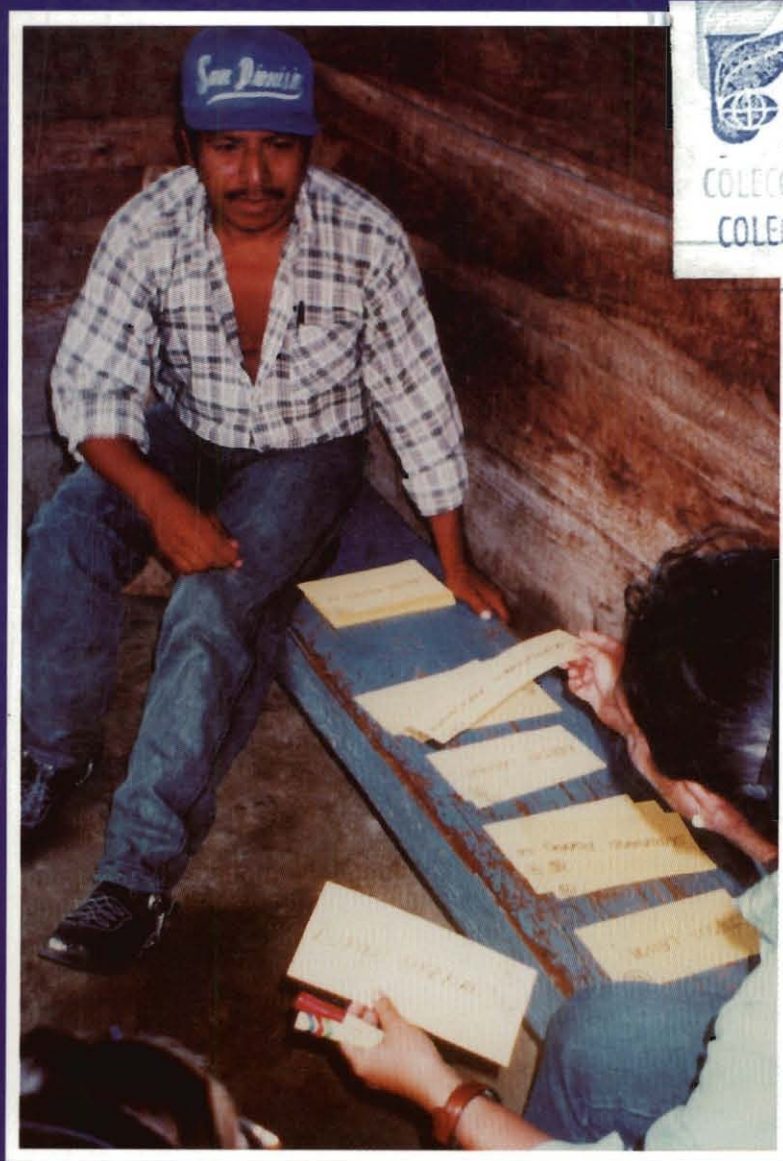


Identifying Levels of Well-Being
to Construct Local Profiles of
Rural Poverty



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María Eugenia Baltodano
Miguel Angel Méndez

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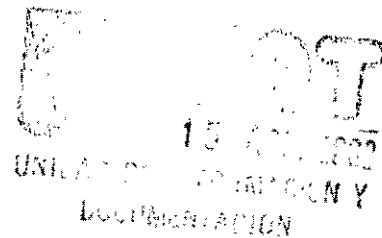
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Methodologies for Decision Making in Natural Resource Management



5



Identifying Levels of Well-Being to Construct Local Profiles of Rural Poverty

María Eugenia Baltodano
Miguel Angel Méndez

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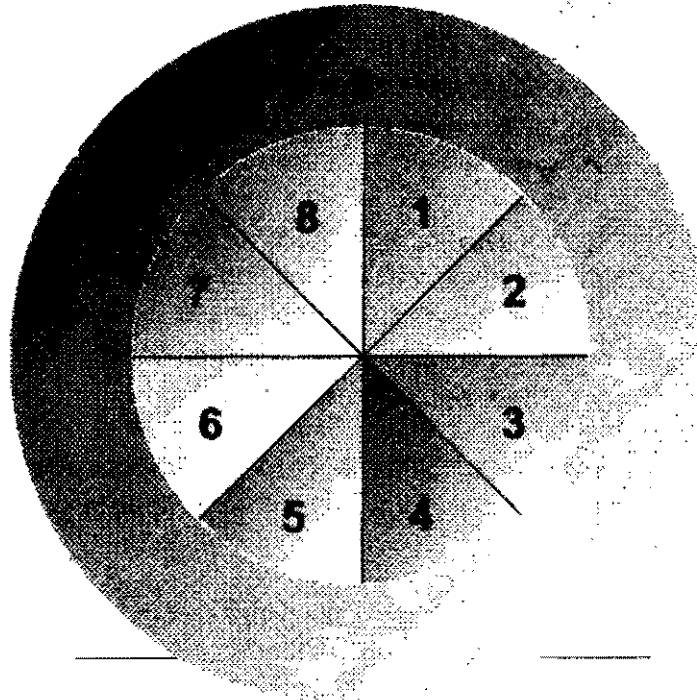
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190 p. Illus.

Also includes 41 originals for transparencies.

1. Participatory methodology.
2. Community work.
3. Poverty indicators.
4. Ranking communities.

Methodological Tools for Making Decisions in Natural Resource Management



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 hillside areas

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

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

5. Identifying levels of well-being to construct local profiles of rural poverty

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 (*Participatory method for identifying and classifying local indicators of soil quality at the microwatershed level*, *Photo-topographical analysis (PTA) of land use trends in hillside areas*, and *Participatory mapping, analysis, and monitoring of natural resources in a microwatershed*) help identify, analyze, and prioritize biophysical components, such as natural resources at the farm, microwatershed, or sub-basin levels.

Those tools in blue (*Methodology for analyzing the stakeholders involved in collective land management at the microwatershed level* and *Identifying levels of well-being to construct local profiles of rural poverty*) 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 (*Atlas of Yorito and Sulaco, Department of Yoro, Honduras*) helps standardize integration, analysis, and presentation by mapping data generated by the tools in green and blue.

The tools in orange (*Identifying and assessing market opportunities for small rural producers* and *Use of simulation models for ex ante evaluation*) 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 (*Development of local organizational processes for collective management of natural resources*) 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.



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Acknowledgements

The methodology presented in this Manual was developed by Dr. Helle Ravnborg, former CIAT research associate, who initially presented the methodology in the manual: *Evaluation of Rural Poverty: A Practical Method for Extrapolating and Quantifying Local Perceptions*. Dr. Ravnborg served as consultant for the studies conducted in Nicaragua and Honduras in 1997.

The examples and information presented herein are the result of analyses carried out by the following staff members of the CIAT-Hillsides Program: Rosa Escolán, Miguel Angel Méndez, and Fernando Mendoza (Honduras); Ronnie Vernooy, Dominga Tijerino, and María Eugenia Baltodano (Nicaragua).

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- Agronomía Genética y Tecnología, AGROGENET (*Agronomy Genetics and Technology*)
- University of Guelph, Canada
- Women CIAL in Jalapa
- Servicios Técnicos para el Desarrollo Sostenible, SERTEDESO (*Technical Services for Sustainable Development*), Yorito
- Municipality of Sulaco
- Health Center of Yorito
- Administración Forestal del Estado, AFE-COHDEFOR (*State Forest Administration*)
- Instituto San Pedro (*San Pedro Institute*), Yorito, Yoro
- Farmers of the communities of Santa Cruz, Pacayal, Jalapa, Río Arriba, San Antonio, El Destino, Mina Honda, Ojo de Agua, Quebrada Vieja, Capiro, and Pueblo Viejo

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- CARE, San Dionisio
- Asociación para el Desarrollo Sostenible Urbano y Rural, ADESUR (*Association for Sustainable Urban and Rural Development*)
- Ministry of Education (MED), San Dionisio
- Instituto 'Enmanuel Mongalo' (*Enmanuel Mongalo Institute*), San Dionisio
- Promoter Bertha Adilia Jarquín, Wibuse Community, San Dionisio
- Promoter Sinfioriano Hernández, El Júcaro Community, San Dionisio

Introduction

Alleviating poverty is an important objective of many development programs, projects, and policies. Traditional methods for measuring poverty or levels of well-being have usually taken into account the information of a single indicator—the per capita income or expenditure rate of a person or household. The main element of the methodology proposed in this Guide is the identification of different levels of well-being within a rural population. This is based on local perceptions and takes into account a series of indicators reflecting the causes or conditions that originate and maintain a determined level.

This Guide was adapted from an earlier manual (Ravnborg 1997), which explained the methodology. Helle Ravnborg was a CIAT research associate at that time. The methodology was first applied in three watersheds and one department in Colombia then at the level of a small watershed in Honduras and Nicaragua. The process of ranking levels of well-being involved 89 communities and 316 informants in Honduras, and six communities with 19 informants in Nicaragua. In Honduras 1268 households were surveyed and in Nicaragua, 302.

The experience acquired in Central America provided the base for adding new elements to the original manual, making it easier for users in rural communities to understand and apply and thus a useful support tool for analyses and local resource management. The Guide is directed mainly at local authorities, representatives of institutions, programs, and projects working in rural areas that are interested in applying the methodology. The application of this methodology will hopefully facilitate decisions about the orientation of strategies that aim to alleviate poverty at the study sites.

Users of the Guides

This Guide was translated from one of a Spanish-language series of nine Guides on “Informed Decision Making for Sustainable Natural Resource Management”. They are directed towards three specific types of users. The first includes professionals and technicians working in agencies and institutions of the public and private sectors, dedicated to research, development, and training in the management of renewable natural resources. This level of users can use the Guides for planning, executing, monitoring, and evaluating their own initiatives in these three fields of action. But most importantly, this group, once trained in the application of these methodologies, will hopefully exert a multiplier effect on hundreds of professionals, technicians, volunteers, and producers. These in turn will promote, analyze, and adapt these methodologies to decision making in natural resource management at the local, regional, and national levels.

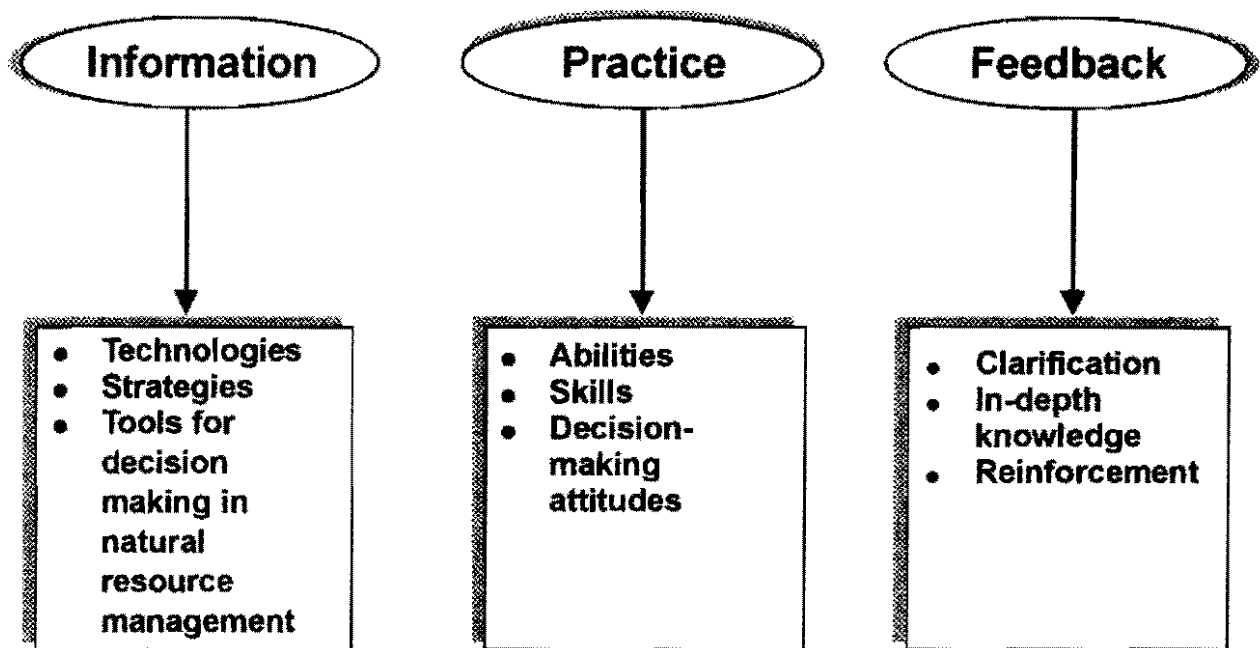
Ravnborg H. 1997. Evaluación de pobreza rural: Un método práctico para extrapolar y cuantificar percepciones locales. CIAT Publication No. 291. CIAT, Cali, Colombia.



The second group of users comprises inhabitants of the watersheds of tropical America, the ultimate legitimate heirs of the proposals of natural resource management generated by research and presented in these Guides. Through training, consultation, and support from diverse nongovernment organizations and state agencies, these people can use the methods and strategies described here to actively participate in the management and conservation of natural resources.

Lastly, this material is especially directed towards the teaching staff of colleges and university faculties of agricultural sciences, environmental sciences, and natural resources. These train professionals and technicians, who will collaborate with agricultural communities in the arduous task of maintaining or recovering natural resources, placed under their custody, for future generations.

The Learning Model



The series of Teaching Guides on Methodological Tools for Making Decisions in Natural Resource Management is based on a 'learning by doing' teaching model, shown above. This model presents trainers and multiplier—the immediate users of these Guides—with 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.

Users will find that the methodological components of this Guide differ from those of other materials on the dissemination of technologies. Each of the sections dividing the Guides contains design elements that help the trainer in facilitating the learning process.

A set of objectives orients the Guides and helps both the instructor and the participant direct the learning activities. Exercises are carried out in the field or other realistic scenarios in which analysis and decision making are practiced. They include outings, simulations, dramatizations, and application of different tools for collecting and analyzing information.

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

In summary, the model consists of three elements:

1. Technical and strategic information, generated by research and constituting the technological content required for decision making;
2. Practical in the form of exercises at the training sites and field activities directed towards developing abilities, skills, and attitudes for decision making; and
3. Feedback, which is a type of formative evaluation that strengthens the learning process and the adequate application of the fundamental theoretical principles involved.

The practicals are the core of the learning process. They simulate reality for those who use the decision-making tools presented in each Guide. Through the exercises, trainees experiment with the use of the tools, face the difficulties arising from their application at 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 Guides were drawn from the authors' local research experience in watersheds of Honduras, Nicaragua, and Colombia. However, instructors from other countries and regions can draw excellent examples and cases from their own research projects and field work with which practicals can be remodeled and tailored to the local context. Each instructor has available Guides that are flexible working tools and that can be adapted to the needs of assorted audiences in different scenarios.

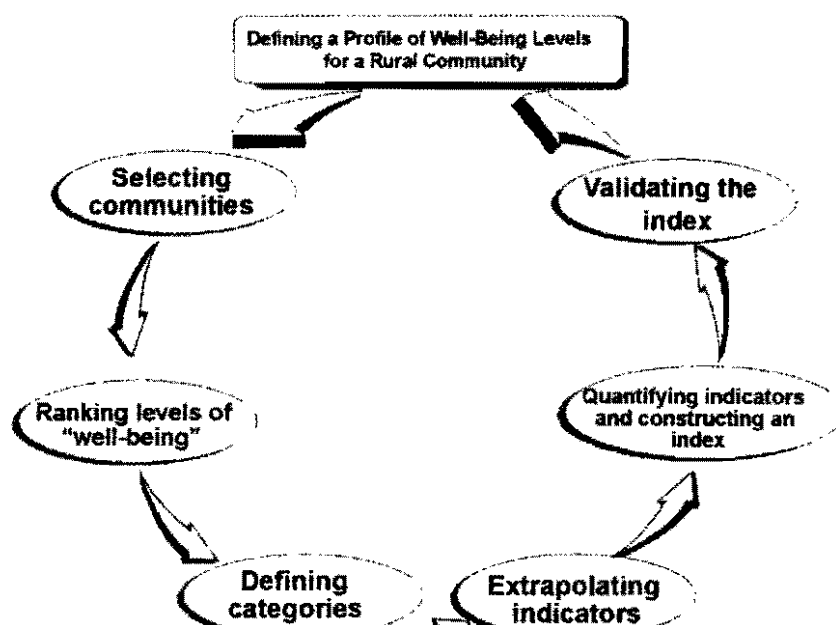
Uses and Adaptations of the Model

Users (instructors, multipliers) of these Guides must be familiar with its didactic structure to use it advantageously to the benefit of end users. They are the ones who will make the decision to introduce these tools into the local development process.

Flow charts are for the instructors' use when presenting the different sections. The *Guiding Questions* help instructors establish a dialogue and motivate the participants before going deeper into theory. *Originals for Transparencies* 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 already mentioned, the suggested exercises and practices 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 (Final Evaluation, Evaluating the Training Session, the Instructor's Performance, the Training Materials, etc.) help complement the training activities.

Finally, the central idea of the Guides' training model stresses that if practice is the base for learning, then the training time should be sufficient to give the trainees the opportunity to develop abilities, skills, and attitudes that reflect the learning objectives. Only thus will training have the expected impact on decision makers involved in natural resource management.

The Guide's General Structure



Explanation

The main objective of this Guide is to describe a methodology for constructing poverty profiles by identifying well-being levels for a given study area (village, municipality, watershed) based on local perceptions.

The scheme presented above describes the sequential learning of methodological steps that will ultimately lead to the fulfillment of the main objective.

As shown in the figure, a profile of levels of well-being can be constructed in six steps:

1. *Selecting communities* involves the definition of study areas, according to certain criteria, in which key informants will rank levels of well-being to describe the different groups.
2. *Ranking levels of well-being* is the process by which key informants from a selected community (or site) group households, according to the criteria established for each level of well-being.
3. *Defining categories* is based on the percentage distribution of households within a community according to their level of well-being, as described by a key informant.

Extrapolating indicators is the next step. Informants' descriptions of well-being are translated into different well-being indicators and their use in different communities and at different levels is analyzed. Whether these indicators can be extrapolated to a larger study area (several communities or a municipality) is accordingly assessed.

Quantifying indicators and making an index involves verifying, through a questionnaire, the quantitative meaning of each indicator by formulating questions around each indicator. With this process, a well-being index can be calculated for each household that results from averaging the indicators used.

Validating the index calculated for each household compares the index with the ranking assigned by informants in Step 3 for the same households. For this reason it is important to work with the same households ranked in Step 2, who were also included in the survey. The final distribution of the households is obtained, and a local poverty profile or profile of level of well-being of the study site is defined.

The bibliography given at the end of Section 1 also applies to all other sections of the Guide.

Self-Evaluation

Instructor's Guidelines

The following questions are a tool for exploring the general knowledge of participants about poverty or levels of well-being. This is not a test to assess knowledge. Each question has a possible reply that will be discussed in group sessions once all participants have answered the questions.

Questions

1. Why analyze the different levels of well-being in a population?

2. Name methods of identifying well-being levels or poverty indexes.

3. What do you think of the method of measuring poverty by the income or expenditures of a household or individual?

4. Are there other elements that should be taken into account when deciding on a household's or community's well-being level?

5. Could these elements be used to analyze all sorts of communities or populations?

Feedback on Self-Evaluation

Instructor's Guidelines

The instructor shares with the participants the answers to the previous questions for comparison with those given by participants. They are also given the opportunity to briefly discuss each answer.

Answers to questions

1. By identifying the differences in levels of well-being within a population, better strategies can be designed to alleviate poverty because the factors that originate or maintain a determined level are known.
2. Other methods exist, for example the Human Development Index, developed by the United Nations Development Program (UNDP), which combines data on life expectancy at birth, adult literacy rate, and per capita income. The Head-Count Ratio, developed by the World Bank, is also used.
3. The method that measures poverty in terms of income or expenditure rate does not indicate the source of that income in the different groups of well-being nor the way in which that income is spent. Neither does it reveal differences in income within a target area.
4. With this methodology, indicators based on local perceptions can be obtained that describe the characteristics of the different levels of well-being. Based on these characteristics, the factors that originate and maintain a determined level of well-being can be inferred.
5. Elements or indicators are determined based on the real situation of each community. The methodology facilitates their verification so they can be applied to other study areas, without overlooking the specifications of each community.

Objectives

General

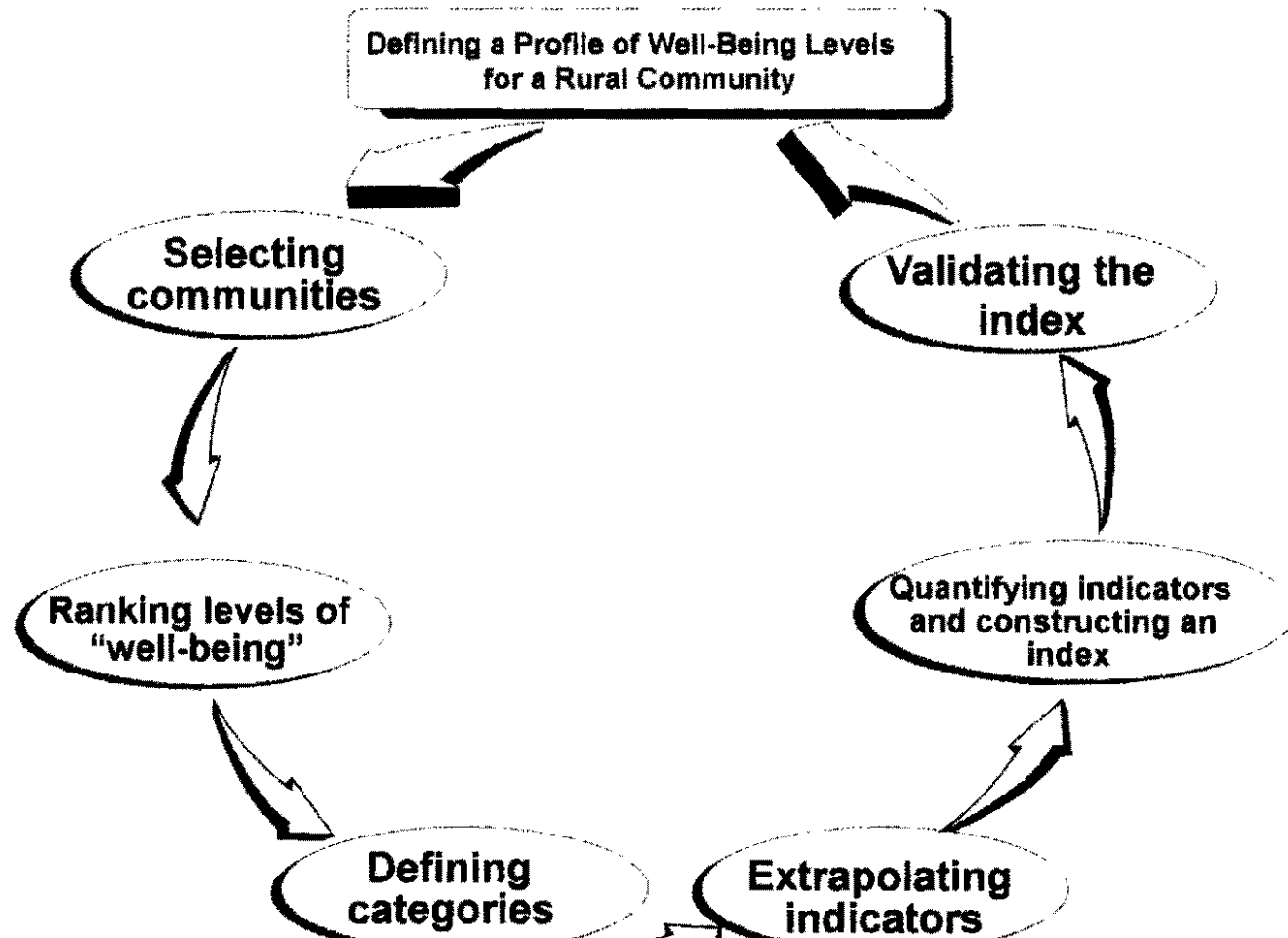
- ✓ To construct local poverty profiles by identifying levels of well-being in rural communities based on local perceptions.

Specific

- ✓ To identify the advantages of using local perceptions to construct a poverty profile with different indicators, as compared to other methods traditionally used.
- ✓ To identify those factors influencing the perception of the level of well-being of households within a rural community.
- ✓ To apply the maximum variation of factors identified to select communities.
- ✓ To classify households of a community according to their level of well-being based on local perceptions of key informants.
- ✓ To formulate different numerical distributions to achieve the final distribution of households into categories of well-being.
- ✓ To evaluate the applicability of indicators to the entire study area, based on those previously obtained when ranking communities.
- ✓ To quantify well-being indicators through use of a questionnaire.
- ✓ To prepare a well-being index for a given study area.
- ✓ To confirm the validity of the index by relating it to informants' rankings in the sampled communities.
- ✓ To prepare well-being categories based on the well-being index.
- ✓ To create a poverty profile for the study area.

Originals for Transparencies

SECTION STRUCTURE



GENERAL OBJECTIVE

To construct local poverty profiles by identifying well-being levels in rural communities, based on local perceptions.

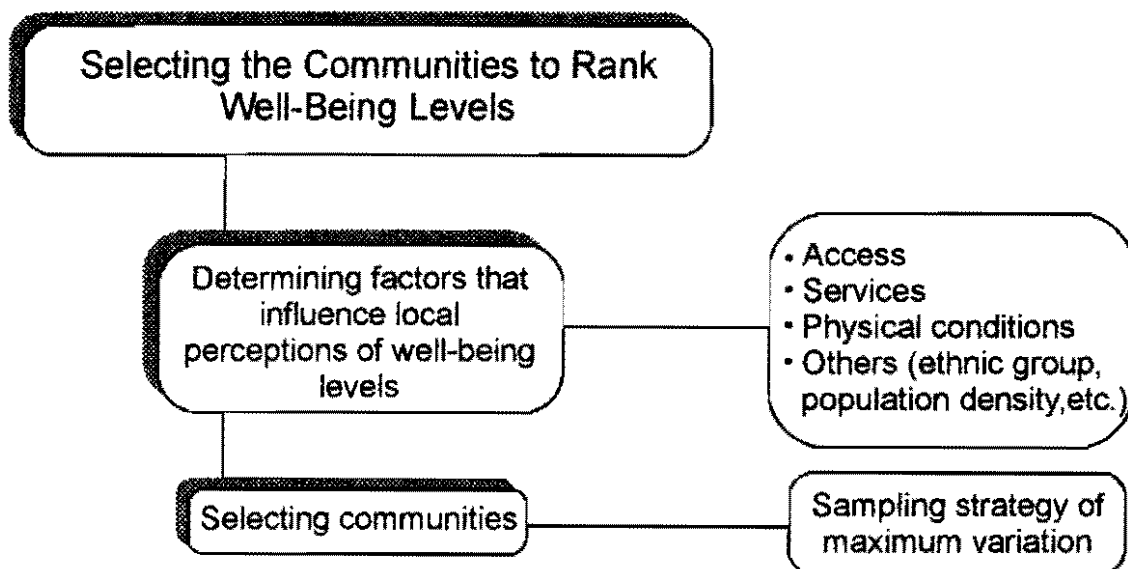
SELF-EVALUATION

- 1.** Why analyze the different levels of well-being in a population?
- 2.** Name methods of identifying well-being levels or poverty indexes.
- 3.** What do you think about the method that measures poverty by the income or expenditures of a given household or individual?
- 4.** Are there other elements that should be taken into account when deciding on a household's or community's well-being level?
- 5.** Could these elements be used to analyse all sorts of communities or populations?

Section 1. Selecting the Communities for Ranking Well-Being Levels

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Section Structure



Objectives

- ✓ To identify factors that determine which communities are selected for ranking well-being levels.
- ✓ To select communities according to variations between factors.

Guiding Questions

1. Why select communities to rank well-being levels?
2. What factors might influence the selection?
3. Why should the communities selected be different?
4. What is a sampling strategy of maximum variation?

Introduction

Institutions or programs analyzing levels of well-being or poverty indexes usually work in large areas. This prevents them from inquiring into local perceptions of levels of well-being and thus defining local poverty indicators.

In this section, we explain how to select communities or sites to rank well-being levels by using a strategy called maximum variation of sampling factors.

Once local perceptions of levels of well-being have been identified in selected communities, we can determine whether these perceptions, which later become indicators, are applicable to the entire study area.

The methodology attempts to identify as many different perceptions of well-being levels as possible, avoiding an average perception because this could not then be extrapolated to the rest of the area. This is why we work with the sampling strategy of maximum variation.

Sampling for Maximum Variation

To identify different local perceptions of well-being levels within the communities, sampling factors must differ among them. For example, when selecting a community, combinations are found such as: difficult access, middle altitude, good services, etc. In another community, these same factors are combined but described differently, for example, easy access, middle altitude, and poor services. In this way we can evaluate the effect of these factors on individuals' opinions on their well-being level.

Experience shows the convenience of identifying local perceptions of well-being in communities with a population of less than 100 households and greater than 40.

1.1. Sampling Factors for Selecting Communities

To determine which and how many sites to choose, you must first make assumptions about the factors that can account for different perceptions of well-being, that is, those factors that explain the differences or variations within communities or study areas.

In studies carried out in Central America (Honduras and Nicaragua), the following seven factors that could influence the existence of different perceptions of well-being were used:

- Land ownership
- Agroecological conditions
- Institutional presence
- Status of public services or their accessibility
- Ethnic composition
- Physical conditions of the site (altitude, access)
- Population density, which indicates the pressure on natural resources

Agroecological conditions, ease of physical access, and population density indicate the general conditions for production and thus are basic to reaching a certain level of well-being. The existence of various ethnic groups within the population may show different ranges in local perceptions, according to each level of well-being.

Your choice of sampling factors must be adjusted according to the availability of data.

1.2. Selecting Communities Based on Differences between Factors

Once the factors affecting different local perceptions of well-being have been identified, you can then select the communities. Your decision should consider a combination of several factors, not just one single factor, for a given site.

The following examples of site selection in Central America illustrate this approach more clearly (Table 1.1.).

Table 1.1. Selecting communities in the Calico River watershed, Matagalpa, and sampling factors used for the selection (Nicaragua, 1997).

No.	Community ^a	Sampling factors ^b				
		Altitude	Land ownership	Access	Services	Ethnic groups
1	El Zapote	1	1	1	1	1
2	El Zarzal	1	2	1	1	1
3	El Corozo*	1	2	1	1	1
4	El Carrizal	1	1	2	1	1
5	Susulí	1	1	1	1	3
6	La Cuchilla	1	2	1	1	1
7	Wibuse*	1	1	1	2	2
8	Piedras Largas*	3	1	1	1	1
9	Monte Verde	1	1	2	2	2
10	Ocote Arriba	1	1	1	2	2
11	Ocote Abajo	2	1	2	1	1
12	El Cóbano*	2	1	1	1	1
13	Los Limones*	3	2	2	1	2
14	El Jicaro*	2	1	1	2	3
15	El Junquillo	1	1	1	1	1
16	El Chile	1	1	1	1	2
17	La Cañada	1	1	2	2	1

a. * = Selected communities.

b. Sampling factors:

Sampling Factors

<u>Altitude (m)</u>	<u>Land ownership</u>	<u>Access</u>	<u>Services</u>	<u>Ethnic groups</u>
1 = > 750	1 = Sharecroppers/cooperatives	1 = Good	1 = Good	1 = Mestizos
2 = 500-750	2 = Large-scale producers	2 = Poor	2 = Poor	2 = Indigenous population
3 = < 500				3 = Mestizos/indigenous population

People who knew the sites assigned the values of factors (1, 2, 3). Selection was made taking into account the variation of these factors attempting to obtain different local perceptions of well-being.

Exercise 1.1. Selecting Communities according to Sampling Factors

Objective

- ✓ To select sample communities, using as criterion the maximum variability of identified factors.

Instructor's Guidelines

To carry out this exercise, you will need key informants or people who know the sites and can provide the information required.

1. Divide participants into groups of five or six, depending on the number present.
2. Hand out the work sheet of objectives and instructions for the exercise (page no. 1-10) and read over it with the participants.
3. Hand each participant the work sheet that lists the possible communities for selection (page no. 1-11).
4. Ask participants to write their results down on paper (one per group). The results will be presented during a plenary session using a flip chart.

Resources needed

- Work sheets
- Markers
- Adhesive tape (masking tape)
- Flip chart
- Paper for flip chart

Estimated time required: 30 minutes.

Exercise 1.1. Selecting Communities according to Sampling Factors

Objective

- ✓ To select sample communities, using as criterion the maximum variability of identified factors.

Instructions for the Participants

Join a group of four or five members and name a coordinator, who will be responsible for presenting the group's results in the plenary session. Please read the instructions before beginning the exercise. The instructor will gladly answer any questions you may have.

1. On the work sheet, rank each community on the list regarding each sampling factor based on the information provided by informants.
2. Compare the factors among communities to find differences (strategy of maximum variation) and select those communities that you consider adequate for ranking levels of well-being.
3. List the selected communities on the flip chart and ask a member of your group to present the results.

Exercise 1.1. Work Sheet for Selecting Communities according to Sampling Factors

No.	Community	Sampling factors ^a				
		Altitude	Land ownership	Access	Services	Ethnic groups
1	El Zapote					
2	El Zarzal					
3	El Corozo					
4	El Carrizal					
5	Susulí					
6	La Cuchilla					
7	Wibuse					
8	Piedras Largas					
9	Monte Verde					
10	Ocote Arriba					
11	Ocote Abajo					
12	El Cóbano					
13	Los Limones					
14	El Júcaro					
15	El Junquillo					
16	El Chile					
17	La Cañada					

a. Sampling factors:

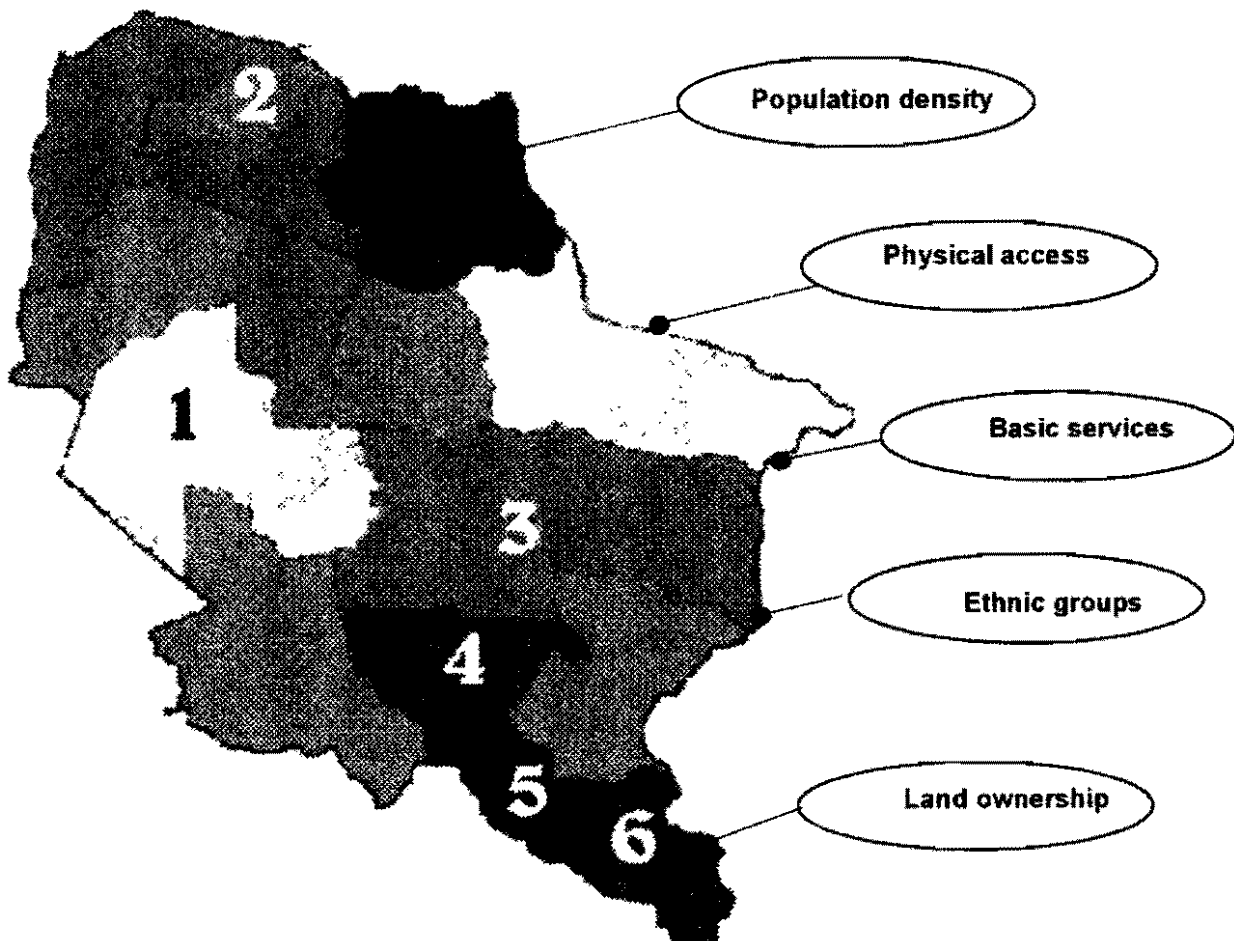
<u>Altitude (m)</u>	<u>Land ownership</u>	<u>Access</u>	<u>Services</u>	<u>Ethnic groups</u>
1 = > 750	1 = Sharecroppers/cooperatives	1 = Good	1 = Good	1 = Mestizos
2 = 500-750	2 = Large-scale producers	2 = Poor	2 = Poor	2 = Indigenous population
3 = < 500				3 = Mestizos/indigenous population

Exercise 1.1. Feedback on Selecting Communities according to Sampling Factors

- Following the strategy of maximum variation, numerous combinations may exist between communities.
- Selection should respect the rule of contrast when comparing factors, in other words, select communities that differ among themselves.
- The work capacity and resources of the entity responsible for the survey should also be taken into account.

Section 1

Selecting the Communities for Ranking Well-Being Levels



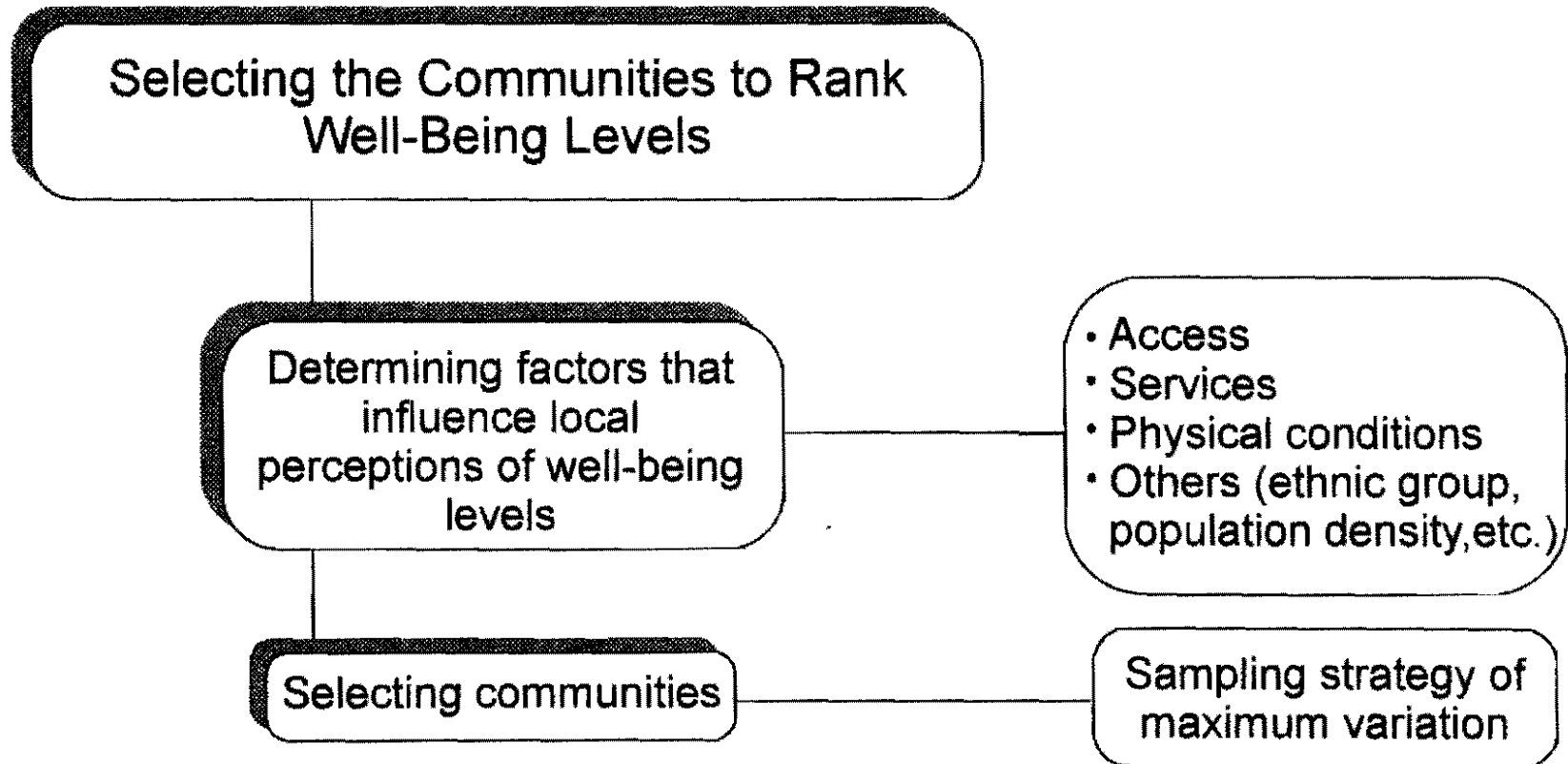
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SECTION STRUCTURE



SECTION OBJECTIVES

- ✓ To identify factors that determine which communities are selected for ranking well-being levels.
- ✓ To select communities according to variations between factors.

ORIENTING QUESTIONS

- 1.** Why should you select communities to rank well-being levels?
- 2.** What factors should you consider when selecting communities?
- 3.** Why should you select communities that differ among themselves?
- 4.** What is a “maximum variation sampling strategy?”

SELECTING SITES

As many different perceptions of well-being levels as possible should be indentified to avoid creating an “ average” perception, especially if these perceptions are to be applied to the entire area.

FACTORS AFFECTING THE DIFFERENT PERCEPTIONS OF WELL-BEING LEVELS

- **Land distribution**
- **Agroecological conditions**
- **Institutional presence**
- **Status of public services or their accessibility**
- **Ethnic composition**
- **Physical conditions (altitude, access)**
- **Population density, which indicates the pressure on natural resources**

SAMPLING FACTORS FOR SITE SELECTION

Physical access

- 1. Easy**
- 2. Regular**
- 3. Difficult**

Altitude (m.a.s.l.)

- 1. High (>1000)**
- 2. Middle (500-1000)**
- 3. Low (<500)**

Basic services

- 1. Acceptable**
- 2. Regular**
- 3. Poor**

Ethnic groups

- 1. Indigenous population**
- 2. Mestizos**
- 3. Others**

Land ownership

- 1. Sharecroppers/cooperatives**
- 2. Large-scale producers**

Section 2

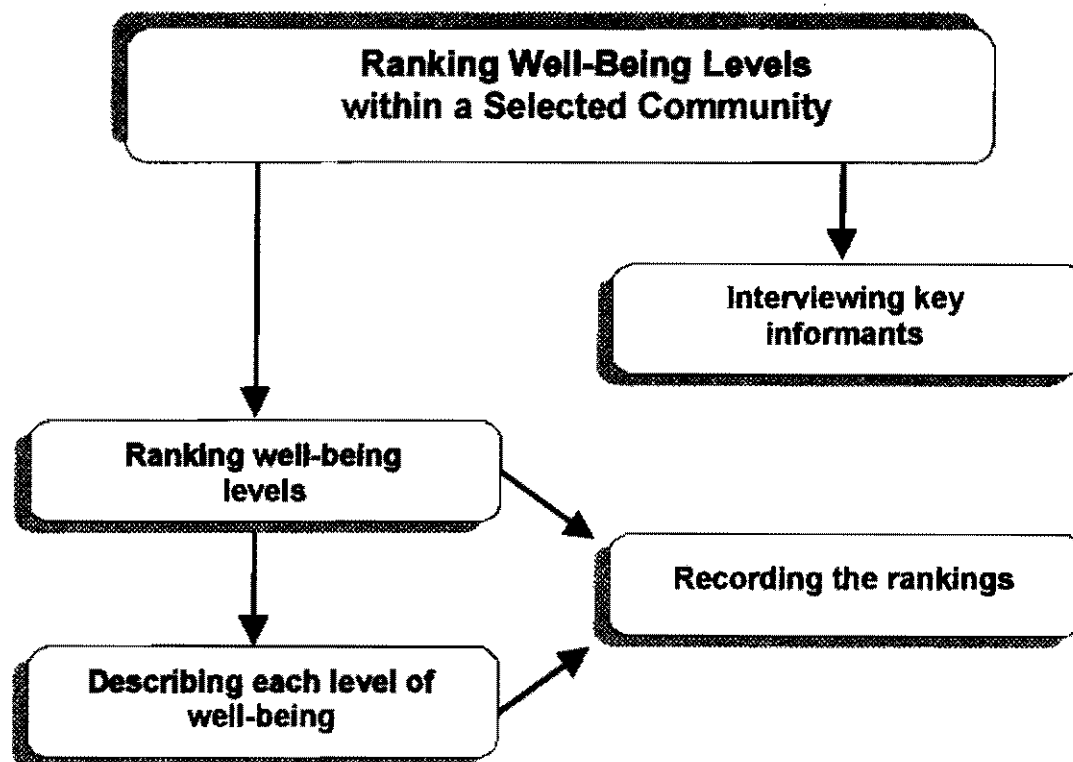
Ranking Levels of Well-Being within Selected Communities



Section 2. Ranking Levels of Well-Being within Selected Communities

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2.1.1.Defining the community	2-3
2.1.2.Defining the units to be ranked	2-3
2.1.3.Listing all households within the community	2-4
2.1.4.Finding reliable (or key) informants.....	2-4
2.1.5.Sorting cards.....	2-5
2.1.6.Describing the groups or "piles".....	2-5
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Section Structure



Objective

- ✓ To rank the households of a community according to their well-being levels based on local perceptions obtained from key informants.

Guiding Questions

1. What do you understand by "ranking households"?
2. Why should families be ranked?
3. Who can rank households within a community?
4. What criteria should be used to rank different groups of households?
5. How do you record the information gathered?

Introduction

Ranking levels of well-being is a technique for understanding socioeconomic differences within a community, as are the indicators that local people use to describe different levels of well-being. The households within a community are ranked to establish groups and characterize the population according to their resources and needs. Various authors have suggested different ways of conducting well-being rankings. Two frequently used methods are:

1. Card sorting by individuals or community members.
2. Group discussions on criteria of well-being. In this case, community groups, with the help of a facilitator, select households according to specific characteristics (e.g., whether they own land, a house, or cattle).

The two methods can be combined.

2.1. Ranking Method with Key Informants

Here we describe card sorting by community members. This method is simple and demands less from the researcher in terms of skills in group discussion facilitation. Data are easier to analyze and the information given by informants is likely to be more reliable.

Information on well-being is bound to be sensitive, and group pressures are much more likely to influence the way individual informants provide information.

The ranking of households according to their level of well-being includes the following steps.

2.1.1. Defining the community

Make sure that the community you select for ranking is small enough for people to know about one another's level of well-being, but large enough to encompass differences in levels of well-being within the community.

In most rural settings, such a community would have between 40 and 100 family units (or households).

2.1.2. Defining the units to be ranked

In most cases, you will probably want to rank households. However, you can choose other units of analysis, depending on your study's objective, such as individuals, adult women, or entire neighborhoods. Whatever the selected unit, you should carefully define it. For instance, make clear whether two families living in the same house are ranked as two separate households or together as one household.

2.1.3. Listing all households within the community

List all the households within the community in a notebook placing the name of the community at the top of the page and then the name or names of each family head or household head. Assign a number to each household. Write the name of each household head on a separate card so that there is one card for each household. Write in large letters. Number each card for ease of reference (Figure 2.1.).

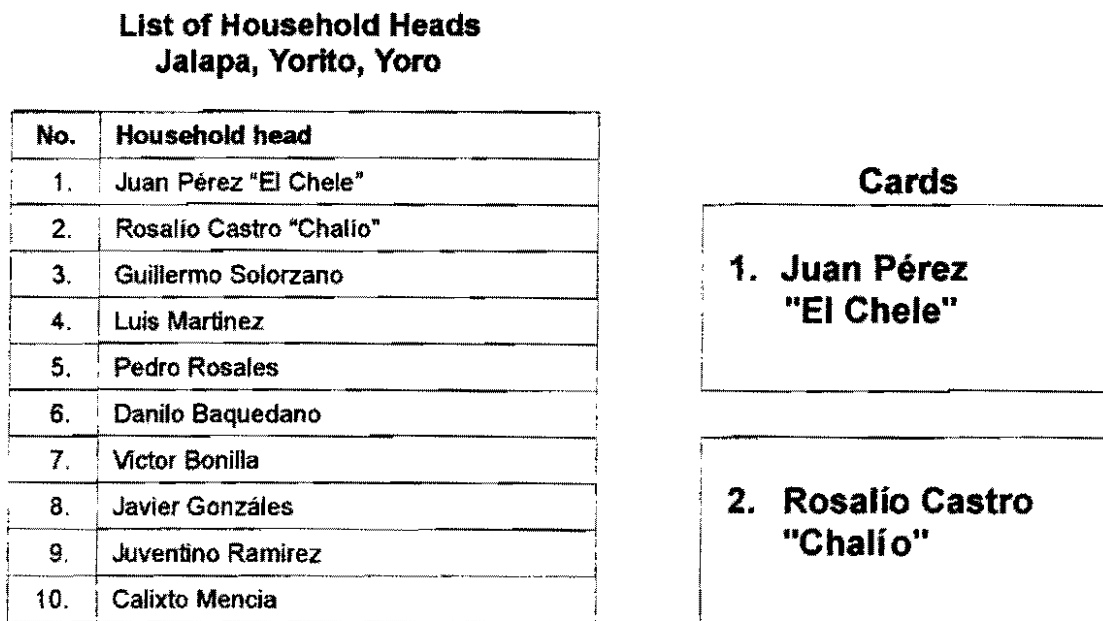


Figure 2.1. An example of a notebook page and cards.

2.1.4. Finding reliable (or key) informants

The most practical way of finding key informants is to ask a member of the community, usually the president or coordinator of a local organization, to identify three to five informants who would be willing to participate in the ranking exercise. The criteria for selecting the informants are that:

1. They have been living in the community for sufficient time to know the level of well-being of other households; and
2. They represent, as far as possible, a wide cross-section of the community in such characteristics as gender, ethnicity, and level of well-being.

The second criterion is highly important because people tend to be more knowledgeable and make finer discriminations of aspects such as the ranking scale and gender among households who are closer to their own position. Choosing different informants will therefore help detect the possible variations in perceptions of levels of well-being within the community. Normally, you will find that three to five rankings of well-being are enough because individual informants tend to agree on how they rank households and on the type of indicators they use to describe different well-being categories. However, if informants differ widely, then you will need to conduct more rankings and, consequently, find more informants.

2.1.5. Sorting cards

Make sure that card sorting takes place in a place where the informant will not feel pressured to rank specific households in specific ways (Figure 2.2.).



Figure 2.2. Farmer ranking households of his community according to several levels of well-being based on his perception of the community's well-being.

The purpose of well-being ranking should be explained to the informant. Describe it briefly. If you use the household as the unit of analysis, make sure that the informant will consider and rank the household as such, rather than just the persons whose names appear on the cards.

Let the informant read each card or, if necessary, read aloud the names on each card. Ask him or her to make at least three groups or piles, each one representing those households whose level of well-being is most similar. You should also remind the informant from time to time of the categories already chosen by reading aloud some of the cards that are already ranked. Also, ask the informant to take a card that he or she considers representative of the level of well-being of his or her own household and to place it in the corresponding pile.

If you see the informant hesitating to rank a particular household, encourage him or her to set that card aside. This way no false rankings will be made.

2.1.6. Describing the groups or "piles"

Now ask the informant to describe how the households, represented by a given group or pile, resemble one another and how they differ from the households represented by the other groups. Encourage the informant to check through all the cards within the group being described to ensure that the description does not apply just to that card (i.e., to the household) on top of the pile, but to all the households in that pile.

Carefully write down the informant's descriptions, as literally as possible, because they constitute primary information and should not lead to misinterpretations or omissions. This information should be as faithful as possible to the thoughts of informants because the success of the ranking depends to a great extent on this information.

Table 2.1. contains the descriptions given by three different informants from a community of Honduras. Figure 2.3. illustrates how a researcher literally writes down the descriptions of each group as given by the key informant.

Table 2.1. Example of how to record informants' descriptions while ranking households of a community in Honduras.

Village of La Albardilla, Municipality of Sulaco, Yoro Department Code: 180904 Date: 9 April 1997 Interviewer(s): Rosa		
Informant 1	Informant 2	Informant 3
Name: Martha Edilia Hernandez Sex: Female Age: 33 Occupation: Housewife Ethnic group: -	Name: Dagoberto Orellana Sex: Male Age: 21 Occupation: Farmer Ethnic group: -	Name: Ana Leticia Murillo Sex: Female Age: 26 Occupation: Housewife Ethnic group: -
Well-Being Level 1: They have a house and animals. They have a place to work and can support themselves. They have livestock, pigs, hens, not too many, but they help. Some have planted coffee, and have draft animals. They are fighters; they harvest more than others do. Some lease land and houses. Others do not own land; they rent land, but the harvests are good, that is, they do well; they have surplus produce to sell and money for household expenses.	Well-Being Level 1: They have more than do others, more to show; they grow maize, beans. They all have land, cattle; they plant and harvest more than the rest. They are able to sell and trade. They have good quality houses, beasts of burden, hens, and enough healthy cows.	Well-Being Level 1: They have land. They at least have their own house. They do not work for others and, if they do, it is as a favor and not out of need. They have their own sources of work; they do not have cash, but they have food security. They give work to others who do not have a means of living. They are people who do not suffer during crises because they are able to store their grain for times of shortage. They harvest a little more than do others. They are not rich; they are people who have enough to support their families and have a little more than others. They can put up a fight while others go down under adversity.

Village of La Albardilla, Municipality of Sulaco, Yoro Department Code: 180904 Date: 9 April 1997 Interviewer(s): Rosa		
<p>Well-Being Level 2:</p> <p>They are poor, but manage for food. They are hard workers; they seek ways of earning money from using animals, either selling or consuming them. Sometimes they work as day laborers, taking whatever work they can get (contract work). The women raise small animals and many make a living from them. The people belonging to this group have their own land to work; they manage to sell some of their produce, but leave most for home consumption.</p>	<p>Well-Being Level 2:</p> <p>They live well; they have less than do those of group 1. They have their own house and land. They work their own land and occasionally work as day laborers; they are able to give work to others. They grow maize and beans for home consumption. They sell very little.</p>	<p>Well-Being Level 2:</p> <p>Their needs are slightly greater than are those of group 1. Although they are day laborers, they manage to support their families. They grow a little maize and beans. (These families have many children, at least five. They have about enough food to eat. In June they suffer a little from food shortages; they cannot always make ends meet during the year. They have their own houses and a little land that gives them the opportunity to cultivate.)</p>
<p>Well-Being Level 3:</p> <p>They have neither a house nor land to work. They suffer ill health. Women who live alone belong to this group; they do not always have food for their three meal times. They are fighters. (They live off day work. Some are long-suffering elderly people who live on community charity. During times of crisis they are the most affected because they do not have reserves. The women who live alone make and sell bread or pork tamales, or perform household chores in cities like Tegucigalpa and San Pedro Sula. Those who plant crops have to rent land or ask for it on loan.)</p>	<p>Well-Being Level 3:</p> <p>They live in poor conditions because they do not have animals; they only have a house. They work as day laborers; they cultivate land that they lease or have on loan. On this land they grow beans and maize. They work and sacrifice themselves a lot but, even so, they do not have enough on which to live. No one in the community is rich; they only half-satisfy their needs, a little more than do others.</p>	<p>Well-Being Level 3:</p> <p>They have few resources and do not own land. The other groups do not include women who live alone; this group does. Some only have their house, others not even that and have to pay rent or are lucky because someone lends them a house. Others work as caretakers of other properties. (They work as day laborers to subsist; they pick coffee. They have no means of storing food and therefore suffer in times of crisis. They look for jobs in other communities such as La Montaña. Wages are low; sometimes they sell maize when it is still immature because they need to buy something. Women who live alone go elsewhere to work as cleaners or at whatever job they can find. This group includes many malnourished children.)</p>
<p>Observations on interviews/community (e.g., quality of informant(s), sampling factors).</p>		



Figure 2.3. A researcher writing down the literal descriptions of each group of cards as prepared by the key informant.

2.1.7. Recording the rankings given to groups of cards by key informants

Once each group of cards has been described, then evaluate the level of agreement of each household's well-being level. Write in your notebook the rank given to each household. Write the rank down in front of the informant. In this way informants can be sure about what data are being taken "out of the community".

Number the groups or piles from 1 to N, where N is the total number of groups or piles formed by the informant. Groups should be organized in descending order of levels of well-being so that group 1 represents the households that live at the highest level of well-being and group N those that live at the lowest level. Write in your notebook the number of the group to which each household was assigned (Table 2.2.).

Table 2.2. Example of how three informants ranked households, Los Limones Community, Matagalpa, Nicaragua, 1997.

Household head	Informants/groups		
	Informant 1	Informant 2	Informant 3
Ricardo López	2	1	2
Wilberto Jarquín	2	1	2
Pedro P. Jarquín	2	1	2
Anselmo Jarquín	2	1	2
Lucio Mairena	4	2	3
Romelia Pérez	3	3	3
Miguel Jarquín	3	2	2
Isidro Hernández	3	2	3
Emilio López	2	1	1
César A. López	3	1	2
María González	3	1	2
Ma. Elena Sotelo	2	1	1
Eva González	2	1	2

Exercise 2.1. Ranking Households according to their Level of Well-Being in a Rural Community

Objective

- ✓ To simulate a ranking of households within a community or study area, using cards and key informants.

Instructor's Guidelines

For this exercise, you must carry out several activities before the workshop.

1. First, identify a community with a population ranging between 40 and 60 households within the work area of workshop participants.
2. Make a list of household heads within the community and transcribe the names to three or four sets of cards, depending on the number of groups of participants planned for the exercise.
3. Identify three or four key informants within the community to help you with the rankings during the workshop.

At the start of the exercise:

1. Divide the participants into groups of five or six members.
2. Give each participant a copy of the exercise (page no. 2-17) and each work sheet (pages 2-18 and 2-19).
3. Assign a key informant to each group and hand out a set of cards with the names of the household heads of the targeted community. Hand out work sheets the size of paper for flip charts, pencils, and markers. Provide a worktable for the group.
4. Once all participants have a copy of the exercise and their materials, carefully read aloud all instructions, making sure that all participants understand them.
5. Ask each group to complete the exercise. Inform them that they have 40 minutes to do so.
6. Once all groups have finished their work, the results obtained are presented.
7. Make observations and comments about the rankings made by each group.

Resources needed

- Cards 8 cm long x 4 cm wide
- Work sheets
- Markers
- Flip chart with paper
- Lists of families or households living in the community that were selected for ranking
- Three to four informants who live in the selected community
- Worktable for each working group

Estimated time required: 45 minutes

Exercise 2.1. Ranking Households according to their Levels of Well-Being in a Rural Community

Instructions for the Participants

1. With the other members of your group, choose a person to interview the key informant. You should also name a coordinator who will present your group's interview results to the other groups.
2. On each of the work sheets, write the name, age, occupation, and sex of the key informant.
3. From the set of cards at hand, take out the card that corresponds to the household head represented by the key informant.
4. Each group will ask the key informant to rank the households of the selected community according to his or her own perception of the level of well-being of each household. At least three groups or piles should be made.
5. Once you have grouped the households into several piles, depending on the informant's criterion, ask him or her to describe the characteristics of each group. Write these descriptions on Work Sheet No. 1. It is important that you write down *everything* that the key informant says, just as he or she says it. If you have any questions, ask the informant after he or she has finished giving the descriptions.
6. After completing the descriptions, organize the piles or groups of cards in descending order of levels of well-being. Then number the piles: assign 1 to the pile representing the highest level of well-being, 2 to the one that follows in well-being, and so on, until each group has been assigned a number.
7. Write down the number corresponding to each household on Work Sheet No. 2.
8. When your group has finished ranking the households, the group coordinator will present, during a plenary session, the well-being levels identified by the key informant and the descriptions used for the households assigned to each level.

Exercise 2.1. Work Sheet No. 1 for Ranking Households according to their Level of Well-Being in a Rural Community

Group No. _____

Description of Different Well-Being Levels

Informant: _____

Sex: F _____ M _____ Age: _____

Occupation: _____

LEVEL I
LEVEL II
LEVEL III
LEVEL IV

Exercise 2.1. Work Sheet No. 2 for Ranking Households according to their Level of Well-Being in a Rural Community

Group No. _____

List of Household Heads and their Respective Scores

Informant: _____

Sex: F ____ M ____ Age: _____

Occupation: _____

Household head	Informant 1	Informant 2	Informant 3	Informant 4
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
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16				
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29				
30				
31				
32				
33				
34				
35				

Exercise 2.1. Feedback on Ranking Households according to Levels of Well-Being in a Rural Community

After each group has made its presentation, the instructor should comment on the results obtained.

The instructor should emphasize the considerable similarities that are sure to be found in the ways that informants ranked households and in the criteria used to rank each one.

Description of Different Levels of Well-Being in Los Limones Community, Matagalpa, Nicaragua

Informant: Ricardo López
Age: 33

Sex: Male
Occupation: Farmer

LEVEL I
They have enough to live on; they have cows, draft animals. They have something to eat ... They own land, from 50 to 80 <i>manzanas</i> ^a . They produce everything they need. They have their own house.
LEVEL II
They live more or less well. They have a big backyard, a small lot. They only have one beast of burden, one cow. Their needs are not satisfied; they face difficult situations; they need things. They sometimes work for a salary.
LEVEL III
They have only a big backyard. They have to lease land to work. They do not have livestock, perhaps small animals, a hen. They are salaried workers. They find it difficult to subsist. They always have to buy their food.
LEVEL IV
They live poorly. They do not have a place to live; they are unsettled. They do not always have food to eat.

a.1 manzana = 0.7 ha (80 m²).

**List of Household Heads and their Respective Scores
Los Limones Community, Matagalpa, Nicaragua**

Household head	Informant 1/ Group	Informant 2/ Group	Informant 3/ Group	Informant 4/ Group
1	2	1	2	
2	2	1	2	
3	2	1	2	
4	2	1	2	
5	4	2	3	
6	3	3	3	
7	3	2	2	
8	3	2	3	
9	2	1	1	
10	3	1	2	
11	3	1	2	
12	2	1	1	
13	2	1	2	
14	3	1	2	
15	2	1	2	
16	2	1	2	
17	2	2	2	
18	2	1	1	
19	4	2	3	
20	3	2	2	
21	1	1	1	
22	3	1	2	
23	1	1	1	
24	4	2	3	
25	3	2	2	
26	3	2	2	
27	3	2	2	
28	4	2	3	
29	4	2	3	
30	3	2	2	
31	4	2	3	
32	4	2	3	
33	1	1	-	
34	1	1	1	
35	2	1	2	

- The descriptions were written down exactly as given by the informants. Clarification or amplification was requested on useful points to obtain well-being indicators.
- Overall, the assigning of the households to the different groups did not differ substantially between informants. That is why an index or average of three or four scores was obtained, as previously explained in this section.

Bibliography

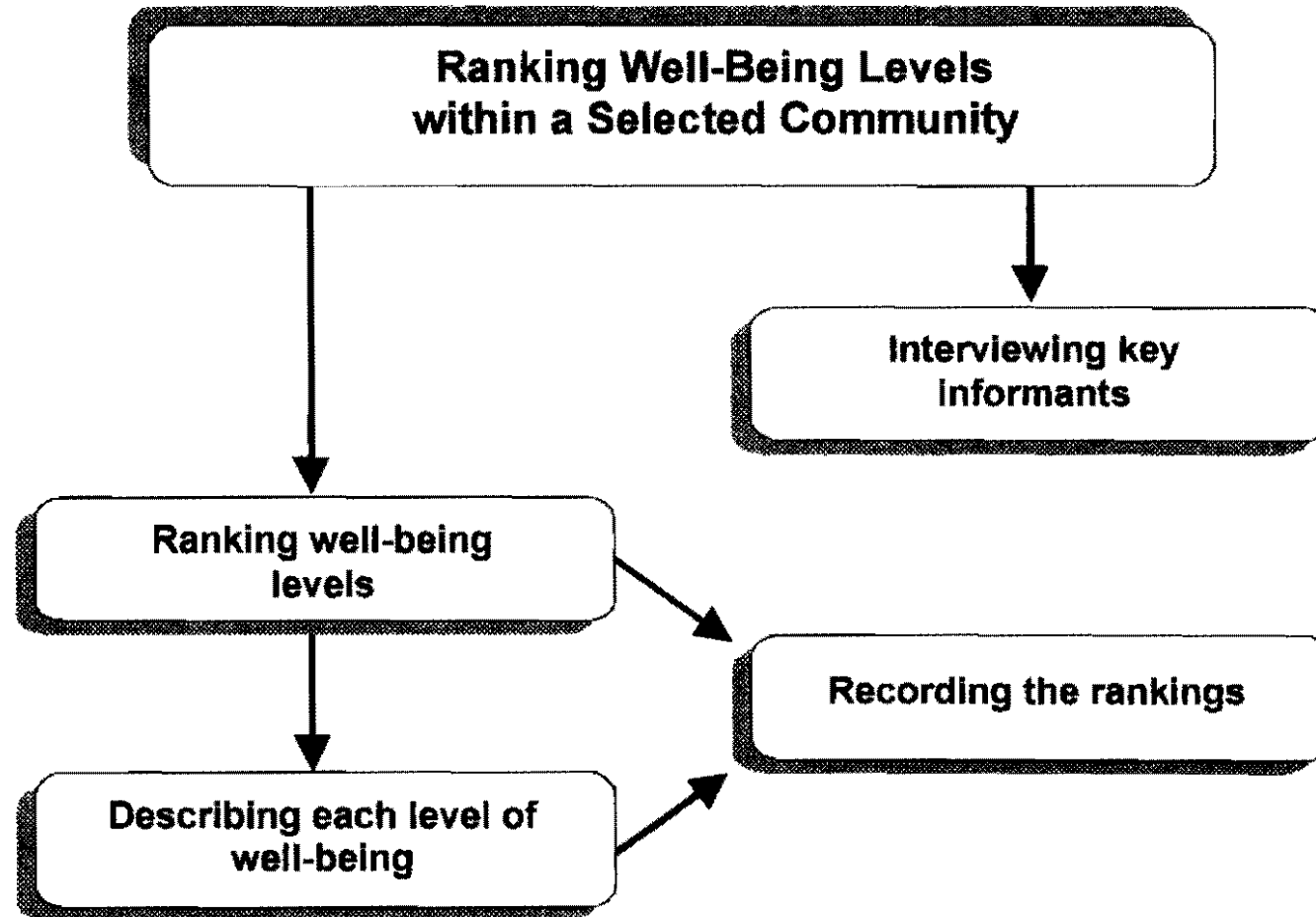
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Originals for Transparencies

SECTION STRUCTURE



SECTION OBJECTIVE

To rank the households of a community according to their well-being levels, based on local perceptions obtained from key informants

ORIENTING QUESTIONS

- 1.** What do you understand by “ranking households” ?
- 2.** Why should households be ranked?
- 3.** Who is capable of ranking households within a community?
- 4.** What criteria should be used to rank different groups of households?
- 5.** How do you record the information gathered?

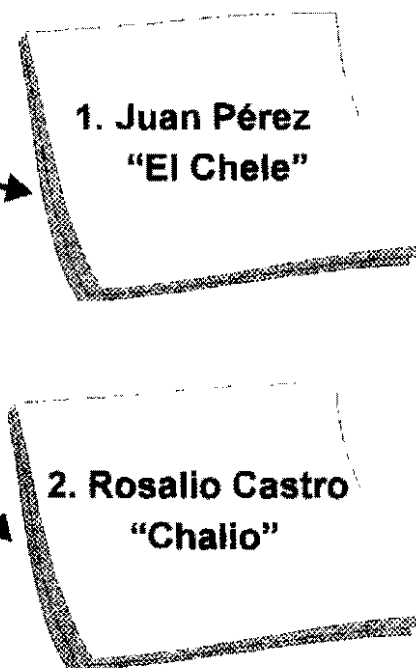
STEPS TO RANKING LEVELS OF WELL-BEING

- Define the community
- Define the units to be ranked
- List all the units (households) within the community
- Find reliable (or key) informants

EXAMPLE OF THE NOTEBOOK AND CARDS USED TO RANKED HOUSEHOLD

List of Household Heads Jalapa, Yorito, Yoro

Nº	Household head
1	Juan Pérez "El Chele"
2	Rosalio Castro "Chalio"
3	Guillermo Solorzano
4	Luis Martínez
5	Pedro Rosales
6	Danilo Baquedano
7	Victor Bonilla
8	Javier Gonzáles
9	Juventino Ramírez
10	Calixto Mencia



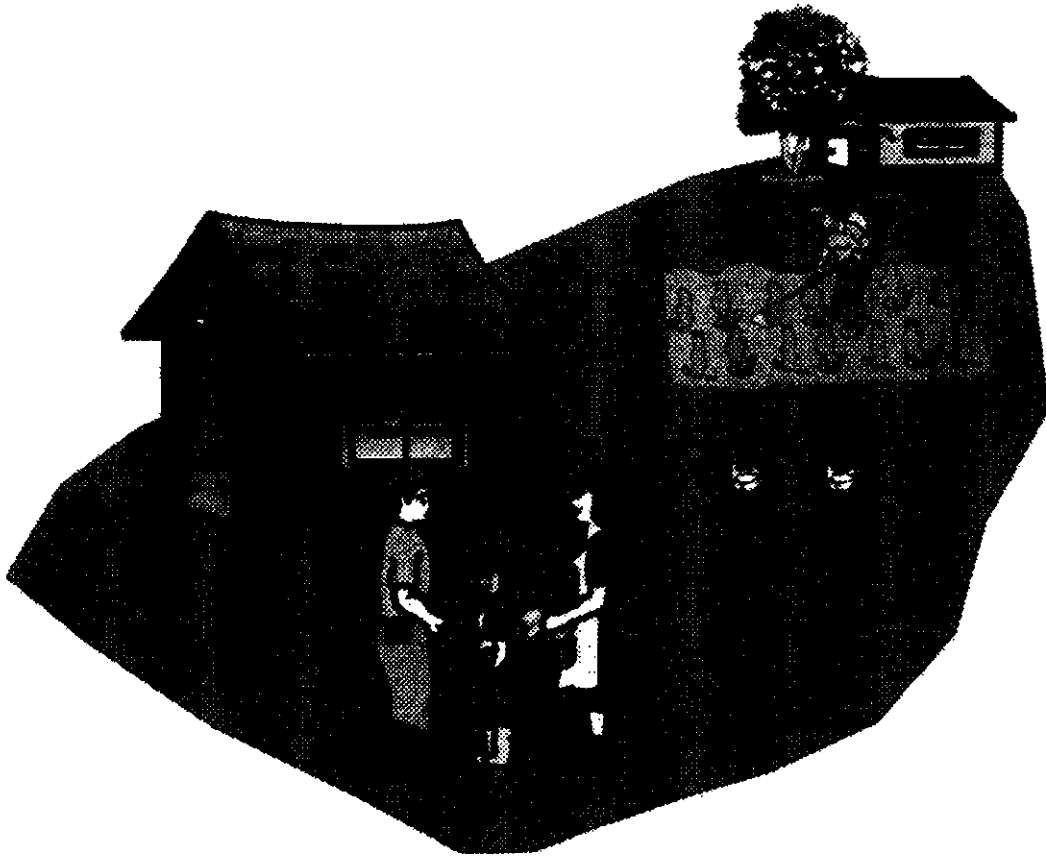
Recording the Rankings of Well-Being Levels

Community: Los Limones, Matagalpa, Nicaragua

Household head	Informants/Groups		
	Informant 1	Informant 2	Informant 3
Ricardo López	2	1	2
Wilberto Jarquín	2	1	2
Pedro P. Jarquín	2	1	2
Anselmo Jarquín	2	1	2
Lucio Mairéna	4	2	3
Romelia Pérez	3	3	3
Miguel Jarquín	3	2	2
Isidro Hernández	3	2	3
Emilio López	2	1	1
César A. López	3	1	2
María González	3	1	2
Ma. Elena Sotelo	2	1	1
Eva González	2	1	2

Section 3

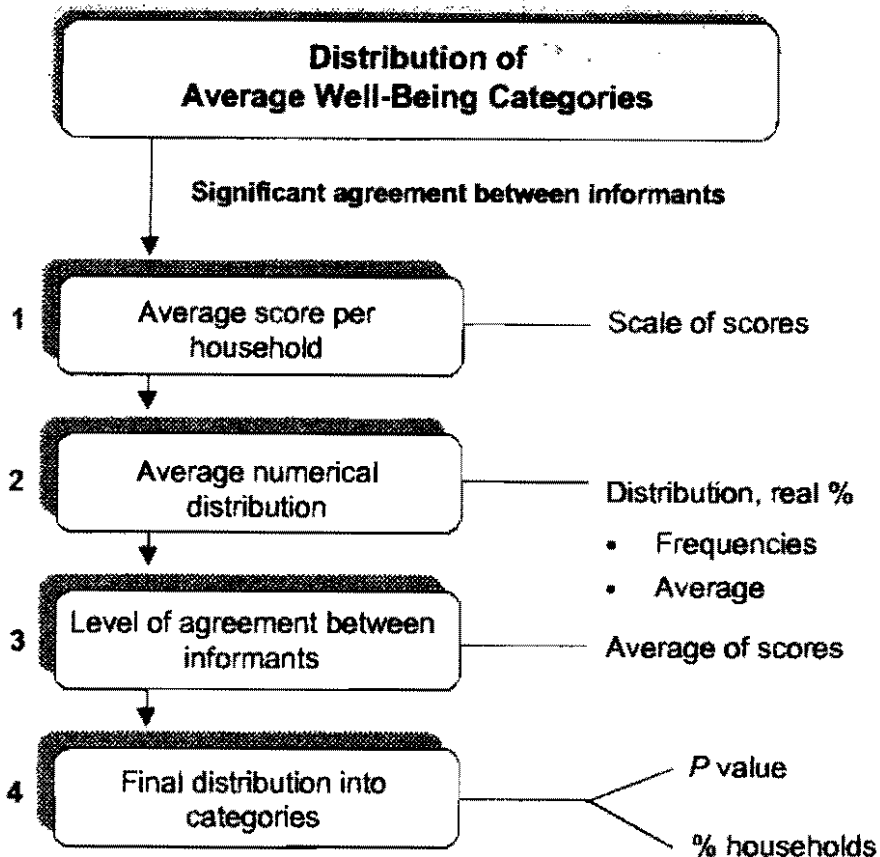
Grouping Households into “Average Well-Being Categories”



Section 3. Grouping Households into Average Well-Being Categories

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Section Structure



Objective

- ✓ To determine well-being categories based on the percentage distribution of households carried out by key informants.

Guiding Questions

1. What conditions should be taken into account when grouping households into different well-being levels?
2. How can you include the criteria used by several informants to rank a single household?

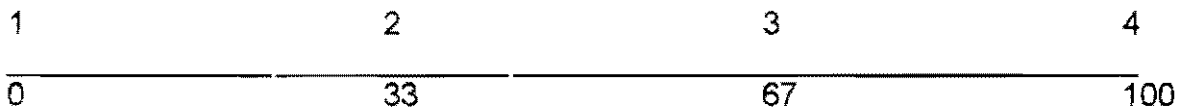
Introduction

The grouping of households into different levels of well-being, based on local perceptions, is done under the basic assumption that the level of agreement between rankings is significant. In other words, the individual informant's rankings of a household must be translated to an average well-being score or range. Instead of working with three or more individual rankings for each community, you can construct an average ranking per community.

The first step is to calculate an average well-being score for each household, based on individual rankings. As proposed in Section 2, informants usually rank households into three groups, but some may rank them into four or five groups. This means, for instance, that households ranked by all informants as having the lowest well-being level may have received the rank of 3 from one informant but 4 or 5 from other informants.

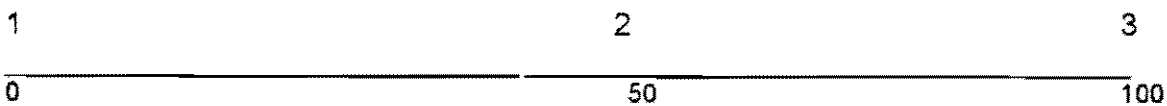
3.1. Computing the Average Well-Being Score per Household

The ranks assigned to each household correspond to the group where the informant placed it. Therefore you will need to equalize the different rank numbers to a common scale. Place the different groups made by the informant on a scale and assign them a number for differentiation, as shown below:



The scores (03367100) are arbitrary and are only used to establish key differences among the different levels.

The above are groups of households ranked by one informant.



These are groups of the same families as ranked by another informant.

The left-hand end of the scale (0 points) is chosen to represent the highest level of well-being and the right-hand (100 points), the lowest level of well-being.

The scales of the two informants show that one differentiated four levels of well-being (1, 2, 3, 4 on the scale) and the other just three.

These levels are represented on the scales as 1 = 0 points; 2 = 50 points, and 3 = 100 points. By placing the rankings on a single well-being scale, we achieve a scoring system whereby households ranked as having the highest level of well-being will always receive a score of 0 points and households ranked as having the lowest level of well-being receive a score of 100 points. From now on, we will work with these scores to obtain a household's average well-being level.

To calculate this score, "S", the following formula is used:

$$S = (p - 1/P - 1) \times 100$$

Where:

p = the number of the pile or group to which the household was assigned,

P = the total number of piles or groups made by the informant.

You multiply the result by 100 simply to avoid working with decimals.

Example: With the scale given by the second informant, you would apply the equation as follows:

$$\begin{aligned} \text{Number of piles or groups} &= 2 - 1 = 1 \\ \text{Total number of piles or groups} &= 3 - 1 = 2 \end{aligned}$$

$$S = 1/2 = 0.50 \times 100 = 50$$

This household was therefore ranked as belonging to Group 2 by this informant and will have a score of 50 on the well-being scale.

Once you have calculated the well-being score for each household in a given community, you can calculate the average well-being score for each household. You do this by averaging the well-being scores obtained in the individual rankings.

Example: Continuing with the case above, for this informant the household has a score of 33; for another informant it may have a score of 50 and for another, also 50. The total average well-being score for the household would be equal to:

$$33 + 50 + 50 = 133 / 3 = 44 \text{ (average well-being score for the household)}$$

These data are summarized in a scoring table per household, illustrated in Table 3.1.

Table 3.1. Well-being scores per household according to their ranking by key informants.

Country:	Nicaragua	S-INF1: Score given by informant 1
Department:	Matagalpa	S-INF2: Score given by informant 2
Municipality:	San Dionisio	S-INF3: Score given by informant 3
Community:	Los Limones	S: Average score
Interviewers:	DT, ME	

	INF1	INF2	INF3	S-INF1	S-INF2	S-INF3	S
Group No.	4	3	3				
CODE							
1	2	1	2	33	0	50	28
2	2	1	2	33	0	50	28
3	2	1	2	33	0	50	28
4	2	1	2	33	0	50	28
5	4	2	3	100	50	100	83
6	3	3	3	67	100	100	89
7	3	2	2	67	50	50	56
8	3	2	3	67	50	100	72
9	2	1	1	33	0	0	11
10	3	1	2	67	0	50	39
11	3	1	2	67	0	50	39
12	2	1	1	33	0	0	11
13	2	1	2	33	0	50	28
14	3	1	2	67	0	50	39
15	2	1	2	33	0	50	28
16	2	1	2	33	0	50	28
17	2	2	2	33	50	50	44
18	2	1	1	33	0	0	11
19	4	2	3	100	50	100	83
20	3	2	2	67	50	50	56
21	1	1	1	0	0	0	0
22	3	1	2	67	0	50	39
23	1	1	1	0	0	0	0
24	4	2	3	100	50	100	83
25	3	2	2	67	50	50	56
26	3	2	2	67	50	50	56
27	3	2	2	67	50	50	56
28	4	2	3	100	50	100	83
29	4	2	3	100	50	100	83
30	3	2	2	67	50	50	56
31	4	2	3	100	50	100	83

Table 3.1. Continued

	INF1	INF2	INF3	S-INF1	S-INF2	S-INF3	S
Group No.	4	3	3				
CODE							
32	4	2	3	100	50	100	83
33	1	1	-	0	0	-	0
34	1	1	1	0	0	0	0
35	2	1	2	33	0	50	28
36	1	-	-	0	-	-	0
37	3	1	1	67	0	0	22
38	4	2	3	100	50	100	83
39	4	2	2	100	50	50	67
40	3	2	2	67	50	50	56
41	1	1	1	0	0	0	0
42	3	2	3	67	50	100	72
43	3	1	2	67	0	50	39
44	1	1	2	0	0	50	17
45	2	2	2	33	50	50	44
46	2	1	2	33	0	50	28
47	2	1	2	33	0	50	28
48	2	1	2	33	0	50	28
49	4	1	2	100	0	50	50
50	3	1	2	67	0	50	39
51	3	2	3	67	50	100	72
52	1	1	1	0	0	0	0
53	3	1	2	67	0	50	39
54	3	2	3	67	50	100	72
55	2	1	2	33	0	50	28
56	4	1	2	100	0	50	50
57	1	1	1	0	0	0	0
58	4	2	3	100	50	100	83
59	3	2	3	67	50	100	72
60	1	1	2	0	0	50	17
61	1	1	2	0	0	50	17
62	1	1	1	0	0	0	0
63	4	1	2	100	0	50	50
64	1	1	1	0	0	0	0
65	1	1	2	0	0	50	17
66	4	1	2	100	0	50	50
67	1	1	2	0	0	50	17
68	1	1	2	0	0	50	17
69	1	1	1	0	0	0	0
70	3	2	-	67	50	-	58
71	3	1	2	67	0	50	39
72	3	2	2	67	50	50	56

Table 3.1. Continued.

	INF1	INF2	INF3	S-INF1	S-INF2	S-INF3	S
Group No.	4	3	3				
CODE							
73	3	1	2	67	0	50	39
74	4	1	-	100	0	-	50
75	3	2	2	67	50	50	56
76	1	1	1	0	0	0	0
77	3	2	2	67	50	50	56
78	1	1	2	0	0	50	17
79	2	-	2	33	-	50	42
80	4	2	2	100	50	50	67
81	2	1	2	33	0	50	28
82	2	1	2	33	0	50	28
83	4	3	-	100	100	-	100
84	4	-	3	100	-	100	100
85	3	-	2	67	-	50	58
86	4	2	3	100	50	100	83
87	3	2	2	67	50	50	56
88	4	3	3	100	100	100	100
89	4	2	3	100	50	100	83
90	3	2	-	67	50	-	58
91	3	2	-	67	50	-	58
92	3	2	2	67	50	50	56
93	3	2	2	67	50	50	56
94	3	2	2	67	50	50	56
95	-	2	3	-	50	100	75
96	4	2	-	100	50	-	75
97	1	1	2	0	0	50	17
98	3	2	3	67	50	100	72
99	3	2	3	67	50	100	72
100	3	2	3	67	50	100	72
101	4	2	-	100	50	-	75

Now the question is: What should we do with the first informant's rankings of households (four groups or piles) on the scale?

Our experience with the methodology has shown that ranking into three well-being categories is sufficient and adequate to fulfill our objective. We can accordingly presume that the informant who ranked households into four groups possibly assigned the households with the lowest level of well-being to the last two groups (3 and 4).

To verify this assumption, we must revise the descriptions of these last two groups and decide whether they can be joined together into one group, the one corresponding to the lowest level of well-being.

In brief, when the informant ranks the households into more than three groups, revise the description of the groups to determine which groups are similar and can be joined together so that you finally have three well-being categories.

We will clearly illustrate this situation below.

3.2. Constructing of Average Well-Being Categories

The number of average well-being categories should correspond to the average number of groups or piles made by the informants when ranking the households. It should not be more than this number because that would convey a false impression of precision. Once you have decided on the number of categories to be made, you next need to determine how to define the well-being categories, that is, how to delimit them.

Follow the rule of making the categories correspond as closely as possible to the informants' information with respect to:

1. The numerical distribution of households in each well-being group or pile (i.e., the percentage of households in each group); and
2. The level of agreement between informants on the rankings of individual households.

3.2.1. Average numerical distribution

Numerical distribution provides an average of the rankings of households for each level of well-being. We basically apply a frequency table that shows the number of households ranked in a single level of well-being. This frequency is applied to the scoring table (Table 3.1.), which can be designed using Excel software or manually (column S).

Example: Three informants were interviewed in Los Limones Community, which has 101 households. One informant ranked the households into four levels of well-being and two informants ranked them into three levels. The following distribution was obtained based on frequencies and scores:

Informant 1

Range	Frequency (No. of households)	Valid (%)
0	20	19.8
50	20	19.8
100	59	58.4
	99	100.0

Informant 2

Range	Frequency (No. of households)	Valid (%)
0	51	50.5
50	43	42.6
100	3	3.0
	97	96.1

Informant 3

Range	Frequency (No. of households)	Valid (%)
0	14	13.9
50	55	54.5
100	23	22.8
	92	91.2

Informant 3 did not rank nine households.

As explained in Section 2, if the informants do not know a given household or family well, encourage them not to rank that household to avoid incurring false rankings.

This is the first real distribution that shows the way informants ranked the households.

Summarizing these data, the distribution of households in percentages is as follows:

	S1	S2	S3
L1 =	20	50	14
L2 =	20	43	54
L3 =	59	3	23

(S1, S2, S3 = scores)

In this case, and after revising Informant 1's descriptions of the groups, we decided to combine groups 3 and 4 (37 + 23), because the differences were not significant, and form a new group 3, corresponding to the lowest level of well-being. For statistical analysis, we recommend working with three levels of well-being.

The average numerical distribution is thus obtained and provides the first percentage scoring of households within this community:

$$\begin{aligned}
 L1 &= 20 + 50 + 14 = 84 / 3 = 28\% \\
 L2 &= 20 + 43 + 54 = 117 / 3 = 39\% \\
 L3 &= 59 + 3 + 23 = 85 / 3 = 28\%
 \end{aligned}$$

However, the scores assigned by informants must be taken into account in this distribution of categories, so a new distribution must be done.

3.2.2. Checking the level of agreement between informants

To check the level of agreement between informants, use the scores assigned to the different levels of well-being: in this case, 0 or 33 for level 1; 50 or 67 for level 2; and 100 for level 3.

First, define a category containing those households who, according to all informants, enjoy the highest level of well-being (i.e., those with the lowest average score = 0).

Then define another category that contains those households who, according to all informants, had the lowest level of well-being (i.e., the highest possible average score = 100). Once you have calculated these averages, use the frequency table of these scores (Table 3.2.) and write the score "0" in the column "Class" and the corresponding percentage, in this case 12% (rounded). Remember groups 3 and 4 of Informant 1 were combined in such a way that the average score for this category is:

$67 + 100 + 100 / 3 = 89$. Households with scores between 89 and 100 fall in the lowest well-being category, accounting in this case for 4% of the community according to informants.

Last, define a third and middle category consisting of those households whose rankings did not fall within these scores in this example, between 1 and 88.

Table 3.2. Frequency of scores (S) per household, Los Limones Community, Matagalpa, Nicaragua.

Class	Frequency	% Accumulated	
0	12	11.9	L1
12	3	3.0	
17	8	7.9	
23	1	1.0	
28	14	13.9	
39	9	8.9	L2
42	1	1.0	
45	2	2.0	
51	5	5.0	
57	14	13.9	
59	4	4.0	
67	2	2.0	
73	8	7.9	
76	3	3.0	
84	11	10.9	
89	1	1.0	L3
100	3	3.0	
and greater...	0	0.0	

Therefore, the distribution according to level of agreement between informants is:

L1 = 12%
L2 = 84%
L3 = 4%

The results of numerical distributions are averaged and, by common agreement, these scores are placed in the S frequency table to delimit the well-being categories and determine the percentage of households belonging to each category. For this example, the results are:

Average numerical distribution according to level of agreement:

L1 = 20
L2 = 62
L3 = 16

The ranges are again written in the "Class" column of Table 3.2. and corresponding percentages for each are calculated.

Final distribution into categories:

L1 = 23%
L2 = 59%
L3 = 18%

The results indicate that most of the households of this community were ranked as enjoying a middle level of well-being.

Exercise 3.1. Calculating the Percentage of Households per Category

Objective

- ✓ To define well-being categories based on the percentage distribution of households effected by key informants.

Instructor's Guidelines

1. Organize the participants into three or four groups, depending on the total number of participants. Give each participant a copy of the exercise (page 3-18). Give each group a copy of the frequency table of the target community that will be used as the basis for calculating numerical distribution, distribution according to level of agreement, and final distribution (Transparencies LPRP 3-8 and 3-9).
2. Use an overhead projector to present the work sheets and explain how to use the frequencies, based on what they have read about the topic.
3. Hand out a work sheet containing score frequencies used to effect the distribution according to level of agreement and final distribution in categories (page 3-19).
4. After all groups complete the exercise, ask one member of each group to present the group's results using the flip chart. Make the necessary observations and present a final table with all the distributions.
5. In brief, show how the households of a community are divided according to their level of well-being based on the perceptions of key informants.

Resources needed

- Four calculators
- Frequency table of the target community (one per group)
- Blackboard and flip chart
- Acetates for overhead projector, markers, and special markers for blackboards

Estimated time required: 45 minutes

Exercise 3.1. Calculating the Percentage of Households per Category

Instructions for the Participants

To participate actively in this exercise, you must carry out the following tasks:

1. Make a real distribution of households on the frequency table that the instructor gave you. Place the frequency of cases for each well-being level on this sheet.
2. Calculate the numerical distribution by averaging the scores for each level obtained in the real distribution.
3. Calculate the distribution according to level of agreement, using the S frequency table that the instructor gave you. Average the two previous distributions.
4. Locate the final percentage distribution in each category. Use a calculator to work out the distributions.
5. Name a representative of your group to present the group's results in a plenary session. This person should use a flip chart for the presentation.

Exercise 3.1. Work Sheet for Calculating the Percentage of Households per Category

**Distribution Frequency of Households according to Key Informants
Los Limones Community, San Dionisio, Matagalpa, Nicaragua**

P1 (P = total no. of piles or groups made by the informant)

Class	Frequency	% valid
0	20	19.8
50	20	19.8
100	59	58.4
and greater...	0	0.0

P2

Class	Frequency	% valid
0	51	50.5
50	43	42.6
100	3	3.0
and greater...	0	0.0

P3

Class	Frequency	% valid
0	14	13.9
50	55	54.5
100	23	22.8
and greater...	0	0.0

Class	Frequency	%
0	12	11.9
12	3	3.0
17	8	7.9
23	1	1.0
28	14	13.9
39	9	8.9
42	1	1.0
45	2	2.0
51	5	5.0
57	14	13.9
59	4	4.0
67	2	2.0
73	8	7.9
76	3	3.0
84	11	10.9
89	1	1.0
100	3	3.0
and greater...	0	0.0

Exercise 3.1. Feedback on Calculating the Percentage of Households per Category

Distribution in Well-Being Categories Data of Los Limones Community, Matagalpa, Nicaragua

1. Average numerical distribution (based on frequencies of informants)

Level	Score 1	Score 2	Score 3	Average
1	20	50	14	28
2	20	43	54	39
3	59 ^a	3	23	28

a. This score resulted from combining groups 2 and 3 that have similar characteristics.

Distribution according to level of agreement between informants (average of scores 0, 33, 67, and 100 for each well-being level. Place the result in S frequency table, Work Sheet No. 3.1.)

Range

0 = 12%
13 - 84 = 84%
89 - 100 = 4%

Final average distribution between numerical distribution and that according to level of agreement

Level 1 = $12 + 28 / 2 = 20$
Level 2 = $39 + 84 / 2 = 62$
Level 3 = $28 + 4 / 2 = 16$

Final distribution (place these results in the S frequency table, Work Sheet 3.1.)

0 - 17 = 23%
18 - 75 = 59%
76 - 100 = 18%

Conclusions

The first distribution is made by taking into account the number of households that informants assigned to each level of well-being, that is, the numerical frequency.

However, when defining categories you should take into account the previous agreement between all informants, a condition that, as you will remember, is essential for establishing categories. Therefore, you should use the scores assigned to each well-being level and their averages. For example:

$$\begin{aligned}\text{High level} &= 0 + 0 + 0 / 3 \\ \text{Low level} &= 67 + 100 + 100 / 3\end{aligned}$$

In this case, a score of 67 was obtained because groups 2 and 3 of Informant 1 were combined. Results are then placed in the S frequency table. The intermediate level corresponds to all cases that do not belong to the high and low levels of well-being.

Finally, the averages of these two distributions are calculated to obtain a final distribution of well-being categories.

The main conclusion of this exercise, according to the level of agreement between informants and the criteria they used to rank households of this community, is that most of the population (59%) enjoys an intermediate level of well-being, its total score ranging between 18 and 75.

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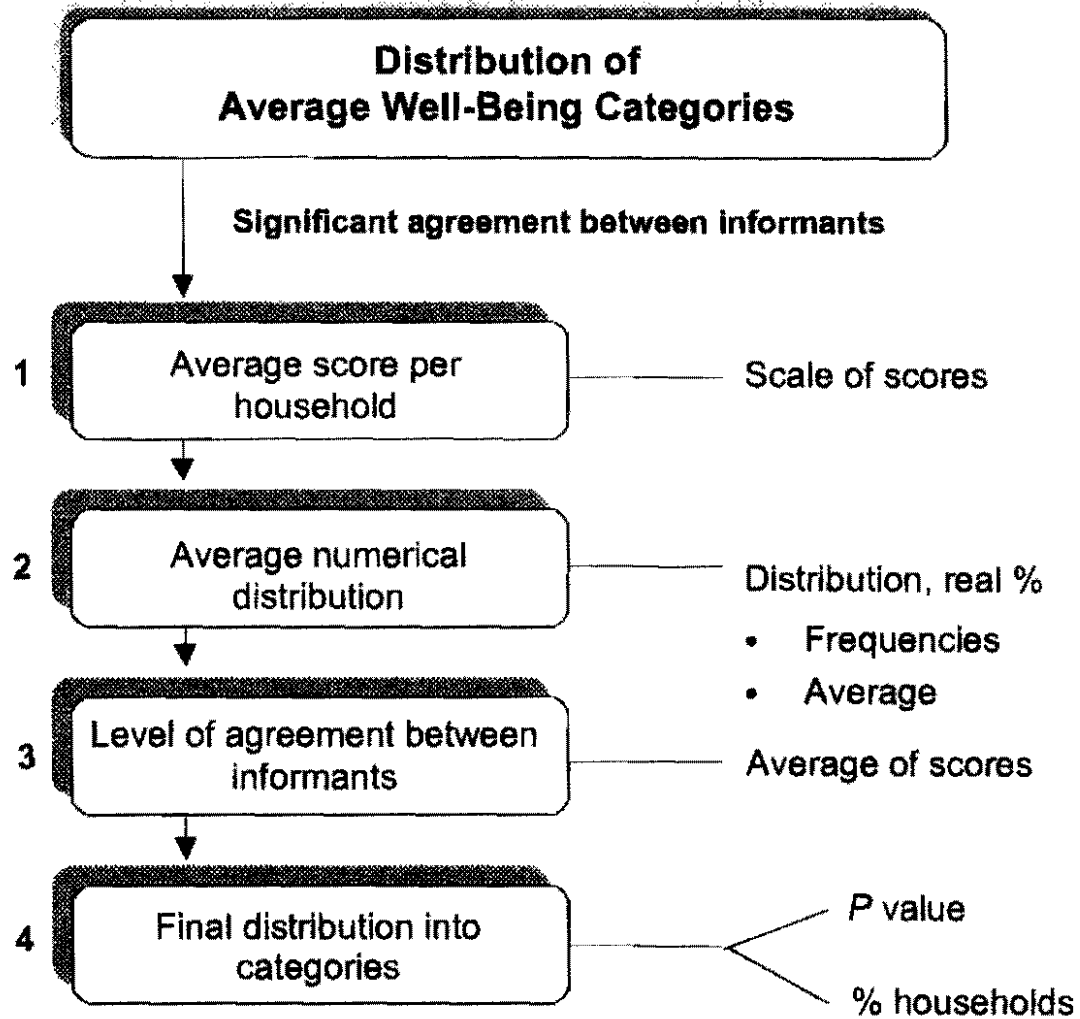
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Originals for Transparencies

SECTION STRUCTURE



SECTION OBJECTIVE

**To construct well-being categories,
based on the porcentaje
distribution of households carried
out by key informants**

ORIENTING QUESTIONS

- 1.** What conditions should you take into account when grouping households into different well-being levels?
- 2.** How can you include the criteria used by several informants to rank a single household?

CONSTRUCTING “AVERAGE WELL-BEING CATEGORIES”

The categories should correspond as closely as possible to the informants' information with respect to:

- The numerical distribution of households in each well-being group or pile (that is, the percentage of households in each group)
- The level of agreement between informants of the rankings of individual households

CONSTRUCTING “AVERAGE WELL-BEING CATEGORIES”

The level of agreement between informants rankings should be significant as a prerequisite to grouping households into different well-being categories

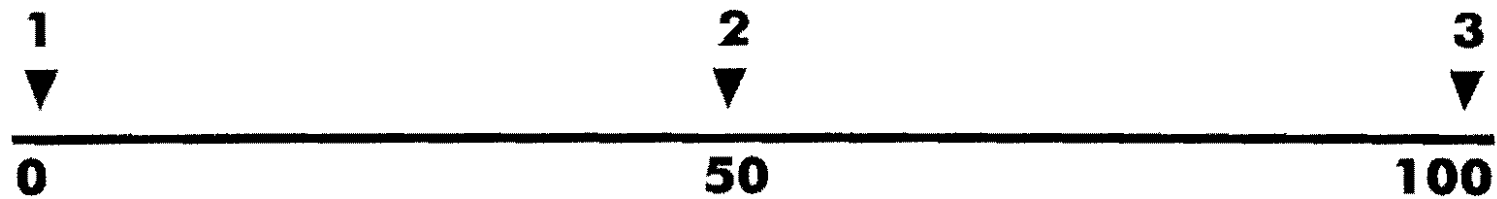
CONSTRUCTING “AVERAGE WELL-BEING CATEGORIES”

- The number of categories should correspond to the average number of groups or piles made by the informants
- These numbers should not differ because that would convey a false impression of precision

TWO SCALES FOR RANKING



Scores used by one informant



Scores used by another informant

DISTRIBUTION FREQUENCY OF HOUSEHOLDS COMMUNITY LOS LIMONES

P 1

Class	Frequency	% Valid
0	20	19.8
50	20	19.8
100	59	58.4
and greater...	0	0.0

P 2

Class	Frequency	% Valid
0	51	50.5
50	43	42.6
100	3	3.0
and greater...	0	0.0

P 3

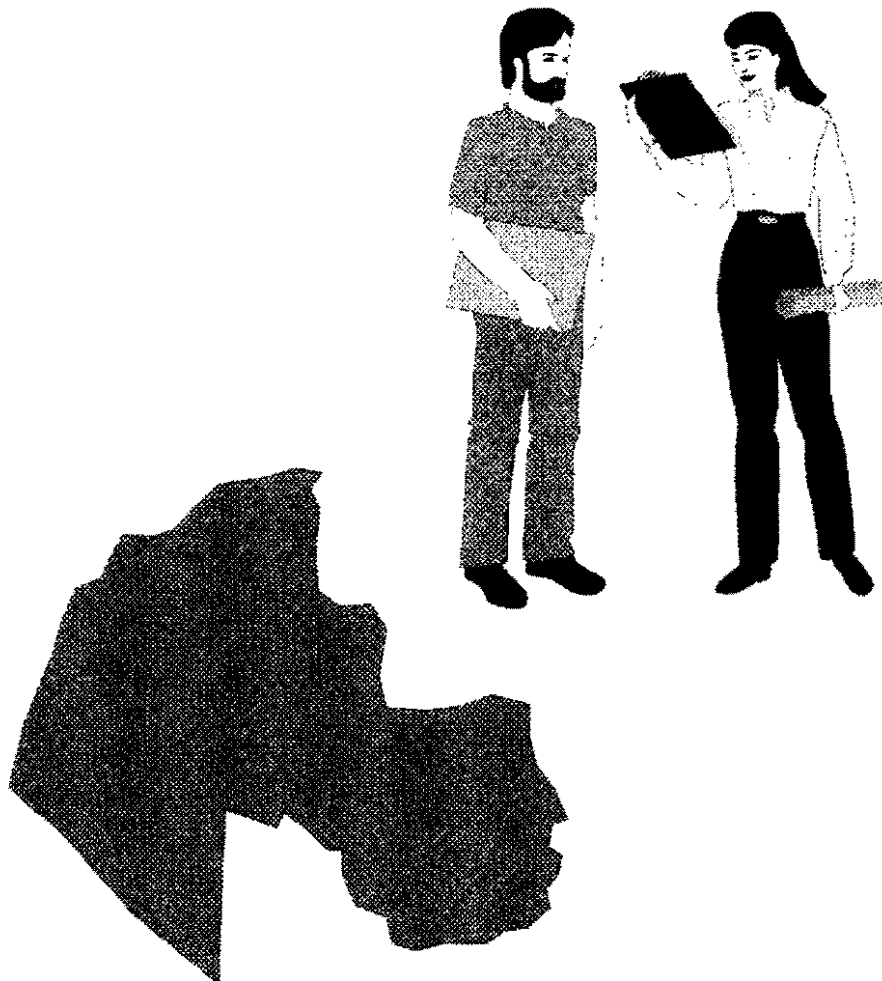
Class	Frequency	% Valid
0	14	13.9
50	55	54.5
100	23	22.8
and greater...	0	0.0

LOS LIMONES

Class	P Frequency	% Accumulated
0	12	11.9
12	3	3.0
17	8	7.9
23	1	1.0
28	14	13.9
39	9	8.9
42	1	1.0
45	2	2.0
51	5	5.0
57	14	13.9
59	4	4.0
67	2	2.0
73	8	7.9
76	3	3.0
84	11	10.9
89	1	1.0
100	3	3.0
and greater...	0	0.0

Section 4

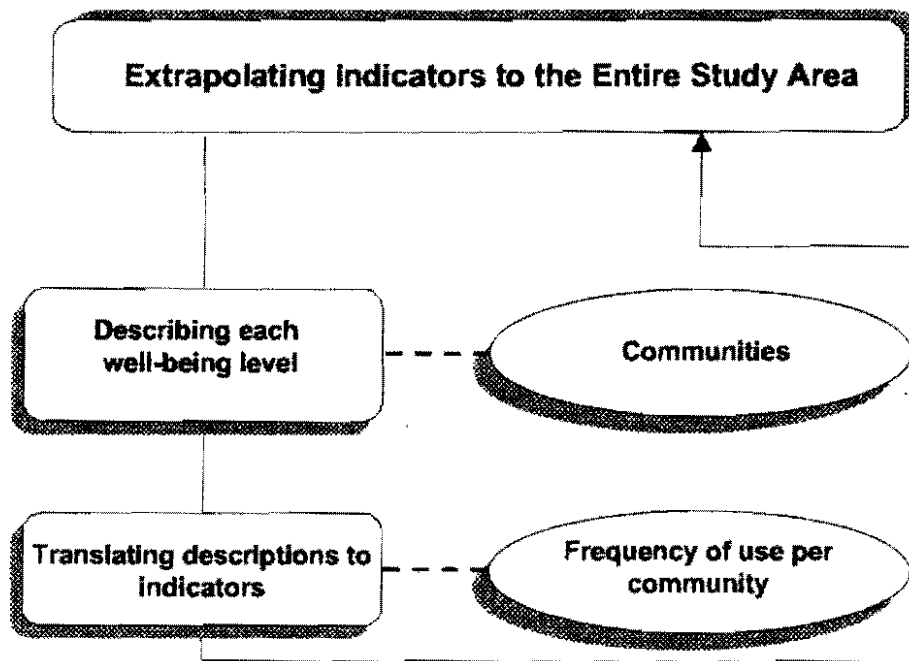
Extrapolating Indicators to the Entire Study Area



Section 4. Extrapolating Indicators to the Entire Study Area

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Section Structure



Objective

- ✓ To evaluate the applicability of indicators for a study area based on the indicators obtained from sampled communities.

Guiding Questions

1. Where can you obtain the indicators used for ranking well-being levels?
2. What conditions should you take into account when selecting an indicator?
3. What factors should you evaluate to decide whether an indicator could be extrapolated to an entire study area?

Introduction

So far we have discussed the descriptions of well-being levels and the distribution of households according to each level, but with respect to only *one* community. Most researchers, technicians, and rural development workers, however, are interested in extrapolating such descriptions to larger areas, for example the municipality.

In this section, we will show you how to assess the extent to which well-being descriptions of sample communities can be applied to an entire study area. Instead of comparing entire descriptions, you may find it more practical to "translate" or "reduce" the descriptions of the different well-being levels into sets of indicators, and then compare these sets.

4.1. Translating the Descriptions to Indicators of Well-Being

To reduce the descriptions of the different well-being levels for each community where they were ranked, you should first check how many there are. You will find it easier to work with a fixed number of levels for all the selected communities. This number should be the same as for the average well-being categories, based on rankings that you constructed in Section 3. For example, three levels of well-being were identified in the studies conducted in Honduras and Nicaragua.

Once you have identified the well-being levels, you can reduce the informants' descriptions to indicators. We recommend that you do this reduction with the help of another person to ensure greater reliability of the reduction or translation.

Table 4.1. presents the descriptions for each level of well-being given by three informants in La Albardilla Community, Sulaco, Yoro in Honduras, and Table 4.2. shows several indicators obtained from these descriptions.

Table 4.1. Well-being rankings, Abardilla Community, Sulaco, Yoro Department.

Code: 180 904 Date: 9 April 1997 Interviewer(s): Rosa Escolan		
Informant 1	Informant 2	Informant 3
Name: Martha Edilia Hernandez Sex: Female Age: 33 Occupation: Housewife Ethnic group: -	Name: Dagoberto Orellana Sex: Male Age: 21 Occupation: Farmer Ethnic group: -	Name: Ana Leticia Murillo Sex: Female Age: 26 Occupation: Housewife Ethnic group: -
Well-Being Level 1: They have a house and animals. They have a place to work and can support themselves. They have livestock, pigs, hens, not too many, but they help. Some have planted coffee, and have draft animals. They are fighters; they harvest more than others do. Some lease land and houses. Others do not own land ; they rent land, but the harvests are good, that is, they do well; they have surplus produce to sell and money for household expenses.	Well-Being Level 1: They have more than do others, more to show; they grow maize, beans. They all have land, cattle; they plant and harvest more than the rest. They are able to sell and trade. They have good quality houses, beasts of burden, hens, and enough healthy cows.	Well-Being Level 1: <i>They have land. They at least have their own house. They do not work for others and, if they do, it is as a favor and not out of need. They have their own sources of work; they do not have cash, but they have food security. They give work to others who do not have a means of living. They are people who do not suffer during crises because they are able to store their grain for times of shortage. They harvest a little more than do others. They are not rich; they are people who have enough to support their families and have a little more than others. They can put up a fight while others go down under adversity.</i>

Table 4.1. Continued

Code: 180904 Date: 9 April 1997 Interviewer(s): Rosa		
<p>Well-Being Level 2:</p> <p>They are poor, but manage for food. They are hard workers; they seek ways of earning money from using animals, either selling or consuming them. Sometimes they work as day laborers, taking whatever work they can get (contract work). The women raise small animals and many make a living from them. The people belonging to this group have their own land to work; they manage to sell some of their produce, but leave most for home consumption.</p>	<p>Well-Being Level 2:</p> <p>They live well; they have less than do those of group 1. They have their own house and land. They work their own land and occasionally work as day laborers; they are able to give work to others. They grow maize and beans for home consumption. They sell very little.</p>	<p>Well-Being Level 2:</p> <p>Their needs are slightly greater than are those of group 1. Although they are day laborers, they manage to support their families. They grow a little maize and beans. (These families have many children, at least five. They have about enough food to eat. In June they suffer a little from food shortages; they cannot always make ends meet during the year. They have their own houses and a little land that gives them the opportunity to cultivate.)</p>
<p>Well-Being Level 3:</p> <p>They have neither a house nor land to work. They suffer ill health. Women who live alone belong to this group; they do not always have food for their three meal times. They are fighters. (They live off day work. Some are long-suffering elderly people who live on community charity. During times of crisis they are the most affected because they do not have reserves. The women who live alone make and sell bread or pork tamales, or perform household chores in cities like Tegucigalpa and San Pedro Sula. Those who plant crops have to rent land or ask for it on loan.)</p>	<p>Well-Being Level 3:</p> <p>They live in poor conditions because they do not have animals; they only have a house. They work as day laborers; they cultivate land that they lease or have on loan. On this land they grow beans and maize. They work and sacrifice themselves a lot but, even so, they do not have enough on which to live. No one in the community is rich; they only half-satisfy their needs, a little more than do others.</p>	<p>Well-Being Level 3:</p> <p>They have few resources and do not own land. The other groups do not include women who live alone; this group does. Some only have their house, others not even that and have to pay rent or are lucky because someone lends them a house. Others work as caretakers of other properties. (They work as day laborers to subsist; they pick coffee. They have no means of storing food and therefore suffer in times of crisis. They look for jobs in other communities such as La Montaña. Wages are low; sometimes they sell maize because they need to buy something. Women who live alone go elsewhere to work as cleaners or at whatever job they can find. This group includes many malnourished children.)</p>
<p>Observations on interviews/community (e.g., quality of informant (s), sampling factors).</p>		

Table 4.2. Well-being indicators according to Informant 1, La Albardilla, Sulaco, Yoro, in Honduras.

Level of Well -Being		
High	Middle	Low
<ul style="list-style-type: none"> • Lease land. • Own animals • Own few hens • Own few cattle • Own few pigs • Plant coffee • Some rent housing • Have draft animals/horses • Are fighters • Have harvest surpluses • Are a source of work • Have their own house 	<ul style="list-style-type: none"> • Sell animals • Sometimes have grain surpluses • Do not have problems getting food • Have their own land 	<ul style="list-style-type: none"> • Do not own house • Have ill health • Have problems getting enough food • Do not own land • Some are women

Once you have reduced the descriptions to well-being indicators, then you can assess the degree to which these indicators, already identified in the sampled communities, can be extrapolated to neighboring communities. Remember that the communities were selected using a maximum variation sampling strategy. That is, they were selected with respect to factors that were assumed to cause differences in local perceptions of well-being within the communities.

One of the following situations may occur:

1. The indicators obtained for the different well-being levels show major similarities across communities, despite these communities being selected through a maximum variation sampling strategy. You can then assume that these indicators are valid for and can be extrapolated to the entire set of communities from which the sampled communities were selected.
2. The indicators show major differences among groups of communities, but are similar within these groups. For example, indicators are the same among communities that are easily accessible, but different to those among communities that are difficult to reach. In this case, indicators defined for one group of communities can be extrapolated to other communities only if they have similar characteristics to those of the group (for example, similar access).
3. Some indicators can be generally used across the selected communities, whereas others are specific to only certain types of communities. In this case, you will have to define a set of alternative indicators that vary between groups of communities, but have the same significance.

The set of indicators can then be extrapolated. Hypothetical examples of alternative indicators are "having cattle" and "having capital, vehicles, et cetera". Both indicators signify access to resources, although in different material forms.

The well-being indicators identified in the sampled communities are altogether different. In this case, you cannot extrapolate, and you may have to revise your choice of sampling factors selected in Section 1.

4.2. Frequency of Use of Indicators per Community and Level of Well-Being

To make it easier to compare the indicators used for different communities, count the number of times an indicator is used in different communities to describe the different well-being levels.

A matrix similar to that illustrated in Table 4.3. can be used. You can make it on an Excel or Lotus spreadsheet, or you can do it manually. Indicators are placed in the sequence in which they appear in the descriptions. Counting is done in the columns, which differentiate informant, community, and level of well-being described by the indicator.

Table 4.4. indicates the number of times an indicator is repeated per community studied in the Calico River watershed, Matagalpa, Nicaragua. The significance of the indicators was determined by informants at the study sites and their use per well-being level is differentiated by their quantification, as shown in Table 4.5. Table 4.6. shows the use of indicators by community.

Table 4.3. Matrix for calculating the frequency of indicators in Jalapa (Community No. 1), Yorito, Yoro.

Informant No.	1	1	1	2	2	2	3	3	3	Total
Community	1	1	1	1	1	1	1	1	1	
Level of well-being	1	2	3	1	2	3	1	2	3	
INDICATORS										
Some lease land						1				1
Some have little land						1				1
Rent land	1									1
Cultivate the land						1				1
Some do not own land								1		1
Some own a house								1		1
Do not own a house			1							1
Have good quality houses				1						1
Do not have animals						1				1
Have animals	1									1
Have a lot of cattle				1						1
Have hens				1						1
Have cattle				1						1
Have few hens	1									1
Own few cattle	1									1
Have few pigs	1									1
Can meet obligations							1			1
Have ill health			1							1
Not day laborers								1		1
Raise cattle				1						1
Are day laborers								1		1
Plant coffee	1									1
Plant beans						1				1
Plant maize						1				1
Have problems getting enough food			1							1
Have various ways of making money				1						1
Buy and sell beans				1						1
Buy and sell maize				1						1
Sell animals		1								1
Some work on their own land					1					1
Cannot meet obligations						1				1
Can meet obligations								1		1

Table 4.3. Continued.

Informant No.	1	1	1	2	2	2	3	3	3	Total
Community	1	1	1	1	1	1	1	1	1	
Level of well-being	1	2	3	1	2	3	1	2	3	
INDICATORS										
Lack resources									1	1
Are unsettled/stay with others									1	1
Do not own land			1						1	2
Some rent housing	1								1	2
Own draft animals/horses	1			1						2
Some are women			1						1	2
Are fighters	1					1				2
Sometimes have surpluses		1			1					2
Have surpluses	1			1						2
Sometimes work as day laborers		1			1					2
Are day laborers (or wage earners)						1			1	2
Plant some beans						1			1	2
Plant some maize						1			1	2
Do not have problems		1							1	2
Contract day laborers					1				1	2
Source of work	1								1	2
Own land		1				1			1	3
Own house	1					1			1	3

Table 4.4. Use of indicators by level of well-being, Calico River watershed, Matagalpa, in Nicaragua.

Indicators	Level 1	Level 2	Level 3	Total
Own enough land (> 3 mz) ^a	18	8	0	26
Own a house	9	10	3	22
Own cattle and/or horses	17	2	0	19
Are day laborers but have problems getting work	0	5	13	18
Do not own a lot of land (< 3 mz)	0	10	7	17
Do not own land	0	1	12	13
Have to rent land	0	2	11	13
Have few animals	0	11	1	12
Some have no house or it is provisional, exposed	0	0	8	8
Plant coffee	5	2	0	7
Do not own cattle	0	3	4	7
Have money and economic resources	5	1	0	6
Only have small animals, poultry, and pigs	0	2	4	6
Some live with others or rent housing	0	0	5	5
Have a wooden house	0	3	2	5
Sell part of the harvest	2	2	0	4
Do not have animals	0	1	3	4
Have money to pay workers	3	1	0	4
Have a more balanced diet	2	1	0	3
Concrete houses, galvanized iron roofing, with electricity	2	1	0	3
Have a car	3	0	0	3
Have a lot of animals	3	0	0	3
Work as caretakers	0	0	3	3
Are cattle -raisers and live off livestock	3	0	0	3
Have little money to buy things	1	1	0	2
Suffer from ill health	0	0	2	2
Do not have land outside the community	1	1	0	2
Have little money	1	1	0	2
Some have a paddock	1	1	0	2
Have land in another community	2	0	0	2
Cultivate part of their land	0	2	0	2
Plant some coffee	0	1	1	2
Own a farm or large estate	1	1	0	2
No access to credit	0	1	1	2
Have products for sale (milk, chickens, produce)	2	0	0	2

Table 4.4. Continued.

Indicators	Level 1	Level 2	Level 3	Total
Have no resources, are helped by children or family	0	0	2	2
Plant only to eat	0	1	1	2
Do not have to get work outside	0	1	1	2
Have to resort to credit	0	0	1	1
Sometimes do not harvest	0	0	1	1
Are self-sufficient	1	0	0	1
Have to beg	0	0	1	1
Do not have money	0	0	1	1
Have a brick and wood house	1	0	0	1
Are women living alone	0	0	1	1
Are not in need	1	0	0	1
Do not have a car	0	1	0	1
Have machinery	1	0	0	1
Know how to invest, do not squander	1	0	0	1
Do not drink much alcohol	1	0	0	1
Are more knowledgeable, have other ideas, and luck	1	0	0	1
Do not rent land to anybody	0	1	0	1
Are orphans	0	0	1	1
Are not very intelligent	0	0	1	1
Have money to buy things	0	1	0	1
Cannot buy cows	0	1	0	1
Have to work more to buy medicines	0	1	0	1
Do not loan or sell on credit	0	1	0	1
Rent their land to others	0	1	0	1
Live with employers	0	0	0	0

a. 1 mz = 0.7 ha (80 m²).

Table 4.5. Quantifying indicators according to level of well-being, Calico River watershed, Matagalpa, Nicaragua (1997).

Indicator	Level 1 (33)	Level 2 (67)	Level 3 (100)
Own land	> 3 mz ^a	1-3 mz	< 1 mz
Own animals	> 5 cows and 2 horses	1-4 cows, 1-2 horses	Only small animals
Own house (quality of house)	Good quality: made of concrete, wood, galvanized iron	Medium: timber, tile roofing	Poor: wood and straw; only straw
Food	Self-sufficient in production	Buy part, produces part	Almost always buys
Plant crops	Coffee, maize, beans	Maize and beans, more than 1 mz	Only maize or only beans, 1 mz or less
Earn wages/day labor	Never	Sometimes	Always
Contract servants	Always	Sometimes	Do not contract

a. 1 mz = 0.7 ha (80 m²).

Table 4.6. Use of indicators per community, Calico River watershed, Matagalpa, Nicaragua.

Indicator	Jicaro	Wibuse	Piedras Largas	Los Limones	Ciobano	Corozo	Total
Own enough land (> 3mz ^a)	3	3	3	3	3	3	18
Own cattle and/or horses	3	2	3	3	3	3	17
Day labor/have problems getting work	2	3	3	3	3	2	16
Own a house	2	3	3	2	2	3	15
Do not own a lot of land (< 3 mz)	2	2	3	2	1	3	13
Do not own land	0	2	3	3	3	2	13
Have to rent land	1	3	2	2	3	2	13
Have few animals	0	2	2	3	3	1	11
Some do not have a house, provisional	3	1	0	1	1	2	8
Do not have livestock	0	1	1	1	1	3	7
Have money and economic resources	0	0	1	0	2	2	5
Plant coffee	2	3	0	0	0	0	5
Some are unsettled or stay with others	0	2	0	2	0	1	5
Have a wooden house	0	1	0	0	2	2	5
Sell part of the harvest	0	0	0	1	3	0	4
Only have small animals, poultry, and pigs	0	1	0	1	1	1	4
Do not have animals	0	0	2	1	1	0	4
Have a car	0	2	1	0	0	0	3
Have a lot of animals	0	2	0	0	1	0	3
Work as caretakers	0	0	1	0	1	1	3
Have money to pay servants	0	0	0	2	1	0	3
Raise cattle and live off livestock	0	2	0	0	1	0	3

a. 1 mz = 0.7 ha (80 m²).

Exercise 4.1. Validating Rankings for an Entire Study Area

Objective

- ✓ To verify whether the rankings conducted in several communities can be extrapolated to an entire study area.

Instructor's Guidelines

1. Organize participants into groups of four or five members, depending on the number of participants.
2. Hand out the instructions and the five work sheets of the exercise (pages 4-14 to 4-19 inclusive) to each participant.
3. Explain in detail what the participants are to do with each work sheet. If possible, use an overhead projector to demonstrate and explain the material.
4. Ask a member of each group to present the indicators most used per community and per well-being level in the sampled area.
5. Share with the participants the feedback on the exercise.

Resources needed

- Work sheets in matrix form to calculate frequencies of indicators in the sampled community
- Information from other communities of the study area (Appendices 7.3, 7.4, 7.5)
- Work sheet to obtain frequency of indicators per community
- Work sheet to obtain frequency of indicators per level of well-being
- Work sheet to select indicators most frequently used in all communities
- Flip chart and markers

Estimated time required: 1 hour

Exercise 4.1. Validating Rankings for the Entire Study Area

Objective

- ✓ To verify whether the rankings conducted in several communities can be extrapolated to the entire study area.

Instructions for the Participants

Read the following instructions carefully to complete the exercise.

1. On Work Sheet No. 1, write down the indicators that you can obtain from the description work sheet (Village of Jalapa, Yoro, Honduras), Appendix 7.3.
2. On Work Sheet No. 2, write down the frequency of the indicators obtained in the previous step. Employ indicators used by the three informants, without repeating them. This work sheet aims to determine the frequency **per well-being level**.
3. With the data contained in Work Sheet No. 2, in addition to the information appearing in Appendices 7.4 and 7.5, fill out Work Sheet No. 3 to obtain the frequency of indicators per community.
4. Based on the data collected in Work Sheet No. 2, in addition to the information contained in Appendices 7.4 and 7.5, fill out Work Sheet No. 4 to obtain the frequency of the indicators per each level of well-being for the entire study area.
5. On Work Sheet No. 5, write down the indicators most commonly used for all communities and indicate the level of well-being.
6. Choose a member of your group to present, during the plenary session, the indicators most used (frequency) in the study area analyzed in the exercise, using the flip chart.

Exercise 4.1. Work Sheet No. 1 for Validating Rankings for the Entire Study Area

**Reducing Well-Being Descriptions to Indicators
Jalapa, Yorito, Yoro (Honduras)**

Group No. ____

Level of Well -Being		
High	Middle	Low

Exercise 4.1. Work Sheet No. 2 for Validating Rankings for the Entire Study Area

Matrix for Calculating the Frequency of Indicators in Community No. 1, Jalapa, Yorito, Yoro (Honduras)

Group No. _____

Informant No.	1	1	1	2	2	2	3	3	3	Total
Community	1	1	1	1	1	1	1	1	1	
Level of well-being	1	2	3	1	2	3	1	2	3	
Indicators										

Exercise 4.1. Work Sheet No. 3 for Validating Rankings for the Entire Study Area

Frequency with which Indicators are Used per Community-Tascalapa Watershed

Group No. ____

Indicators	Level of well -being/community			
	Jalapa	La Albardilla	Vallecillos	Total
Are day laborers				
Plant a lot of maize				
Have a lot of land				
Raise cattle				
Do not own land				
Poor-quality house, or do not own one				
Own little land				
Plant a lot of beans				
Plant coffee				
Have problems getting food				
Own a good quality house				

Exercise 4.1. Work Sheet No. 4 for Validating Rankings for the Entire Study Area

Frequency with which Indicators are Used per Level of Well-Being,
Tascalapa Watershed, Honduras

Group No. ____

Indicators	Levels of Well -Being			
	High	Middle	Low	Total
Are day laborers				
Plant a lot of maize				
Own a lot of land				
Raise cattle				
Do not own land				
Poor-quality house or do not own a house				
Own little land				
Plant a lot of beans				
Plant coffee				
Have problems getting food				
Have a good quality house				

Exercise 4.1. Validating Rankings for the Entire Study Area

Feedback on Work Sheet No. 1

Reducing Descriptions of Levels of Well-Being to Indicators Jalapa, Yorito, Yoro, Honduras

Group No. ____

Levels of Well -Being		
High	Middle	Low
Have good quality houses	Have little land to work	Do not own land
Have a lot of land	Have their own house	Some have a small plot
Own cattle	Sell some of their harvest	Poor-quality house, or do not have one
Have small animals (pigs, hens)	Plant maize and beans	Do not have animals
Some have coffee farms	Sometimes work as day laborers	Buy most of the grains they consume
Have animals	Sometimes rent land	Are day laborers
Some rent land to others	Are capable of giving work to others	Rent or borrow land to plant crops
Sell animals	Have animals	Work as caretakers of other farms
Have harvest surpluses to sell		Women who live alone
Give work to other people		
No problems with food security		
Sometimes work as masons		
Are professionals		

Feedback on Work Sheet No. 2

Matrix to Calculate the Frequency of Indicators Jalapa, Yorito, Yoro (Honduras)

Group No. _____

Indicators	Level of Well -Being			Total
	High	Middle	Low	
Are day laborers	0	2	4	6
Have a lot of land	4	0	0	4
Have a good quality house	3	0	0	3
Own cattle	4	1	0	5
Plant coffee	2	2	0	4
Have small animals (pigs, hens)	1	2	0	3
Poor-quality house, or do not have one	0	0	3	3
Work as masons	1	0	0	1
Have a little plot of land to work	0	3	2	5
Do not own land	0	1	2	3
Rent or borrow land	0	1	2	3
Sell part of their harvest	3	2	0	5
Give work to other people	3	0	0	3
Are professionals	1	1	0	2
Women who live alone	0	0	2	2
Plant a lot of maize	4	0	0	4
Have problems with food security	0	0	1	1

Feedback on Work Sheet No. 3

Frequency with which Indicators are Used per Community Tascalapa Watershed (Honduras)

Group No. ____

Indicators	Communities			Total
	Jalapa	La Albardilla	Vallecillos	
Are day laborers	6	3	4	13
Plant a lot of maize	4	3	4	11
Own a lot of land	3	2	3	8
Raise cattle	5	2	3	10
Have small animals	3	-	-	3
Do not own land	3	3	3	9
Poor-quality house, or do not have one	3	4	3	10
Own little land	5	2	3	10
Plant coffee	4	2	2	8
Have problems with food security	0	2	2	4
Have a good quality house	3	2	2	7

Feedback on Work Sheet No. 4

Frequency with which Indicators are Used per Level of Well-Being Tascalapa Watershed (Honduras)

Group No. ____

Indicators	Level of Well -Being			Total
	High	Middle	Low	
Are day laborers	0	3	10	13
Plant a lot of maize	10	1	7	14
Own a lot of land	8	0	0	8
Raise cattle	9	1	0	10
Do not own land	0	1	8	9
Poor-quality house, or do not have one	0	1	9	10
Own little land	0	8	2	10
Plant coffee	6	2	0	8
Have problems with food security	0	0	5	5
Have small animals	1	2	0	3
Rent land	0	1	3	4
Have a good quality house	7	0	0	7

Feedback on Work Sheet No. 5

Most Frequently Used Indicators per Community and per Level of Well-Being Tascalapa Watershed (Honduras)

Group No. _____

Indicators	No.	Level of Well -Being		
		High	Middle	Low
Plant a lot of maize	14	X		
Are day laborers	13			X
Own livestock	10	X		
Do not own land	9			X
Own a lot of land	8	X		
Own little land	10		X	
Plant coffee	8	X		
Have a good quality house	7	X		
Rent land	4			X
Have problems with food security	5			X
Have a poor -quality house or do not own one	10			X
Have small animals	3		X	

Conclusions

The main objectives of Exercise 4.1 are to:

- ✓ Obtain reliable indicators of levels of well-being, based on descriptions given by key informants in sampled communities, and
- ✓ Assess whether they can be extrapolated to a larger area than the community (for example, to a small or large watershed) by using the frequency of use of these indicators.

Work Sheets No. 1 and 2 served to extract the indicators from the descriptions made of a village of Honduras (Appendix 7.3) and record the number of times they were used by informants to describe the three levels of well-being (frequency).

Work Sheet No. 3 used this information and that contained in Appendices 7.4 and 7.5, which are the indicators of other villages of the Tascalapa watershed in Honduras, to determine whether they are repeated in more than one community of the area. Thus whether they can be applied to identify levels of well-being in the entire study area can be assessed.

Work Sheets No. 4 and 5 summarize the indicators most frequently used per community and per level of well-being, supporting the decision that they can be extrapolated to a larger area than a community or village.

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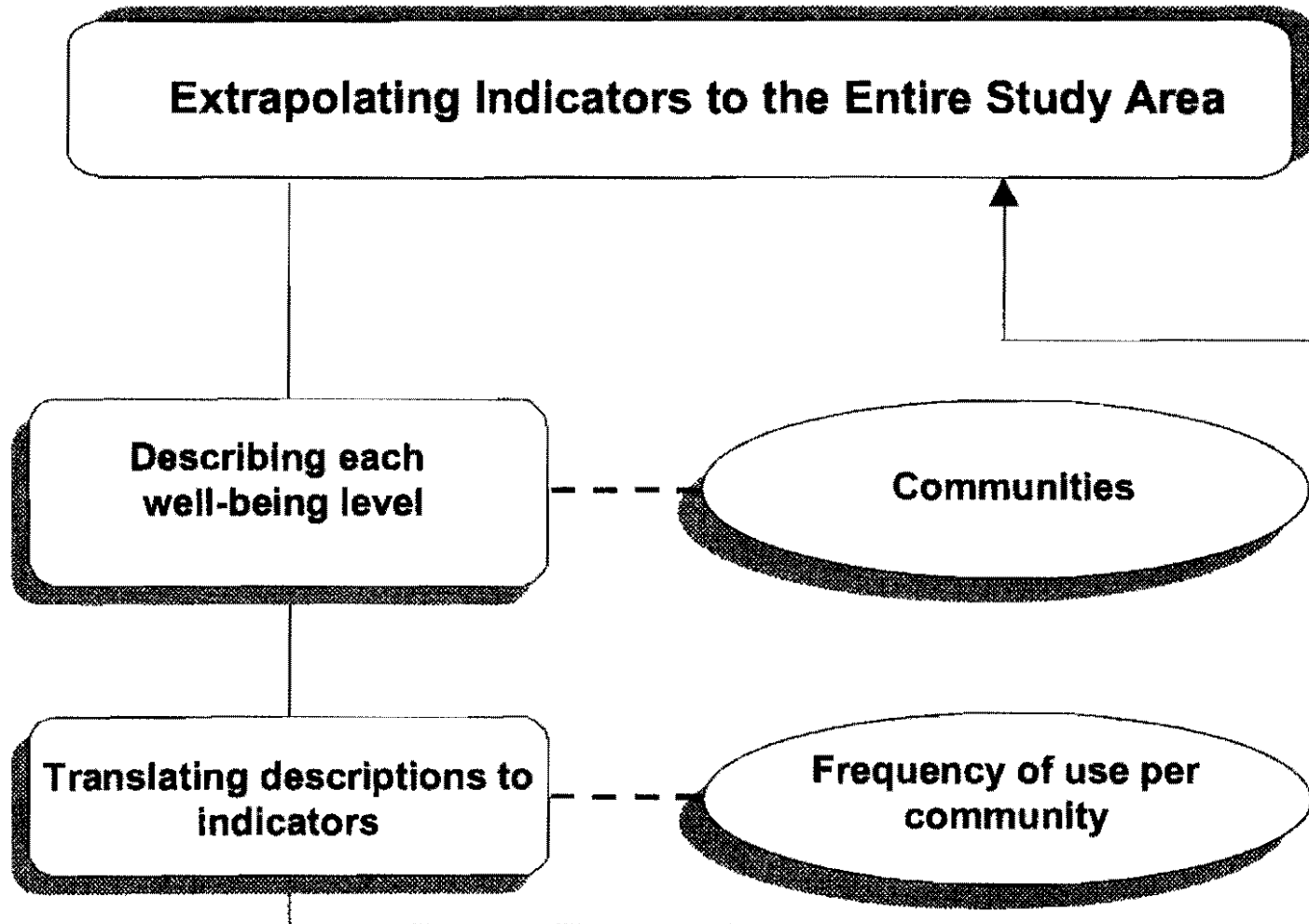
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Originals for Transparencies

SECTION STRUCTURE



SECTION OBJECTIVE

- ✓ To evaluate the applicability of indicators for a study area based on the indicators obtained from sampled communities.

ORIENTING QUESTIONS

- 1.** Where can you obtain the indicators used for ranking well-being levels?
- 2.** What conditions should you take into account when selecting an indicator?
- 3.** What factors should you evaluate to decide whether an indicator can be extrapolated to an entire study area?

INDICATORS OF WELL-BEING LEVELS

INFORMANT N°. 1

LA ALBARDILLA, SULACO, YORO, HONDURAS

Level of Well-Being		
High	Middle	Low
Lease land to others	Sell animals	Don't have a house
Have animals	Sometimes don't have	Are very sick people
Own few chickens	surpluses of grain	Have problems getting
Own few cattle	Don't have problems	food
Own few pigs	getting food	Don't own land
Plant coffee	Own land	Some are women
Some rent housing		
Have animals/horses		
Are hard-working		
Harvest a lot		
Have surpluses of production		
Source of employment		

QUANTIFYING INDICATORS ACCORDING TO WELL-BEING LEVEL CALICO RIVER SUB-WATERSHED, MATAGALPA, NICARAGUA (1997)

Indicator	Level 1 (33)	Level 2 (67)	Level 3 (100)
Own land	> 3 mz*	1-3 mz	<= 1 mz
Have animals	> 5 cows and 2 horses	1-4 cows, 1-2 horses	Only small animals
Own a house (condition of house)	Good: concrete, wood, zinc	Regular: wood, tile	Poor: wood and straw, only straw
Food	Self-sufficient	Buys half, produces half	Almost always buys
Plant crops	Coffee, maize, beans	Maize and beans, > 1 mz	Maize alone or beans alone, 1 mz or less
Wage earner/ day laborer	Never	Sometimes	Always
Contract workers	Always	Sometimes	Never

* 1 mz = 0.16 ha (0.40 ac)

Section 5

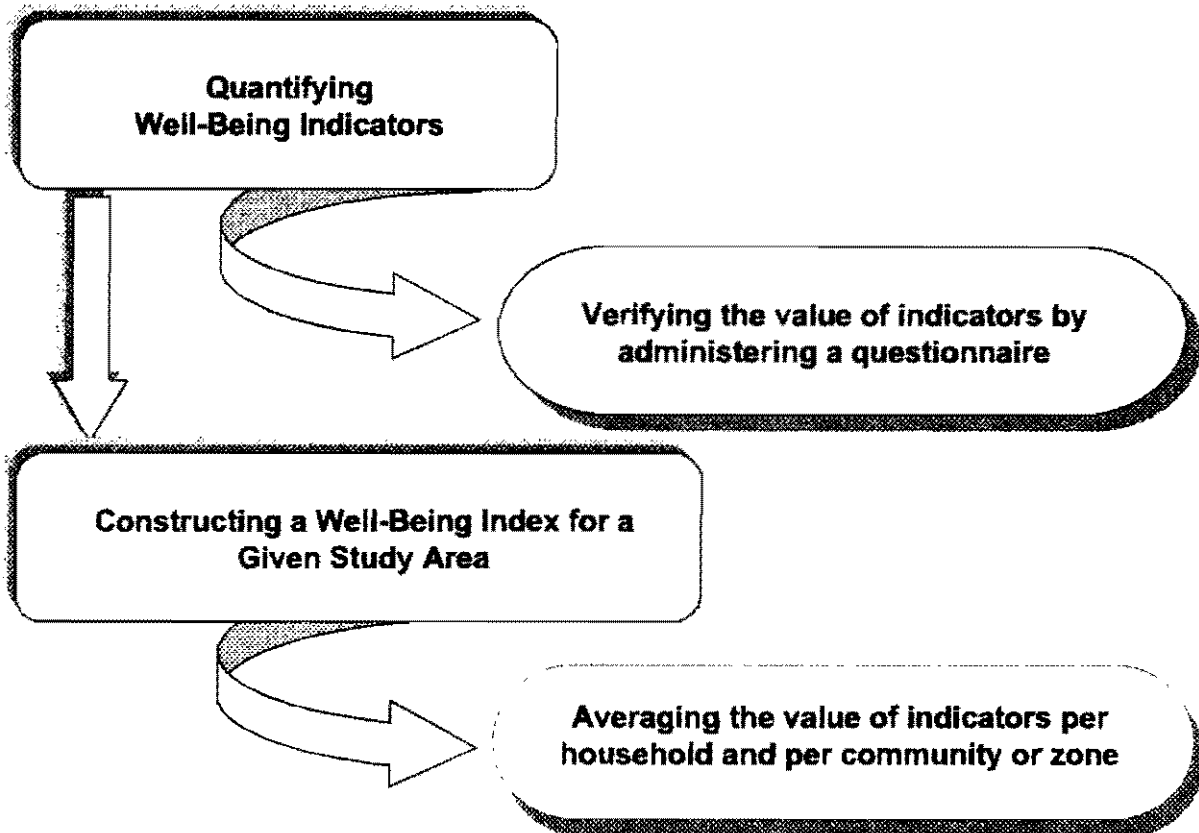
Quantifying Indicators of “Well-Being” and Constructing an Index for the Entire Study Area



Section 5. Quantifying Indicators of “Well-Being” and Constructing an Index for the Entire Study Area

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Section Structure



Objectives

- ✓ To quantify well-being indicators by administering a questionnaire.
- ✓ To construct a well-being index for a given study area.

Orienting Questions

1. What do you understand by 'quantifying' a well-being indicator?
2. How do you select the sample population for administering a questionnaire?
3. What is a "well-being index"?

Introduction

Sections 1 through 4 indicated how to identify local perceptions of well-being through rankings. These perceptions were translated into sets of well-being indicators to determine the extent to which these sets of indicators can be applied or extrapolated to the entire study area.

As a result, you now have a set (or various sets) of indicators that will help you characterize the entire population according to its well-being level.

Now, you must find a way to apply this set (or sets) of indicators to the entire study area so that you can make an overall profile of well-being or poverty.

5.1. Designing and Administering Questionnaires

Probably the most practical way of applying indicators and verifying whether they are valid for the entire area is to design and administer a questionnaire to a representative sample of the population in your study area.

The questionnaire should be structured around the indicators. Questions should be formulated in such a way that their answers will give you only those details that you need to quantify the indicator (Table 5.1).

The questionnaire may also include other poverty-related aspects, for example the use of natural resources. If this is the case, include specific questions on these aspects in the questionnaire.

In the case of Honduras and Nicaragua, one of the objectives of the questionnaire was to understand the relationship between poverty and natural resource management. Therefore, in addition to questions on well-being, specific questions on the use of natural resources were included, as indicated in Table 5.2.

Table 5.1. Sample questionnaire to quantify indicators of "well-being" within a community.

No.	Question	Options	Score
I. Land ownership			
1.1.	Do you own land?	Yes _____ Only a backyard _____ No _____	
1.2.	If you do, how much do you own?	Less than 1 mz* _____ 1 to 4 mz _____ More than 4 mz _____	
II. HOUSING			
2.1.	The house where you live is...	Your own _____ Rented _____ Borrowed _____	
2.2.	In what condition is the house?	Good _____ Regular _____ Poor _____	
III. EMPLOYMENT AND INCOME			
3.1.	Do you work as a day laborer during the year?	Yes _____ No _____	
3.2.	If you answered affirmatively, with what frequency?	Continually _____ Occasionally _____	

* 1 mz (manzana) = 0.7 ha (80 m²).

Table 5.2. Sample questions on the use of natural resources (Honduras, 1998).

6.1.	In general, what do you think about the soil in this plot? How fertile is it?	Does not produce without fertilizers _____ Does not need fertilizers _____
6.2.	What happens with the water if it rains and the plot is uncovered?	Puddles are formed _____ Some puddles are formed _____ No puddles are formed _____
6.3.	Has anything been done to prevent the soil from eroding?	Contour levels _____ Live barriers _____ Dead barriers _____ Mulching to protect the soil _____ No _____
6.4.	How deep is the soil?	Less than 2 inches _____ Between 2 and 5 inches _____ Between 5 and 10 inches _____ More than 10 inches _____

5.2. Developing a “Well-Being Index”

A “well-being index” is a single measure that combines a set of previously quantified indicators that express the level of well-being of a given household. However, you must be careful to preserve the sense in which the informants used the indicators to describe the different well-being levels.

You need to remember that indicators are not strict criteria, defined beforehand. Instead, they are the result of the perceptions of each key informant during the ranking of households within their respective communities.

Also, the different levels of well-being were based on phrases as 'most households in this group own livestock' and 'some households of this group are professionals'. As a result, no indicator by itself would be sufficient to indicate a household's well-being level.

Some indicators describe only one level of well-being, while others distinguish various levels of well-being. Finally, for some indicators, what is important is the existence of certain threshold values related to a qualitative meaning and not just their quantitative meaning.

'Land ownership' illustrates this concept in studies conducted not only in Colombia but also in Nicaragua and Honduras.

The informants used this indicator to explain not only the amount of land owned by a household the concrete or quantitative meaning but also to differentiate between households whose only source of income was to day labor and those households who, in addition to its work, have access to sufficient land and therefore the opportunity of using labor for their own benefit, regardless of other people. This is the qualitative meaning of land ownership.

A scoring system can then be developed for “well-being” indicators. The system assigns a score to each household, for each individual indicator. The well-being index is thus defined as *the average of scores a household obtains for the indicators used to measure its well-being level.*

The index has the advantage that different combinations of scores for individual indicators or variables may result in the same well-being index value.

The scoring system developed for both Honduras and Nicaragua operates with three levels of scoring, corresponding to the three levels of well-being: 33, 67, and 100 (see Section 3). But the actual values of these scores are arbitrary; what is important is that the number of levels of scoring corresponds to the number of levels of well-being included in the analysis *and* that the intervals between scores is uniform.

Thus, instead of choosing 33, 67, and 100, we could have chosen something like 100, 200, and 300; or 10, 20, and 30; or 20, 40, and 60.

In the studies of Honduras and Nicaragua, a value was assigned for each well-being level. A value of 33 was assigned to the high level of well-being, 67 to the intermediate level of well-being, and 100 to the low level of well-being.

Table 5.3 shows how values were assigned to each indicator forming the well-being index for Honduras. Also, the table includes some indicators for which a value could not be assigned for all households. Therefore, a value of 999 was assigned if the indicator was not applied or 888, if data was lost. For example, for the milk production indicator, not all households had cattle and therefore only those with cattle were included in this indicator.

Table 5.3. Quantifiable well-being indicators and their scores (Honduras, 1998).

(Italicized text refers to Spanish names of indicators)

Indicator	Score
Housing (ownership and quality) (<i>PCASA</i>)	
• If the household owns the house and the house is of good quality	33
• If the household owns the house but this house is in regular conditions	67
• If the household does not own the house or it is of poor quality	100
Land ownership (<i>PTIERRA</i>)	
• If the household owns 4 mz* or more of land and also has land under pasture	33
• If the household owns between 1 and 4 mz of land	67
• If the household doesn't own land or only owns less than 1 mz	100
Crops (<i>PCULTIVO</i>)	
• If the household plants coffee, cacao, or pastures and/or plants more than 4 mz of maize and/or beans	33
• If the household does not plant coffee or cacao or pastures, but plants between 1 and 4 mz of maize and/or beans	67
• If the household does not plant crops or plants less than 1 mz of maize and/or beans	100
Day labors on other farms (<i>PJORNAL</i>)	
• No member of the household works as a day laborer	33
• Household member occasionally works as a day laborer (less than 3 months a year)	67
• Household member works as a day laborer as main occupation (more than 3 months/year)	100
Production, use, and purchase of basic grains (<i>PPRODUCC</i>)	
• If the household sells most or all of its production and does not buy basic grains	33
• If the household sells up to half of its production and does not buy basic grains	67
• If production is mainly for consumption, but the household also has to buy basic grains	100

Health conditions and problem -solving (PSALUD)	
• If the household has access to health services when a member is ill	67
• If household members usually do not have access to health services and resort to traditional medicine	100
Sources of income besides farming (PINGRESO)	
• If household members are professionals and/or businessmen	33
• If household members are not professionals and/or businessmen, but are craftsmen	67
• Nobody in the household is a professional, a businessman, or a craftsman, but perform domestic work	100
Animal ownership (PANIMAL)	
• If the household owns poultry and other animals	33
• If the household only owns poultry	67
• If the household does not own any animals	100
Cattle-raising (PGANADO)	
• If the household has cattle	33
• If the household does not have cattle	67
Food security (PALIMENT)	
• If the household does not have problems in getting enough food or, if it experiences shortages, it is only for a short time	67
• If the household has problems in getting enough food for long periods of time	100
Employment of day laborers (PUSOJORN)	
• If the household contracts day laborers on its farm	33
• If the household does not contract day laborers on its farm	67
• The indicator does not apply	999
Capacity to save money and to lend money to neighbors (PDINERO)	
• If the household has savings in some institution and/or makes small loans to neighbors	33
• If the household does not have savings nor does it make loans to neighbors	67

* 1 mz = 0.7 ha (80 m²).

The well-being index is calculated by adding the average of each indicator, as follows:
INDICEBE = PCASA + PTIERRA + PCULTIVO + PJORNAL + PPRODUCC + PSALUD + PINGRESO + PANIMAL + PGANADO + PALIMENT + PUSOJORN + PDINERO

The well-being index is constructed by adding the averages of each indicator and not by adding each indicator because this excludes the effect of the 999 and 888 values. Table 5.4 indicates how the well-being index is constructed for several households of La Albardilla Community in Sulaco, Yoro.

Table 5.4 Calculating the well-being index of several households of La Albardilla Community in Sulaco, Yoro (1998).

No. of household	Indicators												
	Land	Crop	Day laborer	Income	Use of laborers	Cattle	Animals	Housing	Money	Food	Health	Production	Index
1	33	33	33	100	33	33	33	33	67	100	100	100	58
2	67	100	33	33	67	33	33	100	67	100	100	100	69
3	67	100	100	100	67	67	33	100	33	100	100	67	97
4	67	na	100	33	na	67	67	67	67	100	67	na	71
5	67	100	33	33	33	67	67	100	67	100	67	100	70
6	33	67	33	100	33	33	33	33	67	67	100	67	56
7	33	67	33	100	33	33	33	100	67	100	67	100	64
8	100	na	33	67	na	67	33	67	67	100	67	na	67
9	67	100	100	67	33	67	33	100	33	100	67	100	72
10	67	100	100	33	67	67	67	100	67	100	100	100	81
11	67	100	67	100	33	67	67	100	67	100	100	67	78
12	67	67	100	100	33	67	33	100	67	100	67	100	75
13	67	33	33	100	33	67	67	100	33	100	100	100	69

Exercise 5.1. Constructing a “Well-Being Index” for a Given Community

Objective

- ✓ Participants should be able to construct a well-being index for households and for the community, using the averages of indicators provided in the work sheet.

Instructor’s guidelines

1. Organize participants into groups.
2. Hand out the instructions and Work Sheet no. 1 that contains the values of indicators for 16 families of Los Limones Community, Nicaragua.
3. Ask a member of each group to present the results in the plenary session, using a flip chart.

Resources needed

- Calculator
- Flip chart
- Magic markers

Time required: 20 minutes

Exercise 5.1. Constructing a “Well-Being Index” for a Given Community

Objective

- ✓ The participants should be able to construct a well-being index for households and for the community, using the averages of indicators provided in the work sheet.

Instructions for the participants

1. Use Worksheet no. 1 to add up the indicators per household to obtain the household's index. Then do the same to obtain the community's well-being index.
2. Select a member of the group to present and explain the group's results using the flip chart. To explain the result with the indexes, remember the scoring scale defined for each well-being level (0, 33, 67, 100).

Exercise 5.1 Work Sheet No. 1 for Constructing a "Well-Being Index" for a Given Community

**Calculating the well-being index per household and per community
(Data of Los Limones Community, Matagalpa, Nicaragua, 1997)**

Household code no.	Indicators										Index
	Housing	Land	Crops	Animals	Income	B. grains	Day laborer	Use of day laborers	Food	Health	
4013	100	67	67	100	67	67	33	67	67	67	
4016	100	100	67	100	100	100	67	100	67	67	
4020	100	100	67	100	100	100	67	67	100	67	
4023	100		33	100	67	67	33	67	67	100	
4029	100	33	67	100	100	100	67	100	100	67	
4030	100	67	67	100	100	100	67		67	67	
4036	100	100	33	100		67	33	67	67	67	
4045	67	67	67	100	100	67	67	67	67	67	
4054	67	100	67	100	100	100	67		67	67	
4066	67	67	67	33	67	67	33	67	67	67	
4072	100	67	67	100	100	67	33	67	67	67	
4078	100	100	67	67	100	67	67	67	67	67	
4083	100	33	67	100	100	100	67	100	100	100	
4094	100	33	67	67	100	67	33	100	100	67	
4097	100	67	67	100	100	67	67	67	67	67	
4101	100	100	67	100	100	100	67	67	100	100	

Community's well-being index

Exercise 5.1. Feedback on Constructing a "Well-Being Index" for a Given Community

**Calculating the well-being index per household and per community
(Data of Los Limones Community, Matagalpa, Nicaragua, 1997)**

Household code no.	Indicators										Index
	Housing	Land	Crops	Animals	Income	B. grains	Day laborer	Use of day laborers	Food	Health	
4013	100	67	67	100	67	67	33	67	67	67	70
4016	100	100	67	100	100	100	67	100	67	67	87
4020	100	100	67	100	100	100	67	67	100	67	87
4023	100		33	100	67	67	33	67	67	100	70
4029	100	33	67	100	100	100	67	100	100	67	83
4030	100	67	67	100	100	100	67		67	67	82
4036	100	100	33	100		67	33	67	67	67	70
4045	67	67	67	100	100	67	67	67	67	67	74
4054	67	100	67	100	100	100	67		67	67	82
4066	67	67	67	33	67	67	33	67	67	67	60
4072	100	67	67	100	100	67	33	67	67	67	74
4078	100	100	67	67	100	67	67	67	67	67	77
4083	100	33	67	100	100	100	67	100	100	100	87
4094	100	33	67	67	100	67	33	100	100	67	73
4097	100	67	67	100	100	67	67	67	67	67	77
4101	100	100	67	100	100	100	67	67	100	100	90

Community's well-being index

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Quantifying Indicators of "Well-Being" and Constructing 5 - 11 an Index for the Entire Study Area

Identifying Levels of Well-Being to Construct Local Profiles of Rural Poverty

Conclusion

The well-being index per household represents the contribution of each defined indicator, in the precise formulation of the profile for each household in a community, in this case, Los Limones.

Please remember that a scale was defined to obtain a score per household (0, 33, 67, 100) and represents the well-being level of that household and the community to which it belongs. (See index, Exercise 5.1). For example: The first household obtained an index of 70%, and therefore tends to be located at an intermediate level of well-being (67-100), according to the score assigned to this level. The same occurs with the well-being index for the entire community (78%).

In this study, Los Limones Community, which is located in a sub-watershed in Nicaragua, was ranked with an intermediate well-being level.

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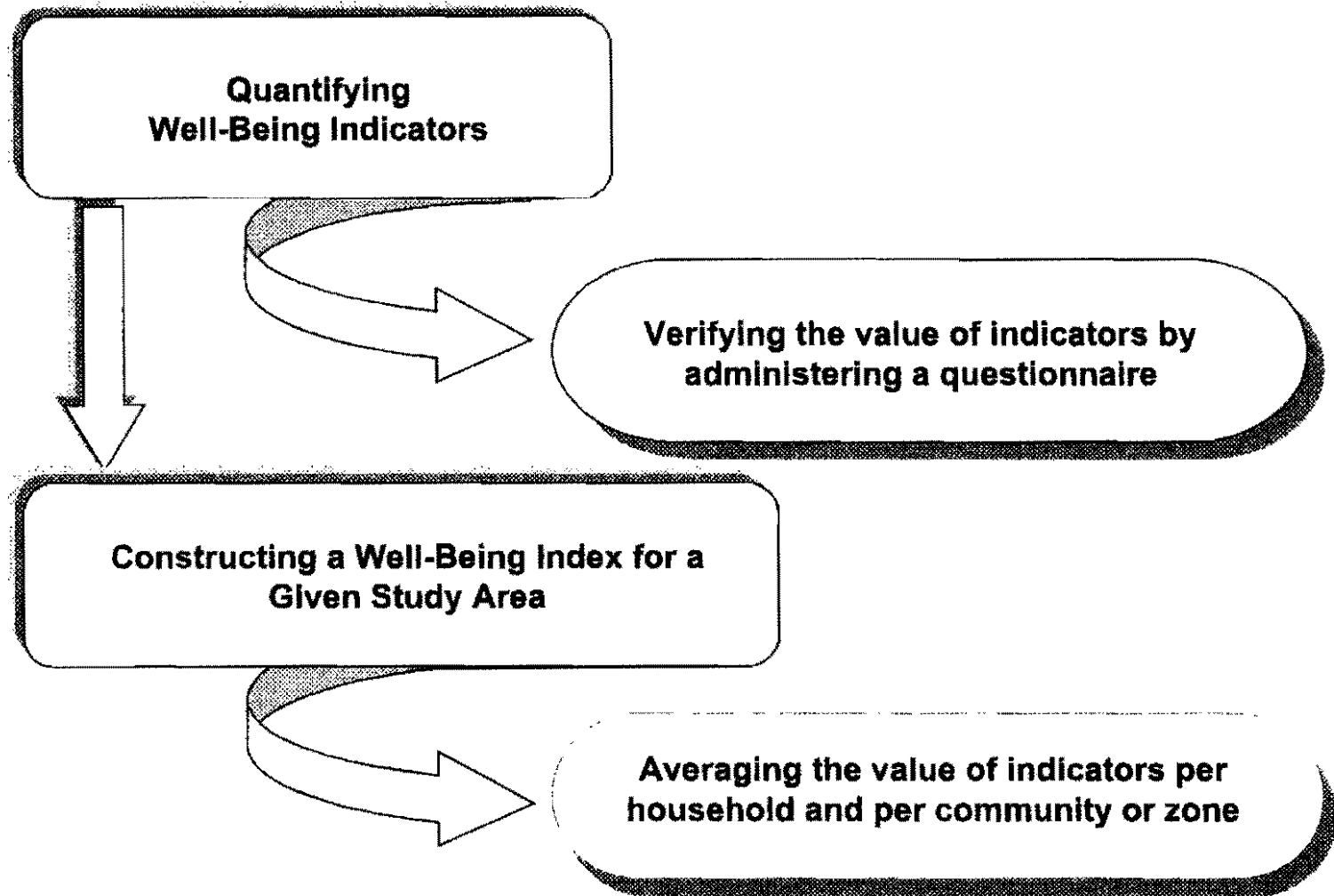
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Originals for Transparencies



SECTION STRUCTURE



SECTION OBJECTIVES

- ✓ To quantify well-being indicators by administering a questionnaire.
- ✓ To construct a well-being index for a given study area.

ORIENTING QUESTIONS

- 1.** What do you understand by “quantifying” a well-being indicator?
- 2.** How do you select the sample population for administering a questionnaire?
- 3.** What is a “well-being index” ?

WELL-BEING INDEX

- It is a single measure that combines a set of quantified well-being indicators that are used to indicate a household's well-being level
- It is obtained by adding up the average of the scores a household obtains for the indicators used to measure its well-being level

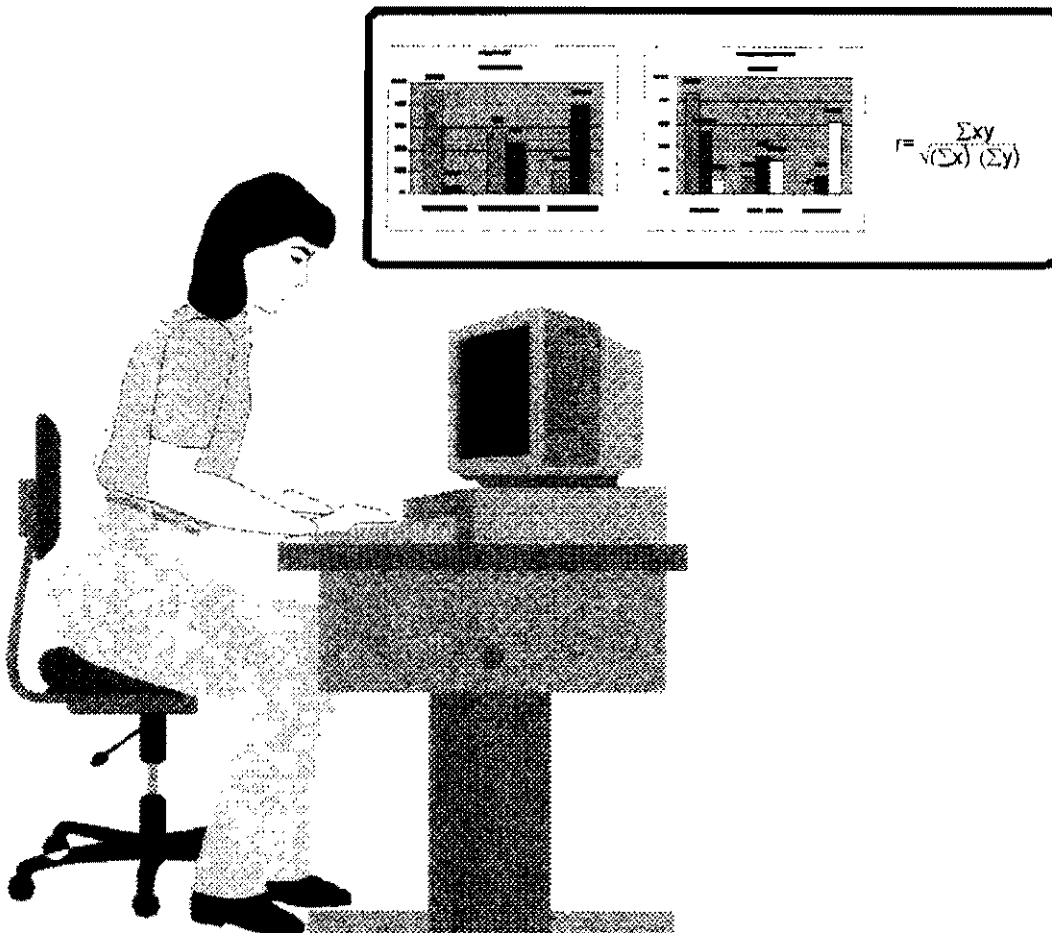
EXAMPLE OF A QUESTIONNAIRE TO QUANTIFY WELL-BEING INDICATORS WITHIN A COMMUNITY

N°	Question	Options	Score
I. Land ownership			
1.1	Do you own land?	Yes _____ Only a backyard _____ Nothing _____	
1.2	If you own land, how much do you have?	Less than 1 mz* _____ From 1 to 4 mz _____ More than 4 mz _____	
II. Housing			
2.1	The house where you live is	Your own _____ Rented _____ Borrowed _____	
2.2	What is the condition of the house?	Good _____ Regular _____ Bad _____	
III. Day labor			
3.1	Do you day labor during the year?	Yes _____ No _____	
3.2	If you answered yes, how frequently?	Continuously _____ Occasionally _____	

* 1 mz = 0.7 ha (80 m). ²

Section 6

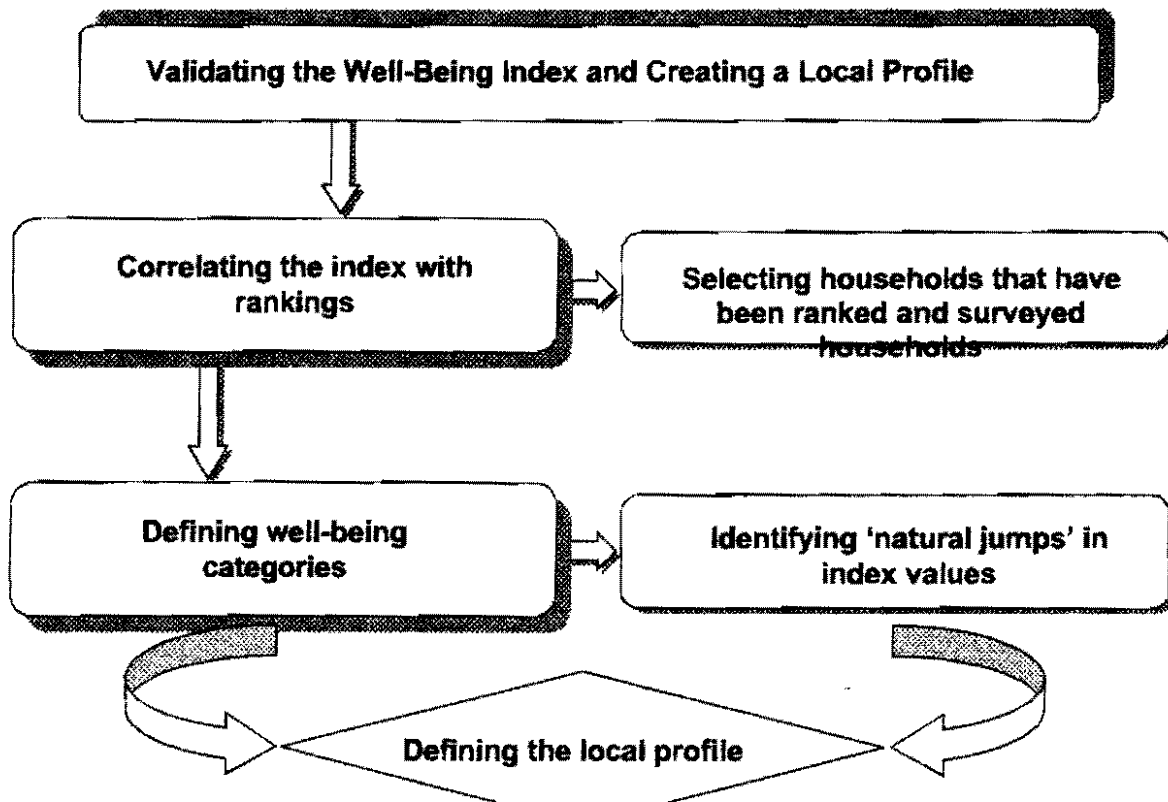
Validating the Well-Being Index and Creating a Local Profile



Section 6. Validating the Well-Being Index and Creating a Local Profile

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Section Structure



Objectives

- ✓ To confirm the validity of the well-being index by relating it to the rankings made by the informants in sampled communities.
- ✓ To define well-being categories according to the respective index.
- ✓ To create a poverty profile for a given study area.

Orienting Questions

1. How does the index relate to the ranking made by the informants in sampled communities?
2. What happens if this relationship is not significant?
3. Based on what criteria are the well-being categories defined?

Introduction

The way of assigning a score to each household within a community was discussed in Section 3. These scores are based on the rankings made by informants. In other words, the well-being index of each household, according to informants, is reflected in a score or index.

A well-being index per household and per community, based on indicators, was also obtained in Section 5.

This step involves correlating or comparing this well-being index with the score (S) given by informants to households in the sampled communities. It seeks to verify the validity of the well-being index obtained by indicators. This correlation should be significant to confirm that the indicators used were valid for the study area and, accordingly, that the well-being index is also valid.

6.1 Correlating the Index with the Informants' Rankings

Use the scoring sheet that corresponds to the communities ranked by the informants. Go to column 'P' of the scoring sheet. This column indicates the average of all scores given by informants to a household. Then, indicate the well-being index that these same households obtained in the survey data by averaging the indicators. The process is detailed below.

6.1.1. Selecting households that have been ranked and surveyed

Carry out the following steps to perform the correlation:

First, identify the communities that were surveyed in addition to having been ranked by key informants regarding their well-being levels.

Second, once the data is in the computer (in an Excel spreadsheet), select those households that meet both conditions: ranked and also surveyed. Use the code assigned to each family.

Once the families have been selected and included in the same file, the simplest way to find the correlation is to use an Excel spreadsheet and apply a correlation coefficient to each community that has been ranked and surveyed. This coefficient measures the relationship between two sets of data, and is used to determine whether these sets vary simultaneously, whether the high and/or low values of one set are associated with those of the other set, or whether these values are unrelated (negative correlation). Excel uses several formulas to yield the correlation coefficient. We recommend that you use the simplest coefficient (r^2) that correlates similarly to Spearman's Rho. To verify the significance of the coefficient, you can use the Student *t*-table (Appendix G.6). This method establishes a confidence interval of 0.05% to evaluate significance.

Identifying Levels of Well-Being to Construct Local Profiles of Rural Poverty

In case you do not have appropriate computer software, another method you can use to find the correlation is to calculate r using a calculator with square root functions.

The data necessary for calculations are shown in the table that provides feedback on the exercises, included at the end of this section. In this table, variables X and Y represent the sets of data to correlate: X are data on well-being indexes and Y the scores given by key informants during ranking.

After making the calculations with the variables, the formulas are applied to determine the coefficient of correlation and Student t is used to assess the significance of this coefficient. The formulas are:

$$r = \frac{\sum xy}{\sqrt{(\sum x^2)(\sum y^2)}}$$

$$t = \frac{r \sqrt{N-2}}{\sqrt{1-r^2}}$$

The significance of the coefficient is evaluated by comparing the t calculated with the t value in the table. If the first is greater than the t value in the table, then the relationship between the index and the scores (X and Y) is significant. If the t value in the table is greater than the calculated t , then the relationship is not significant.

If the correlation is not significant, the following situations may occur:

- The index is not well prepared, and should be reviewed to verify that the selected indicators were the most appropriate, in other words that they truly describe a given well-being level.
- The ranking in communities was not well oriented by the informants or, the community's real composition tends toward a single well-being level (most are very poor, or intermediate or high level) and the established criteria did not detect differences. In this case, the comparison of scores is hindered.

In Honduras, the correlation was significant in four of five communities (Table 6.1). In Nicaragua, it was significant in four of six communities (Table 6.2). The positive correlation means that the index truly reflects the informants' descriptions of each well-being level and, therefore, the indicators identified are suitable.

Table 6.1. Level of correspondence between the well-being index and the scores based on rankings carried out in five Honduran Communities.

Community	Spearman's Rho
Araulí, Danlí, El Paraíso	0.5449 **
San Francisco de Saco, Arizona, Atlántida	0.7604 **
Jalapa, Yorito, Yoro	0.7214 **
Vallecillos, Yorito, Yoro	0.5831 *
La Albardilla, Sulaco, Yoro	0.4862 ns

* Significant at 0.01 level.
 ** Significant at 0.001 level.
 ns Not significant.

Table 6.2. Correlation between the well-being index and the rankings made by informants in six ranked communities of the Calico River sub-watershed, Matagalpa, Nicaragua (1997).

Community	Spearman's coefficient	No. of cases	Significance*
El Júcaro	0.5106	19	0.026
Wibuse	0.7663	14	0.001
Piedras Largas	0.1253	12	0.698
Los Limones	0.6841	16	0.003
El Cóbano	0.642	7	0.891
El Corozo	0.4769	23	0.021

* The relationship is significant at < 0.05 level.

6.2. Defining “Well-Being” Categories

After verifying the correlation between the well-being index and the scores assigned by informants, you need to define categories of well-being based on the index. These must correspond, as much as possible, to the ranking-based categories, in other words, those done in Section 3.

To define well-being categories, you must first examine the well-being index obtained for all households in the study and those resulting for each indicator, and then locate the limits or 'natural jumps' in scores as in the case of Nicaragua (Table 6.3).

Table 6.3. Defining Limits for Well-Being Categories (italized column headings refer to Spanish names of indicators).

<i>Indicador</i>	<i>Paliment</i>	<i>Panlmal</i>	<i>Pcasa</i>	<i>Pcultivo</i>	<i>Pgbasic</i>	<i>Pingreso</i>	<i>Plaboral</i>	<i>Pmozos</i>	<i>Psalud</i>	<i>Ptierra</i>
60.10	67	33	67	67	67	67	33	67	100	33
60.10	100	33	67	67	67	67	33	67	67	33
63.30	100	33	100	33	67	67	33	67	100	33
63.40	67	33	100	67	67	67	33	67	100	33
63.50	67	33	100	67	67	67	33	67	100	33
66.67	100	67	100	33	---	100	33	67	67	33
66.70	100	67	67	33	100	100	33	67	67	33
66.80	67	33	100	67	67	100	33	67	67	67
70.00	100	100	67	33	100	100	33	67	67	33
70.10	67	67	100	67	67	100	33	100	67	33
70.10	100	67	67	67	100	100	33	67	67	33
70.20	67	100	67	67	67	100	33	67	67	67
70.44	67	100	100	33	67	---	33	67	67	100
73.40	100	67	67	33	100	67	33	67	100	100
73.40	67	100	100	33	100	67	33	67	67	100
73.40	67	100	100	67	67	100	33	100	67	33
73.50	100	67	67	67	100	100	67	67	67	33
73.50	67	67	67	67	100	100	33	67	67	100
73.50	100	67	67	67	100	100	67	67	67	33
73.50	100	67	67	33	100	100	67	67	67	67
76.70	100	33	100	67	100	100	33	67	67	100
76.70	67	100	100	67	67	100	33	100	100	33
76.80	67	100	100	67	100	100	33	67	67	67
76.80	100	67	100	67	100	100	33	67	67	67
76.80	100	100	67	67	67	100	33	67	100	67
76.80	67	100	100	67	67	100	33	67	67	100
76.80	100	67	100	67	67	100	67	100	67	33
76.90	67	100	100	67	100	67	67	67	67	67
80.10	100	100	100	67	100	100	33	67	67	67
80.10	100	67	100	67	100	100	33	67	67	100
80.10	100	67	100	67	100	100	67	100	67	33
80.20	100	100	100	67	67	67	67	100	67	67
81.67	100	67	---	67	100	100	67	67	67	100
83.40	100	100	100	67	67	100	33	100	67	100
83.40	100	100	67	67	100	100	67	100	100	33
83.40	67	100	100	67	100	100	33	100	67	100
83.40	100	100	100	67	100	100	67	100	67	33
83.50	100	100	100	67	---	---	67	---	67	---

Category 1
High level of well-being

Category 2
Intermediate level of well-being

Identifying Levels of Well-Being to Construct Local Profiles of Rural Poverty

Validating the Well-Being Index and Creating a Local Profile 6 - 7

6 - 8 Validating the Well-Being Index and Creating a Local Profile

76.80	67	100	100	67	67	100	33	67	67	100
76.80	100	67	100	67	67	100	67	100	67	33
76.90	67	100	100	67	100	67	67	67	67	67
77.78	100	67	100	33	100	100	---	100	67	33
80.10	100	100	100	67	100	100	33	67	67	67
80.10	100	67	100	67	100	100	33	67	67	100
80.10	100	67	100	67	100	100	67	100	67	33
80.20	100	100	100	67	67	67	67	100	67	67
81.67	100	67	---	67	100	100	67	67	67	100
83.40	100	100	100	67	67	100	33	100	67	100
83.40	100	100	67	67	100	100	67	100	100	33
83.40	67	100	100	67	100	100	33	100	67	100
83.40	100	100	100	67	100	100	67	100	67	33
83.50	100	100	100	67	---	---	67	---	67	---
83.50	100	67	100	67	100	100	67	100	67	67
85.22	100	67	100	33	100	100	---	100	100	67
86.70	67	100	100	33	100	100	67	100	100	100
86.70	100	100	100	33	100	100	67	100	67	100
86.80	100	100	100	67	100	100	67	100	67	67
86.80	100	100	100	67	100	100	67	100	67	100
86.80	67	100	100	67	100	100	67	100	67	100
86.80	67	100	100	67	100	100	67	100	67	100
86.80	100	100	100	67	67	100	67	100	67	100
86.80	100	67	100	67	100	100	67	100	67	100
88.80	100	100	100	67	100	100	67	100	67	100
89.00	100	100	100	67	---	100	67	100	67	100

**Category 3
Low level of
well-being**

Identifying Levels of Well-Being to Construct Local Profiles of Rural Poverty

6.3. Creating a Poverty Profile for the Study Area

You have now reached the stage where the final product of the study is generated: a poverty profile for the study area. This profile indicates the composition of a population in a given area regarding its well-being levels.

For example, the analysis of Calico River sub-watershed in Matagalpa, Nicaragua, yielded the following profile:

Of the population inhabiting the watershed, 50.3% belong to the poorest or lowest level of well-being, 33.4% to the middle or not-so-poor level, and 16.2% to the highest level of well-being.

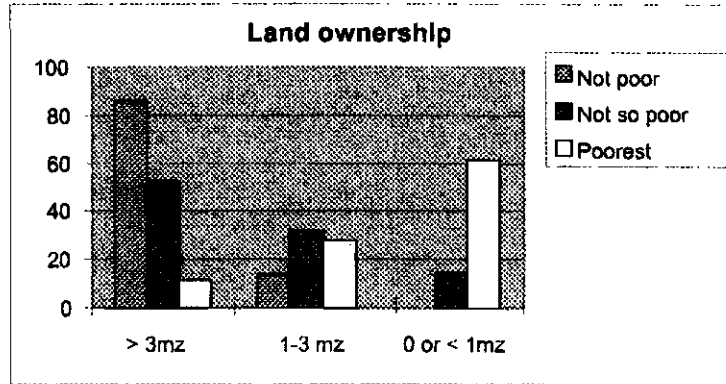
The profile gives us not only an idea of the geographical distribution of poverty (i.e., how many poor and less-poor households exist and where), but also important information about poor and not-so-poor households. Figure 6.1 shows the different well-being levels of the Calico River sub-watershed in Nicaragua with respect to the indicators used to construct the well-being index.

When the indicators are combined with the well-being descriptions originally made by the informants, they provide important information for designing and evaluating programs or activities intended to alleviate poverty. For example, in the studies of Nicaragua and Honduras, the factor that maintains poverty at given level was identified. It is not always the same from one site to another.

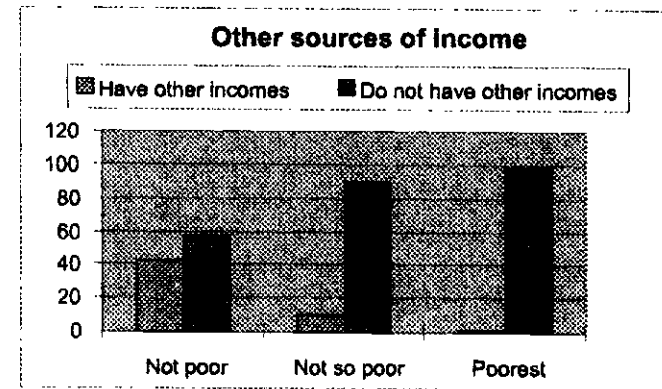
When natural resource management was related to the poor and less-poor well-being groups of farmers, no substantial differences were found in Honduras and Nicaragua.

Therefore, the application of this methodology can provide useful information for policymakers and programs aiming to alleviate poverty.

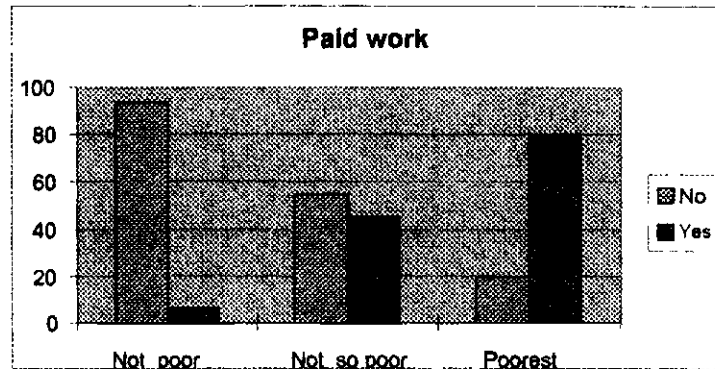
	Not poor	Not so poor	Poorest
> 3 mz	85.7	53.08	11.3
1 - 3	14.3	32	27.6
0 or < 1 mz	0	15	60.9



	Not poor	Not so poor	Poorest
Have other incomes	42.9	10.2	1.3
Do not have other incomes	57	89.8	98.7



	Not poor	Not so poor	Poorest
No	93.9	55	19.9
Yes	6.1	45	80.1



	Not poor	Not so poor	Poorest
No	30.6	51.5	86.1
Yes	69.4	48.5	13.9

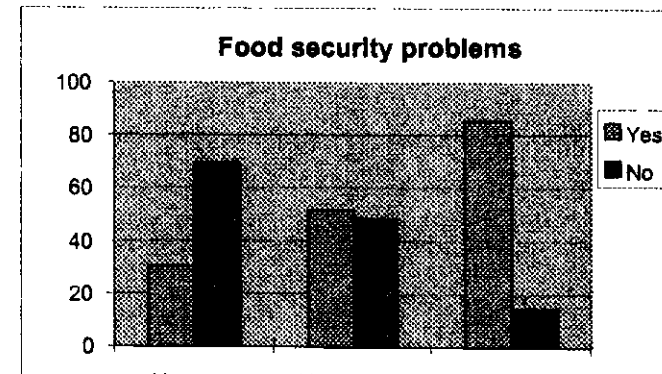


Figure 6.1. Relationship of different indicators with well-being levels in San Dionisio, (Matagalpa, Nicaragua (1997)).

Exercise 6.1 Correlating the “Well-Being” Index with the Scores Assigned by Key Informants

Objective

- ✓ Using a coefficient of correlation, the participants should be able to verify the correlation between the index obtained by averaging the indicators for each household and the score assigned by key informants.

Instructor’s guidelines

This exercise is designed to calculate the coefficient of correlation using only a calculator with square root functions. The method includes calculating a linear regression (r). The coefficient can also be obtained with a software program such as Excel. The results can be verified both ways.

1. Organize the participants into small groups so all members can participate in the exercise.
2. Hand out the instructions with the following materials: Work Sheet No. 1 containing data about the communities and which the participants should complete; Work Sheet No. 2 with the formulas to find (r) and the level of significance (t); and Annex G.6 (Student t table) to verify the significance of each coefficient.
3. Ask a member of each group to present the coefficient and its significance in the plenary session, using a flip chart.
4. Provide feedback by showing the corrected data sheet.

Resources needed

- Work sheets for each participant
- Calculator with square root functions (1 per group)
- Flip chart and paper
- Magic markers

Time required: 60 minutes

Exercise 6.1 Correlating the “Well-Being” Index with the Scores Assigned by Key Informants

Objective

- ✓ Applying a coefficient of correlation, the participants should be able verify the correlation between the index obtained by averaging the indicators for each household and the score assigned by key informants.

Instructions for the participants

1. Complete the data missing in Work Sheet No. 1; make the calculations for the last five columns for Los Limones and Piedras Largas communities.
2. Use the X and Y data completed in Work Sheet No. 1 to find the coefficient of correlation (r), and the Student t -test to determine the level of significance. Apply the formulas provided in Work Sheet No. 2.
3. Compare the results of the t calculated with the t value in the table (Appendix G.6). Use the **df** column (degrees of freedom) to locate Los Limones, which is equal to 14, and Piedras Largas, which is equal to 10. Locate the t value in the first row. The intersection cell of both values is the t value.
4. Explain the results. If the t calculated is greater than the t value in the table, then the correlation is significant. If it is less, then the correlation is not significant.
5. Appoint a member of the group to explain the results of the coefficient of correlation and the level of significance for both communities in the plenary session, using a flip chart.

Exercise 6.1. Work Sheet No. 1 for Correlating the “Well-Being” Index with the Scores Assigned by Informants

**Data on the Level of Well-being and Scores Assigned by Informants
Los Limones Community, Matagalpa, Nicaragua**

N	X	Y	X = x-x MEAN	Y = x-y MEAN	X ²	Y ²	XY
1	70	28	-7.7	-18.1	59.1	328.5	139.3
2	87	28	9.3	-18.1	86.7	328.5	-168.8
3	87	56	9.3	9.9	86.7	97.5	92.0
4	70	0	-7.7	-46.1	59.1	2127.5	354.6
5	83	83	5.3	36.9	28.2	1359.8	195.9
6	82	56	4.3	9.9	18.6	97.5	42.6
7	70	0	-7.7	-46.1	59.1	2127.5	354.6
8	74	44	-3.7	-2.1	13.6	4.5	7.8
9	82	72	4.3	25.9	18.6	669.5	111.6
10	60	50		3.9	312.8	15.0	-68.5
11	74	56			13.6	97.5	-36.4
12	77	17				248.3	20.0
13	87	100					501.7
14	73	56					
15	77	17					
16	90	75					
N=16	1243	738					

MEAN X	MEAN Y
77.7	46.1

X = Household's well-being index.
Y = Score assigned by key informants.

**Data on the Well-Being Index and Scores Assigned by Informants
Piedras Largas Community, Matagalpa, Nicaragua**

N	X	Y	X = x-x MEAN	Y = x-y MEAN	X ²	Y ²	XY
1	73	15	-10.7	-21.2	113.8	448.0	225.8
2	87	40	3.3	3.8	11.1	14.7	12.8
3	87	26	3.3	-10.2	11.1	103.4	-33.9
4	90	21	6.3	-15.2	40.1	230.0	-96.1
5	83	54	-0.7	17.8	0.4	318.0	-11.9
6	87	41	3.3	4.8	11.1	23.4	16.1
7	83	37		0.8	0.1	0.7	0.0
8	87	29			9.6	0.0	0.0
9	77	38				0.0	0.0
10	80	42				15.0	-68.5
11	80	35				97.5	-36.4
12	90	56				248.3	20.0
N=12	1004	434					501.7

MEAN X	MEAN Y
83.7	36.2

X = Household's well-being index.
Y = Score assigned by key informants.

Exercise 6.1 Work Sheet No. 2 for Correlating the "Well-Being" Index with the Scores Assigned by Key Informants

Formulas to Obtain the Correlation Coefficient (r) and the Level of Significance with the Student t value

Correlation coefficient (r):

$$r = \frac{\sqrt{\sum xy}}{\sqrt{(\sum X^2)(\sum Y^2)}}$$

$$t = \frac{r \sqrt{N-2}}{\sqrt{1-r^2}}$$

Where,

xy = Sum of the square of the remainder of X, multiplied by the square of the sum of the remainder of Y.

x^2 = Square of the difference after subtracting the average of X from the X value.

y^2 = Square of the difference after subtracting the average of Y from the Y value.

r^2 = Square of the value of r .

t = Once the value has been calculated with the formula, go to the first column (N) of the Student t -table (Work Sheet 6.3), number 14 (N-2) for Los Limones and 10 (N-2) for Piedras Largas and, in the first row, place the value 0.975, which at the 0.05% level of significance.

The correlation is significant when the t calculated is greater than the t value in the table. It is not significant if the t calculated is less than the t value in the table.

Exercise 6.1 Feedback on Correlating the "Well-Being" Index with the Score Assigned by Key Informants

Worksheet No. 1

Data on the Well-being Index and Scores Assigned by Key Informants Los Limones Community, Matagalpa, Nicaragua

N	X	Y	X = x-x MEAN	Y = x-y MEAN	X2	Y2	XY
1	70	28	-7.7	-18.1	59.1	328.5	139.3
2	87	28	9.3	-18.1	86.7	328.5	-168.8
3	87	56	9.3	9.9	86.7	97.5	92.0
4	70	0	-7.7	-46.1	59.1	2127.5	354.6
5	83	83	5.3	36.9	28.2	1359.8	195.9
6	82	56	4.3	9.9	18.6	97.5	42.6
7	70	0	-7.7	-46.1	59.1	2127.5	354.6
8	74	44	-3.7	-2.1	13.6	4.5	7.8
9	82	72	4.3	25.9	18.6	669.5	111.6
10	60	50	-17.7	3.9	312.8	15.0	-68.5
11	74	56	-3.7	9.9	13.6	97.5	-36.4
12	77	17	-0.7	-29.1	0.5	848.3	20.0
13	87	100	9.3	53.9	86.7	2902.5	501.7
14	73	56	-4.7	9.9	22.0	97.5	-46.3
15	77	17	-0.7	-29.1	0.5	848.3	20.0
16	90	75	12.3	28.9	151.6	833.8	355.5
N=16	1243	738			1017.4	12783.8	1875.6

MEAN X	MEAN Y
77.7	46.1

X = Household's well-being index.
Y = Score assigned by key informants.

**Data on the Well-Being Index and Scores Assigned by Key Informants
Piedras Largas Community, Matagalpa, Nicaragua**

N	X	Y	X = x-x MEAN	Y = x-y MEAN	X2	Y2	XY
1	73	15	-10.7	-21.2	113.8	448.0	225.8
2	87	40	3.3	3.8	11.1	14.7	12.8
3	87	26	3.3	-10.2	11.1	103.4	-33.9
4	90	21	6.3	-15.2	40.1	230.0	-96.1
5	83	54	-0.7	17.8	0.4	318.0	-11.9
6	87	41	3.3	4.8	11.1	23.4	16.1
7	83	37	-0.7	0.8	0.4	0.7	-0.6
8	87	29	3.3	-7.2	11.1	51.4	-23.9
9	77	38	-6.7	1.8	44.4	3.4	-12.2
10	80	42	-3.7	5.8	13.4	34.0	-21.4
11	80	35	-3.7	-1.2	13.4	1.4	4.3
12	90	56	6.3	19.8	40.1	393.4	125.6
N=12	1004	434			310.7	1621.7	184.7

MEAN X	MEAN Y
83.7	36.2

X = Household's well-being index.
Y = Score assigned by key informants.

Worksheet No. 2

Result of Correlating Data from Los Limones and Piedras Largas communities in Nicaragua

Los Limones (correlation coefficient)

$$r = \frac{1875.6}{1017.4 * 12783.8} = 0.52007$$

$$r^2 = 0.27047$$

t calculated:

$$t = \frac{0.52007 \sqrt{16-2}}{1 - 0.27047} = 2.27 \text{ (} t \text{ calculated)}$$

The t value in the table = 2.14; therefore, the t calculated is greater than the t value in the table.

Conclusion

The relationship between the well-being index and the scores assigned by informants in Los Limones Community is significant.

Piedras Largas (correlation coefficient)

$$r = \frac{184.7}{310.7 * 1621.7} = 0.25965$$

$$r^2 = 0.0674$$

t calculated :

$$t = \frac{0.25965 \sqrt{12-2}}{\sqrt{1 - 0.0674}} = 0.85 \text{ (} t \text{ calculated)}$$

The *t* value in the table = 2.23; therefore the *t* calculated is less than the *t* value in the table.

Conclusion

The relationship between the well-being index and the scores assigned by informants in the Piedras Largas Community is not significant.

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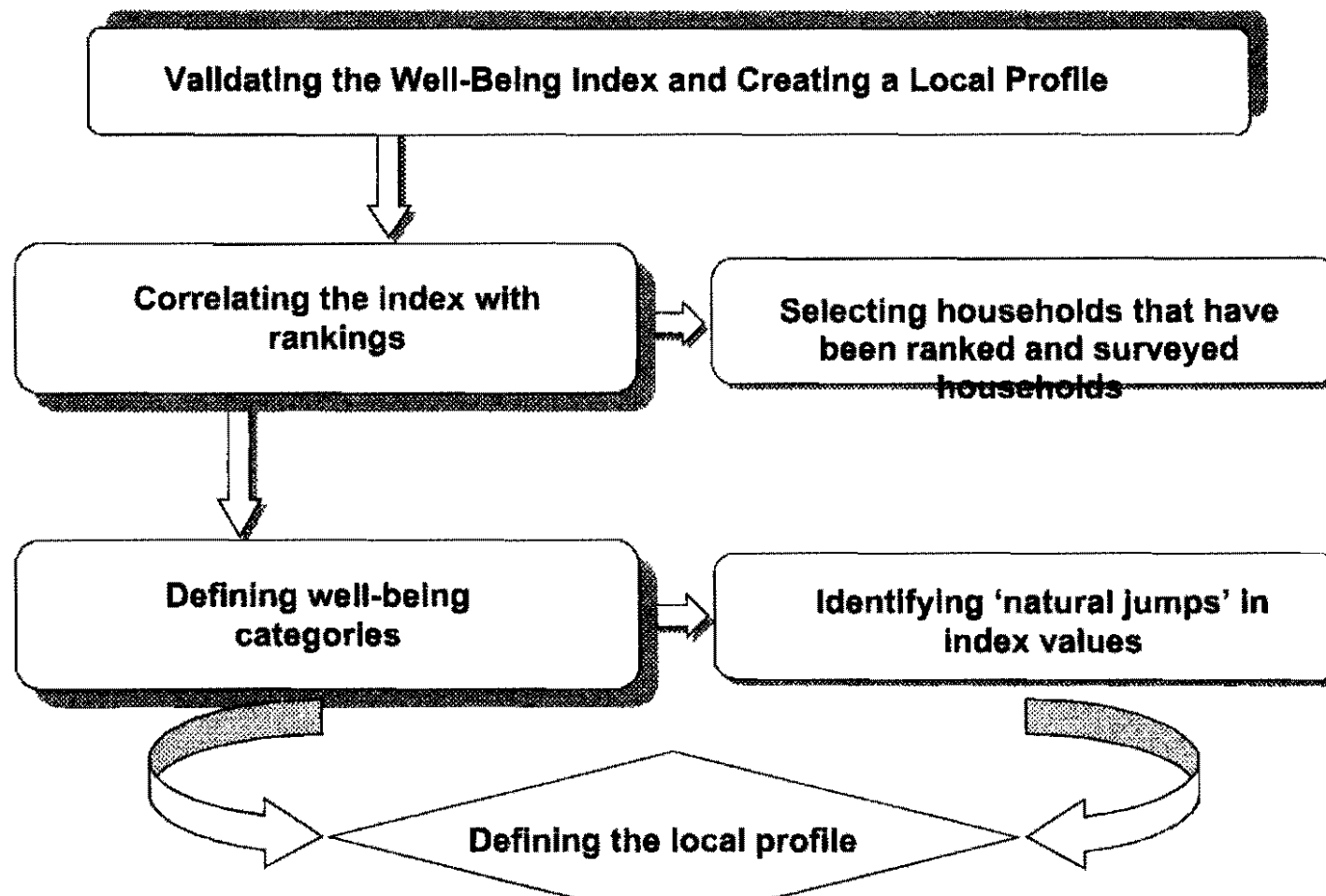
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Originals for Transparencies

SECTION STRUCTURE



SECTION OBJECTIVES

- ✓ To confirm the validity of the well-being index by relating it to the rankings made by the informants in sampled communities.
- ✓ To define well-being categories according to the respective index.
- ✓ To create a poverty profile for a given study area.

ORIENTING QUESTIONS

1. How does the index relate to the ranking made by the informants in sampled communities?
2. What happens if this relationship is not significant?
3. Based on what criteria are the well-being categories defined?

STEPS FOR CORRELATING THE INDEX AND THE RANKINGS MADE BY INFORMANTS

- Identify families and communities that have been ranked and surveyed
- Select and combine survey data with rankings in the same file
- Apply the correlation coefficient

DELIMITING “WELL-BEING CATEGORIES”

The well-being index obtained for all households included in the survey should be examined and “natural jumps” in scores located

CORRELATION BETWEEN THE WELL-BEING INDEX AND WELL-BEING SCORES (BASED ON RANKINGS) IN FIVE HONDURAN COMMUNITIES

Community	Spearman's Rho
Araulí, Danli, El Paraíso	0.5449**
San Francisco de Saco, Arizona, Atlántico	0.7604**
Jalapa, Yorito, Yoro	0.7214**
Vallecillos, Yorito, Yoro	0.5831**
La Arbadilla, Sulaco, Yoro	0.4862ns

* Significant at $\alpha=0.01$ level

** Significant at $\alpha=0.001$ level

CORRELATION BETWEEN THE WELL-BEING INDEX AND THE RANKINGS MADE BY INFORMANTS IN SIX COMMUNITIES OF THE CALICO RIVER SUB-WATERSHED, MATAGALPA, NICARAGUA, 1997

Community	Spearman's coefficient	No. of cases	Significance
El Jícaro	0.5106	19	0.026
Wibuse	0.7663	14	0.001
Piedras Largas	0.1253	12	0.698
Los Limones	0.6841	16	0.003
El Cóbano	-0.642	7	0.891
El Corozo	0.4769	23	0.021

