Series on the Evaluation of Urban Shelter Programs

VOLUME FOUR

DESIGNING A QUESTIONNAIRE FOR A LONGITUDINAL IMPACT STUDY

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TABLE OF CONTENTS

Preface

Part 1 DESIGN AND ADMINISTRATION OF IMPACT STUDIES

Chapter 1 The approach to the evaluation of project impact
Chapter 2 Operational issues in the design and administration of impact studies

Part 2 SUBJECT AREAS FOR THE EVALUATION OF PROJECT IMPACT

Chapter 3 Project impact on the demographic characteristics of the household
Chapter 4 Project impact on housing quality and access to public services
Chapter 5 Project impact on income and employment
Chapter 6 Project impact on expenditure and consumption
Chapter 7 Project impact on health
Chapter 8 Project impact on community participation and attitudes

Appendices

1. Example of a model baseline questionnaire
2. Example module to include in the repeat survey to study respondent perception of project impact
3. List of the primary hypotheses on project impact discussed in Chapters 3 - 8
4. Index to baseline questionnaire indicating the question numbers covering each variable identified in Chapter 1
5. Sample list of occupational categories
6. Module with more detailed questions on housing costs and form of construction.
This is the fourth volume of a Series being produced by the Urban and Regional Economics Division of the World Bank on the design and implementation of systems for the evaluation of urban shelter programs. The Series is one of the end products of a cooperative venture by the International Development Research Center of Canada and the World Bank, which helped establish national research units to conduct five year evaluations of urban shelter programs in Zambia, Senegal, El Salvador and the Philippines. The original five year program ended in 1980, and final reports are being prepared on each program. 1/

One of the original objectives of the program was to use the experience of the four evaluations to develop systems which could be applied to the valuation of other urban projects. The present Series is the response to this objective. The Series comprises seven volumes which between them provide guidance on most of the major policy and research issues related to the planning, implementation and use of evaluation research on urban shelter programs (See Table 1).

One of the main types of evaluation is the longitudinal impact study in which samples of households are interviewed at two or more points in time in an attempt to evaluate the changes which have occurred in their social and economic conditions as a consequence of their participation in the project. The purpose of the present volume is to discuss the design of the questionnaire to be used in this type of longitudinal impact study.

1/ Two of the four evaluations (Senegal and the Philippines) continued beyond the original five year period. At the time of writing final reports had been prepared on the El Salvador and Zambia projects.
<table>
<thead>
<tr>
<th>Volume</th>
<th>Title</th>
<th>Contents</th>
<th>Audience</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Planning an Evaluation System for an Urban Shelter Program: Key Issues for Program Managers</td>
<td>Definition of main users of evaluation and the types of information they need. Key issues in each type of study and main research designs. Main stages in the planning of the evaluation system</td>
<td>Policy makers and Program Managers</td>
</tr>
<tr>
<td>2</td>
<td>A basic methodology for impact evaluation in urban shelter programs</td>
<td>Research techniques for the design, implementation and analysis of impact evaluations.</td>
<td>Researchers</td>
</tr>
<tr>
<td>3</td>
<td>Designing a questionnaire for longitudinal impact studies</td>
<td>The main types of information required for measuring project impact over time. Examples of typical questionnaires.</td>
<td>Researchers</td>
</tr>
<tr>
<td>4</td>
<td>Designing a questionnaire for longitudinal impact studies</td>
<td>The main types of information required for measuring project impact over time. Examples of typical questionnaires.</td>
<td>Researchers</td>
</tr>
<tr>
<td>5</td>
<td>Non-survey techniques in the evaluation of urban shelter programs</td>
<td>Description of non-survey techniques of evaluation which avoid many of the problems inherent in the use of structured questionnaires.</td>
<td>Researchers</td>
</tr>
<tr>
<td>6</td>
<td>Computer analysis of longitudinal impact studies: some issues</td>
<td>Discussion of typical problems with matching cases, data cleaning, consistency checks and data transference from one computer system to another.</td>
<td>Researchers</td>
</tr>
<tr>
<td>7</td>
<td>Statistical evaluation of project impact through longitudinal surveys</td>
<td>The main statistical techniques for evaluation project impact with different types of sampling design. Explanations are included for each technique.</td>
<td>Researchers</td>
</tr>
</tbody>
</table>
The volume contains 8 chapters and 6 appendices. Chapters 1 and 2 discuss issues related to the design and administration of impact studies. Chapter 1 summarizes the general approach to impact studies and discusses the principal types of variables which must be measured through the questionnaire. Chapter 2 is concerned with operational issues related to the application and design of the questionnaire.

The remaining six chapters discuss the main subject areas to be covered in the evaluation. Each of these are areas in which it is believed the project may produce significant impacts or changes. Each of these chapters presents some of the main hypotheses about project impact in this area, as well as indicating the types of information to be included and some of the problems involved in its collection. Chapter 3 discusses potential project impacts on the demographic characteristics of the household. This includes family size and composition, educational levels, geographical stability and fertility. Chapter 4 discusses impacts on housing quality and access to public services. Chapter 5 covers impacts on income and employment, while Chapter 6 covers impact on expenditure and consumption patterns. Chapter 7 discusses impacts on health and the final chapter covers community participation and attitudes.

A number of appendices have been included to provide complete examples of the questionnaires and methods discussed in the text. Appendix 1 gives an example of a typical baseline questionnaire. This uses the variables discussed in the text so the reader can see how hypotheses can be converted into variables and how variables can be transformed into a questionnaire. Appendix 2 gives an example of the supplementary module which can be added when the interview is repeated. This includes questionnaires on participants
perceptions of the changes which have occurred and the way in which the project has affected them. Appendix 3 provides a summary of all of the hypotheses about project impact which were discussed in Chapters 3 through 8. Appendix 4 indicates the numbers of the questions in the model questionnaire which cover each of the variables discussed in Chapter 4. This type of systematic listing will help the researcher to make sure that all variables have in fact been included in the questionnaire. Appendix 5 gives a sample list of occupational categories which can be used in coding the employment section of the questionnaire. The final appendix suggests more detailed questions which could be included in a special module on housing costs and forms of construction.

Throughout the text it is emphasized that the examples given are simply intended to be illustrative and should not be used uncritically by the person responsible for designing a particular evaluation. The important point is to understand the underlying logic of the design and then to use the examples given as a guide in selecting the most appropriate hypotheses, variables and questions to be used in a particular study.

Michael Bamberger
Series Editor
1. Simplified model of project impact

At least half the battle in project evaluation consists of having a clear model of the process of change one is trying to measure and a coherent set of hypotheses about the changes or impacts which are expected to occur. The model of change can be expressed very simply in the following diagram:

![Diagram of the simplified model of project impact]

According to this model, the program consists of a series of inputs (infrastructure, building material loans, community organization etc.) These inputs are received (in a standard way or in different combinations) by project families, and produce a number of changes in the condition of the families. However, it is expected that the project will not have exactly the same effects (impacts) on all households and that the socioeconomic characteristics of each household and the neighborhood in which it lives is likely to affect the magnitude and even the direction of the change. For example the provision of piped water which has to be purchased may have different effects on the children of poor households with little education, than it has on children in better off households with higher educational levels.

Again in a very simplified way the main research tasks in the evaluation of project impact can be defined as follows:
i. Define all project inputs.

ii. Measure the degree of exposure of each household to each input. This is important as in no project do all households receive exactly the same "package" of inputs.

iii. Formulate hypotheses as to the types of impact which are expected, and define ways to measure these impacts.

iv. Identify the intervening variables which are likely to affect project impacts.

v. Develop a research design which can determine the extent to which observed changes can be attributed to the effects of the project and not to external factors unrelated to the project.

vi. Develop an analytical model to evaluate the relative contribution of each project component (input) in producing the observed change.

Points v and vi are the subject of Volumes 2 and 7. The purpose of the present volume is to make recommendations on how to approach the first four points.

2. Defining program inputs

Inputs vary considerably from one program to another, and there are of course significant differences between the components of sites and services and upgrading projects. Table 1.1 presents a typical list of inputs.

Six broad categories are defined:

i. Physical infrastructure

ii. Economic development

iii. Financial services
Table 1.1 Typical Program Variables

<table>
<thead>
<tr>
<th>PHYSICAL INFRASTRUCTURE:</th>
<th>Roads</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Sidewalks</td>
</tr>
<tr>
<td></td>
<td>Water</td>
</tr>
<tr>
<td></td>
<td>Sanitation</td>
</tr>
<tr>
<td></td>
<td>Public buildings</td>
</tr>
<tr>
<td></td>
<td>Public areas (parks, playgrounds, sports facilities)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ECONOMIC DEVELOPMENT:</th>
<th>Small business development</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Savings and loan cooperatives</td>
</tr>
<tr>
<td></td>
<td>Consumer cooperatives</td>
</tr>
<tr>
<td></td>
<td>Production cooperatives</td>
</tr>
<tr>
<td></td>
<td>Plots for small businesses</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>FINANCIAL SERVICES:</th>
<th>Credit for land purchase</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Building materials and dwelling unit loans</td>
</tr>
<tr>
<td></td>
<td>Small business development loans</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>TENURE:</th>
<th>Land titles</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>COMMUNITY ORGANIZATION:</th>
<th>Organization of community committees</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mutual help construction groups</td>
</tr>
<tr>
<td></td>
<td>Development of cultural and social activities</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PUBLIC SERVICES:</th>
<th>Schools</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Health services</td>
</tr>
<tr>
<td></td>
<td>Transportation services</td>
</tr>
<tr>
<td></td>
<td>Sanitation services</td>
</tr>
</tbody>
</table>
iv. Legalization of land tenure
v. Community organization
vi. Public services.

Most projects will include components in most if not all of these categories.

3. Defining and measuring exposure to project inputs

It is important to appreciate the fact that families in a project vary considerably in terms of their exposure to the project inputs. Whereas one family may obtain a material loan to improve their house, another family will not. Similarly, one family may live near to and benefit from a paved road, whereas another family lives at a considerable distance and receives almost no benefit. For this reason it is essential to include in the survey a way to measure exposure. Table 1.2 gives a list of indicators of exposure to each of the project inputs outlined in the previous table. The researcher will usually have to decide the degree of precision which is possible for each indicator. For example, although it would be very useful to know how many litres of drinking water are consumed, this may not be feasible and the information may have to be restricted to whether or not the new source of water is used at all. Measurement decisions will depend in part on costs and in part on the research priorities. If, for example, the project is particularly interested in health impacts, then it may become important to have an accurate measure of consumption of drinking water.
## Table 1.2 Measuring Exposure to Program Variables

<table>
<thead>
<tr>
<th>VARIABLE</th>
<th>INDICATOR OF EXPOSURE</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PHYSICAL INFRASTRUCTURE</strong></td>
<td></td>
</tr>
<tr>
<td>Roads</td>
<td>Distance in meters from paved road</td>
</tr>
<tr>
<td>Sidewalks</td>
<td>Distance in meters from paved sidewalk</td>
</tr>
<tr>
<td>Water</td>
<td>Possess piped water (Yes/No): Communal Yes/No If data available could measure number of liters consumed</td>
</tr>
<tr>
<td>Sanitation</td>
<td>Possess pit latrine (Yes/No): Possess water borne sewage (Yes/No)</td>
</tr>
<tr>
<td>Park/playground</td>
<td>Distance in meters OR Used (Yes/No): Could ask the frequency of use (No. of days per week used is best measure)</td>
</tr>
<tr>
<td><strong>ECONOMIC DEVELOPMENT</strong></td>
<td></td>
</tr>
<tr>
<td>Small business loan</td>
<td>Amount of loan (if no loan will be counted as &quot;0&quot;)</td>
</tr>
<tr>
<td>Savings and loan coop</td>
<td>Member (Yes/No) OR Amount of Savings OR Amount of loan</td>
</tr>
<tr>
<td>Consumer cooperative</td>
<td>Member (Yes/No) OR Amount of Savings OR Amount of loan</td>
</tr>
<tr>
<td>Production cooperative</td>
<td>Member (Yes/No) OR Amount earned OR Difference between amount earned there and previous earnings</td>
</tr>
<tr>
<td>Plot for small business</td>
<td>Obtained plot (Yes/No)</td>
</tr>
<tr>
<td><strong>FINANCIAL SERVICES</strong></td>
<td></td>
</tr>
<tr>
<td>Loan for land/house purchase</td>
<td>Amount of loan (if no loan will be counted as &quot;0&quot;)</td>
</tr>
<tr>
<td>Building material loan</td>
<td>Amount of loan</td>
</tr>
<tr>
<td>Small business loan</td>
<td>Amount of loan</td>
</tr>
<tr>
<td><strong>TENURE</strong></td>
<td>Yes/No</td>
</tr>
<tr>
<td><strong>COMMUNITY ORGANIZATION</strong></td>
<td></td>
</tr>
<tr>
<td>Community Committee</td>
<td>Member (Yes/No) OR Frequency of attendance (Frequent, Occasional, Never)</td>
</tr>
<tr>
<td>Mutual Help</td>
<td>Participated (yes/No) OR Number of weeks of participation</td>
</tr>
<tr>
<td><strong>PUBLIC SERVICES</strong></td>
<td></td>
</tr>
<tr>
<td>Schools</td>
<td>No. of children attending</td>
</tr>
<tr>
<td>Clinics</td>
<td>No. of people using OR frequency of visits by respondent</td>
</tr>
<tr>
<td>Transportation</td>
<td>Frequency of use OR amount spent</td>
</tr>
<tr>
<td>Garbage collection</td>
<td>Frequency of collection OR distance from collection point OR evaluation of cleanliness of streets (Clean, moderate, dirty)</td>
</tr>
</tbody>
</table>
4. Hypotheses about project impact

Table 1.3 gives a list of potential impacts it is hypothesized the project may produce. These are classified under the headings of:

i. Income and employment
ii. Demographic characteristics of the family
iii. Quality of housing and access to public services
iv. Health
v. Consumption patterns
vi. Community participation and attitudes.

In Part 2 a chapter will be devoted to the discussion of each of these areas and specific hypotheses will be presented as to why the changes may occur. Very briefly the reasons for expecting these changes will be considered here to demonstrate the logic behind the research design.

The project may affect income and employment by improving access to markets or places of work, by improving health and hence work productivity or through increased income from the house through renting or sale. The demographic characteristics may be affected by increasing population stability on the one hand or by encouraging relatives and friends to join the household to improve from the improved conditions. Over the long run the project may reduce fertility as the economic conditions of the household increase. Similarly the increasing stability may improve school attendance or educational performance.

In most cases a primary objective of the project is to improve housing quality and access to public services. It is also hypothesized that improved physical conditions and sanitary services will improve health, particularly through reductions in infant mortality and the incidence of
### Table 1.3 Typical Project Impacts

<table>
<thead>
<tr>
<th>TYPE OF VARIABLE</th>
<th>SPECIFIC OUTCOMES OR CHANGES</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>4. Health</strong></td>
<td>1. Infant mortality rate&lt;br&gt; 2. Main types of intestinal infection&lt;br&gt; 3. Main types of illness&lt;br&gt; 4. Time lost from work due to illness&lt;br&gt; 5. Time lost from school due to illness&lt;br&gt; 6. Access to medical services&lt;br&gt; 7. Amount spent on medical services&lt;br&gt; 8. Anthropometric measures of weight and height</td>
</tr>
<tr>
<td><strong>5. Consumption Patterns</strong></td>
<td>1. Amount spent on housing&lt;br&gt; 2. Amount spent on food&lt;br&gt; 3. Amount spent on clothing&lt;br&gt; 4. Amount spent on transportation&lt;br&gt; 5. Amount spent on medicine and medical treatment&lt;br&gt; 6. Amount saved</td>
</tr>
<tr>
<td><strong>6. Community participation</strong></td>
<td>1. Number of community organizations in which families participate&lt;br&gt; 2. Number of other families in the project who are known and considered as friends&lt;br&gt; 3. Membership in particular types of community organization like political, social or religious&lt;br&gt; 4. Participation in mutual help programs&lt;br&gt; 5. Satisfaction with the community&lt;br&gt; 6. Satisfaction with one's own political, economic and social situation</td>
</tr>
</tbody>
</table>
parasitic and bacterial infections, and other diseases related to overcrowding and poor sanitation and water supply.

The project may affect consumption patterns in a number of ways. On the negative side increased expenditure on housing may force households to spend less on food, health or education. On the positive side improved transport and geographical location may give easier access to food markets. Many projects also include cooperatives.

Finally the project may affect the level and types of community organization and the attitudes of households to the community, to the possibilities for self-improvement and to the future. This will be partly achieved through communal involvement in house construction and maintenance. Most projects also try to encourage the development of community organizations. Similarly house ownership may have an influence on attitudes.

5. Defining intervening variables

Table 1.4 gives a list of the intervening variables most commonly included in this type of analysis. It can be seen that some of these variables refer to characteristics of the household (income, size, etc.) whereas others refer to characteristics of the community and its location in the city. The list will usually be modified according to the particular characteristics of the project or city being studied.

6. Methods used to measure change (project impact)

Three main approaches can be used to evaluate project impact. The first is to conduct repeated observations on a sample of households, usually with a control group. Changes between two points of time are estimated and inferences are made as to the causes of the changes. This is the traditional
Table 1.4 Typical intervening variables at the level of the household and the community

**Family level intervening variables**
- Family size
- Age of head
- Education of head
- Sex of head
- Family income
- Number of people working
- Stability of income or employment
- Employment in formal or informal sector
- Time living in the city

**Community level intervening variables**
- Distance from center of the city
- Population density
- Economic level (per capita income)
- Proportion of renters and owners
longitudinal study and is the model underlying the design of the questionnaire presented in Part 2.

The second method consists in applying the questionnaire to the project group and a control group at only one point in time after the project has been underway for some time. The differences between participants and the control group are compared and inferences are made about the extent to which the project has contributed to the difference. This approach is similar to the first one although generally methodologically inferior. 1/

The third method consists in asking households in the follow-up interview to indicate what they believe are the changes they have experienced since the project began and what they believe to be the causes of these changes. Although there are some potential problems in terms of reliability of the information on changes, this type of question will often provide valuable insights not obtained through the traditional surveys. Appendix 2 is devoted to the discussion of how to design the instrument for this purpose.

7. Information collection for impact studies

Information can be collected in two main ways. The first is to conduct interviews with a sample of respondents and to record their replies to a series of set questions contained in a questionnaire. This is the method proposed in the present volume. It is also possible to obtain much of the information through observation without having to conduct interviews. Volume 5 is devoted to the presentation of a wide range of non-survey techniques which can be used for this purpose.

1/ The weaknesses of this design are discussed in Volume 2 Chapter 3 of this series.
CHAPTER TWO: OPERATIONAL ISSUES IN SURVEY DESIGN AND ADMINISTRATION

1. Questionnaire development

The questionnaire should be looked upon as an instrument to operationalize and collect the information required on the types of indicators outlined in Chapter 1. The most common error in questionnaire development is to prepare it without a precise method for defining the questions to be included or the ways in which they will be analyzed. The design of an effective questionnaire requires that the following steps be followed:

1. Clear definition of research objectives. In the present case the objective is to evaluate project impact in 6 main areas.

2. Definition of the hypotheses to be tested (see Part 2 and Appendix 3).

3. Definition of the list of variables required. In the present case Chapter 1 identified the following types of research variables: indicators of exposure to project impact; indicators of project impact and intervening variables. In addition it is usually necessary to include a certain number of control and identification variables. These include identification of the structure and family as well as information on the progress of the interview and the number of times the family has been interviewed.

4. Preparation and revision of possible indicators of the above types of variables.

5. Preparation of a draft questionnaire.
Decision as to questionnaire format. Volume Six of this series discusses the relative merits of pre-coded and post-coded questionnaires.

Once the questionnaire has been drafted it must be tested in a pilot survey. A small sample of households are surveyed to check on comprehension and the ability to respond. Questions which consistently elicit responses of "I don't know" are probed as to whether the respondent does not understand the question or just cannot answer it. Confusing questions are reworded. A question which is understood but unanswerable may indicate that another household member is the appropriate respondent. Questions have to adapted to the language and cultural context. Even between regions in a country, vocabulary and usage can change. Since the questionnaires are applied in low-income areas, educational levels will often be low. Therefore the questions should be phrased in the simplest way possible.

After the pilot survey some revisions may have to be made in questionnaire format and in the design of particular questions. They may also have to be some changes with respect to which person or persons are to be interviewed. For example, to obtain expenditure data it will be necessary to test whether the information can all be given by the wife or whether the man must also be interviewed.

A weakness of many longitudinal surveys is that the baseline questionnaire is reapplied in exactly the same form for the follow-up interviews several years later. With the passage of
time there are likely to be certain modifications in the project. Also there are likely to be a number of specific questions to be included about participation in the project, attitudes to maintenance etc. which are only appropriate to include in the follow-up survey. For these reasons it is recommended that an additional module be added to the questionnaire for the repeat survey. An example of this additional module is given in Appendix 2. It will be noted that this also includes questions about the respondent's opinion of the changes which have occurred, how they have affected his or her family and contribution of the project to producing these changes.

2. Some sampling issues

Before designing the sampling it is necessary to decide what will be the main unit of analysis. Volume 6 explains that analysis can normally be conducted on one or more of three levels: the structure, the household or the individual. The structure will often be the unit of analysis when the study focusses on questions of housing quality and demand. However, for studies of employment, income or consumption, the household will normally be the unit of analysis. When the household is studied it may also be necessary to obtain more detailed information on the behaviour of individual household members, in which case interviews will be conducted with some or all of the household members as well as the household head.
In many types of evaluation study it will be necessary to analyze both the structure and the household. In this case the question has to be resolved of how to define a household. In practice this can be very difficult. A structure may house a large number of people, some of whom are related and others who are not. Even people who are related may appear to live largely separately, preparing their own food and organizing their own budget. A household will usually be defined in the following way: people form part of the same household if:

a. They accept the authority of a single head.
b. They live together in the same place.
c. Contribute to and depend on a single budget.
d. Share meal preparation and consumption.

The precise way in which this definition will be used will change from one country and culture to another. The following are useful guidelines in preparing the definition of the household:

a. The definition must be defined clearly and applied consistently. One of the greatest dangers is to have a very vague definition which is interpreted and applied in different ways by each interviewer.

b. The unit of analysis must be related to the primary objective of the study. If the focus is on house construction then the unit of analysis will be the group which makes and implements decision on house building. If the primary objective is to study income and expenditure than the unit of analysis should be the earnings or consumption group.
c. The unit of analysis must be consistent with the main research hypotheses.

Another issue relates to the question of who to interview. In many cases only the household head is interviewed. Although this is cheaper and easier, there are likely to be many topics on which the household head does not have adequate information (for example the head may not have details on household expenditures). Also restricting the interview to the head assumes the household group is monolithic and all decisions and opinions emanate from the head. It is likely that women will have very different opinions and sources of information and if they are not interviewed an important dimension of the community reality will be completely ignored. In general therefore we would recommend that both spouses are interviewed.

The issue of deciding who actually is the household head may be a difficult one in itself. The observation of many households shows that there is a wide division of labor and there is no one person who has maximum authority or influence on all topics. If this is the case it may be very hard to define what is meant by "head". This issue is important to resolve and define clearly in each survey as if it is not clearly defined, different interviewers will interview different people so that the results between households will not be comparable.

Finally, there is the issue of how to select households for the repeat interview. The longitudinal study involves returning for a second interview usually after one or two years. It was recommended in Volume Two that a "Mixed Panel Design" be used. With this the same structures are revisited. If the same household still lives there it will be reinterviewed. If the household has moved the interview will be conducted with the new family now occupying the house. If the structure is no longer there,
procedures are given for selecting a new household to interview as a replacement. In practice great care and supervision is needed to determine whether in fact the same household is still occupying the house. This is very important to determine both for the statistical analysis and also because the questions to be asked will vary depending on whether the interview is conducted with the same or a different family. For this reason the questionnaire contains a number of items designed to establish whether the family is the same as the one interviewed earlier.

3. Administration and Supervision of the Interview
   Control Data

   Each questionnaire has a cover sheet to identify the survey and to record the results of the interview. This information is critical for proper survey management and quality control. First and foremost, control data is needed for data validation. It is also necessary to have exact locations of houses in order to resurvey the same households in panel studies.

   The importance of validation should not be underestimated. Field supervisors check each questionnaire to ensure that the information is complete and that interviewers have followed instruction. When necessary, interviewers are asked to return to a house to complete or to clarify information. Also the field supervisor verifies that interviews were actually conducted by visiting a certain number of households, ostensibly to thank the families for their cooperation. Initially every fourth or fifth questionnaire should be checked in this way and as the survey proceeds, at least ten percent of the questionnaires.

   This procedure is necessary because of the arduous nature of interviewing. It is not uncommon for interviewers to attempt short-cuts in the survey work since the hours are long and irregular (evenings and weekends are
the best time to interview heads of households) and physically demanding. The terrain is often difficult, streets are dusty, and there may be an element of fear of certain neighborhoods, especially at night. Thus, without a system of checks, interviewers may be tempted to choose easier households to survey or even to "create" households at their own convenience. Experience has shown that there is reason for strict supervision of the field work.

Since sloppy or falsified data must be discarded, the validation process is critical to the collection of valid information. Part of good field management is selecting field supervisors who are able and willing to oversee the survey operations, to provide support, and to make unpopular decisions when necessary, such as asking an interviewer to make a return visit to a house or replacing those who are not working up to par.

For a typical identification or control page, see Sample Questionnaire, page 56.

Lead-in's and Interviewers Instructions

Prior to the initiation of surveys, interviewers should receive an intensive training program. They are taught techniques of interviewing and given opportunities to practice various interview situations. Instructions for completing the questionnaires should be reviewed. An important aspect of training is the interviewers' introduction to the households. In order to gain the cooperation of respondents and to prevent refusals, an interviewer must, in a sense, sell the survey to the household. The purpose of the study has to be clear, important and interesting enough for a person to be willing
inconsistent with information given. Explanatory notes should be made in the margins of the questionnaires during the course of the interview. As mentioned previously, some types of information are more difficult to collect than others. Income is one area of information which respondents might be reluctant to provide. The anonymity of answers should be stressed by interviewers. While names are needed (to resurvey the household), the interviewer should explain that the information is confidential and will not be used for any other purposes than the study itself.

Differences in questionnaire application for project and control group in the repeat survey

Since each survey round covers the project population and a control population, the second survey questionnaires differ in that questions on participation are only appropriate for the former group. (Theoretically, the control population is not receiving the same services which are being provided to the target population.) As can be noted in the sample questionnaire, page 73, the instruction for the interviewer reads "FOR PROJECT PARTICIPANTS ONLY". The levels of awareness of and participation in the various project components (which would differ from project to project), as well as the degree of satisfaction of project beneficiaries are important checks on the data collected in the rest of the instrument. As an example, if a respondent in the project zone indicates that between Time 0 and Time 1, the household's water source changed from river or well to a piped connection, and if a project component was water installation, it might be assumed that the project was responsible for that change. By asking the household whether they were aware of or participated in this project activity, the analysis and explanation of the change becomes much clearer. Employment might provide another example. If a household member who was unemployed in Time 0 is employed in a
trade in Time 1, there is no way to attribute this finding to the project unless it is known that the person participated in some way, e.g. a vocational training program. Also, in asking whether the general well-being of the family was affected by the project (e.g. "Has your household income changed as a result of the project?"), a number of unexpected effects may be uncovered. For instance, a component for regularizing land tenure might provide incentive for a family to invest in a small business in the area, which they were reluctant to do while there were still questions about relocation.
CHAPTER THREE: DEMOGRAPHIC CHARACTERISTICS OF THE HOUSEHOLD

Data on household composition and demographic characteristics is important not only to permit the testing of hypotheses about project impact, but also because many of the household characteristics will be used as intervening variables. It is likely that additional variables will be included in many countries to provide information on tribal, religious or other socio-cultural characteristics.

1. Hypotheses about project impact on demographic characteristics of the household

Household size: The project may influence household in two opposite ways. Firstly, by increasing the available housing stock, the project may reduce household size by permitting nuclear households to live on their own rather than having to share with relatives. On the other hand by increasing the quality of housing (and also its size) relatives may be encouraged to move into the household. Similarly the improved quality, together with improved neighborhood services may make it easier to rent rooms.

Geographical stability: It is hypothesized that one of the causes of geographical mobility is poor quality and insecure housing, and that secure tenure and improved housing quality in the projects will tend to lower the rate of population movement.

It is also hypothesized that owners will have lower mobility rates than renters. In fact in some upgrading projects it is hypothesized that renters may be forced to move as owners increase rents.
Fertility: Assuming improved housing leads to general improvements in economic conditions, it is hypothesized that the projects will gradually produce lower fertility rates. Evidence is not yet available to indicate over what period these lower rates can be expected to occur.

Educational performance: Improved housing quality and family stability will lead to higher rates of school attendance and performance. These effects will also be increased by easier access to schools.

Motivation for migration: Many policy planners are concerned that improving the quality of urban housing will have the undesired effect of stimulating rural to urban migration. It is hypothesized that this will not occur and that surveys will show: (a) that most project residents have been living in the city for some considerable time before the project began and (b) the motivation for migration was to obtain better employment opportunities not to obtain better housing.

2. Use of demographic information as intervening variables

As explained in Chapter 1, the basic model explaining the process of project impact assumes that the degree and direction of many project impacts will be influenced by the social and economic characteristics of the household. Among the variables normally used as intervening variables in the analysis are the following:

1. Household size.

2. Age and sex of household head.

3. Education level of head.

4. Average educational level of household members.

5. Time living in the city.

6. Region of origin.
3. Demographic data requirements in the questionnaire

Questions 1-18 in the sample questionnaire refer to demographic variables. The topics covered are:

(1) Size and structure of the household
   - head of household
   - relationship of each member to head
   - total number of people

(2) For each member:
   - age
   - sex
   - marital status
   - school attendance and highest grade reached
   - time living in the household

(3) Migration history of head (optional)
   - residence as a child
   - length of residence in city; in present household
   - plans for future moves

(4) Fertility (for all women over 12)
   - births in last 12 months
   - total live births
   - total children still living

(5) In countries where ethnic characteristics are important (optional)
   - language
   - religion
   - tribe, etc.

4. Notes on the demographic data

"Head of Household" is usually the person recognized as such by household members, and most often coincides with the primary earner. However, in some cultures, the eldest male may be designated as the head of household and may not be providing income. In a polygamous society, the husband may not reside in the household nor provide for its sustenance, and still be designated as its head. In this situation, clarification should be
made regarding the definition of household head and instructions given to the interviewers.

"Household Members" are persons who normally reside in the household and participate in its regular activities. Temporary visitors are not included. In situations where seasonal migration is prevalent and workers are away for long periods, a definition of their status in the household would be required. Often persons who are away for more than three months at the time of the survey are excluded, although this may depend on the extent of the financial contributions which are made to the household during that period. Unlike surveys which are primarily concerned with questions such as change in fertility (which would tend to exclude absent members), these impact surveys stress the household as an economic unit which might provide a justification for including absent members who make regular contributions to household income.

"Marital Status" must be defined with sufficient flexibility to take into account the substantial variations in social structure. For example in polygamous societies it is necessary to record the position of the wife.

Fertility. In a detailed fertility study it will usually be necessary to obtain information on the age of all living children as well as the number of stillbirths and abortions. In addition to creating negative reactions in many cultures, the obtaining of this information is also very time consuming. A number of recent techniques permit the estimation of fertility rates on the basis of more limited data. This is the approach we are using.
Additional Intervening Variables

Along with the socio-economic characteristics of populations and migration history which are dealt with directly in the questionnaires, the environmental and historical characteristics of the city and region can be important intervening variables for analysis, especially when surveys are conducted in more than one city in a country. Secondary data are needed on the geographic and climatic characteristics of the area and its economic base.
CHAPTER FOUR: PROJECT IMPACT ON HOUSING QUALITY AND ACCESS TO PUBLIC SERVICES

Increasing the housing supply and improving the quality of the physical environment of low-income urban communities is the central focus of most of the Bank's urban projects. Sites and services projects usually provide various options, ranging from basic serviced plots to completed core units, to credit mechanisms for families trying to acquire housing in newly developed areas. While upgrading projects emphasize home improvements with minimal relocation, a certain amount of new housing is usually required to accommodate families displaced by the installation of infrastructure.

The baseline and subsequent surveys gather information on the quality of the housing stock, building and improvement costs, the process of housing consolidation, the availability and terms of credit, and the demand for various kinds of housing. Since control groups cover non-project areas, much can be learned about the existing low-cost housing alternatives, such as squatter settlements and illegal subdivisions. 1/ These alternatives can indicate trade-offs that families are willing to make in terms of service levels, plot size, or location. They also provide information on the experiences people have had in construction, the costs involved in building and home repairs, types of building materials used, and the aspirations of families for housing. This information provides immediate feedback for project designers in adjusting project components to local preferences and

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1/ "Illegal" subdivision are known by various names in different countries. The term refers to land developments in which plots are sold without an official permit of the municipality and in which service levels are often below the official standards of the city.
needs, e.g. determining the level of credit needed to complete a basic housing unit.

Subsequent surveys monitor changes both in the number of families who have been able to acquire housing and in the quality of their dwellings. Quality is measured by a variety of indicators, such as density or space per capita, the quality of materials used, and the levels of services. To determine the impact of project components such as technical assistance for house construction, small scale studies are often used to complement the longitudinal data.

In addition to the specific hypotheses about project impact which are discussed in the following section, there are a number of general issues which should be addressed in the evaluation of project impact on housing and public services. The following are some of the most important of these issues:

- What types of housing are available to the target population through the formal and informal markets?

- How do the alternative types of housing compare in terms of quality and costs?

- How much do people pay for housing and services in the pre-project period? Would they be able (and willing) to pay more if better housing alternatives existed in the local market?

- What is the tenure status of residents, i.e. renters, squatters, does tenure affect their behavior in terms of housing consolidation?

- What is the process of housing consolidation? In particular, what labor sources are used:
  - What credit sources exist for the lowest income groups?
  - What construction materials are available and which ones are preferred by purchasers.
  - What are the implications in terms of time, costs, and housing quality for self-help versus contracted labor, and how does the use of particular building materials affect costs and affordability?
What are the changes in property values over time and how is the target population affected in terms of geographical mobility and financial well-being?

How do real costs of construction and project participation match the estimated costs at the time of appraisal?

What are the effects of technical assistance for construction on the ability of people to build their own houses?

What credit sources exist and how would a credit component affect the accessibility of the lowest income groups to housing?

When sites and services projects offer various options, which are chosen and what do these choices reflect in terms of costs and preferences?

1. Hypotheses about project impact

Housing quality: It is hypothesized that progressive development is a relatively efficient method for building or upgrading housing and that for a given investment the project families will experience a greater improvement in housing quality than will families in other types of housing. It is also hypothesized that the provision of tenure and basic services will provide a stimulus to housing investment and that project families will invest relatively more in housing than will families of comparable income levels living in other types of housing.

Access to public services: Access to public services will increase more rapidly for participants than for families in other types of community.

Rent/cost ratios: The rent/cost ratio will be higher for project families than in other areas (in other words the return on investment will be higher in the projects.)

Note: It will only be possible to test this hypothesis if the additional cost information given in Appendix 6 is included in the questionnaire.
Satisfaction with housing and services: The level of satisfaction with housing will be higher in the project than in control areas. However, it is hypothesized that project households will be more critical of public provision of services, and that in the project satisfaction with comparable service levels will be lower than in control areas. The reason for this latter hypothesis is that in project areas households level of expectations with respect to services has been raised so that families will less easily accept unsatisfactory service levels. One not directly covered by the present study, it has also been shown that project households are also willing to take action to pressure government agencies to improve services.

2. Data requirements on housing and access to public services.

The required basic information on housing is given in questions 19 to 48 of the sample questionnaire, while the information on access to public services, work, school and markets is given in questions 49 to 82. Questions 73 to 85 cover family attitudes and satisfaction with services and housing.

The main types of information are the following:

1. Area of the house
   - number of rooms
   - number of floors
   - total area of the house or area occupied by the household

2. Located on public or private land

3. Types and quality of materials:
   - roof
   - floor
   - walls

4. Availability of space for garden and/or patio

5. Water source
(6) Sanitation facilities
(7) Drainage system
(8) Type of lighting
(9) Type of cooking facilities
(10) Garbage disposal service
(11) Bathing facilities
(12) Type of kitchen
(13) Distance to public amenities
  - water
  - nursery school
  - primary school
  - church or mosque
  - head's place of work
  - clinic
  - hospital
  - bus stop
  - paved road
  - street lighting

If housing information is considered to be particularly important, it may be decided to include the more detailed information on housing costs and construction methods which is included in Appendix 6. This would cover the following topics:

(14) Date when house built
(15) Tenure status
  - house
  - land
(16) Purchase date and price
(17) For those buying:
  - Amount of down payment
  - Monthly payments
  - No. of years of mortgage
  - Source and amount of financing
(18) Estimated current value of property

(19) (For renters) monthly rent paid

(20) Who built the house

(21) How long did it take to build

(22) Material costs for construction

(23) Labor costs for construction

(24) Person/days of own labor

(25) Improvements made in the past 12 months
   - Added room
   - Structural repairs

(26) Costs of improvements
   - Labor
   - Materials
   - Person/days own labor

Finally information may be included on family attitudes:

(27) Degree of satisfaction with public services:
   - Access to medical services
   - Access to schools
   - Quality of the schools
   - Public lighting
   - Access to public transport
   - Garbage collection

(28) Degree of satisfaction with housing:
   - Area of lot
   - Area of the house
   - Type of materials used for house construction
   - Quality of the construction
   - Design of the house
   - Toilet
   - Water supply
3. Notes on data related to housing and access to public services

Measuring Housing Quality

Defining the most valid indicators of housing quality is difficult since standards and perceptions vary from country to country. In general, size and the housing density, the quality of materials and workmanship, and the service levels are used to construct an index of the housing stock. However, other variables, such as location in relation to jobs, markets, etc., community relationships and social ties greatly influence how residents themselves would rate their dwellings. Therefore, comparability of housing standards is difficult even if precise measurements could be taken.

A problem of measurement arises in terms of time and cost. Much of the survey data on housing quality is currently collected by observation, e.g. the interviewer's perceptions of the quality of construction or the state of repair. Therefore, biases are introduced and the assessment of housing quality is not exact. In terms of building material, attempts should be made to specify the particular material instead of using classifications such as "permanent, semi permanent rustic," etc. One reason is to gain insights into housing preferences rather than just to obtain a measure of quality. For instance in Zambia, both locally made bricks and concrete blocks might be classified as "permanent" materials and therefore be considered equivalent. Yet, concrete, which is imported, is many times more costly than the bricks and is considered the "best" material by the people constructing their homes.

Also, the trade-offs which have been discussed previously in various aspects of housing, such as larger plot size instead of higher service levels, or higher housing density and greater proximity to jobs, must be taken into account when constructing an overall index of quality. Currently, methods are
being explored for making these measurements and comparisons and these will be presented in other publications in this methodology series.

Areas: Many households may not be aware of the area of their house or plot. In this case the interviewer should be trained to pace out the approximate dimensions. A normal pace is about one meter and with practice this method can be reasonably accurate.

Imputed rent and sales value: An important way to estimate the value of a house is to estimate the imputed rent. This is the rent which could be obtained if the house was rented. In some cases where many houses in the area are rented it is possible to obtain a fairly accurate estimate, in cases where there is not an active housing market the estimating process may be more difficult. Care must be taken with the phrasing of the question. In some projects subletting is forbidden or constrained so the family may be reluctant to discuss the issue. In these cases it is often possible to formulate the question as follows: "If you were to rent a similar house to this in a similar neighborhood in another part of the city, how much do you think you would have to pay?" Another danger is that the estimate may be made artificially low if the family feels their monthly payment to the project may be increased, or artificially high if they think the questioner may be interested in renting the house.

For estimating project benefits imputed rent is usually better than imputed sale value as the latter is influenced by future perceptions of trends in the housing market. However, imputed sale value is also a useful indicator. A useful technique, if the resources are available, is to compare
the estimate given by the owner with estimates from neighbors, professional valuators and possibly a building contractor. 1/

Importance of dates when obtaining cost data: Many studies on housing costs have been of very limited use because no information was obtained on the year in which payments were made. Given the very high inflation rates in most countries, it is obvious that knowing a family paid 1000 pesos for building materials is of no use if we don't know whether they made the payment last year or 15 years ago.

1/ This method was used successfully in the Philippines. See E. Jimenez "The value of squatter settlements in developing countries." Urban and Regional Report No. 80-17 Urban and Regional Economics Division. The World Bank.
CHAPTER FIVE: PROJECT IMPACT ON IMPACT AND EMPLOYMENT

1. Introduction

Employment issues

A long-term objective of urban development projects is to improve the employment status and thereby the income levels of the urban poor. Projects often have components which are designed to generate employment directly, such as cooperative formation, credits for small businesses and vocational training programs. Construction of housing and infrastructure also is expected to have some impact on employment in project areas.

Projects may hope to affect employment indirectly as well as secondary effects of other components. For example, productivity may be expected to increase as a result of better medical services and housing which improve workers' health. New business may be attracted to the areas which are improved.

The studies address questions at the macro level of the target population as a whole, and the micro level of the employment structure within households. The key questions being asked are:

* What are the employment characteristics of the target population (project and control groups)?
  - rate of unemployment and under-employment
  - the stability of employment and types of benefits available
  - the types of employment which predominate in the area (sometimes used to discern concentrations in the "informal sector")
  - the obstacles to finding employment
  - the employment structure of households, specifically:
the proportion of earners, potential earners and dependents
the proportional contributions of working members to household
income
seasonal variations in employment and how these affect household
income and financial security

* What are the direct effects or impacts of project components designed to
  generate employment? 1/ For example;
  - Have new construction jobs been generated as a result of the
    installation of infrastructure and housing consolidation?
  - Have graduates of vocational training programs found work in their
    fields?
  - Has credit for small businesses increased job opportunities for
    unemployed workers?

* What are the changes in the employment status of the target population which
  might be indirect effects of the project (measured in comparison with the
  control groups)?
  - Are more job opportunities available for the Labor Force in
    general?...how was the employment status of women, young people and
    older workers changed over time?
  - Are individuals receiving higher wages, salaries, or income?
    ... have benefits such as social security, pensions, etc.
    increased? ... are people working fewer hours for the same income?
  - Is employment more stable, i.e. fewer casual workers and less
    seasonal employment?
  - In cases where relocation was needed, how have household employment
    patterns adjusted?

Income Issues

The integrated urban development projects provide a package of
services which are meant to be affordable to low-income groups. Through

1/ Gathering detailed information on the effects of specific components
often requires special studies, e.g. tracer studies of trainees,
interviews with construction contractors, surveys of firms, etc., which
do not follow the household sample survey model.
I-5-3

various components the projects also expect to raise the income levels of these groups. The studies, therefore, focus on income to test affordability assumptions and to measure long-term impact on the levels of household income of project beneficiaries.

Assumptions are made at the time of project appraisal regarding the percentage of income that a household would be able to spend on housing or improved services. The service levels and housing standards are tailored to estimates of the target population's income levels and of project costs since the interventions are ideally provided without subsidies. However, given the sparse data base in most project areas, the affordability assumptions in the pre-project period are often rough. A major purpose of the baseline surveys is to provide more precise information of the target population's income in order to assess initial affordability assumptions. Subsequent surveys provide more detailed information on the changes in income and expenditure patterns caused by the projects.

Affordability questions are most clear cut for sites and services projects due to the initial self-selection process and the large outlays of capital required for housing consolidation. Usually the poorest 10-20 percent of the population are not expected to participate in sites and services since the costs of even the most basic serviced plots may be high relative to the purchasing power of these groups.

However, affordability issues are not limited to sites and services. Upgrading projects propose to reach an entire population within a targeted area, even the poorest families. Therefore, the projects use lower, less costly standards such as communal standpipes instead of individual house connections for water. Questions on affordability arise when recovery of
costs (i.e. service charges or loan repayments) is not going smoothly or if unplanned dislocation of families is observed. The rate of defaults on loan or service charges may be a sign of inability to pay although other factors, such as an inadequate collections system, must also be investigated as possible causes of the phenomenon. The surveys attempt to answer as accurately as possible for both sites and services and upgrading projects "can these families afford to pay?", and to the extent possible, "are they willing to pay?".

Affordability and cost recovery are critical issues for the long range goal of replicability of housing projects. However, increasing the income levels of the target population is a major objective in itself. If income levels increase even while full costs are not recovered, as might be the case in projects with administrative problems, the impact of projects is positive. The surveys answer questions on changes in income on various levels.

In many projects it is becoming clear that the main direct impact on household income is through the increased value of the property which permits the owner to either sublet or sell. This raises some important policy issues related to the distribution of project benefits. House owners usually receive one or more direct or indirect subsidies. This may take the form of below market rate financing or the provision of public facilities such as clinics or community centers free or at a very reduced cost. In the case of upgrading projects land title will usually be given at substantially less than the market value. Between them these factors can amount to a very significant subsidy to house owners. However, due to the scarcity of housing, rent will quickly rise to their true market levels with the effect that the owner
receives all of the capital gain from the subsidies while the renter has to pay full market cost. In many, but not all, projects, owners tend to be wealthier than renters so that the subsidies may be going mainly to the higher income groups. For all of these reasons the analysis of the generation and distribution of increased rental and sale value is often an important policy issue.

The following are some of the main policy issues related to income:

* Is the project accessible to the target population?
  - Is the project reaching the original target population? Specifically, which income groups benefit the most from the projects? ... the least?
  - If a project has income-related selection criteria, how do the criteria match the income spread of the population as a whole?

* Is the project affordable to the target population?
  - Do obstacles exist which hinder the ability of beneficiaries to pay for services? Do any groups within the target population (e.g., female headed households, the lowest income groups, etc.) have particular problems in affordability?
  - Which components, if any, appear not to be affordable?
  - What groups of families drop out of the project or default on payments? Do the causes seem to be financial, or are other factors evident?
  - Are services being provided at lower cost?
  - How much do households rely on non-labor market sources of income for successful project participation?
  - What fluctuations occur in household income over a year's period and how do these variations affect project participation, a household's income generating patterns, and its expenditure patterns?

* What changes in household income occur over time which can be attributed to the project? In comparison to the control group, has the target population experienced:
  - higher salaries or increased employment benefits?
- more household members working and higher per capita income?
- new or additional sources of income from rent?
- increased land values (which may not be translated into immediate household income, but implies a capital gain)?

2. Hypotheses about project impact on income and employment

**Labor force participation of secondary workers**

Project participation will increase labor force participation rates for secondary wage earners. 1/ This is due in part to their increased motivation to work to cover housing investment costs and in part to the better location of the project site with respect to sources of employment and customers.

**Increased stability of employment**

Employment stability will increase for project participants. This is due in part to the higher motivation to have a regular source of income to cover housing investment costs, and in part to the preference which many employers give to project participants.

**Increased income of the self-employed**

The income of self-employed household heads in the project will increase more rapidly than the income of other household heads. The reason for this is that the project offers a certain degree of monopoly in terms of access to customers. 2/

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1/ This was found to be the case in El Salvador. See Bamberger, Gonzalez Polio and Sae-Hau "Evaluation of the First El Salvador Sites and Services Project". Urban and Regional Report No. 80-12 (1980).

2/ Where there is not an internal market due to slow plot occupation, the self employed will often be the last to move to the project. This was found to be the case in Senegal.
Increased income from rent

Rental income in project areas will increase more quickly than in other areas of the city. This will become particularly significant for lower income landlords.

Income redistribution from renters to owners

Given the various subsidy elements in the project, owners receive significant capital gains. At the same time this subsidy element will not be transferred to renters who will pay market rents with the consequence of an income transfer from renters to owners.

Increasing receipts from income transfers

A high proportion of low income households receive regular income transfers from relatives. During the period of house construction and consolidation, these transfers tend to increase significantly. This has been found to be the case in both El Salvador 3/ and the Philippines 4/.

3. Data requirements on income and employment

Questions 86 to 101 of the model questionnaire are related to employment. Information on other sources of income is covered by questions 102 to 111. The main types of information are the following:

(1) Work activity of each person during past month
   - Working
   - Unemployed/looking for work


- Student
- Disabled
- Retired
- Housewife

(2) Information on employment (for each person and each job)
- Hours worked last week
- Weeks worked last month
- Months worked last year
- Occupation
- Economic sector
- Employment status
- Number of persons working at place of employment
- Total earnings from each job
- Total earnings from all employment

(3) Number of weeks unemployed have been looking for work

(4) Income from part-time work of people declared as unemployed

(5) Total household labor market earnings

(6) Other sources of household income:
- Sales
- Rent from lodgers
- Other property income
- Pensions
- Cash assistance from relatives living elsewhere
- In-kind assistance from relatives living elsewhere

(7) Total household monthly income

(8) Purpose of transfer income

(9) Regularity of transfer income

(10) Variations in monthly income during the year

(11) Months of lowest income

(12) Months of highest income

(13) Average monthly income throughout the year

(14) Ownership of consumer durables:
- television
- refrigerator
- telephone
4. Notes on income and employment data collection

Definition of the Labor Force

The age group classification of the Labor Force for studies in developing countries should be more inclusive than the convention of ages 15 to 64 used in most industrialized countries. Since children from poor families frequently must work to contribute to household income, and since an official retirement age is rare, employment questions should be asked for any person who might contribute to household earnings. Additionally a probe question should be asked such as "Did anyone else in the household have any earnings last month which have not been mentioned?"

The response category "housewife" (Labor Force Activity) should not automatically remove a person from the Labor Force. Attempts should be made to probe any earnings activity of women who are classified as housewives since often they generate income from home-based activities, such as doing laundry for other households, and they may not classify this as "employment".

Since an objective of the studies could be to measure changes in the rate of child labor as well as to gather complete information on household income, care should be taken with the classification of children as only students or only workers. Children may be working part time as well as studying, and, in this respect, the category of "family worker" may be important. While income may not be generated directly, children who are
working as helpers in a family enterprise are increasing disposable income by reducing expenditures on wage employees, or by freeing adult household members for other employment.

Therefore, to gather complete employment data on both full-time and part-time work activities, at least two questions must be asked: "What were the person's major activities during the past month?"; "Was the person involved in any activity which produced income or earnings?"

Choosing the Respondent

Ideally each household member would be asked directly about his/her work activities. However, this is rarely feasible given the unlikelihood of finding all household members at home. If possible, both the head of household and spouse should be asked about each household member and this is usually done most conveniently when the initial roster of household members is taken.

Level of Detail of Income Data

Labor market earnings usually represent the largest share of household income and it is important to explore all sources since at times secondary earners, especially children and housewives may be overlooked (see employment section). Many times respondents do not consider part-time activities which provide income, such as selling products or providing services, which are done largely from the home as "employment." The phrasing of questions and probing by interviewers should try to capture the part-time activities of secondary earners.

A number of other income categories can be significant for certain segments of the target population. In particular, it has been found from past
surveys that transfers of cash or gifts between families are very important to the lowest income groups in many countries. Inter-family transfers have been critical for some housing projects since initial outlays of capital are substantial and families are required to draw on resources outside their immediate circle. Also, data have shown that female headed households may rely heavily on outside assistance over extended periods. One survey in El Salvador indicates that more than 40 percent of all female headed households received at least 20 percent of their income as gifts or transfers of cash from outside of the household.

In-kind income presents difficulties both in identifying the goods and services and in assigning values to them. The most important and possibly the easiest to calculate is the rental value of owner-occupied houses. Gifts of foods, clothing, etc. are less easily measured, although values can be assigned to meals provided regularly by an employer.

Rental income may be significant in some areas and may be one of the income sources which changes over time if households are able to enlarge their houses and rent out rooms.

Income Stability over Time

The regularity of a household's income over a year is an important factor for cost recovery and affordability. Most projects require regular payments for service charges and loans. If wide fluctuations exist in the income of groups, it may be necessary to reformulate repayment schedules to better coincide with income cycles. Also, affordability assessments should be made on long-range income patterns. Measurements taken in a "good" income month might present a much too optimistic picture of the target population's ability to meet project costs. The reverse is true as well. A snapshot
picture of a low-income month, e.g. caused by seasonal unemployment of some household members, might indicate that the project is not affordable to a large portion of the target population, when in fact it would be if yearly income was considered.

Accuracy of Income Data

Researchers often question the reliability of income data and experience shows that it tends to be underestimated. Accurate recall is one problem, especially for people with irregular earnings. If people are paid by the hour or by piece-work, it may be necessary for the interviewer to review with the respondents the average number of hours worked or articles produced per day, the days worked per week, etc. and to estimate monthly income based on that information.

A more difficult problem in collecting accurate income data is the reluctance of respondents to discuss this information. Sometimes, there are cultural taboos in disclosing income and assets. Also, respondents may distrust the purpose of the surveys. Even with careful introductions and explanations, interviewers may be viewed as government representatives and connected with activities such as tax collection or squatter relocation.

The problem of eliciting completely honest answers on income is aggravated when the project has a selection process. Households are generally aware of the eligibility requirements for projects and that their income must fall within a set range. They bias their answers on application forms, either upward or downward, in order to be accepted in the program. If the survey personnel are associated with that selection procedure, the same biases will appear. In Senegal’s evaluation program, application forms for serviced lots were initially used as "baseline" information. The income data proved to be
so unreliable that the procedure was abandoned. In future surveys, every effort should be made to distance the survey personnel from the agency or group charged with project execution.

Estimating income of the self-employed and those with their own businesses

It is particularly difficult to obtain accurate income information from the self-employed or people who own their own business. Firstly, these groups are most interested in avoiding tax assessment and hence have the largest incentive to not cooperate. However, even if they wish to provide the information, it is often very difficult to estimate how much has been earned. For many self-employed people there is no systematic recording of expenses and earnings. This is particularly true for food producers or sellers as their family will often eat part of what is produced or bought.

To the larger businessman the situation is complicated by the fact that accounting is not normally done over such a short period as a month. Many of the purchases and sales are on credit and many goods may not be sold for several months.

In practice the researcher has two options. The first is to accept the estimate given by the respondent. The second is to conduct a special study to obtain more accurate estimates. The decision on which option to chose will depend partly on available resources and partly on the importance which the study places on obtaining more accurate estimates. In most evaluations there will be relatively few respondents with large businesses but there may be 20 or 30 per cent who are self-employed and where this estimation problem may exist.
Durable Goods Checklist

Any number of household goods can be listed which researchers feel indicate well-being, status, or wealth in a particular country. However, the lists should never be used as the primary reference point for classifying households in a socio-economic index. The data can be misleading since people may not own all the items found in their home, but may be buying them on credit. On the other hand, they may own the goods, even so-called "luxury" items, but these still may not reflect overall economic well-being. This has been noted in particular areas where land tenure is under constant threat. Since people are paying no rent, they may have a little savings to invest in movable property while little or no improvements are made on their houses or communities.

One good use of the list is to identify goods which might provide additional source of income. For instance, the presence of a sewing machine or a refrigerator may be clues on earnings that were not mentioned by respondents. However, given the overall utility of this information, it is an optional item for questionnaires.
CHAPTER SIX: PROJECT IMPACT ON EXPENDITURE AND CONSUMPTION

1. Introduction

Income must be looked at in relation to expenditures to answer many of the questions about affordability and to measure changes in welfare over time. Expenditures provide a check on income data and are proxies for consumption which is a more direct measure of welfare. Projects expect to increase the access to and consumption of a variety of goods and services, while also hoping to lower the costs for many of them.

The relationship between expenditures and consumption is not always a direct one. For example, construction of a health clinic where none existed previously should increase the consumption of medical services and, therefore, increase medical expenditures. At the same time, other components, such as the provision of potable water, are expected to decrease the prevalence of illnesses and the need for medical services in the long run. Using water as an example, the installation of communal standpipes may increase the consumption of water, but costs may be reduced if beneficiaries previously purchased water from private sources.

In many studies consumption can only be estimated indirectly through information on expenditure. To avoid this circularity it is recommended that direct indicators be obtained where possible. Chapter 4 demonstrated how direct measures of the consumption of housing could be obtained (indicators of housing quality). This proves to be a valuable tool for comparing the cost effectiveness of alternative housing programs. Similar direct measures could be made of other types of consumption, for example food, but they are probably too expensive for the purposes of the present studies.
One of the largest and most important of a household's expenditures is housing. A prevailing assumption is that the poor could and would invest in housing if better credit mechanisms, secure tenure, and more low-cost housing were made available through local housing markets. As mentioned previously, affordability assumptions are based on estimates of household income and project costs and not necessarily what people currently pay for housing. Renters who pay a small proportion of their income on housing, or squatters who may pay nothing, might be able and willing to spend a considerable portion of their income for housing if it were available.

In general, increased expenditures on housing are seen as a benefit since they represent a long-range investment. At the same time there is concern that participation in housing projects may cause strains on household budgets, especially during the initial period of housing consolidation. The original cost projections, which include estimates of monthly charges, cannot account for all expenses that a family may incur, and past surveys indicate that investments on housing are often much higher than estimates at time of appraisal. Decisions made by families might be affected by social pressures in terms of the size of house which is constructed, the types of building materials which are purchased, and the amount of labor which is paid or contracted. Many of these decisions may cause households to over-extend their budgets. Thus, families without access to savings, may need to generate new sources of income through additional jobs or by mobilizing resources from the extended family. The real concern is whether they may have to reduce expenditures on other household necessities. Economizing may be possible up to a certain point, but beyond that point families may be forced to drop out of projects or to default on their payments. The surveys attempt to monitor
all expenditures in order to better understand the interrelationships between patterns of income generation and expenditures and how these affect the ability of households to participate successfully in projects.

Some of the key issues to be investigated are the following:

How do households allocate their budgets prior to project implementation?

Which expenditure items increase over time and which decrease? How do these changes relate to changes in income and which represent increased welfare?

What do people pay for housing prior to the project and does this expenditure reflect what they are able or willing to pay?

Do housing expenditures in the post-project period reflect the cost estimates made at the time of appraisal?

Are preferences evident in the expenditure patterns on housing available through the local market in terms of types of housing, service levels, plot size, etc.

Are participant families meeting the required payments for services and loans. For those defaulting, does ability to pay seem to be the primary reason or are other factors evident?

What is the propensity to save and how does this change over time?

What are the costs of basic services such as water and light before project implementation...and after?

2. **Hypotheses about project impact on expenditure and consumption**

**Housing consumption:** The project will produce greater increases in housing consumption than occur in other areas of the city.

**Housing expenditure:** The projects will produce greater increases in housing expenditure than those occurring in other areas. However, housing
expenditure will increase proportionately less than housing consumption due to the relative cost-effectiveness of the projects.

**Project impact on expenditures on food and other basic needs**

Although some decrease in basic needs expenditures on food, clothing and medicine may occur among some of the lowest income project families, these decreases will be less than the increase in housing expenditure for two reasons. First, in many cases housing investment will be partly offset by increased rental income, and second many low income families will receive increased income transfers from relatives as a result of the project.

3. **Data requirements on expenditure and consumption**

The information on monthly expenditures and expenditure fluctuations is contained in Questions 112 to 116 of the model questionnaire. Information on the "consumption" of housing and public services is contained in questions 19 to 58.

(1) **Expenditure during the last month**

- purchase of food
- meals eaten out
- transportation
- clothing
- fixed housing payments
- house construction expenses
- water
- electricity
- cooking fuel
- furnishings/household goods
- education
- medical care
- loan or credit payments
- taxes, social security etc.
- recreation/personal expenses
- ceremonial, social and community expenditures
- gifts or loans to relatives and friends
- major purchases
- savings
(2) Are there expenditure fluctuations during the year
(3) Highest expenditure months
(4) Lowest expenditure months
(5) Reasons for expenditure fluctuations
(6) Consumption of housing: This was explained in Chapter 4.

4. Notes on expenditure and consumption data

Measuring Consumption

As noted, expenditures are proxies for consumption which is the variable of interest in many cases. However, it is more difficult and more expensive to gather data on actual consumption. Items entering the household would have to be counted and valued over a period of time. Therefore expenditure estimates are used as indicators or "stand-ins" for consumption. It should be noted that there is always the danger that a chosen indicator may not adequately reflect the behavior which is the real focus of study.

Along with recognizing that consumption and expenditures do not always change in the same direction (the example of water consumption and reduced costs given above), it is also important to have secondary information on changes in prices in the area. Families may increase their expenditures on food, transportation, clothing, etc. but their purchasing power may have remained the same or even declined depending on the rate of inflation. Expenditures as a proportion of income rather than expenditure items as percentages of total expenditures is one way to approach the analysis.

The Role of Preferences in Expenditures

The consumption decisions of households in all societies are affected by preferences or tastes which are difficult to measure. It also appears that
preferences may not be given due consideration in reviewing the expenditure patterns of poor households, possibly because of a tendency to believe that the poor have limited choices because of scarce resources. Data have been accumulated which show that expenditures are often higher than what project planners originally estimated households should spend in the area of housing. People often build with more expensive materials, choose higher service levels, and contract labor instead of saving money through self-help which their stated incomes seem to indicate are unaffordable. Along with the possibility of substantially understated income, social pressures and tastes may play an equal if not greater role in many of these decisions. The surveys serve to compare households by income and expenditure behavior and to identify these apparent inconsistencies.

Expenditures as a Check on Income

Theoretically, income and expenditures should balance out in the long run. However, in practice it is rare that a perfect reconciliation of the two is possible. Imbalances of up to 10 percent are usually considered acceptable in very large surveys. The imbalances may be even greater for smaller surveys, especially when studying a short period (one month). Over a year's time, income and expenditures would approximate each other more closely. Just as income tends to be under-reported, expenditures are often overstated. At the same time, researchers generally trust expenditure data more than income data because there is less reluctance to disclose it and because the poor are often more conscious of their budgets than higher income groups.

In terms of accuracy, a problem can occur in the choice of the reference period. Even three months may be too long for good recall, so each expenditure item is usually asked for the past month. This presents little
difficulty for regular purchases, but bulky expenditure categories, such as clothing or education, can cause data problems. If it is equally probable that a family will make those purchases during any month of the year, the responses should average out, with a number of people saying “zero” and other providing a range of responses. However, if particular expenditures are invariably made in one or two months of the year by the majority of families, e.g. just before Christmas or before the school year begins, the responses will not be representative. Sometimes, therefore, it is better to ask about expenditures for the past year, which avoids the problem of unknown expenditure peaks. At the same time, there is a trade-off in terms of recall and accuracy.

Some budget items are rarely reported and these would probably fall into the category “personal expenditures.” These are expenditures which have social stigma, such as money spent on alcoholic drinks and gambling, which may not be even fully reported to the spouse (either as income or expenditures). This problem in reporting should be kept in mind since personal expenditures can represent as much as 25% of income in some cases.
CHAPTER SEVEN: PROJECT IMPACT ON HEALTH

1. Introduction

Although for reasons discussed below this is one of the least studied areas, it is likely that the impact on health is likely to be one of the most important social and economic outcomes of many shelter programs. Projects are designed to provide significant improvements in water supply, sanitation, surface drainage, solid waste disposal and the quality of the structure. These improvements are being offered to population groups suffering from very high rates of disease directly related to environmental conditions so it is reasonable to expect significant reductions in disease rate and as a consequence in infant mortality. In addition to the reduction of mortality, these health improvements are likely to have direct economic benefits in the form of higher rates of school attendance, less absenteeism from work (and hence higher productivity).

Despite the significant potential impacts on health, this is an aspect of shelter programs on which very little information has been collected. The following are some of the reasons:

1) Most health impacts cannot be measured with standard questionnaires and hence require special studies using medical and paramedical staff and sometimes laboratories (See Section 3 for a discussion of these techniques).

2) Many health impacts, such as fertility changes, lower mortality or higher productivity, are likely to occur over a relatively long time period. It may be that some changes will not be observable for 5 to 10 years. On the other hand most impact
studies tend to last only 3 or 4 years so that they would be completed before many health effects could be expected to have fully occurred.

3) Required sample sizes for studying changes in infant mortality rates (one of the best indicators) are between 5,000 and 10,000 households. Many projects do not have this many households and even for very large projects the survey sample is usually not more than about 1,000 households.

4) Many types of health studies can be very expensive with budgets ranging into the hundreds of thousands of dollars.

5) The design of a comprehensive health study which tries to estimate the causes of observed changes is technically very complex. In fact there is no agreement among researchers as to what would be the appropriate research design.

Despite these factors, it is argued in Section 3 that it is possible to conduct a useful initial evaluation of health impact at a reasonable cost, assuming the cooperation of health authorities can be obtained. The rest of this chapter is devoted to a discussion of the limited types of health information which can be obtained from a questionnaire as well as a description of the initial evaluation which could be conducted if the research program is able to develop a cooperative exercise with local health authorities.

2. Hypotheses about health impacts

Table 7.1 distinguishes between those hypotheses which can be tested with information obtained from the questionnaire and those which require the
Table 7.1 Data required to test each hypothesis about health impact

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>Information required for testing</th>
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<tbody>
<tr>
<td>1. Reduced infant mortality</td>
<td>Questionnaire with sample of 5,000 or more households.</td>
</tr>
<tr>
<td>2. Reduced work absenteeism</td>
<td>Questionnaire</td>
</tr>
<tr>
<td>3. Improved work productivity</td>
<td>Questionnaire (for approximate estimation)</td>
</tr>
<tr>
<td>4. Reduced school absenteeism</td>
<td>Questionnaire</td>
</tr>
<tr>
<td>5. Parasitic and bacterial infection</td>
<td>Parasites can be tested using simple procedures with standard microscope. Bacterial testing require electron microscope and complex procedures</td>
</tr>
<tr>
<td>6. Respiratory infection</td>
<td>Examination by doctor or paramedic</td>
</tr>
<tr>
<td>7. Physical development of child</td>
<td>Anthropometric measurement of and weight. Usually requires two trained people if conducted in house</td>
</tr>
<tr>
<td>8. Reduced fertility rates</td>
<td>Questionnaire with relatively large sample (minimum of 1000)</td>
</tr>
</tbody>
</table>
more complete information outlined in Section 3. It should also be noted that these hypotheses only refer to the expected impacts of programs which improve water supply, sanitation, surface drainage, solid waste disposal and the physical quality of construction. They do not consider the impact of the direct provision of health services such as materno-infantil centers.

**Lower infant mortality rates:** It is hypothesized the projects will produce significant reductions in infant mortality rates. The main direct cause will probably be reduced diarrheal infections, although other improvements will also contribute.

**Reduced absenteeism from work:** Due to improved health, workers living in project areas will suffer less absenteeism from ill health. There are likely to be significant differences between employed and self-employed workers in this respect as the former group are often covered by social security so that their opportunity cost from absenteeism is much lower.

**Improved work productivity:** Improved health of workers living in project areas is likely to lead to increased productivity. However, this is difficult to measure directly in the present study and can only be inferred indirectly through changes in earnings.

**Reduced absenteeism from school:** Project children are likely to experience lower absenteeism rates from school as a result of improved health. The main factor is likely to be reduced diarrheal infection although in some cases reduced respiratory infection may be of equal importance.

**Reduced incidence of parasitic and bacterial infection:** Improved water supply and waste disposal are likely to produce significant reductions in intestinal infections produced by parasites and bacteria.
Reduced respiratory diseases: Respiratory infection are linked to overcrowding. It is hypothesized that improved housing conditions, and lower densities will produce reduced respiratory infection rates in project areas.

Improved physical development of children: As a result of health improvements there will be a more rapid rate of physical development of children. This will be indicated by improved weight/height ratios for each age group.

Reduced fertility rates: Over a longer period of time fertility rates will begin to decline in response to lower infant mortality rates.

3. A basic non-questionnaire evaluation of health impacts

This section outlines briefly the main indicators of health impact which could be used if the cooperation of the Ministry of Health could be obtained. The main health divisions to be involved would be: public health (evaluation of water quality and cleanliness of streets); materno-infantil (anthropometric measures of weight and height and possibly respiratory infection); laboratories for analysis of stool samples. With the cooperation of these divisions, together with the interviewers for the normal evaluation, it is possible to study the following indicators:

A. Delivery of health inputs:

i. Quality of water supply (biological analysis by public health or water supply authorities).

ii. Cleanliness of streets, drains and areas for collection of garbage (public health authorities or interviewers).

iii. Quality and area of house (interviewers).
B. **Indicators of improved health:**

i. Infant mortality rates (requires a sample of at least 5,000 households). In a major upgrading project it is possible this information could be obtained directly from vital statistics records.

ii. Incidence of parasites in stool samples: (clinical analysis of stool samples).

iii. Anthropometric growth rates (requires measurement of weight and height of a sample of children up to the age of about 5).

iv. Incidence of respiratory infection (requires examination by paramedical staff).

C. **Operational indicators of improved health**

i. Reduced absenteeism from work (interview).

ii. Reduced absenteeism from school (interview).

If information can be obtained on all of these indicators from a sample of at least 500 project households (with the exception of infant mortality which requires at least 5,000) and if similar information can be obtained from a control group, it is possible to obtain a useful preliminary indicator of health changes which have taken place and also of their possible causes.

4. **Health data requirements in the questionnaire**

Information on the delivery of health related services and housing quality is included in Questions 19 to 48. The questions directly relating to health are included in 117 to 129. Information on fertility is covered in Questions 10 to 12.

(1) Housing quality (discussed in Chapter 4)

(2) Health related services (discussed in Chapter 4)
(3) Fertility:
- live births during past 12 months
- total live births to each woman over age 12
- total children living to each woman over age 12

(4) Illnesses during past month:
- symptoms
- source of treatment
- days missed from work
- days missed from school

(5) Miscarriages or still births during past 12 months

(6) Number of children who have died during past 12 months:
- age at death
- cause of death

5. Notes of health questions

Symptoms of illness: Unless interviewers are very well trained many of the replies to this question will be too vague to be usable. Typical symptoms given are "pains", "felt hot", "felt tired". It may be decided it is not worth including this question.

Days missed from work and school: Care must be taken to ensure this information only refers to days lost due to illness.

Miscarriages and stillbirths: In some cultures it may not be possible to ask this question.

Death of children: Again in many cultures it may be difficult to obtain this information. In parts of Africa, for example, it's considered to bring bad luck to talk of the dead. In other cultures a child is not considered to have been born until it reaches one month of age (at one point it is named or goes through a birth ceremony).

Total live births: This refers to all children born to the mother, not just to those living in the household.
CHAPTER EIGHT: PROJECT IMPACT ON COMMUNITY PARTICIPATION

1. Introduction

Most projects are interested in stimulating community participation in project decision making and implementation either as a means to greater project efficiency or as an end in itself. It is usually believed that if the community is actively involved in the planning of the project they will be more willing to cooperate in implementation. It is also believed that participation will help induce a more responsive attitude to cost recovery and a greater community involvement in project maintenance.

Some projects also consider community participation as a goal in itself. In political systems based on grassroots democracy, progressive development housing is considered as an opportunity to give families experience in the political process. In other cases it is believed that cooperation on house construction will help develop an organizational structure which can be used to achieve other economic, political and social goals at a later point.

In many cases the study of community organization requires techniques other than a questionnaire (See Volume Five of this series). However, there are a number of useful indicators which can be included in the questionnaire.

2. Hypotheses about project impact on community organization

Note that many of these hypotheses refer to changes which will be produced during the life of the project. Some of the questions referring to these changes are not included in the baseline questionnaire (Appendix 1) but in the model for the repeat survey (Appendix 2).
Level of community participation: participants in the projects will develop higher levels of community participation than control groups.

Effects of community participation: Higher levels of participation will produce greater satisfaction with the project and will also lead to greater acceptance of responsibility for project maintenance.

Effects of feeling of control over project decisions: If participants feel they have control over project decisions this will lead to greater satisfaction with the project and to acceptance of greater responsibility for maintenance.

Participation and perception of different organizations: High levels of participation will lead to a re-evaluation of the value of different types of traditional organization, particularly political parties. Participants will no longer automatically perceive the political parties as the best way to resolve all community problems.

3. Data requirements on community participation

Information on participation is contained in Questions 130 to 147. Questions 73 to 85 provide information on satisfaction with different aspects of the project. Information on perception of change, satisfaction with change and acceptance of responsibility for maintenance are included in the supplementary module to be added to the repeat survey (Appendix 2).

(1) Types of organization in which one participates and level of participation:
- sports club
- religious group
- cooperative
- trade union
(2) Opinions on the effectiveness of different types of organization in the solution of community problems:
- political party
- cooperative
- community organization
- religious organization
- trade union

(3) Awareness of community activities:
- road construction/improvement
- installation of water
- installation of light
- home improvement loans
- day care center
- cooperative formation

(4) Participation in activities:
As above

(5) Satisfaction with activities:
As above

(6) Do most families participate in activities

(7) Reasons for non participation (if this is the case)

(8) Which activities have been the most beneficial

(9) Awareness of meetings to plan project

(10) Participation in meetings to plan project

(11) Usefulness of project planning meetings

(12) How much influence do families consider they had over project planning decisions

(13) Satisfaction with services

(14) Satisfaction with house

(15) Acceptance of responsibility for project maintenance

(16) Participation in project maintenance
4. Notes on community participation data

The question given in the model questionnaire should be looked upon only as examples. The questions to be used in an actual study will obviously depend on the way the project is organized and the timing of the studies.

Levels of participation: This can be measured in several ways. The method proposed is to ask whether people participated rarely, occasionally or frequently. It would also be possible, of course, to ask how active the person was in the meetings. More detail can also be obtained on whether the respondent assumed any position of responsibility.

Degrees of effectiveness: Four options are proposed with respect to opinions of different organizations. It is quite possible that a certain organization could be considered to have made community problems worse. This is a different category from simply being ineffective. In many communities it may be difficult to obtain this type of reaction, either because it is culturally not accepted to criticize or because people are reluctant to criticize powerful organizations such as political parties.
APPENDIX 1

SAMPLE BASELINE QUESTIONNAIRE

The questionnaire which follows is an example of a typical baseline question-naire which can be applied at the time an impact study is beginning. The categories included are intended to be illustrative only. In any actual survey the researchers will need to modify the content to respond to the specific features of the project being evaluated.
SURVEY TITLE

Questionnaire No. __

City: ___________

Name of Interviewer: __________________________

Name of Respondent(s):

Head of Household ____________________________
Spouse ______________________________________
Other (Specify) ______________________________

Address of Dwelling: Section ____________________
Block: __________________________
Street Name: __________________________
No. of House: __________________________

Record of Interview:

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*Reason not completed: __________________________

Name of Editor ____________________________ (Date)
Name of Coder ____________________________ (Date)
## HOUSEHOLD ROSTER

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<th>Age</th>
<th>Status</th>
<th>Currently Attends School</th>
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<th>(2)No</th>
<th>Highest Education Level Achieved</th>
<th>All Women Over Age 12</th>
<th>Total Live Births</th>
<th>Total Children Still Living</th>
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</tbody>
</table>

*Note:
(1) Married
(2) Common-law
(3) Widowed
(4) Separated/Divorced
(5) Single*
Where did you grow up (where did you spend most of your childhood)?

__________ (town) ___________ (region)

If different from survey city How long have you lived in this city?

__________________________ years

How long have you lived in this location (this house)? _______ months ________ years

What was the principle reason for moving here? (check one)

(1) Close to work ______
(2) Better Public services ______
(3) To own a house ______
(4) To pay less for housing ______
(5) To acquire a larger dwelling ______
(6) Because relative lives in this neighborhood ______
(7) Other (specify) __________________________

Are you thinking of moving from here? (1) Yes ______ (2) No ______

If yes, what is the reason? ________________________________________

(Choose No. from Question 15)
HOUSING

19. Type of Structure?
   (1) Single Family ___ or (2) Multi-Household ___

20. No. of Floors ___

21. Area of Lot ___ M²

22. Constructed Area ___ M²

23. No. of Rooms ___ (excluding kitchen and bath)

24. No. of floors ___

25. Total No. of Households residing in building ___

26. No. rooms used exclusively by surveyed household ___
   (excluding kitchen and bath)

27. Living area of household ___ M²

FOR ALL STRUCTURES

23. Location: (1) private land ___ (2) public land ___

24. Roof ___

25. Floors ___

26. Floor ___

27. Walls ___

Predominant Building Materials:
See lists below

Quality of Construction:
(1) poor (2) average (3) good

28. No. 10:
   (1) Corrugated metal ___
   (2) Tiles ___
   (3) Thatch ___
   (4) Other (specify above) ___

29. No. 11:
   (1) Tile ___
   (2) Concrete ___
   (3) Dirt ___
   (4) Other (specify above) ___

30. No. 12:
   (1) Concrete blocks ___
   (2) Bricks ___
   (3) Wood ___
   (4) Adobe ___
   (5) Scrap metal ___
   (6) Other (specify above) ___

35. Does the lot have space for:
   (if yes, indicate in M²)
   (1) Vegetable Garden ___ M²
   (2) Decorative Garden ___ M²
   (3) Courtyard/Patio ___ M²

36. Is this building or lot used for any commercial purpose, such as cottage industry, etc.?
   (1) Yes ___ (2) No ___

37. Specify ___
### Housing Service Levels

#### Water Source:
- **Piped**
- **Well**
- **Cistern**
- **Public Tap**
- **Purchase from vendors**
- **Trucks**
- **River/stream**

#### Is water source shared with other households?

<table>
<thead>
<tr>
<th>No</th>
<th>Yes</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tbody>
</table>

**If yes, indicate No. of households.**

#### Sanitation Facilities:
- **Water closet**
- **Septic tank**
- **Letrine**
- **Other** *(Specify)*

#### Drainage system in area:
- **Covered**
- **Open/lined**
- **Open/unlined**
- **Other** *(Specify)*

#### If household pays for water, how much?
- $ per *(week or month)*
44. Light service available to household:

   (1) Electric ______
   (2) Gas/lamp ______
   (3) Candle ______
   (4) Other ___________
       (Specify)

45. Type of cooking fuel used in household:

   (1) Electricity ______
   (2) Gas ______
   (3) Kerosene ______
   (4) Wood/Charcoal _____
   (5) Other ___________
       (Specify)

46. Garbage disposal for household:

   (1) Collected by city _____
   (2) Burned ______
   (3) Community dump ______
   (4) Household compost _____
   (5) Dumped elsewhere ______

47. Bathing facilities:

   (1) Inside
   (2) Outside
   (3) None

48. Kitchen:

   (1) Inside
   (2) Outside
## ACCESS TO SERVICES, WORK, SCHOOL AND MARKETS

### Distance to public amenities

<table>
<thead>
<tr>
<th>Amenity</th>
<th>Distance (Km)</th>
</tr>
</thead>
<tbody>
<tr>
<td>48. Water supply</td>
<td></td>
</tr>
<tr>
<td>50. Nursery school</td>
<td></td>
</tr>
<tr>
<td>51. Primary school</td>
<td></td>
</tr>
<tr>
<td>52. Church or mosque</td>
<td></td>
</tr>
<tr>
<td>53. Head's place of work</td>
<td></td>
</tr>
<tr>
<td>54. Clinic</td>
<td></td>
</tr>
<tr>
<td>55. Hospital</td>
<td></td>
</tr>
<tr>
<td>56. Bus stop</td>
<td></td>
</tr>
<tr>
<td>57. Paved road</td>
<td></td>
</tr>
<tr>
<td>58. Street lighting</td>
<td></td>
</tr>
</tbody>
</table>

### Time, mode and cost of travel to work, school and market

(Nota: all information refers to the most recent trip)

<table>
<thead>
<tr>
<th>Time</th>
<th>Mode</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heads journey to work</td>
<td>59</td>
<td>60</td>
</tr>
<tr>
<td>Spouse journey to work</td>
<td>62</td>
<td>63</td>
</tr>
<tr>
<td>Children travel to school</td>
<td>65</td>
<td>66</td>
</tr>
<tr>
<td>Main weekly shopping</td>
<td>66</td>
<td>69</td>
</tr>
</tbody>
</table>

(For house owners)

71. If you decided to rent your house, how much do you think you would receive per month?

72. If you were to sell your house how much do you think you could sell it for?
<table>
<thead>
<tr>
<th>URBAN SERVICES</th>
<th>Satisfied</th>
<th>More or less satisfied</th>
<th>Dissatisfied</th>
</tr>
</thead>
<tbody>
<tr>
<td>73. Access to medical services</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>74. Access to schools</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>75. Quality of the schools</td>
<td></td>
<td></td>
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<tr>
<td>76. Public lighting</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>77. Access to public transport</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>78. Garbage collection</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

| HOUSING                                |           |                        |              |
| 79. Area of lot                        |           |                        |              |
| 80. Area of the house                  |           |                        |              |
| 81. Type of materials used for house construction | |                        |              |
| 82. Quality of the construction        |           |                        |              |
| 83. Design of the house                |           |                        |              |
| 84. Toilet                             |           |                        |              |
| 85. Water supply                       |           |                        |              |
**Employment**

For those identified as working in 9.87 continue through 9.96. If not working, skip to 9.98. Use one line per occupation. If a person has two or more occupations use one line for each.

<table>
<thead>
<tr>
<th>No.</th>
<th>Name</th>
<th>Work Activity Past Month</th>
<th>No. hrs. worked past wk.</th>
<th>No. wks. worked past mo.</th>
<th>No. mos. worked past yr.</th>
<th>Occupation</th>
<th>Economic Sector</th>
<th>Employment Status</th>
<th>No. of persons working this source</th>
<th>Total Earnings this source</th>
<th>Total Earnings this person</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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<td></td>
</tr>
<tr>
<td>No. 97</td>
<td>(1) Working</td>
<td>(1) Employer</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(2) Unemployed/looking for work</td>
<td>(2) Self-employed</td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>(3) Student</td>
<td>(3) Employee</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>(4) Disabled</td>
<td></td>
<td></td>
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<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>(5) Retired</td>
<td>(4) Unpaid Family Worker</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(6) Housewife</td>
<td>(5) Cooperative Producer</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
For unemployed household members who are looking for work:

<table>
<thead>
<tr>
<th>No.</th>
<th>Name</th>
<th>No. wks. or mos. looking for work</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tbody>
</table>

Do any of the household members you identified as not working (students, retired, etc.) earn any income from part-time work activities?

(1) Yes ________ (2) No ________

<table>
<thead>
<tr>
<th>Household Member (identify with roster no.)</th>
<th>(1) Activity</th>
<th>(2) Average Earnings</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Week</td>
</tr>
<tr>
<td></td>
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<td></td>
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</tr>
</tbody>
</table>

Make calculations for month Sub-total $________

Total Household Labor Market Earnings: $________
Last month did the household receive income from:

(If Yes, note amount for past month)

<table>
<thead>
<tr>
<th></th>
<th>No</th>
<th>Yes</th>
<th>Specify</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) Sales</td>
<td>$</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(2) Rent from lodgers</td>
<td>$</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(3) Other property income</td>
<td>$</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(rent, interest)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(4) Pensions</td>
<td>$</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(5) Cash assistance from relatives living elsewhere</td>
<td>$</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(6) In-kind assistance (specify and estimate value)</td>
<td>$</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

103 Subtotal $ __________

104. TOTAL HOUSEHOLD MONTHLY INCOME

(Interviewer should compute this then check with respondent)

Total earned income (97) __________
Income from members not working (100) __________
Income from other sources (103) __________

(Compute) TOTAL HOUSEHOLD INCOME.... __________

(If transfer income from friends or relatives in 102)

105. Was the transfer given for a particular purpose?

Yes  No

Specify

106. Is this transfer received regularly. Yes  No
According to these estimates, the total income for the household during the past month was approximately $_____. Are there some months when your household’s income is higher or lower than that?

1. Yes ____  
2. No ____

What would you estimate was the lowest monthly income you had during the year?  $

What would you estimate was the highest? $ _________

What would you say is the average monthly income of your household? $ ________

Do you own any of the following?

(by observation if possible)

<table>
<thead>
<tr>
<th>Item</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Television set</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Refrigerator</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Telephone</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sewing Machine</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Phonograph</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transistor Radio</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vehicle:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Car</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bike</td>
<td></td>
<td></td>
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<tr>
<td>Motorcycle</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Truck</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td></td>
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</tbody>
</table>
**EXPENDITURES**

(Calculate by the month is possible. If purchases are easier to calculate by the year or week, monthly estimates can be done afterwards.)

112. What would you estimate that you spent last month for the following household items (not including purchases for business):

<table>
<thead>
<tr>
<th>Month or monthly equivalent</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>

- (1) Purchase of food
- (2) Meals eaten out
- (3) Transportation
- (4) Clothing
- (5) Fixed housing payment (rent or mortgage)
- (6) House construction expenses (material or labor)
- (7) Water
- (8) Electricity
- (9) Cooking fuel
- (10) Furnishings/household goods
- (11) Education
- (12) Medical care
- (13) Loan or credit payments (excluding housing)
- (14) Taxes, social security etc
- (15) Recreation/personal expenditure
- (16) Ceremonial, social and community expenditures (ceremonies, funerals, payment to political or community organizations)
- (17) Gifts or loans to relatives or friends
- (18) Major purchases not covered by other items (for example purchase of land in the village)
- (19) Savings

**TOTAL MONTHLY EXPENDITURES**

113. Are there some months in the year when your expenditures are especially high or low compared to the past month?

(1) Yes  
(2) No.

114. Which months are the highest?

115. Which months are the lowest?

116. What are the reasons for these differences in expenditures?

____________________________________________________________________________________

____________________________________________________________________________________
HEALTH

117. Have any household members been sick in the past month and needed treatment?

(1) Yes ________  (2) No ________

<table>
<thead>
<tr>
<th>Name</th>
<th>Type of Illness or Symptoms</th>
<th>Source of Treatment</th>
<th>No. of Days Missed</th>
</tr>
</thead>
<tbody>
<tr>
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</table>

For all women over 12 years of age in household

121. Have you (or she) ever had any pregnancies which miscarried or children who were stillborn during the past 12 months?

(1) Yes ________  (2) No ________

124. How many? __________

125. Have any of your children or the children of other women in the household died during the past 12 months?

(1) Yes ________  (2) No ________

<table>
<thead>
<tr>
<th>Name of Mother</th>
<th>Name of Child</th>
<th>Age at Death</th>
<th>Cause of Death</th>
</tr>
</thead>
<tbody>
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</tbody>
</table>
COMMUNITY PARTICIPATION

Do you belong to any of the following types of organizations?

(For those organizations for which membership is indicated, ask "Would you say that you participate in activities rarely, occasionally, or frequently?")

<table>
<thead>
<tr>
<th>TYPE OF ORGANIZATION</th>
<th>MEMBER</th>
<th>LEVEL OF PARTICIPATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) Sports Club</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(2) Religious Group</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(3) Cooperative</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(4) Union</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(5) Political Organization</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(6) Social Club</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Of the kinds of organization I will mention, how effective do you think each has been in dealing with problems faced by the community?

<table>
<thead>
<tr>
<th></th>
<th>Effective</th>
<th>Reasonably Effective</th>
<th>Ineffective</th>
<th>Race problems worse</th>
</tr>
</thead>
<tbody>
<tr>
<td>122 Political party</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>133 Cooperative</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>134 Community organization</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>135 Religious organization</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>136 Trade union</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>137 Other (specify)</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>
Of the following activities which are being undertaken to improve this community, which are you aware of and in which have you participated?

<table>
<thead>
<tr>
<th>PROJECT COMPONENTS (Sample List)</th>
<th>AWARE Yes/No</th>
<th>PARTICIPATES Yes/No</th>
<th>SATISFACTION VS/ S/DS</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) Road construction/ improvement</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(2) Installation of water</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(3) Installation of public light</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(4) Home improvement loans</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(5) Day care center</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(6) Cooperative formation</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Of those you have mentioned, would you say that you are very satisfied, satisfied, or dissatisfied with the services provided?

141 Do the majority of the families living in this community participate in the program to improve the area?

Yes ___ No ___

142 Why don't they participate?

__________________________________________________________________________

143 In your opinion, which of the activities which are underway in the community have been the most beneficial to community?

__________________________________________________________________________
During the planning of the project a number of meetings were held with families to discuss the location of roads, which buildings were to be demolished and the types of services to be installed.

144. Were you aware of these meetings?
   a. Not aware
   b. Vaguely aware
   c. Completely aware.

145. How frequently did you or someone from your family attend?
   a. Never.
   b. Some but not all
   c. All

146. How useful did you find the meetings?
   a. No use at all
   b. Quite useful
   c. Very useful

147. How much influence did you and your neighbors have on the decisions about the project?
   a. None at all.
   b. Some
   c. A lot
APPENDIX 2

ADDITIONAL MODULE TO INCLUDE
IN REPEAT SURVEY

When the families interviewed in the baseline survey are reinterviewed after several years, it is useful to add a few additional questions to the original baseline format so as to obtain their opinions on the changes they have experienced and the extent to which these changes have been produced by the project.

Families who have entered since the previous interview and who are being interviewed for the first time will receive only the original baseline questionnaire.
Compared with 2 (or number of years since previous interview) years ago, do you think things have improved, stayed the same or got worse:

<table>
<thead>
<tr>
<th>House</th>
<th>Better</th>
<th>Same</th>
<th>Worse</th>
<th>If better or worse</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Living area</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Quality of construction</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Water supply</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Sanitary service</td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Access to services</th>
<th>Better</th>
<th>Same</th>
<th>Worse</th>
<th>If better or worse</th>
</tr>
</thead>
<tbody>
<tr>
<td>5. Access to medical service</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Access to hospitals</td>
<td></td>
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<tr>
<td>7. Public transport</td>
<td></td>
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<tr>
<td>8. Access to schools</td>
<td></td>
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<table>
<thead>
<tr>
<th>General conditions</th>
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<tbody>
<tr>
<td>9. Family income</td>
<td></td>
</tr>
<tr>
<td>10. Employment situation</td>
<td></td>
</tr>
<tr>
<td>11. Health of children</td>
<td></td>
</tr>
<tr>
<td>12. Health of adults</td>
<td></td>
</tr>
<tr>
<td>13. Security of neighborhood</td>
<td></td>
</tr>
<tr>
<td>14. Relations with neighbors</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>15. Do you think the project has had a direct affect on the employment situation of your family:</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Has improved situation ____</td>
</tr>
<tr>
<td>b. Has not affected situation ____</td>
</tr>
<tr>
<td>c. Has made situation worse. ____</td>
</tr>
</tbody>
</table>

(If a or c)
15. Explain ________________________________
17. Do you think the project has had a direct effect on your household income?
   a. Has increased income ____
   b. No change ____
   c. Has reduced income ____
   (if a or c)
   18. Explain ________________________________

19. Do you think the project has affected the amount of money your household has to spend on basic necessities?
   a. Has increased available money ____
   b. No change ____
   c. Has decreased available money ____
   (if a or c)
   20. Explain ________________________________

21. Do you think the project has had any direct effect on the health of your children?
   a. Has improved children's health ____
   b. No effect ____
   c. Has made children's health worse ____
   (if a or c)
   22. Explain ________________________________

23. Do you think the project has had any direct effect on the health of the adult members of your family?
   a. Has improved adult health ____
   b. No change ____
   c. Has worsened adult health ____
   (if a or c)
   24. Explain ________________________________

25. When everything is considered how much do you think the project has affected the situation of yourself and family?
   a. Has improved our situation considerably ____
   b. Has made some small improvements ____
   c. No change ____
   d. Has made things slightly worse ____
   e. Has made things alot worse. ____
   26. Explain ________________________________
27. When everything is considered what do you think is the biggest change the project has made in the life of you and your family?

28. How well do you think the public water taps and pipes, the roads, the drains and the public toilets have been maintained? And how well have the public areas been kept clean?

<table>
<thead>
<tr>
<th></th>
<th>Good</th>
<th>Average</th>
<th>Bad</th>
<th>Cause of problems</th>
</tr>
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<tbody>
<tr>
<td>Physical condition</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>of roads</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Surface drainage</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Public water taps</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>and water pipes</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Public toilets</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cleanliness of public areas</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

30. Who do you think should be mainly responsible for the maintenance?

Local government
The project
Community organizations
Individual family

31. Do you think the community should assume more responsibility than it does at present, about the same or less?

a. More responsibility
b. About the same
c. Less

31. (if a or c) Explain

32. Do you think individual families should accept more responsibility for maintenance than they do at present, about the same or less?

a. Should accept more responsibility
b. About the same
c. Should have less responsibility

(if a or c)

32. Explain
APPENDIX 3 PRIMARY HYPOTHESES ABOUT PROJECT IMPACT

Primary hypotheses are defined as those which refer to a general project impact on all participants. Secondary hypotheses are those which relate to the impact on particular groups. This appendix only refers to the primary hypotheses.

1. Project impact on demographic characteristics of the household

   Household size
   1. By increasing available housing stock the project will permit nuclear families to establish independent households.
   2. By increasing housing area and quality the project will increase household size by encouraging subletting or part of the structure.
   3. By increasing housing area and quality household size will be increased through relatives coming to live temporarily or permanently in the structure.

   Geographical stability
   4. Secure tenure and improved housing quality will improve geographical stability by reducing movement of owners out of the project.
   5. Renters will have higher mobility rates than owners.
   6. The project may increase mobility rates of renters who may be forced to leave due to increased rents.

   Fertility
   7. Over the long run the project will lead to lower fertility rates. This will be due to improved economic conditions.

   Educational performance
   8. School attendance rates will increase in project areas.
   9. School performance will improve in project areas.

2. Project impact on housing quality and access to public services

   Housing quality
   1. For a given investment project families will experience a greater improvement in housing quality than will households in other areas.
2. The provision of tenure will provide a stimulus to housing investment in projects and this will occur at higher rates than in other areas.

Access to public services

3. Access to public services will increase more rapidly for project households than in other areas.

Rent/cost ratio

4. The rent/cost ratio will be higher for project families than in other areas (i.e. the return on investment is higher).

Satisfaction with housing and service

5. The level of satisfaction with housing will be higher in the project than elsewhere.
6. Project households will be more critical of the provision of public services as their level of expectations has been raised. Consequently their degree of satisfaction with a given level of services will be lower than in other areas.

3. Project impact on income and employment

Labor force participation of secondary workers

1. Labor force participation rates for secondary workers will be higher in project areas than elsewhere. This is partly due to higher motivation, partly due to higher motivation, partly to better access to employment and partly because employers give some preference to project families.

Increased stability of employment

2. Employment stability will increase for project participants.

Increased income of self-employed

3. Income of self-employed will increase more rapidly than income of other groups in the project. This is largely due to semi-monopolistic access to the project market.
4. In projects where occupation rates are slow, the self-employed will be the last to occupy their houses due to the lack of access to potential customers.

Increased income from rent

5. Rental income in project areas will increase more rapidly than in other areas.
6. Rental income in the project will increase more rapidly than other sources of income.

**Income redistribution from renters to owners**

7. Owners will receive substantial capital gains due to the direct and indirect subsidy elements in the project.
8. Renters will pay market rents and will not receive any of the benefits received free by owners. Consequently there will be an income transfer from renters to owners.
9. As renters are usually poorer than owners, the income transfers will go from poorer to richer households.

**Increasing receipts from income transfers**

10. Project households will receive higher income transfers from relatives than they did before the project began.
11. The increased transfers will be directed mainly to poorer households.

4. **Project impact on expenditure and consumption**

**Housing consumption**

1. The project will produce greater per capita increases in housing consumption than occur in other areas of the city.

**Housing expenditure**

2. The project will produce greater increases in housing expenditure than those occurring in other areas of the city.
3. Housing expenditure will increase proportionately less than housing consumption due to the relatively cost effectiveness of the projects.

**Project impact on expenditure on food and basic necessities**

4. Some decrease by the poorest families will occur in expenditure on food and other basic necessities, at least during the period of highest housing investment.
5. The above reductions will be less than the increased expenditure on housing due to increased income from rent and increased income transfers from relatives.

5. **Project impact on health**

**Infant mortality**

1. Infant mortality rates will be lower in project areas.
Appendix 3-4

Absenteeism from work

2. Absenteeism from work due to illness will be lower in project areas.
3. Absenteeism rates will be lower for self-employed workers than for wage earners, largely because many of the latter are covered by social security so that the opportunity cost of missing work is much lower.

Work productivity

4. Work productivity will increase in project areas due to improved health.

Absenteeism from school

5. Absentee rates from school due to ill health will be lower in project than control areas.

Parasitic and bacterial infection

6. Due to improved water supply and sanitation, the rates of parasitic and bacterial infection will be lower in project than in control areas.

Respiratory infection

7. Rates of respiratory infection will be lower in project than in control areas.

Physical development of children

8. The rate of physical development of children will be more rapid in project than in control areas.

Fertility rates

9. As a result of improved health conditions and the decline in infant mortality, fertility rates in project areas will gradually decline.

6. Project impact on community participation

Level of community participation

1. Community participation rates will be higher in project than in control areas.
Appendix 3-5

Effects of community participation

2. Higher community participation levels will produce higher levels of satisfaction with the project.
3. Higher participation rates will also produce more acceptance of responsibility for maintenance of the project facilities.

Effects of feeling of control over project decisions

4. When participants feel they have control over the way in which the project is planned this leads to greater satisfaction with the project.
5. The greater the feeling of control over project planning the greater the acceptance of responsibility for maintenance.

Participation and perception of different organizations

6. The more actively a person participates in the project the more critical he/she becomes of traditional organizations such as political parties.
APPENDIX 4  INDEX TO QUESTIONS COVERING DIFFERENT TYPES OF VARIABLES
REQUIRED FOR EVALUATION OF PROJECT IMPACT

<table>
<thead>
<tr>
<th>Variable</th>
<th>Question Nos.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>INDICATORS OF EXPOSURE TO PROJECT IMPACT</strong></td>
<td></td>
</tr>
<tr>
<td>1. Number of floors</td>
<td>20/24</td>
</tr>
<tr>
<td>2. Area of lot</td>
<td>21</td>
</tr>
<tr>
<td>3. Construction area/living space</td>
<td>22/27</td>
</tr>
<tr>
<td>4. No. of rooms</td>
<td>23/26</td>
</tr>
<tr>
<td>5. Roof materials</td>
<td>29/30</td>
</tr>
<tr>
<td>6. Floor materials</td>
<td>31/32</td>
</tr>
<tr>
<td>7. Wall materials</td>
<td>33/34</td>
</tr>
<tr>
<td>8. Space for garden</td>
<td>33-35</td>
</tr>
<tr>
<td>9. Water supply</td>
<td>38-39</td>
</tr>
<tr>
<td>10. Sanitation</td>
<td>41-42</td>
</tr>
<tr>
<td>11. Drainage</td>
<td>43</td>
</tr>
<tr>
<td>12. Light</td>
<td>44</td>
</tr>
<tr>
<td>13. Garbage disposal</td>
<td>46</td>
</tr>
<tr>
<td>14. Bathing facilities</td>
<td>47</td>
</tr>
<tr>
<td>15. Kitchen facilities</td>
<td>48</td>
</tr>
<tr>
<td>16. Distances from public amenities</td>
<td>49-58</td>
</tr>
<tr>
<td>17. Use of home improvement loan</td>
<td></td>
</tr>
<tr>
<td>18. Attending project planning meetings</td>
<td>145</td>
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</table>

<table>
<thead>
<tr>
<th><strong>INTERVENING VARIABLES</strong></th>
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<tbody>
<tr>
<td>1. Household size</td>
<td>1</td>
</tr>
<tr>
<td>2. Age of head</td>
<td>5</td>
</tr>
<tr>
<td>3. Sex of head</td>
<td>4</td>
</tr>
<tr>
<td>4. Heads educational level</td>
<td>8</td>
</tr>
<tr>
<td>5. Region of origin of head</td>
<td>13</td>
</tr>
<tr>
<td>6. Head's time living in the city</td>
<td>14</td>
</tr>
<tr>
<td>7. Head's occupation</td>
<td>91</td>
</tr>
<tr>
<td>8. Total household earned income</td>
<td>97</td>
</tr>
<tr>
<td>9. Total household monthly income</td>
<td>104</td>
</tr>
<tr>
<td>10. Ownership of consumer durables</td>
<td>111</td>
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</table>

<table>
<thead>
<tr>
<th><strong>INDICATORS OF PROJECT IMPACT (DEPENDENT VARIABLES)</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>(Note these often refer to changes which will be measured by comparing the response to the base-line survey with the response to the repeat survey)</td>
<td></td>
</tr>
<tr>
<td>1. Household size</td>
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</tr>
<tr>
<td>2. School attendance</td>
<td>7</td>
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<tr>
<td>3. School achievement by age</td>
<td>8</td>
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<tr>
<td>4. Live births during last 12 months</td>
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<tr>
<td>Variable</td>
<td>Question Nos.</td>
</tr>
<tr>
<td>-------------------------------------------------------------------------</td>
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<tr>
<td>(Indicators of project impact contd.)</td>
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<tr>
<td>5. Time of living in present dwelling</td>
<td>9/15</td>
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<tr>
<td>6. Plans to move</td>
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<tr>
<td>7. Changes in housing quality</td>
<td>Vars 1-15 of project exposure</td>
</tr>
<tr>
<td>8. Changes in access to public services</td>
<td>49-58</td>
</tr>
<tr>
<td>9. Changes in time, cost and mode of travel to work, school and market</td>
<td>59-79</td>
</tr>
<tr>
<td>10. Imputed rent</td>
<td>71</td>
</tr>
<tr>
<td>11. Imputed sale value</td>
<td>72</td>
</tr>
<tr>
<td>12. Satisfaction with urban services</td>
<td>73-78</td>
</tr>
<tr>
<td>13. Satisfaction with house</td>
<td>79-85</td>
</tr>
<tr>
<td>14. Labor force participation rates</td>
<td>87</td>
</tr>
<tr>
<td>15. Total household earned income</td>
<td>97</td>
</tr>
<tr>
<td>16. Total household monthly income</td>
<td>104</td>
</tr>
<tr>
<td>17. Ownership of consumer durables</td>
<td></td>
</tr>
<tr>
<td>18. Receipt of transfers from relatives</td>
<td>102</td>
</tr>
<tr>
<td>19. Income stability</td>
<td>107</td>
</tr>
<tr>
<td>20. Expenditure on food</td>
<td>112</td>
</tr>
<tr>
<td>21. Expenditure on housing</td>
<td>112 (5+6)</td>
</tr>
<tr>
<td>22. Gifts/loans to relatives and friends</td>
<td>112 (17)</td>
</tr>
<tr>
<td>23. No. of people sick during the month</td>
<td>119</td>
</tr>
<tr>
<td>24. Days absent from work due to illness</td>
<td>121</td>
</tr>
<tr>
<td>25. Days absent from school due to illness</td>
<td>122</td>
</tr>
<tr>
<td>26. Miscarriages or stillbirths during past year</td>
<td>123</td>
</tr>
<tr>
<td>27. Children who have died during past year</td>
<td>127</td>
</tr>
<tr>
<td>28. Participation in organizations</td>
<td>131</td>
</tr>
<tr>
<td>29. Attitude to relative effectiveness of different types of organization in solving community problems</td>
<td>132-137</td>
</tr>
<tr>
<td>30. Participation in community projects</td>
<td>139</td>
</tr>
<tr>
<td>31. Satisfaction with community projects</td>
<td>140</td>
</tr>
<tr>
<td>32. Attendance at community planning meetings</td>
<td>145</td>
</tr>
<tr>
<td>33. Opinion on influence over project planning</td>
<td>147</td>
</tr>
<tr>
<td>34. Opinion on changes in condition of house</td>
<td>Special module 1-4</td>
</tr>
<tr>
<td>35. Opinion on changes in access to services</td>
<td>Special module 5-8</td>
</tr>
<tr>
<td>36. Opinions on changes in general conditions</td>
<td>Special module 9-14</td>
</tr>
<tr>
<td>37. How has project affected employment situation of the family</td>
<td>Special module 15-15</td>
</tr>
<tr>
<td>38. How has project affected family income</td>
<td>Special module 17-18</td>
</tr>
<tr>
<td>39. How has project affected money available for basic expenditures</td>
<td>Special module 19-20</td>
</tr>
<tr>
<td>40. How has project affected children's health</td>
<td>Special module 21-22</td>
</tr>
<tr>
<td>41. How has project affected adult health</td>
<td>Special module 23-24</td>
</tr>
<tr>
<td>42. Degree of total impact of project on family situation</td>
<td>Special module 25-26</td>
</tr>
<tr>
<td>43. Biggest change made by project</td>
<td>Special module 27</td>
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<tr>
<td>Variable</td>
<td>Question Nos.</td>
</tr>
<tr>
<td>------------------------------------------------------------------------</td>
<td>-------------------------------</td>
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<td>44. Opinions on quality of maintenance and cause of problems</td>
<td>Special module 28-32</td>
</tr>
<tr>
<td>45. Main responsibility for maintenance</td>
<td>Special module 33</td>
</tr>
<tr>
<td>46. Should community assume more responsibility for maintenance</td>
<td>Special module 34-35</td>
</tr>
<tr>
<td>47. Should individual families assume more responsibility for maintenance</td>
<td>Special module 36-37</td>
</tr>
</tbody>
</table>
APPENDIX 5

Sample list of
Occupational Categories

I. AGRICULTURE AND FISHING

Professionals and/or technicians with degrees from universities, technological institutes and other centers of higher learning.

Agr. employees: bookkeepers, office workers, foremen, supervisors, overseers, agents (employees in a position of trust). Farm machinery operators, drivers, guards.

Permanent agricultural wage-earners: grooms, farm hands, day laborers, permanent workers, smallholders, fishermen.

Seasonal agricultural workers: cutters, farm hands, cotton, vegetable, fruit harvesters.

Miscellaneous farm work.

II. MANUFACTURING (Large and medium-scale industry)

Professionals and/or technicians with degrees from universities, technological institutes and other centers of higher learning.

Industrial employees: offices, warehouses, accounting, control, transportation, communication, maintenance.

Skilled workers: foremen, section leaders, millers, lathe operators, team leaders.

Semi-skilled workers: carpenters, mechanics, shoemakers, weavers, typesetters, clerks, bakers, repairmen, assemblers, installers, etc.

Unskilled workers: worker's helpers: day workers, common laborers, miscellaneous workers, packers, bottlers, cyclists.

Other types of industrial workers.

III. CONSTRUCTION AND RELATED SECTOR

Professionals and/or technicians with degrees from universities, technological institutes and other centers of higher learning.

Employees in construction offices, companies or departments (draftsmen).
Skilled workers: construction managers, personnel directors, controllers, team leaders.

Skilled construction workers, (brick layers, fitters, plumbers, electricians, painters).

Semi-skilled construction workers: floor-layers, plasterers, joiners.

Unskilled workers: assistants, hands, laborers.

IV. TRANSPORTATION AND STORAGE

Professional and/or technicians with degrees from Universities, technological institutes and other centers of higher learning.

Employees in transportation companies (land, sea, air carriers, storerooms, warehouses, depots).

Operators of vehicles, ships, motor vehicles used in urban and extra-urban transportation networks (coastal shipping).

Riders of animals and drivers of animal-drawn vehicles, cart drivers.

Miscellaneous unclassified workers.

V. POWER WATER TELEPHONE, TELEGRAPH, FUEL, POSTAL SERVICES

Professional and/or technicians with degrees from universities, technological institutes and other centers of higher learning.

Employees in power, water, telephone offices, companies, facilities, supply plants, etc.

Operators, installers, assemblers, repairmen for power/gas/water/fuel/telegraph equipment, drivers.

 Assistants and unskilled laborers working in stations, substations, emergency posts.

Other similar type of unclassified workers.

VI. COMMERCE AND RELATED SECTORS

Professional and/or technicians with degrees from universities, technological institutes and other centers of higher learning.

Employees, accountants, bookkeepers, clerks in wholesale businesses, bill collectors, storekeepers.
Employees, operators of restaurants, hotels, motels, tourist complexes, bars and similar establishments.

Employees, operators of dining rooms, cafeterias, guest-houses, boarding houses and similar establishments.

Employees, operators and owners of refreshment stands, ice shops, ice-cream parlors at fixed locations.

Employees, owners, clerks, vendors in retail businesses at fixed locations: shops, grocery stores, and food stands.

Owners, operators, vendors in itinerant retail businesses.

Similar types of unclassified positions.

VII. COMMUNITY, SOCIAL AND PERSONAL SERVICES

Professionals and/or technicians with degrees from universities, technological institutes and other centers of higher learning.

Employees working in local government and private enterprise: office workers, teachers, companies, ministries.

Staff of public protection and security services: police, armed forces, para-military organizations, firemen, security guards.

Workers, workmen, laborers in government and private enterprises: night watchmen, seamstresses, assistants, launderers, cooks and kitchen helpers, drivers, mechanics.

Domestic servants in private residences (in addition to "live-in" launderers, ironers, child-nurses).

Miscellaneous personal services (takers-in of washing, ironers, tailors, cosmetic workers, gardeners, plumbers, seamstresses, shoe-repairers, watchmakers).

Others, unclassified.

VIII. BANKING, INSURANCE, SAVINGS, FINANCIAL SERVICES

Professionals and/or technicians (of universities, technological institutes and other higher-level schools).

Clerks and holders of positions of trust in banking, insurance, savings and financial institutions.
Service personnel of such institutions (watchmen, guards, police, drivers, motorcycles, orderlies).

Miscellaneous personal services, maids, garbage collectors, cleaners.

Other, unclassified.
APPENDIX 6  MORE DETAILED INFORMATION ON HOUSING COSTS AND METHOD OF CONSTRUCTION

68. When was this house built? 19 ____________

Household Tenure:

69. House ________
(Choose one category below)

70. Land ________
(Choose one category below)

(1) owned
(2) buying
(3) rents
(4) rent free/on loan
(5) no title

For Owners/Buyers (Nos. 1 and 2 above):

<table>
<thead>
<tr>
<th>House</th>
<th>Land</th>
</tr>
</thead>
<tbody>
<tr>
<td>_____</td>
<td>______</td>
</tr>
<tr>
<td>19</td>
<td>19</td>
</tr>
</tbody>
</table>

71. Date of purchase

72. Purchase Price

$ __________

73. Amount of Downpayment

$ __________

74. Amount of monthly payments

$ __________

75. No. of years of mortgage

_______

76. Source of financing and amounts:
(Note more than one if applicable)

| (1) Credit institution |
| $ __________ |
| (2) Credit Cooperative |
| $ __________ |
| (3) Savings |
| $ __________ |
| (4) Private lender |
| $ __________ |
| (5) Family loan |
| $ __________ |
| (6) Other (Specify) |
| $ __________ |

77. If you were to sell your property now, what would you estimate its value at?

$ __________
For Renters (Questions No. 69 and 70 (3)):

78. How much do you pay per month for
   (1) House (or rooms) $ _______
   (2) Land $ _______

79. Who built this house? _______
   (1) Family themselves
   (2) Labor contracted by head of household
   (3) Already occupied by another family when purchased
   (4) Built by (insert name of project agency)
   (5) Other ___________________________
       (Specify) _______________________

For households answering (1) and (2) above:

80. How long did it take to build the house? _______ mos. _______ yrs.

81. What were the costs for materials? $__________

82. For households which contracted labor, what were the costs? $__________

   82a. How many days of unpaid family labor were used? _________

For All Households:

83. In the past 12 months, have you made any improvements on the house?
   (1) Yes _____ (2) No _______

84. If yes, Specify _______________________
   (1) Added Room
   (2) Structural repairs
   (3) Other ___________________________

85. Costs for:
   (1) Labor $ _______
   (2) Materials $ _______
   (3) Unpaid family labor _______ person/days