperature or altitudinal zones and the different market options accordingly presented for each subdivision.

For example, in the region representative of hillsides in southern Colombia, four areas were established: low (1100-1300 m above sea level), medium to low (1300-1500 m.a.s.l.), medium to high (1500-1700 m.a.s.l.) and high (over 1700 m.a.s.l.). In the hillside areas of Central America, the degree of access to the market was chosen as the variable of division. In the Peruvian Amazon around Pucallpa (lowlands), division was according to location and economic activity of rural inhabitants, who were categorized into slash-and-burn farmers, slash-and-burn farmers planting perennial crops (African oil palm, peach palm, and *camu-camu*), riverside farmers, and roadside farmers.

- **Types of producers**

Categories or types of producers should be established because of the overall objective of linking rural producers with growth markets. These categories can be defined based on variables such as degree of market orientation, level of well-being, or type of economic activity, as in the case of Pucallpa.

In the area representative of hillsides in southern Colombia, producers were classified according to market orientation. Three categories were established: commercial, semi-commercial, and subsistence. Producers can also be classified by level of well-being into high, intermediate, and low. In a study carried out in 1996 by CIAT, the strong correlation between level of well-being and degree of market orientation was confirmed, which means that those producers most oriented towards marketing tend to have a higher level of well-being and vice versa.

- **Portfolio of market options per subregion.**

In general, market options are not viable in all areas within the targeted region, that is, each subregion requires its own portfolio of market options. Where possible, a list of at least 6 to 8 products must be prepared for each subregion. For example, the same options cannot be offered to producers located at widely different altitudes (*e.g.*, 1800 versus 1100 m above sea level). In the case of lowland areas, such as the Amazons, riverside farmers may differ from roadside farmers in their requirements for market options. However, several crops or market alternatives may be common to several subregions.

3.2.3 Survey of decision criteria used by small producers

As already mentioned, the product card is a fundamental tool in participatory evaluation. Its adequate design requires a previous rapid survey among a representative sample of rural producers that includes producers from all predetermined categories. The survey aims to identify the decision criteria used by small rural producers when selecting a crop or agro-industrial product.

This survey can be carried out through semi-structured interviews, using interview guidelines. Interviews can focus on both traditional and new crops, or on agro-industrial products. The key question is 'When you plant, what do you take into account when you choose between a traditional or new crop?'

The results of a survey conducted in hillside areas of southern Colombia indicated that, for the producer, the most important criteria when selecting a crop for planting are:

- The producer knows the crop and has experience cultivating it,
- The crop is adapted to the region and is hardy,
- The crop has a short or intermediate growth cycle,
- Product prices are stable, and
- The product has a market.

3.2.4 Designing product cards

When the basic decisions have been taken and the survey results on decision criteria are available, the product cards can then be designed. The product card used in Colombia was carefully designed to achieve a balance between easiness of comprehension and informative content. A simplified scheme of the product card is presented in Figure 3.2.

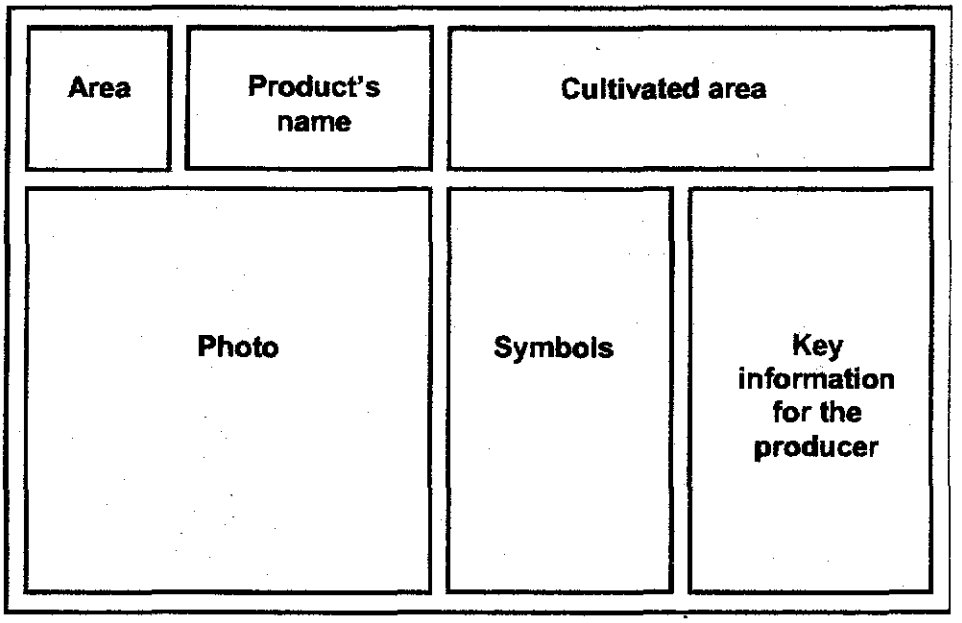


Figure 3.2Simplified scheme of a product card used to provide small producers with information on a potential market option.

This card consists of two main sections. The first section is of identification, where a photo or illustration and the name of the product appear. The second section is informative and contains data related to degree of adaptation, production cycle, annual yield, investment expenses (including number of workdays), and a simplified profitability parameter (FRR). To facilitate comprehension, a drawing or symbol accompanies each type of information. Water requirements and planting density are also described. To facilitate the handling of data and comparison, planting area was always 1600 m^2 in monoculture. A typical cultivated area, in the context of small producers in the region, should be selected. An example of a product card used in Colombia is presented in Figure 3.3. This card is similar to the concept cards used in consumer trials when developing new products.

3.2.5 How to rank preferences

The procedure developed by CIAT consists of organizing product cards in order of preference. First, the producer is asked to separate the cards into three groupsgood, bad, and intermediateaccording to their preferences. The producers are then asked to order the product cards within each group. When they finish, they are asked why they placed certain cards in the first (most preferred) and last (least preferred) positions. Finally, to determine the ideotype or concept of 'ideal product', the producer is asked what condition is missing in the alternative he or she has chosen to improve it even more.

Appendix 7.3 presents the format used in this exercise. The interviewer is responsible for filling out the format. The category or type of producer should be properly identified. This procedure should be implemented with individual producers and by type of producer. Materials required are a set of product cards per producer, and answer sheets and pencils for interviewers.

3.2.6 Planning and organizing an evaluation meeting

This Part describes how to plan an evaluation meeting (Table 3.4) and offers a checklist (Table 3.5) of the necessary resources. A meeting can be planned for each subregion of the targeted region. Each meeting should be carried out with a maximum of 25 producers, representing all categories proposed. To guarantee an attendance of this size, at least 20% more (30) producers should be invited.

From 3 to 5 professionals, capable of performing one or more of the following tasks, are needed to:

- Act as facilitator of the event
- Present market options
- Answer technical questions about market options
- Interview and fill out preference format (at least 3 people)

If the producers were offered transportation, drivers and vehicles should also be available. Remember, members of the working team must be trained so that they can efficiently assume their responsibilities within the participatory evaluation process.

Table 3.5Checklist for holding an evaluation meeting

Add a tick when done	Resources
	1. Human resources
	1.1 A representative sample of rural producers.
	1.2 A facilitator for the meeting.
	1.3 A presenter of market options.
	1.4 One or two consultants of market options.
	1.5 Three interviewers.
	1.6 One or two drivers with vehicles.
	2. Infrastructure
	2.1 A sheltered meeting place, with electricity and projection facilities.
	2.2 Tables and chairs.
	2.3 Bathrooms.
	3. Tools
	3.1 Three sets of full-colour product cards for interviewers.
	3.2 Photocopies of product cards to hand out to producers.
	3.3 Answer formats.
	3.4 Pencils.
	3.5 Badges for producers.
	3.6 Samples of products.
	4. Materials and equipment
	4.1 Opaque, overhead, or slide projector.
	4.2 Flip chart and magic markers (optional).
	4.3 Adhesive tape.
	4.4 Gasoline-powered electric generator if no electricity in area.
	4.5 Light meal, snacks, or refreshments.
	4.6 If necessary, black cloth to darken the room.

3.2.7 Scheduling evaluation meetings

Planning evaluation meetings involves the adequate scheduling of activities. Meeting sites should have the minimum services and equipment necessary, and should be easy to access for both organizers and producers. Because each meeting will require a great deal of coordination and solid logistic support, no more than one meeting per week should be programmed. As said before, one meeting should be programmed per subregion, and representatives of all categories of rural producers should participate. The producers should be invited 2 weeks in advance, and a reminder sent 1 or 2 days before the programmed date.

Table 3.6 presents an example of a meeting programming matrix used in the Colombian case study.

Table 3.6 Matrix to schedule meetings used in the Colombian case study. Subregions were categorized according to altitudes.

	Subregion			
Type of producer	**High**	**Intermediate to high**	**Intermediate to low**	**Low**
Commercial	X	X	X	X
Semi-commercial	X	X	X	X
Subsistence	X	X	X	X
	Meeting 1	**Meeting 2**	**Meeting 3**	**Meeting 4**
	Date: Place:	Date: Place:	Date: Place:	Date: Place:

3.2.8 Inviting the producers

A well-placed invitation to rural producers is key to the participatory evaluation process. First, it guarantees that the sample of producers and farming communities is representative, and, second, it increases the likelihood of a good attendance.

Before inviting the producers, a representative sample of farming communities should be selected within each subregion. Selection criteria should be determined according to one or more related variables, for example, accessibility by road or infrastructure of basic services.

Producers representing each of several predetermined categories are then identified, using either data from previous surveys or key informants, in each selected farming community. The sample should include women. Invite the same number of people per type of producer; for example, if each meeting is going to be carried out with 21 producers, then invite an equal number of producers per type or category. Invite at least 20% more than the expected number of producers to ensure that enough people will attend the meeting. That way, you can cover for those producers who cannot attend for different reasons. That is, instead of inviting 21 producers, invite 25.

To encourage producer participation, design invitation cards on poster paper, which can also be used as vouchers for refreshments or a light meal. Cards should be made out to each producer, specifying the meeting site, the date and hour of the meeting, and mentioning the meeting's motive.

Producers should then be formally invited during a visit made 1 or 2 weeks before the meeting in which the meeting's motive is explained, the type of producer determined or corroborated, and the invitation card is formally handed over. An example of an invitation card is presented in Figure 3.5.

Invitation

Logo of host institution

Name:_____

Meeting to Evaluate
Market Options
CIPASLA

Meeting zone_____

Date: _____
Time: _____
Place: _____

- **Voucher for lunch**
- **Movie**

Figure 3.5 Example of invitation cards sent to small producers to attend participatory evaluation meetings.

3.2.9 Processing and analysing data

After all scheduled meetings are held, preference-ranking formats will be available at both the individual level and by type of producer (Appendix 7.3). These formats contain information that should be processed and analysed, using a computerized statistical package.

Information should be presented by subregion, in different tables that show frequency and percentage of occurrence. These parameters refer to the number of times a market option was classified in the 'good' group or in first place, or in the 'bad' group. Frequencies and percentages are presented for the entire sample for each subregion and also by type of producer. Titles of suggested tables are listed below:

For individual ranking by subregion, the following titles can be used:

- Number of times the option appears in the 'good' group (overall and by type of producer).
- Number of times the option appears in first place (overall and by type of producer).
- Reasons for choosing the first two options (overall and by type of producer).
- Reasons for choosing the most preferred option (overall).
- Number of times the option appears in the 'bad' group (overall).

- Number of times the option appears in the last two places, that is, is least preferred (overall).
- Reasons for rejecting the last two options (overall).
- What the preferred option lacks to be an ideotype or ideal type (overall).

For group ranking by subregion and producer type, these titles can be used:

- Most preferred options.
- Reasons for preference.
- Least preferred options.
- Reasons for rejection.

Table 3.7 shows an example of the first table or presentation format. By organizing information in a series of tables, the initial objectives of participatory evaluation are met, that is, to determine the preferences and decision criteria of rural producers by subregion and by type of producer.

Table 3.7 An example of tables used to present information.

High altitude zone	Number of times classified in 'good' group							
Product	General	%	Commercial	%	Semi-commercial	%	Subsistence	%
Blackberry	17	100	6	100	6	100	5	100
Naranjilla	15	88	6	100	5	83	4	80
Native strawberry	11	65	5	80	2	33	4	80
Cauliflower	6	35	3	50	2	33	1	20
Uchuva	6	35	2	33	3	50	1	20
Anthurium	5	29	0	0	1	33	3	60

3.2.10 Final report

The final report is a document that aims to make explicit the results of the participatory evaluation in terms of the original objectives. It must also provide background information and indicate work methodology. Results can be presented in two ways:

- As a text document, making reference to different tables included as an appendix.

- As a combined text and table document that includes a section on conclusions and recommendations. In addition, the different instruments and formats can be included as appendices.

To illustrate, the table of contents of the final report prepared for the participatory evaluation conducted in a pilot area of the hillside region of Colombia is given:

I. Prologue
II. Acknowledgements
III. Executive Summary
1. Background
2. Objectives
3. Methodology
4. Results
4.1 Preferred options
4.2 Reasons for preferring them
4.3 Options rejected
4.4 Reasons for rejecting them
4.5 Ideotypes
4.6 Conclusions and recommendations
Appendix 1. Tables numbers 1-41
Appendix 2. Cards of the most preferred products
Appendix 3. Questionnaire used
Appendix 4. Guidelines for evaluation meetings

.2.11 Second discard of market options

The final report prepared on the evaluation exercise will clearly indicate which market options were preferred, and which were rejected, by the rural producers. Those options rejected by most producers should be discarded because the producers are saying that these market options are not the most viable or attractive from their point of view or for their socio-economic context.

Market alternatives occupying intermediate places should not be discarded. If a product never occupied a first place, but was not rejected categorically by the producers, it should not be discarded. Based on these results, a refined product portfolio that has been accepted by the rural producers is prepared for use in the next stage, involving a linear programming model.

3.3 Using a Linear Programming Model to Select Market Options: An Overview

The use of a linear programming model is illustrated by the case study carried out in the hillside areas of Colombia, and is summarized as follows:

An *ex ante* evaluation of the most attractive production alternatives was carried out with small producers of the Cabuyal River watershed, in southern Colombia, using a multipurpose linear programming model. This model was used to compare different production alternatives within a farm and to seek a balance between conflicting objectives, such as the producers' objectives (generation of income and reduction in risk) and the researchers' objectives (e.g., reduced erosion). As prerequisite, traditional or existing production systems, and systems incorporating new production alternatives, should be characterized from biological and economic viewpoints. The model was then fed with data related to, for example, soil erosion, crop yields, production costs, and income. Results indicated that, in the 'high-altitude subregion', fruit production systems blackberry, naranjilla (also *lulo*), and *uchuvacan* complement existing production systems. Once pastures are improved, milk production can be another alternative. In the 'mid-altitude subregion', the existing coffee and plantain production system should be maintained because it is a good alternative in terms of income generation and sustainability. Cassava and pastures were considered the best options for the 'low-altitude subregion'. For more information, see Girón and Estrada (1998).

Market options selected after completing the process described in this Section of the manual are those alternatives that successfully passed agronomic, commercial, and economic characterization; participatory evaluation; and the application of a multipurpose linear programming model. Subsequent integrated research and development production projects will focus on these options. These integrated production projects are discussed in Section 4.

Exercise 3.1 Agronomic Characterization of a Crop

Objective

✓ The participant will fill out an agronomic characterization matrix for a crop considered important in the region.

Instructor's guidelines

1. Separate the participants into groups of four.

2. The groups will use the agronomic characterization matrix appearing in the Worksheet for Exercise 3.1.

3. You can find information relevant to this exercise in Part 3.1.3.

4. Where possible, each group should characterize a crop common to the area, but different to that of the other groups.

5. Each group will present the characterization of its respective area during a plenary session.

Resources needed

- Worksheet for Exercise 3.1
- Part 3.1.3 of the manual
- Flip chart, or overhead projector and transparencies
- Paper and pencils
- Magic markers, or markers for transparencies

Time required: 60 to 90 minutes, depending on the number of groups

Exercise 3.1 Agronomic Characterization of a Crop - Worksheet

Instructions for the participants

1. Join a group of four people and nominate a coordinator.

2. Choose a crop that is important in the area and on which one (or more members) of your group has good agronomic knowledge.

3. Use the agronomic characterization format appearing in the worksheet below.

4. You can find information relevant to this exercise in Part 3.1.3. If some data are unknown, the team should make an intelligent assumption. Once you have finished, copy the format on an adequately sized sheet of paper for the final presentation.

5. The group's coordinator will present the characterization during the plenary session.

Production alternative	Complete cycle (years)	Pre-production cycle (months or years)	Technical requirements (low, average, or high)	Soil requirements	pH	Water requirements (mm/year)

Production alternative	Need for irrigation (yes or no)	Altitude requirement (m.a.s.l.)	Major pests and diseases	Planting density (no./ha)	Annual yield (t/ha)

Exercise 3.1Agronomic Characterization of a Crop - Feedback

Each group will present different information depending on the crop selected. Below you will find an example developed in the Colombian case study.

Production alternative	Complete cycle (years)	Pre-production cycle (months or years)	Technical requirements (low, average, or high)	Soil requirements	pH	Water requirements (mm/year)
Fig tree	8	24 months	Low	Moderately fertile soils	5-6	700

Production alternative	Need for irrigation (yes or no)	Altitude requirement (m.a.s.l.)	Major pests and diseases	Planting density (no./ha)	Annual yield (t/ha)
Fig tree	No	1000-2300	Caterpillars, thrips, rust, *Sclerotinia*	400	4

Exercise 3.2 Designing a Product Card

Objective

The participant will develop a product card for a given crop or agro-industrial product.

Instructor's guidelines

1. Separate the participants into groups of four.

2. The groups will use the product card format that appears in the Worksheet for Exercise 3.2.

3. You can find information pertinent to this exercise in Part 3.2.4 and in Figures 3.3 and 3.4.

4. Each group should prepare a product card for a different crop or agro-industrial product common to the area.

5. Each group will present its work in a plenary session.

Resources needed

- Worksheet for Exercise 2.2
- Part 3.2.4 and Figures 3.3 and 3.4 of the manual
- Flip chart, or overhead projector and transparencies
- Paper and pencils
- Magic markers, or markers for transparencies

Time required: 60 minutes

Exercise 3.2 Designing a Product Card - Worksheet

Instructions for the participants

1. Join a group of four and nominate a coordinator.

2. Choose a crop that is important in the area and on which one (or more members) of your group has good knowledge.

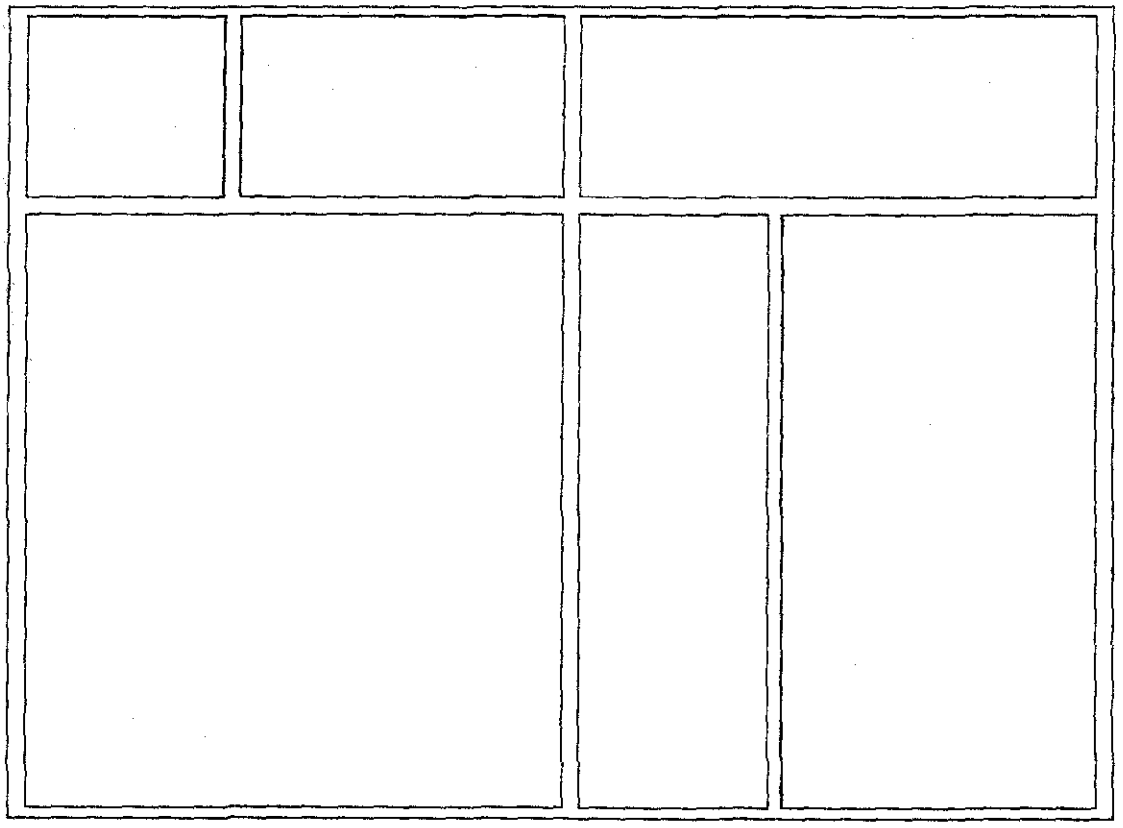
3. Use the product card format appearing in the Worksheet for Exercise 3.2.

4. You can find information pertinent to this exercise in Part 3.2.4 and in Figure 3.3.

5. If some data are unknown, the team should make an intelligent assumption.

6. When you have finished, copy the format onto an adequately sized piece of paper (or transparency) for the presentation.

7. The group's coordinator will present the product card during the plenary session.



Exercise 3.2 Designing a Product Card - Feedback

Each group will present different product cards, depending on the crop selected. An example developed for the Colombian case is given.

Mid-altitude zone	**Fig tree** Fruit tree 46 trees 2 harvests	**1600 m² - Monocrop**	
		Adaptation Tolerates drought, pests, and lack of fertilization	Regular Water: 700 mm
		Cycle Time between planting and first harvest	2 years
		Yield Amount of product produced per year	640 kg
		Expenses up to first harvest How much was spent in inputs and wages	Expenses: Col $770,000 No. of workdays: 28
		Profit (Col$) The amount of money free per $100 spent	Col$35

Exercise 3.3 Preparing a Timetable for a Participatory Evaluation Meeting

Objective

The participant will prepare a timetable for a meeting to conduct the participatory evaluation of market options.

Instructor's guidelines

1. Separate the participants into groups of four.

2. The groups will use the format appearing in the Worksheet for Exercise 3.3.

3. They should first prepare a draft timetable before copying it onto the worksheet format.

4. You can find information pertinent to this exercise in Part 3.2 of the manual.

5. The coordinator of each group will present the group's work in a plenary session.

Resources needed

- Worksheet for Exercise 3.3
- Part 3.2 of the manual
- Flip chart, or overhead projector and transparencies
- Paper and pencils
- Magic markers, or markers for transparencies

Time required: 60 to 90 minutes, depending on the number of groups

Exercise 3.3 Preparing a Timetable for a Participatory Evaluation Meeting - Worksheet

Instructions for the participants

1. Join a group of four and nominate a coordinator.

2. Use the timetable format appearing in the Worksheet for Exercise 3.3.

3. The number of activities appearing in the format is merely a suggestion. You can use more or less. You will find information pertinent to this exercise in Part 3.2.

4. Under the 'Date' column, begin with Week 1 and continue to work in terms of weeks. Some activities may take more than one week. Remember that several activities can be carried out simultaneously and that the order is important because some activities are prerequisites for others.

5. When you have finished, copy the timetable to a large sheet of paper.

6. The group's coordinator will present the timetable during the plenary session.

Exercise 3.3 Preparing a Timetable for a Participatory Evaluation Meeting - Worksheet

No.	Activity	Person responsible	Termination date
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			
18			
19			
20			
21			
22			
23			
24			
25			

Exercise 3.3 Preparing a Timetable for a Participatory Evaluation Meeting - Worksheet - Feedback

Timetables can vary, but it is important to list major activities in the correct order. Activities 15-17 (shaded) are the same for each meeting. The others are general activities.

No.	Activity	Person responsible	Implementation time
1	Ensure funding of participatory evaluation process	Coordinator	Week 1
2	Establish work teams	Coordinator	Week 2
3	Subdivide targeted region	Team	Week 2
4	Select market options per subregion	Team	Week 2
5	Collect information on options	Team	Week 3
6	Define producer categories	Team	Week 4
7	Select sample of farming communities	Team	Week 4
8	Conduct survey on decision criteria	Team member	Week 5
9	Prepare survey report	Team member	Week 6
10	Design and prepare product cards	Team	Week 8
11	Define meeting sites	Team	Week 8
12	Plan meetings	Team	Week 8
13	Prepare invitation cards	Team member	Week 9
14	Train relevant personnel	Team	Week 9
15	Invite producers	Team member	Weeks 10-13
16	Coordinate logistics of the meetings	Team	Weeks 11-14
17	Conduct meetings	Team	Weeks 12-15
18	Process and analyse data	Team	Week 17
19	Prepare final report with conclusions	Team	Week 19
20			
21			
22			
23			
24			
25			

Practice 3.1 Survey of Decision Criteria for Crop Selection

Objective

The participant will identify decision criteria of small producers when selecting a crop for planting.

Instructor's guidelines

1. Separate the participants into groups of four.
2. The two worksheets for Practice 3.1 provide interview guidelines and a reporting format.
3. You can find information related to this practice in Parts 3.2.2 and 3.2.3.
4. This practice requires 2 days, divided into three sessions, as follows:

Planning session (2-4 hours)

If not done already, select four farming communities that are representative of the region and also define producer types. Then follow through with the interview guidelines or questionnaire, which is the research tool to be used with rural producers.

Fieldwork session (3-5 hours)

Each team should interview a sample of eight producers in a single farming community. The sample should include all types of producers. (If necessary, a farming community can be served by more than one team.)

Reporting and presentation session (2 hours)

Each team prepares a report, which its coordinator will present during the plenary session.

Resources needed

- Transportation to and from the rural area
- Refreshments
- Worksheets nos. 1 and 2 for Practice 3.1
- Parts 3.2.2 and 3.2.3 of the manual
- Flip chart, or overhead projector and transparencies
- Paper and pencils
- Magic markers, or markers for transparencies

Time required: 2 days

Practice 3.1 Survey of Decision Criteria for Crop Selection

Instructions for the participants

Join a team of four participants and nominate a coordinator.
Worksheets nos. 1 and 2 include interview guidelines and a format for reporting.
You can find information pertinent to this practice in Parts 3.2.2 and 3.2.3.
This practice takes 2 days, divided into three sessions, as follows:

Planning session

If not done already, choose four farming communities that are representative of the region and define producer types. Then, follow through with the interview guidelines or questionnaire, which is the research tool to be used with rural producers. Remember the objective of the survey of decision criteria. During the interview try to corroborate the type of producer being interviewed. Remember to use simple language.

Fieldwork session

A sample of eight producers is interviewed in a single farming community. The sample should include all types of producers. One team member can conduct the interview, while another completes the format. (If necessary, a farming community can be served by more than one team.)

Reporting and presentation session

Each team prepares a report and its coordinator will present it in a plenary session.

Practice 3.1 Survey of Decision Criteria for Crop Selection - Worksheet no. 1

Interview Guidelines for the Survey on 'Producers' Decision Criteria for Selecting Crops for Planting'

1. Greet the producer and explain the objective of your visit, for example:

   'Good morning (*or* Good afternoon), we are from Such-and-Such Organization and we would like to know whether we could talk to you about a subject that really interests everybody.'

2. Ask a question to corroborate the type of producer, such as:

   'Do you sell most of what you produce or do you use it yourself?'

   Note: This question is pertinent only if it were decided that rural producers should be classified according to their degree of market orientation (commercial, semi-comercial, subsistence).

3. Write down the producer's name, the type of producer he or she is, the farming community, and the name of the survey group.

4. Ask about selection criteria used to choose traditional crops, for example:

   'What aspects do you think about when choosing a traditional crop for planting?'

5. Write down the answers.

6. Ask about selection criteria when choosing new crops, for example:

   'What aspects do you think about when choosing a new crop for planting?'

7. Write down the answers.

8. Thank the producer for his or her collaboration.

Practice 3.1 Survey of Decision Criteria for Crop Selection - Worksheet no. 2

Report Format for the Survey on "Producers' Decision Criteria for Selecting Crops for Planting"

Group: Number of producers interviewed:		Farming community:	
No.	Decision criteria to select traditional crops	Frequency	%
1			
2			
3			
4			
5			
No.	Decision criteria to select new crops	Frequency	%
1			
2			
3			
4			
5			
Differences found in criteria among producer types:			

Practice 3.1 Survey of Decision Criteria for Crop Selection - Feedback

This is an example of a final report:

Survey on "Producers' decision criteria for selecting crops for planting"

Group: No. 5 Number of producers interviewed: 8		Farming community: La Torre	
No.	**Decision criteria to select traditional crops**	**Frequency**	**%**
1	Knowledge/expertise	8	36
2	Does not require inputs/easy to plant	5	23
3	Short or intermediate growth cycle	4	18
4	Stable price	3	14
5	Has a market	2	9
No.	**Decision criteria to select new crops**	**Frequency**	**%**
1	Does not require inputs/easy to plant	8	32
2	Good price	6	24
3	Has a market	5	20
4	Short or intermediate growth cycle	4	16
5	Stable price	2	1
Differences found in criteria among producer types:			
Subsistence producers were more interested in hardy, short-cycle crops.			

Bibliography

CIAT (Centro Internacional de Agricultura Tropical). 1997. Informe anual del proyecto de Desarrollo de Agroempresas Rurales. Cali, Colombia. 47 p.
Davidson S; et al. 1978. Managerial accounting. Dryden Press, Hinsdale, IL.

Girón LE; Estrada RD. 1998. Cultivos intensivos: Un mecanismo para reducir la degradación de suelos. Document in process. Proyecto PE-3, Centro Internacional de Agricultura Tropical (CIAT), Cali, Colombia. 30 p.

Gittinger JP. 1982. Economic analysis of agricultural projects. 2nd ed. Johns Hopkins University, Baltimore, MD.

Green PE; Tull DS. 1978. Research for marketing decisions. 4th ed. Prentice-Hall, Englewood Cliffs, NJ.

Ostertag CF. 1997. Identificación y evaluación de oportunidades de mercado para la subcuenca del Río Cabuyal. Paper presented at the Workshop on "Comercialización", held by Fundación Carvajal and Corpotunía, February 1997, at Tunía, Cauca (Colombia).

Ostertag CF. 1996. Perfiles de producto y proyectos para la agroindustria rural (Colombia). Proyecto de Agroempresas Rurales, CIAT; CORPOICA; and PRODAR, Cali, Colombia. 50 p. (Submitted to *FoodLinks* [CIID], Canada).

Ostertag CF. 1996. Evaluación participativa de opciones de mercado con pequeños productores de la microcuenca del Río Cabuyal: Informe final. Proyecto de Desarrollo de Agroempresas Rurales, CIAT, Cali, Colombia. 45 p.

Ostertag CF; Wheatley C. 1995. A financial model for the implementation and evaluation of small-scale agro-enterprises. In: Scott GJ, ed. Prices, products and people: analyzing agricultural markets in developing countries. CIP and Lynne Rienner Publishers, Boulder, CA. p 361-382.

Ostertag CF. 1994. Estudio rápido de los sistemas de producción y comercialización de la microcuenca del Río Cabuyal en el norte del Cauca. Working document. Hillsides Program, CIAT, Cali, Colombia. 85 p.

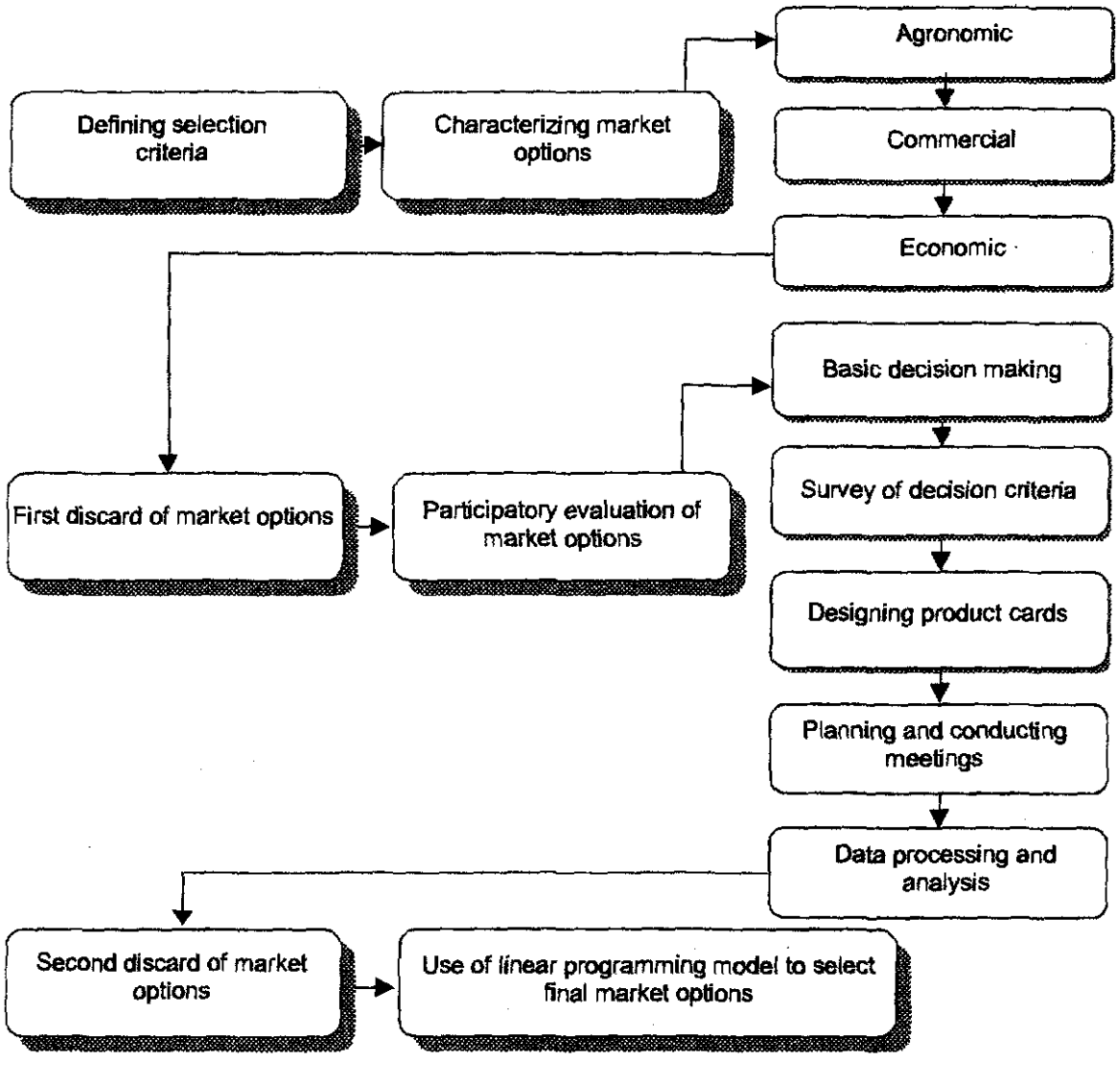
Ostertag CF; Patiño CA. 1996. Identificación y caracterización de oportunidades del mercado. Working document. Hillsides Program, CIAT, Cali, Colombia. 90 p.

Ravnborg HM; Guerrero M del P. 1997. Evaluación de pobreza rural: Un método práctico para extrapolar y cuantificar percepciones locales. CIAT, Cali, Colombia. 47 p.
Riesco A; Arroyo M. 1997. Perfil socioeconómico de la región de Ucayali. Informe de consultoría para el CIAT. CODESU and CIAT, Cali, Colombia. 19 p.

Van Horne JC. 1980. Financial management and policy. 5th ed. Prentice-Hall, Englewood Cliffs, NJ.

Originals for Transparencies

SECTION STRUCTURE



SECTION OBJECTIVE

- ✓ After studying this Section, the participant will be able to carry out the characterization and participatory evaluation of market options for a given microregion.

SPECIFIC OBJECTIVES

The participant should be able to:

- ✓ Explain the objective of, and conduct, the characterization of market options.
- ✓ List the components of a model of financial profitability and interpret the different parameters.
- ✓ Give several reasons why market options need to be discarded.
- ✓ Explain the objectives of, and conduct, the participatory evaluation of market options.
- ✓ With the help of the manual, prepare a timetable for executing the participatory evaluation process.
- ✓ Design the different formats or tools used for participatory evaluation, including product cards.
- ✓ Explain the objective of the linear programming model.

EVALUATION CRITERIA

Taking into account the end client's profile (in this case, the small rural producer) and the importance of production sustainability, the following groups of evaluation criteria are proposed:

- Feasibility of production for the smallholder
- Business attractiveness
- Contribution to production sustainability

AGRONOMIC CHARACTERIZATION MATRIX

Production alternative	Complete cycle (Years)	Pre-production cycle (months or years)	Technical demand (low, average, high)	Soil requirements	pH	Water requirements (mm/year)

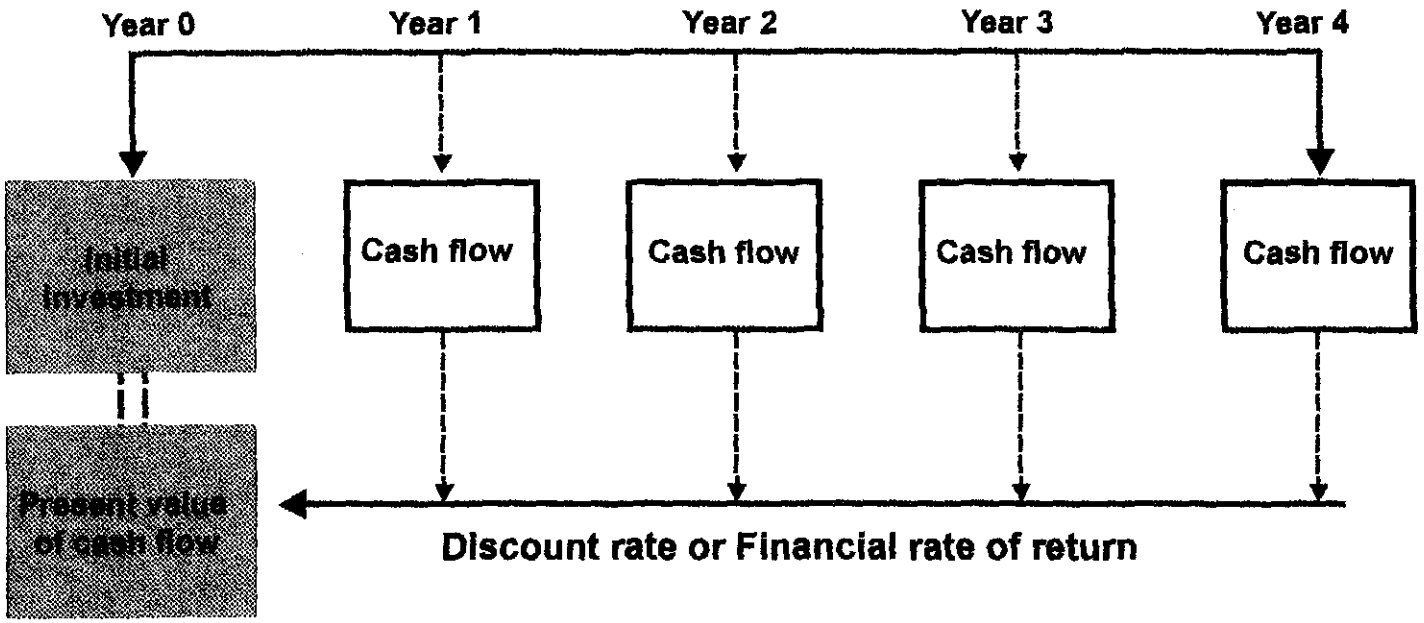
Production alternative	Need for irrigation (Yes or no)	Altitude requirements (m.a.s.l.)	Major pests and diseases	Planting density (No./ha)	Annual yield (t/ha)

MARKETING CHARACTERIZATION MATRIX

Production alternative	Current commercialization (Yes or no)	Degree of perishability (High, Intermediate, or low)	Type of client SM = supermarket, FI = food industry, I = industry, Res = restaurant	Services to the client TA = technical assistance, Cr = credit	Type of ma L = local R = regio D = dom Exp = expo

Production alternative	Growth of demand (high, intermediate, or low)	Quality requirements (high, intermediate, or low)	Packaging requirements	Delivery requirements PZ = delivered at zone, PW = delivered at warehouse	Commercia relationshi AG = agreem PA = partner CO = contra

GRAPHIC INTERPRETATION OF THE FINANCIAL RATE OF RETURN (FRR)



FINANCIAL MODELS

- For a project to be economically appealing to the investor, the FRR should be greater than the opportunity cost of capital or money.

- The opportunity cost of capital is the interest that the financial system recognizes for savings.

- If the FRR is lower than the opportunity cost of capital,then the investor is best off leaving his or her money producing income in the financial system.

- The net present value (NPV) is another profitability parameter that is commonly used.

FINANCIAL MODELS

- The NPV is the value in year zero (0) of the series of cash flows, if the discount rate is equal to the opportunity cost of capital.
- For the project to be financially appealing to and investor, the NPV should be greater than the initial investment.
- If it is smaller, then the investor is better off leaving the money in the financial system to produce income.

COMPONENTS OF THE FINANCIAL MODEL

- Prices
- Quantity matrix
- Costs and income matrix
- Analysis of profitability without financing
- Analysis of profitability with financing

DISCARDING MARKET OPTIONS

- Use the three characterization matrixes.
- Discard an option if it does not respond to one or more evaluation criteria.
- Examples of cases where discarding is appropriate are:
- When the level of profitability is nil or negative,
- When the technology or infrastructure is too sophisticated or expensive
- When the required soil and climatic conditions do not exist in the region.

DISCARDING MARKET OPTIONS

- When the initial investment is too high for most producer associations.
- When the market option is demonstrated to have detrimental effects on the environment.
- When the sales price shows high fluctuations throughout the year
- When the market exacts too-high levels of quality

OBJECTIVES OR PARTICIPATORY EVALUATION

- To determine the preferences of the small rural producer regarding market options, whether these be crops or agro-industries.

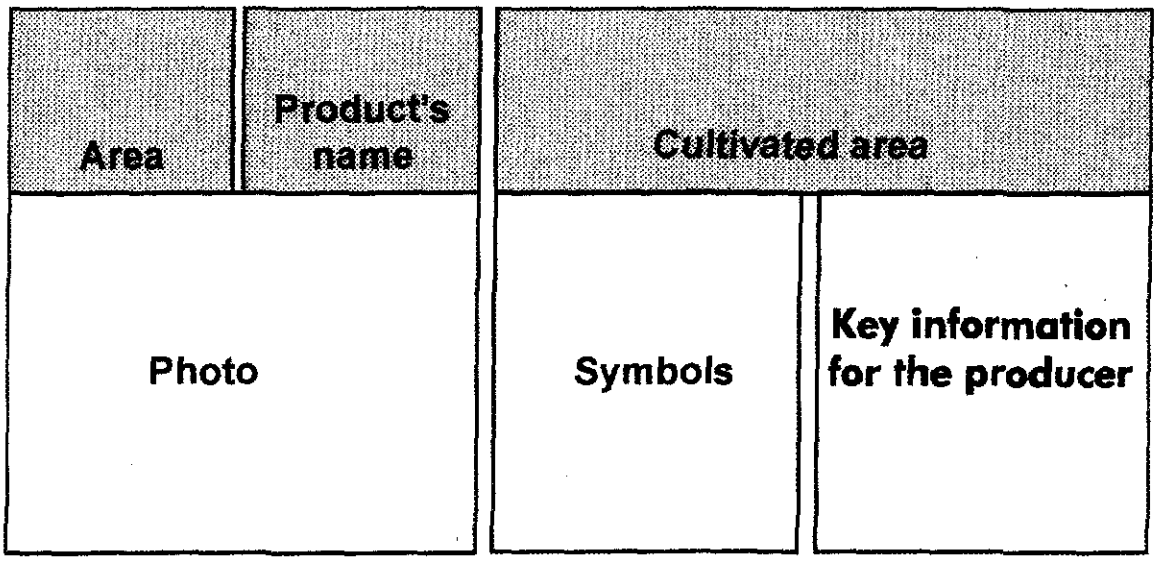
- To determine the decision criteria of the small rural producer when selecting new crops.

- To detect variations in decision criteria according to type of producer.

PARTICIPATORY EVALUATION OF MARKET OPTIONS

- Basic decision making
  - Sub-dividing the region
  - Types of producers
  - Portfolio of market options per sub-region
- Survey of decision criteria
  - Reasons for selecting traditional and new crops
- Designing product cards
- Planning and organizing meetings
- Data processing and analysis

DESIGNING PRODUCT CARDS



- Achieve a balance between ease of comprehension and informative content

- A product card has two sections:
- Identification of product
- Key information

Information should include:

- Degree of adaptation
- Water requirements
- Planting density
- Production cycle
- Annual yield
- Investment expenses (including number of workdays)
- Simplified profitability parameters (financial rate of return)
- Drawing or symbol
- To facilitate comparisons, planting area was always 1600 m^2 in monoculture.

CHECKLIST FOR HOLDING AN EVALUATION MEETING

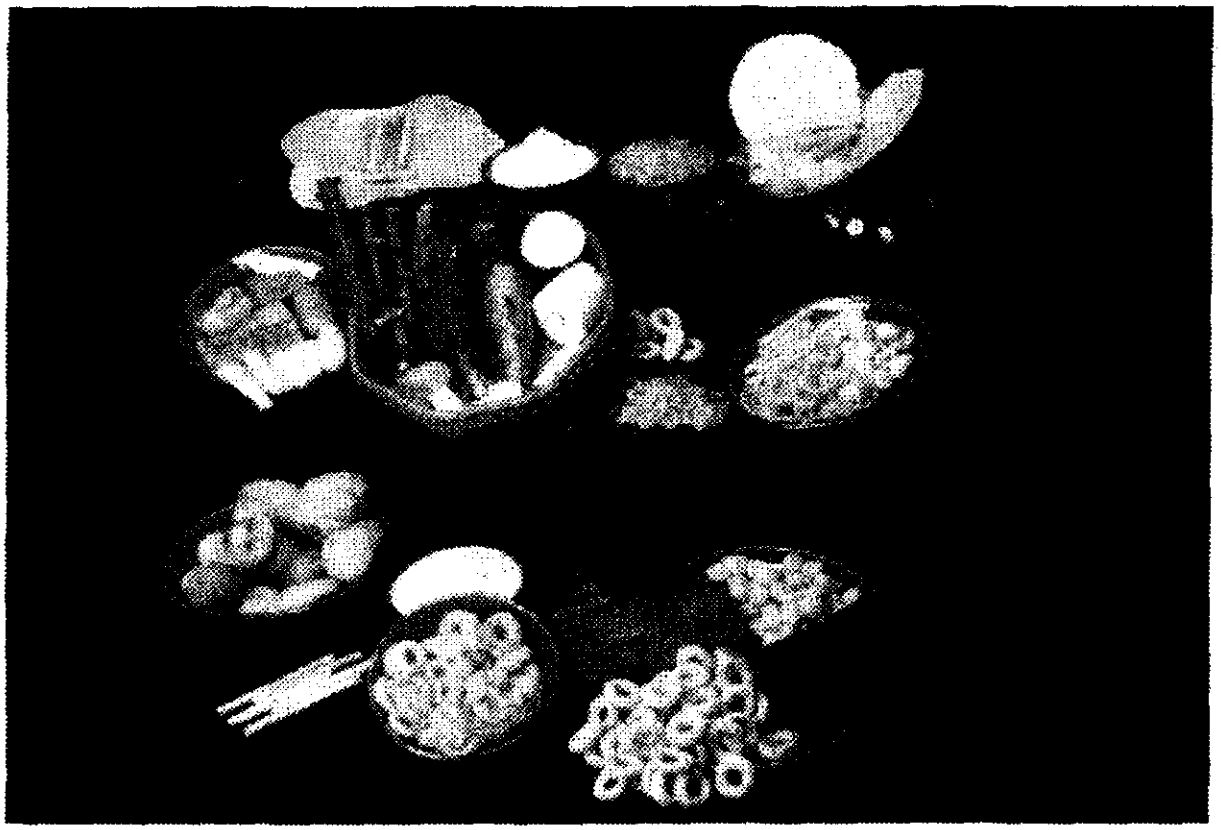
Resources
1. Human resources
1.1 A representative sample of rural producers 1.2 A facilitator for the meeting 1.3 A presenter of market options 1.4 One or two consultants of market options 1.5 Three interviewers 1.6 One or two drivers with vehicle
2. Infrastructure
2.1 A sheltered meeting place, with electricity and project facilities 2.2 Tables and chairs
3. Tools
3.1 Three sets of full-colour product cards for interviewers 3.2 Sets of photocopies of product cards to hand out to producers 3.3 Answer formats 3.4 Pencils 3.5 Badges for producers 3.6 Samples of product
4. Material and equipment
4.1 Opaque, overhead, or slide projector 4.2 Flip chart and magic markers (optional) 4.3 Adhesive tape 4.4 Gasoline-powered electric generator, if no electricity in area 4.5 Light meal, snacks, or refreshments 4.6 Black cloth for darkening room if necessary

SEQUENCE TO FOLLOW FOR EVALUATION MEETINGS

- Give rural producers a distinctive badge, if they have been separated by type.
- Make a general introduction, covering background information and assumptions.
- Present each market option, using and explaining product cards.
- Section for questions and answers on each product.
- Explain how product cards should be ranked.
- Have each participant organize the options, first individually, then together with other producers of his or her type.
- Thank the participants for their collaboration and invite them to a light meal or snack.
- Those producers who were promised transportation are taken back

Section 4

Designing Integrated Production Projects



Section 4. Designing Integrated Production Projects

Page

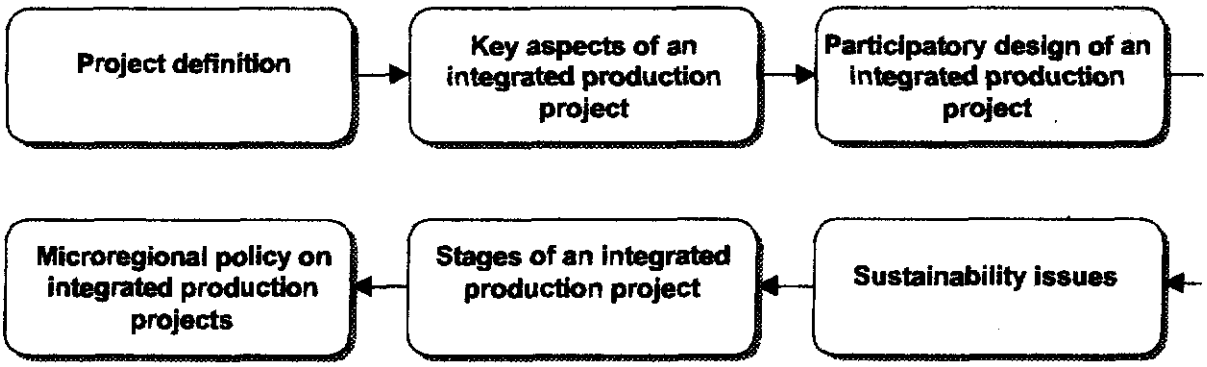
Section Structure 4-2
Objectives 4-2
Orienting Questions 4-3
Introduction 4-3

4.1 Defining 'Project' 4-3
4.2 Key Aspects of an Integrated Production Project 4-4
4.2.1 Agricultural and livestock production 4-4
4.2.2 Post-harvest handling and processing 4-5
4.2.3 Marketing 4-5
4.2.4 Entrepreneurial organization 4-5
4.3 Participatory Design of an Integrated Production Project 4-6
4.4 Sustainability Issues 4-6
4.4.1 Production and post-harvest processes 4-6
4.4.2 Entrepreneurial organization 4-7
4.4.3 Support services 4-7
4.5 Stages of an Integrated Production Project 4-8
4.6 Microregional Policy on Integrated Production Projects 4-8

Exercise 4.1 Determining Priority Work Areas for an Integrated Production Project 4-11
Exercise 4.2 Diagnosing Support Services for Rural Economies 4-15

Bibliography 4-18
Originals for Transparencies 4-19

Section Structure



Objectives

General goal

After studying this Section, the participant should be able to guide design of a rural integrated production project (IPP).

Specific objectives

- ✓ The participant will be able to:
- ✓ Explain the main characteristics of a project.
- ✓ Describe the different aspects considered by an IPP and their implications.
- ✓ Explain why the definition of priority activities within a rural IPP should be participatory.
- ✓ List several areas in which the concept of sustainability is important.
- ✓ Define the term 'pilot stage' and explain its usefulness.
- ✓ List the main points of a microregional policy on production projects.

Orienting Questions

1. We assume that you have already identified a crop or agro-industrial product that represents a market opportunity for the region where you live or work. Now you want to promote it. What would be your first step towards this objective?

2. Reconstruct the path traveled by a pineapple, from planting to the moment you spread pineapple marmalade on a slice of bread.

3. On what factors does the permanence or sustainability of an agro-enterprise depend?

Introduction

As indicated in the previous Sections, one or more market opportunities have already been identified for a targeted region. This Section will show you how to work with rural producer organizations and what activities should be carried out to take advantage of these opportunities. The approach presented is that of 'Integrated Production Projects' (IPPs), a concept that was developed at CIAT in the 1970s and was initially applied to rural development projects oriented towards cassava processing, but which can be applied to any crop or agro-industrial product.

An Integrated Production Project (IPP) can be used to strengthen a business or rural agro-industry that already exists or to establish a new business or rural agro-industry. An IPP may be subdivided into subprojects, some of which are of a research nature and others of which emphasize agro-entrepreneurial development.

4.1 Defining 'Project'

First, we would like to explain what a project format is. A project is a series of activities that are planned and carried out to achieve one or more objectives, within a certain period of time and with some predetermined resources. The fulfilment of the objective is the raison d'etre of the project. A strategy, procedure, or methodology to ensure that the objective or objectives be reached must be defined. The strategy can be divided into project subcomponents, called 'outputs', 'results', or 'modules'. Each subcomponent of the strategy is implemented through a series of activities. For each activity, the people responsible must be assigned and a time framework set up.

Nowadays, a key aspect of projects is the measurement of impact. In view of limited financial resources, donors are increasingly demanding and wanting to know whether the project is achieving its objectives or not. A project has a positive impact if it can show that it has achieved its original objective. When designing the project, measurable indicators or parameters related to the project's objective should be proposed. An indicator can be used to verify whether the project has achieved its objective or not.

Intermediate indicators, that is, parameters that indicate that the project is on the way to achieving the final objective, can also be proposed.

An activity timetable is usually prepared; this timetable is used as a planning and control tool that defines the sequence and duration of activities and responsibilities. Table 4.1 presents a simple timetable as an example. The exercises found in Sections 1 and 3 of this manual also refer to an activity timetable. The sequence of activities is important because an activity may be a prerequisite for others. Some activities can be carried out simultaneously or in parallel.

Table 4.1 Example of an activity timetable.

Objective: Have a successful party

	Activity	Responsible	Week 1	Week 2	Week 3	Week 4
1	Make a guest list	María	X			
2	Make a budget	Jorge	X			
3	Send out invitations	María		X		
4	Call to confirm assistance	Carmen			X	
5	Buy food, cake, and liquor	Jorge				X
6	Have the party	Everyone				X

4.2 Key Aspects of an Integrated Production Project (IPP)

An IPP is justified if a marketing opportunity exists that can benefit the rural population. In other words, IPPs should be market-oriented and respond to demand, whether local, regional, national, or international.

A key concept for this type of production project is to not consider products as isolated or disconnected elements, but rather as forming part of a system. A system is a set or organization of elements related or connected in such a way that they form a unit or organic whole. As the term indicates, an IPP seeks to integrate the different elements composing the systems of the targeted product.

The most pertinent elements of the system of any product are agricultural and livestock production, post-harvest handling or processing, marketing and entrepreneurial organization. This integrated approach is similar to the entrepreneurial approach, because it takes into account innumerable aspects so that the enterprise can survive and be successful.

Accordingly, the IPP approach, as does the business approach, requires numerous multidisciplinary activities, which, in the field of rural development, probably means that the project should be implemented by a properly coordinated interinstitutional consortium. Even so, the project organizers must remember that the project's success hinges on the receptivity of the inhabitants, producers, and rural organizations. A commercial orientation should permeate the project's activities, and links with private enterprise and industrialists should be seen as convenient, even necessary.

In an IPP, research and development activities are carried out to produce and market agricultural, livestock, forest, or agro-industrial products for the benefit of the rural population. Technological or information gaps may hinder the fulfilment of the project's objectives, in which case, research topics should be included. Development activities are those that are oriented directly towards developing the business in question. Research and development activities within the project usually mix or merge.

This production project can be executed with the participation of rural entrepreneurs; producer organizations; local, national, and international governmental organizations and NGOs; private enterprises; universities; and research centers, and others.

The areas of action of an IPP are as follows:

4.2.1 Agricultural and livestock production

The intervention of an IPP in agricultural and livestock production is directed towards the improvement of different aspects of the product or raw material, for example, quality, production costs, production sustainability, continuity of offer, and production volume. Several of these aspects are related to post-harvest handling and entrepreneurial organization.

4.2.2 Post-harvest handling and processing

This type of project may imply work in post-harvest handling or processing (or transformation). Adequate post-harvest handling refers to the treatment of fresh products in such a way that freshness, homogeneity, quality, and good appearance are guaranteed. It may involve activities directed towards improving the product in terms of its appearance, selection, cleanliness, classification, refrigeration, storage, packing, and transportation. In this case, available technology should be inventoried.

If the targeted product of the IPP requires a certain level of transformation or processing, then it may need a transformation technology to be developed, adapted, or improved. Processing technology includes knowledge of procedures, equipment, infrastructure, and inputs, which means that experimental and pilot plants may need to be established before the product can fully enter the market.

4.2.3 Marketing

This is an essential component of the project. As you may remember, this manual has a strictly marketing approach: Section II describes a method for conducting market research, and Section III describes, among other things, a procedure to perform a commercial and economic characterization of a product.

In the area of marketing, the IPP should define both market potential and market strategies for the product of interest. The project should encourage the preparation of plans for business administration and marketing. These plans should include decisions on four marketing variables:

A. Product (What are the characteristics of the product to be sold?)
b. Price (At how much will the product be sold?)
c. Distribution (Which distribution channels will be used to deliver the product to the client or consumer?)
d. Promotion (How can clients and consumers be motivated to buy the product?)

4.2.4 Entrepreneurial organization

This is perhaps the most important component of an IPP. An efficient commercial rural organization, capable of directing the project, may already exist. Or, perhaps the organization is established but requires support and strengthening. Sometimes such an organization does not exist and must be created, always taking advantage of the business capacities and leadership existing within the rural community. In any case, a major objective of an IPP is to strengthen the business capacity and autonomy of producer organizations. The role of the different participating institutions is to assist the rural organization on a temporary basis where necessary, but never to replace it. This point will be discussed again later in this document.

4.3 Participatory Design of an Integrated Production Project

An IPP should have a participatory approach, which means that decisions should be made, taking into account the users and beneficiaries of the IPPthe inhabitants, producers, and rural organizationsin addition to the different actors in the agro-industrial chain of the product of interest. The IPP has two types of clients: (a) as a mechanism of rural development, its client is the rural inhabitant; and (b) as a vendor of products or services, its other client is the buyer or final consumer.

A participatory process that includes rural inhabitants and rural development institutions must be implemented when designing the production project (i.e., when defining priorities of intervention within the product's system). Also, the marketing chain of the product of interest should be studied to detect weaknesses and 'bottlenecks'. Meetings should be held with representatives of the different actors involved in the agro-industrial chain. If the IPP aims to strengthen a traditional enterprise or one that is already established, previous institutional interventions should be studied to improve the IPP approach and avoid making the same mistakes.

In brief, participatory decision making should detect the strengths and weaknesses of the product's system and marketing chain to thus determine priority areas of action. Furthermore, areas of action should be categorized in terms of development or research. Table IV-2 presents a matrix that helps visualize this type of decisions.

Table 4.2 Matrix of priorities within the product's system.

System component	Priority areas of action	
	Product A	Product B
Action: Agro-enterprise development		
Production		
Post-harvest handling		
Processing		
Marketing		
Entrepreneurial organization		
Action: Research		
Production		
Post-harvest handling		
Processing		
Marketing		
Entrepreneurial organization		

4.4 Sustainability Issues

The concept of sustainability is increasingly important, and usually refers to the need to conserve natural resources, protect the environment, and maintain rural production capacity. However, sustainability can also be applied to rural economy and to rural agro-enterprises, in the sense that organizations and economic activities are permanent and continuous. A well-designed IPP tries to ensure that its actions and results will be sustainable over time.

4.4.1 Production and post-harvest processes

The way of producing raw material in the field should be sustainable, that is, it should conserve natural resources such as soils, water, and biodiversity in such a way that following generations can obtain the same agricultural yields, if not higher. Likewise, agro-industrial processes should conserve the environment, preventing its contamination.

4.4.2 Entrepreneurial organization

The concept of sustainability is key to any commercial activity. But we must remember that, without profitability, there is no sustainability. While an IPP cannot guarantee the sustainability of an agro-enterprise, because risk is part of the business world, it can certainly promote it. Agro-enterprise sustainability is promoted through the following actions:

- Proposing viable and profitable market options.
- Strengthening business capacities and leadership in the rural sector.
- Assisting, but not replacing, rural agro-enterprises.
- Always favouring the autonomy of rural organizations through training, avoiding paternalistic attitudes, delegating responsibilities, and promoting participation and decision making by rural producers or inhabitants.
- Promoting a capacity for self-criticism and a culture of efficiency and quality within the rural agro-enterprise.
- Supporting the creation of local, profitable, and permanent support services for the rural economy.

4.4.3 *Support services*

This topic deserves special attention. As already mentioned, a product is not an isolated element but forms part of a system, the product's system. Similarly, an agro-enterprise should form part of a system that includes support services, for example, banking and credit institutions, transportation, commercial information, workshops, and technical advisory services. An agro-enterprise is unlikely to be so self-reliant that it can survive alone. In urban areas, the existence of a commercial system can be clearly detected.

For support services to be truly sustainable, they should generate their own income, that is, they are not offered free. This usually means that they are handled by the local government or the rural community itself. These services can appear spontaneously within the community, or can be promoted through temporary external interventions that include, for example, seed capital and advisory services.

Recently (1999), the director of the Inter-American Development Bank (IDB) commented that subsidies were valid provided that they were temporary and promoted activities that benefited society in general. We believe that this is also true for local support services established for rural enterprises.

The case of external consultants should be mentioned here: when we say that a rural agro-enterprise is autonomous, we do not mean that it is self-reliant, but rather that it is capable of making rational decisions, such as deciding whether it requires support or external consultancy. This consultancy, however, should be temporary and certainly not free. If the rural agro-enterprise has the economic capacity, it can hire external managerial or administrative personnel.

4.4 Stages of an Integrated Production Project

Figure 4.1 shows the stages of an IPP. As already mentioned, this project is based on identifying a marketing opportunity in a given region, then designing, on a participatory basis, those actions of priority identified at both research and development levels.

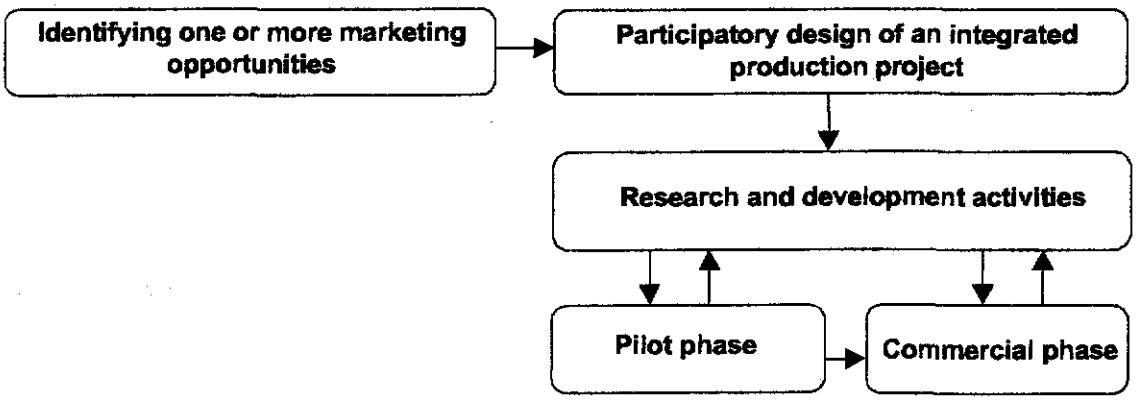


Figure 4.1 Stages of an integrated production project.

The relative importance of research and development components depends on the degree of technological complexity needed for a given marketing opportunity and the status of technical and commercial knowledge of the work team. If a marketing opportunity involves a fresh product, less research is usually required than if it involves a transformed agro-industrial product. Moreover, if the product is new to the region and for the working team, or represents an innovation, the research component will be more important.

In addition, the existence of certain technological gaps does not necessarily mean that agro-empresarial development should halt. The processes of research and development can occur in parallel. However, a team must be able to recognize those technological or knowledge gaps that are too large for work in agro-industrial development to progress. In this case, the gap should be first filled, then the development activities continued.

The pilot stage is a key concept in IPPs and constitutes a business concept, whereby agro-industrial activities are carried out on a small scale, but under real market conditions. The plant, for example, would be built on a pilot, or small, scale. The pilot stage is a strategy to minimize risks and avoid 'white elephants'.

A similar concept exists in marketing, called the 'test-market'. A company introduces a new product to a single city, department, or province to evaluate its potential for success on a larger scale. If all goes well, then the new product is released in another city or nationwide. If it fails, the company will have to decide whether to continue with the product or eliminate it.

If the pilot stage of the IPP is successful, then the IPP continues to the commercial phase where the operational scale is expanded according to calculations of demand potential. When the pilot project reaches the commercial phase, it can be considered as 'successful'.

4.5 Microregional Policy on Integrated Production Projects

All previous considerations were brought together into a proposal of a microregional policy on IPPs, summarized as follows:

- Maintain market orientation and food security.
- Maintain a prioritized project portfolio.
- Design IPPs, using a participatory approach.
- Identify research areas, using a participatory approach.
- Conduct multidisciplinary work involving institutions and/or consultants in a coordinated fashion.
- Promote sustainability of organizations and project achievements.
- Promote the establishment of local, sustainable support services.

This policy can serve as guidelines for regional organizations that conduct activities oriented towards rural development, for example, interinstitutional consortia, producer organizations, and local governments

Exercise 4.1 Determining Priority Work Areas for an Integrated Production Project

Objective

The participant will define work priorities within an integrated production project, focused on a marketing opportunity for a given region.

Instructor's guidelines

To carry out this exercise:

1. First organize the participants into groups of four.

2. The groups will use the priority matrix of the product's system, which appears in the Worksheet for Exercise 4.1.

3. Most information pertinent to this exercise can be found in Parts 4.2, 4.3, and 4.5 of this manual.

4. Whenever possible, each group should focus on a different marketing opportunity.

5. Each group should determine the priority areas of work, and whether these correspond to research or to development. The group should mark the corresponding cells with an X and make any annotations they consider necessary.

6. Each group will present its work priorities during the plenary session.

Resources needed

- Worksheet for Exercise 4.1 (Parts 4.2, 4.3, and 4.5 of the manual
- Flip chart, or overhead projector and transparencies
- Paper and pencils
- Magic markers, or markers for the transparencies

Time required: 60 to 90 minutes, depending on the number of groups

Exercise 4.1 Determining Priority Work Areas for an Integrated Production Project

Instructions for the participants

To participate in this exercise:

1. Join a group of four people and nominate a coordinator.

2. Choose a real marketing opportunity in the area and of which one (or more members) of the group has a good general knowledge.

3. Use the priority matrix format appearing in the Worksheet for Exercise 4.1.

4. You can find information pertinent to this exercise in Parts 4.2, 4.3, and 4.-5 of the manual. If your team does not have data, then it should make intelligent assumptions.

5. Each group should discuss priority areas of work, and decide whether they correspond to research or to development.

6. Mark the corresponding cells with an X and make any annotations you consider necessary.

7. When you finish, copy the format to an adequately sized piece of paper (or transparency) for the presentation in the plenary session.

8. The group coordinator will present the matrix of priorities of the IPP during the plenary session.

Exercise 4.1 Determining Priority Work Areas for an Integrated Production Project - Worksheet

Matrix format for establishing priority work areas (see also Table 4.2)

System component	Priority areas of action
	Product:
Action: Agro-enterprise development	
Production	
Post-harvest handling	
Processing	
Marketing	
Entrepreneurial organization	
Action: Research	
Production	
Post-harvest handling	
Processing	
Marketing	
Entrepreneurial organization	

Exercise 4.1 Determining Priority Work Areas for an Integrated Production Project - Feedback

Each group will present a different matrix of priorities depending on the situation and the marketing opportunity selected. An example is presented below:

System component	Priority areas of action
	Product: Blackberry
Action: Agro-enterprise development	
Production	X (multiply seed and promote production)
Post-harvest handling	X (explain the procedure to producers on how to always deliver a fresh product)
Processing	
Marketing	X (contact industrial clients)
Entrepreneurial organization	X (strengthen current organization of blackberry producers)
Action: Research	
Production	X (investigate methods of fast seed multiplication)
Post-harvest handling	
Processing	
Marketing	X (study marketing opportunities for fresh produce)
Entrepreneurial organization	

Exercise 4.2 Diagnosing Support Services for Rural Economies

Objective

The participant will report on the current status of a given region's support services for rural economies.

Instructor's guidelines

To carry out this exercise:

1. Organize the participants into groups of four.

2. The groups will use the format available in the Worksheet for Exercise 4.2.

3. Information pertinent to this exercise can be found in Part 4.4 of this manual.

4. Each group should diagnose support services for different areas. Examples of support services for rural economies or rural agro-enterprises are financial support (savings and credit), transportation of agricultural products, phone, other communications, information on prices, technical advisory services, sale of seeds, and inputs.

5. Each group will first define those support services that are most important, according to their criteria, for rural economies, then rank the current status of each service in the region as good, bad, or nonexistent.

6. Each group will present its characterization at the plenary session.

Resources needed

- Worksheet for Exercise 4.2
- Part 4.4 of the manual
- Flip chart, or overhead projector and transparencies
- Paper and pencils
- Magic markers, or markers for the transparencies

Time required: 60 to 90 minutes, depending on the number of groups

Exercise 4.2 Diagnosing Support Services for Rural Economies - Worksheet

Instructions for the participants

To participate in this exercise:

1. Join a group of four people and nominate a coordinator.
2. Select a region of which one (or more members) of the team has a good general knowledge.
3. Use the format available in the Worksheet for Exercise 4.2.
4. You can find information pertinent to this exercise in Part 4.4 of this manual. If your team doesn't have data, then it should make intelligent assumptions.
5. Each group should diagnose the support services for different areas. Several examples of support services for rural economies or rural agro-enterprises are financial services (savings and credit), transportation of agricultural products, phone, other communications, information on prices, technical advisory services, sale of seeds, and inputs.
6. The group will first define those support services that are the most important, according to their criteria, for rural economies, then rank the current status of each service in the region as good, bad, or nonexistent.
7. Once the group has finished, copy the format to an adequately sized sheet of paper or transparency for discussion.
8. The coordinator of each group will present the characterization during the plenary session.

Type of service to the rural economy	Region:			
	Qualification of service (mark with X)			
	Good	Intermediate	Bad	Non-existent

Exercise 4.2 Diagnosing Support Services for Rural Economies - Feedback

Each group will present different information according to the targeted region. An imaginary example is presented below. A project should develop proposals for improving deficient services or establishing nonexistent ones.

Type of service to the rural economy	Region: Campesilandia			
	Qualification of service (mark with X)			
	Good	Intermediate	Bad	Non-existent
Savings and credit			X	
Transport of products	X			
Technical assistance	X			
Sale of seed		X		
Sale of inputs	X			
Workshops		X		
Commercial information				X
Communications			X	

Bibliography

Best R; Ostertag CF. 1997. Inserción del componente agroindustrial dentro de un plan de desarrollo microrregional. Paper presented at the third annual meeting of REDAR Peru, March 20-22 de 1997, Tarapoto, Peru. 12 p.

Boucher F; et al. 1995. Metodologías para la promoción y evaluación de proyectos y productos de agroindustrias rurales. PRODAR and IICA, San José, Costa Rica. 345 p.

CIPASLA (Consorcio Interinstitutional para una Agricultura Sostenible en Laderas). 1997. Bases para una política microrregional de desarrollo agroindustrial. Comité de Agroindustria Rural de CIPASLA, Cali, Colombia. 5 p.

Ostertag CF; et al. 1997. Los modelos de desarrollo económico, su impacto en la producción rural e implicaciones para el desarrollo rural en América Latina. Fifth annual meeting of PRODARAndean region, September 1997, Caracas, Venezuela.

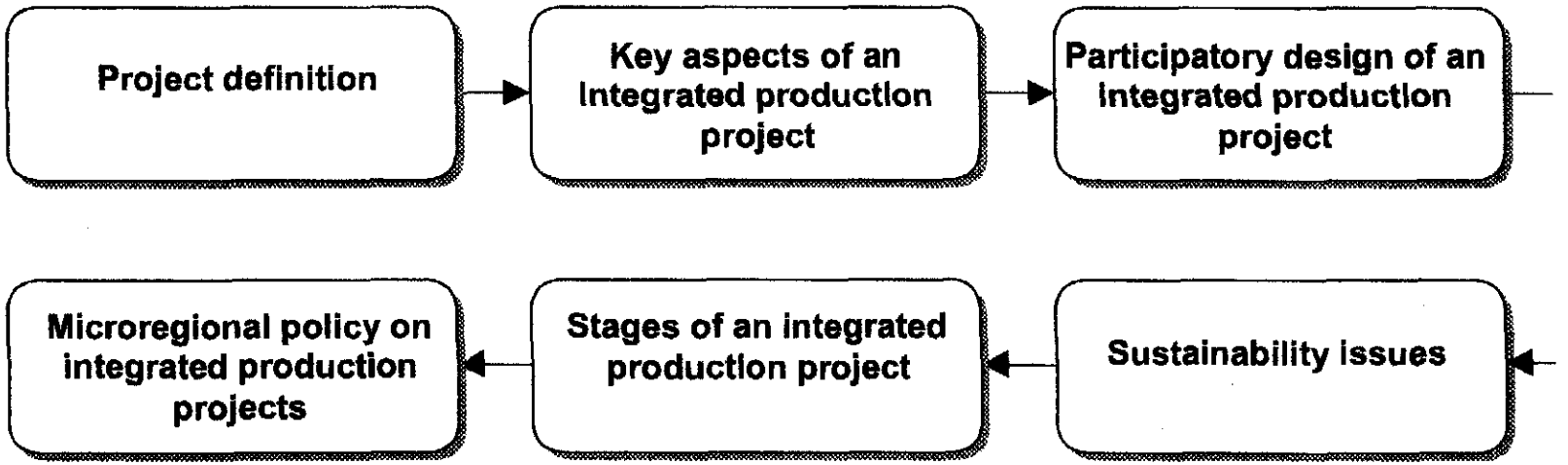
Ostertag CF; Alonso L; Best R; Wheatley CC. 1996. The cassava flour project in Colombia: from opportunity identification to market development. In: Dufour D; O'Brien GM; Best R, eds. Cassava flour and starch: progress in research and development. CIRADSAR and CIAT, Cali, Colombia. p 358-363.

Pérez-Crespo CA, ed. 1991. Proyectos integrados de yuca. CIAT, Cali, Colombia. 262 p.

Wheatley CC; Scott GJ; Best R; Wiersema S. 1995. Adding value to root and tuber crops: a manual on product development. CIAT, Cali, Colombia. 166 p.

Originals for Transparencies

SECTION STRUCTURE



SECTION OBJECTIVE

After studying this Section, the participant should be able to guide design of a rural integrated production project (IPP).

ORIENTING QUESTIONS

1. We assume that you have already identified a crop or agro-industrial product that represents a market opportunity for the region where you live or work. Now you want to promote it. What would be your first step towards this objective?

2. Reconstruct the path traveled by a pineapple, from planting to the moment you spread pineapple marmalade on a slice of bread.

3. On what factors does the permanence or sustainability of an agro-enterprise depend?

DEFINING THE PROJECT

- A project is a series of activities that are planned and carried out to achieve an objective within a certain period of time and with some predetermined resources.

- A strategy procedure or methodology to reach that objective must be defined.

- The strategy is implemented through a series of activities.

- A timetable is used to plan and control the sequence and duration of activities and responsibilities.

- The sequence of activities is important because an activity may bea prerequisite for another.

- Some activities can be carried out simultaneously or in parallel.

KEY ASPECTS OF AN INTEGRATED PRODUCTION PROJECT

- An integrated production project (IPP) is market oriented an responds to demand.
- Products form part of a system.
- A system is a set of related elements of an organic whole.
- An IPP aims to integrate the different elements of the target product's system.

KEY ASPECTS OF AN INTEGRATED PRODUCTION PROJECT

- The most pertinent elements of the system of any product are:
  - Agricultural and livestock production
  - Post-harvest handling or processing
  - Marketing or trade
  - Entrepreneurial organization
- Research and development activities are carried out.
- The process focuses on the inhabitants or rural organizatio

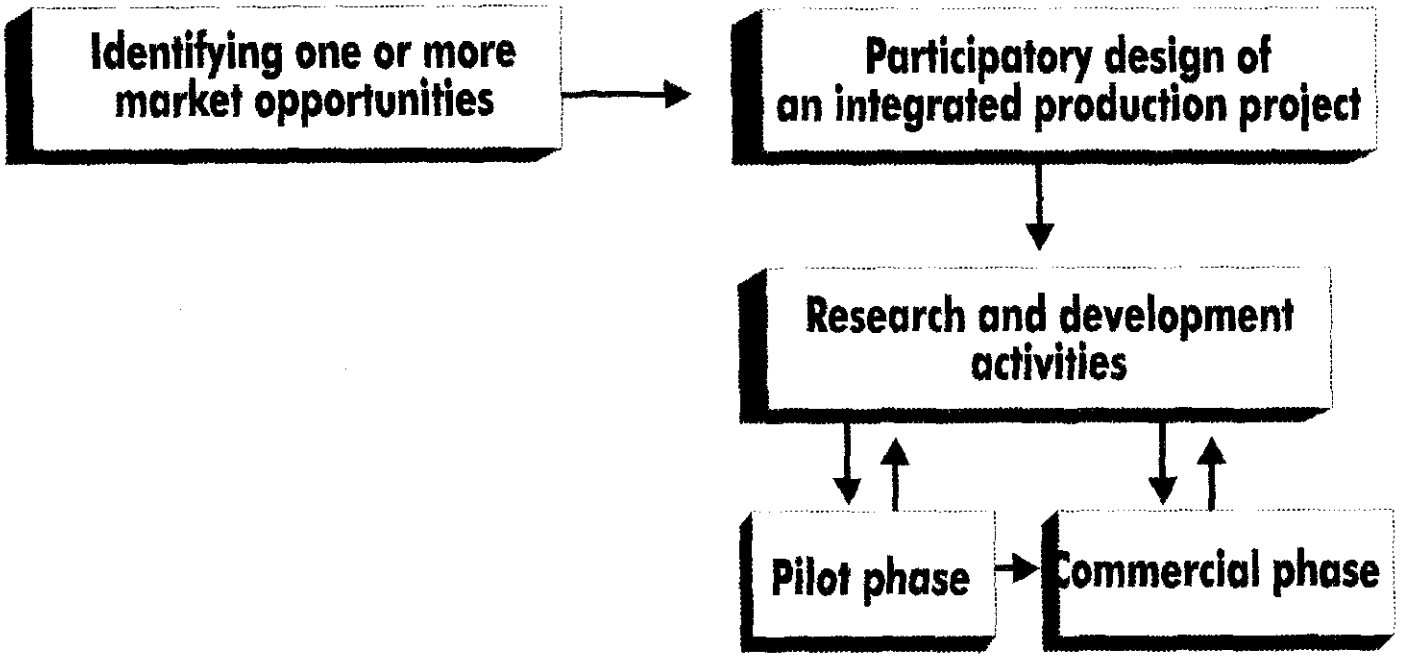
MATRIX OF PRIORITIES WITHIN THE PRODUCT'S SYSTEM

System component	Priority areas of action:	
	Product A	Product B
Action: Agro-enterprise development		
Production		
Post-harvest handling		
Processing		
Marketing		
Entrepreneurial organization		
Action: Research		
Production		
Post-harvest handling		
Processing		
Marketing		
Entrepreneurial organization		

GAPS IN THE SUPPORT SYSTEM OF RURAL ENTERPRISE

Type of service to the rural economy	Region:			
	Qualification of service (Mark with an X)			
	Good	Intermediate	Bad	Non - Existent

STAGES OF AN INTEGRATED PRODUCTION PROJECT



MICROREGIONAL POLICY ON INTEGRATED PRODUCTION PROJECTS

- Maintain an orientation towards marketing and food security.
- Maintain a prioritized project portfolio.
- Design integrated production projects, using a participatory approach.
- Identify research areas, using a participatory approach.
- Conduct multidisciplinary work involving Institutions and/or consultants in a coordinated fashion.
- Promote sustainability of organizations and project achievements.
- Promote the establishment of local, sustainable support services.