Rapid Assessment of Poverty Impacts (RAPI)

Elaboration of a Rapid Survey Method of Assessing the Poverty Reduction Impacts of Pilot Employment-Intensive Projects

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Preface

So far, the impact of poverty reduction interventions has not been sufficiently documented. This is due to a number of reasons including a general lack of information for the generation of profiles describing the poverty situation in a given area, the lack of appropriate procedures for investigating the linkages between project inputs and effects on poverty, as well as the scarcity of financial resources allocated for evaluation purposes and so on. A shared view is that, while work has to continue at conceptual level to learn more on indicators of poverty, it is now essential to develop, implement and document empirical methods for poverty impact assessment.

The present paper, which was prepared for the Development Policies Department of the ILO by Laura Murphy, a researcher at the Carolina Population Centre of the University of North Carolina, concerns a survey method for assessing in a realistic and cost-effective manner the impacts of employment-intensive infrastructure development projects on poverty. It is stressed that this is not a manual on how to conduct the field surveys but rather a description of a general method which will have to be adapted in accordance with the type of project and local circumstances. Field test will also be needed to get indications on both methodological and implementation aspects of the method.

The above being said, it is our conviction that the proposed experimental approach may be of interest to organizations, institutions and individuals involved in poverty-related activities.

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Acronyms/Abbreviations

EI	employment-intensive or labor-intensive
HH	household (also "hh")
ILO	International Labor Organization
RAPI	Rapid assessment of poverty impacts
RASP	Rapid assessment survey of poverty

Executive Summary

1. Overview

A cost-effective method for assessing the impacts of small-scale employment-intensive projects on poverty is presented. The method is referred to as "rapid assessment of poverty impact" (RAPI), as it draws on "rapid" survey-based approaches to poverty monitoring. It is characterized by use of a short questionnaire and probability (cluster-based) sampling of households within a specified geographic area. Collection of minimal household-level data provides necessary poverty indicators and household characteristics. Supplementary data are gathered from community-level interviews. The design incorporates "with and without" project intervention: the method calls for a study area and a control site. Change over time is captured by a "before/after" design; a baseline and at least two follow-up surveys (short-run at about year 2 and long-run at about year 5-6) are recommended. In-field computerized data entry wherever possible will speed turn-around and improve data quality. Results will be statistically generalizable at the level of the study area (i.e., change in the proportion of households lacking "X" in region "A" over time; the method does not call for repeat visits to the same households.)

2. Purpose

The purpose of this document is to describe the proposed RAPI method, to discuss issues that arise in using the method for assessing rural roads projects, to discuss how it would be adapted and note special issues that arise in adapting the method to the Ethiopia road project, and to indicate how to adapt the method for other projects. The next step will be a field test of the method, which will generate useful feedback to modify the basic method provided here.

Rigorous and quantitative data on net poverty change over time are needed to serve donors, decision-makers and planners. It is essential to be able to plausibly attribute observed changes to both immediate and indirect effects of the project, namely the construction methods and infrastructure and resulting increase in economic activity. These objectives justify the approach, which incorporates standard project impact assessment and other quantitative research techniques. Data on poverty over several years are needed to capture expected long-term impacts, and not just short-term effects of construction methods (jobs). Probability sampling is necessary to produce statistically representative data with known precision for a geographic region. Comparison with a carefully selected control site is necessary to be able to attribute observed impacts to the project. Other methods may be used in conjunction with the RAPI method; participatory and other qualitative techniques and approaches may be appropriate for some purposes.

3. Poverty

Poverty is defined as deprivation of material possessions and services; non-material deprivations, such as lack of political power or self-esteem, are not explicitly included here. Multiple dimensions of poverty are captured by five categories which represent different aspects of material deprivation. These are basic needs comprised of food, water, shelter, energy and other daily essentials; assets**,** comprised of household items, tools, land and livestock; livelihoods, indicated by access to farm-based income, non-farm employment or sources of income, and use of other coping strategies; and government services, namely the provision of education, health care, and financial/technical assistance, and mobility. The respondents' perceived quality of life is also important, and is a fifth dimension of poverty.

4. Indicators

Each of the five dimensions is indicated by a few selected variables. Indicators are screened for relevance in light of expected short-term "effects" and long-term "impacts" of a typical pilot employment-intensive project. Absolute (vs. relative) poverty measures are needed which capture both the level and severity of poverty. Indicators must be meaningful to the context, measurable without large error, easily manipulable for analysis, useful for poverty monitoring and minimal, i.e., reduce extraneous

information gathering. No detailed total income or household expenditure data are collected, as these are time-consuming in a survey and subject to serious measurement error. Incidence and severity of poverty can be captured using simple indicators, such as "proportion with less than "X" hectares of land and no regular non-farm income"; and simple thresholds such as the proportion "poor" or "ultra-poor" in housing, food, livestock, land, etc. according to pre-specified characteristics. More complex, composite thresholds such as the number or proportion of households who are "livelihood poor" can be generated. Guidelines, thresholds and definitions are provided to facilitate these steps.

5. Implementation

The RAPI survey method is to be used as part of a long-term, 5-6 year exercise in poverty impact assessment, which is itself associated with a larger project, the actual employment-intensive project (and follow-on activities such as maintenance). Implementation issues thus relate to specific problems and concerns in conducting any individual survey -- such as the need for a survey coordinator, enumerators, training and pretests-- as well as the need to view the RAPI method as part of a long-term poverty assessment and within the structure of the employment-intensive project. The final assessment and interpretation of short-term and long-term poverty impacts should be interpreted in light of project design, implementation and actual achievements, as well as population changes, environmental conditions, policies and other macro and micro-level influences in the region.

6. Survey implementation

The household survey and associated community survey, particularly to produce the first set of baseline data, should be seen as a 5-6 month effort from planning to implementation and follow-up, concluding with the provision of the survey report and poverty profile for each site. Planning includes clarifying specific indicators and other outputs, determining the study site and control site, gathering and reviewing other data which may supplement the survey (and in rare cases supplant it), and revising questionnaires. Survey fieldwork (lasting several weeks) involves recruitment of fieldworkers, training, pretests, actual data collection, and data entry. Follow-up encompasses data analysis, generation of poverty profiles, report writing, and documentation of survey work. Indications for personnel and other needs for the exercise are provided.

7. Household questionnaire

A prototype household questionnaire was developed for the RAPI method (following the RASP prototype in Bilsborrow et al, 1995) and is presented as a technical note. A minimal household roster elicits household size, age/sex composition and characteristics of the household head. Other modules solicit information on food, housing and other basic needs; household items, tools, livestock and land ownership; farm production, non-farm sources of income, project employment and coping strategies (livelihoods); and the respondent's perceived quality of life. This prototype should be revised for application to a specific site, including selection of appropriate variables (i.e., food, possessions, and livestock indicators for the location), and deletions or additions of questions to serve specific purposes and to reflect budgetary constraints. Guidance on these points is provided.

8. Community questionnaire

A prototype community questionnaire was developed to gather supplementary data on population, land use, facilities and conditions in communities within the study area and control, including prices, wages, environmental problems, development projects or organizations and other factors that are likely to influence poverty. The community-level questionnaire will provide indicators used for measuring "services": schools, health services, financial and other facilities, and transport/mobility.

9. Adaptation to other projects

The approach was developed with pilot, labor-intensive rural access roads in mind, but can be

directly applied to other small-scale, local/regional sectoral projects if the objective is to examine net impacts and focus on material indicators of poverty. Expanding to multi-sectoral, needs-driven, community-based projects is more problematic; these projects may be better served by combining participatory methods with some survey-based household and/or community level data collection. It may also be desirable to supplement material poverty indicators used here to capture non-material deprivation, such as measures of local "empowerment." Expanding to a larger geographic scale introduces the problem of identification of a suitable control site, increased costs of field work and overall implementation, and greater complexity of analytical techniques.

10. Ethiopia Application

Application of the RAPI method to the Tigray/S Wollo road projects is discussed in a technical note as preparation for a planned field test. Adaptation to the site seems feasible, in light of a recent census (1994) and experiences of recent household surveys, despite flux in administrative divisions and poor infrastructure. A ball-park estimate of costs for planning, fieldwork and follow-up for a baseline survey in one of three sites is given. Further discussion will be needed to determine whether all three road sites need to be examined separately, or whether one will suffice. The RAPI method outlined in this document is just one step towards developing a cost-effective survey-based method for poverty assessment, and a field test is needed to provide feedback on actual costs and implementation issues, as well as reflections on the poverty indicators, questionnaire design, sampling strategy, analysis plans and other aspects of the method.

11. Data Management

A technical note on poverty indicators elaborates on data entry, verification, tabulation and analysis procedures. Software such as EpiInfo is recommended which performs data entry and validation and produces simple univariate and bivariate statistics. A number of specimen or "dummy" tables provide a standard format for presentation of statistics on poverty as well as contextual information on population and transport. These tables are intended to help project managers determine the final outputs and indicators needed (before beginning the actual survey), to facilitate collection of supplementary data from other sources and to speed the turn-around of poverty indicators following fieldwork.

Part I. Background of Rapid Assessment of Poverty Impacts (RAPI)

A. The Context

Poverty is a state of deprivation which affects hundreds of millions of persons in the world today. They lack not simply "income," but food, water, health, prospects, a sense of security, control over their life, friends, and numerous other goods and qualities which contribute to a decent life. Despite years of efforts to eradicate this state of misery, it is with us still, and no doubt it will remain. Comprehending why and where it exists and how it can be alleviated is a major effort of most development institutions. This document tackles a small part of this enormous problem; it proposes a practical, manageable and cost-effective survey-based method of poverty impact assessment. It presents an approach to gathering minimal, but strategic, quantitative information over time on the status of poor people in rural areas who, it is hoped, will have their lives notably improved by specific project interventions. This information will help in determining where, why and how to spend money and human resources in poverty-reduction efforts.

This work was commissioned by the Development Policies Department (POLDEV) of the ILO. One of the priority objectives of this organisation is to alleviate poverty by creating productive employment; this goal is pursued through various means, including the promotion of labour-based investments in rural infrastructure. The elaboration of a relatively simple, low-cost, and standard method of measuring and monitoring the poverty-reduction impacts of labour-based works projects relates to the felt need to more accurately document the results of this type of project, for both practical and policy purposes.

The rest of this section (A) introduces employment-intensive projects, poverty work at the ILO, and the backdrop to this report. Prior work in the rapid assessment and monitoring of poverty (RASP) is summarized. Section B describes the purpose and objectives of this method for the "Rapid Assessment of Poverty Impacts" (RAPI). Part C introduces poverty concepts, a definition of poverty and the indicators that form an integral part of the method. Part II of this report describes the method. Part III contains "technical reports" discussing selected issues in greater detail than appropriate for main body of the report.

1. Employment Intensive (EI) Projects

The RAPI method described in Part II has been developed specifically for use in connection with small employment-intensive (or labor-intensive/labor-based) projects, especially for public works such as roads, dams, water tanks, and irrigation schemes, and land terracing. To familiarize readers with this context, and so that the broader usefulness of the method for non-EI projects may be perceived, a short description of EI program aims, intentions and approaches follows. This summarizes reviews, findings and observations of many researchers (i.e., von Braun et al, 1992; Gaude et al, 1987; Howe and Richards, 1984). It intentionally takes a global perspective, aiming to highlight general principles, focusing on rural roads for illustration. The multi-faceted and complex causal relationships between EI projects and the eventual goal of poverty reduction are introduced.

Major features of EI public works projects include:

- the use of "labor-intensive methods," the reliance on local, unskilled labor to perform tasks cost-effectively and in lieu of more capital-intensive heavy equipment or machinery. These include tasks such as earthmoving and paving, in the context of road-building, utilizing hand tools and light machinery.

- EI projects have backward and forward multiplier effects, as they not only hire local labor but procure tools and materials locally, so more cash remains in the communities to be spent on local services and products

.

- the infusion of cash to poor households alleviates poverty in the short-run and, it is hoped, enables the accumulation of assets for future production, both human-capital (new skills) and material (tools).

- permanent productive public works are constructed (and if maintained) remain to be used by local people and enterprises over many years. These public assets are expected to directly improve lives through increased mobility, provision of water, etc. and to stimulate agricultural production and the creation of new jobs. Increased production undergirds durable, long term economic growth in the area, enriching flows of cash, supporting higher levels of production and the expansion of marketing, retail and transport enterprises.

The goals and objectives of EI works projects are many, evidently, and associated with both short-term effects and long-term impacts on poverty. Both direct (wage) effects and indirect (multiplier and other) impacts through economic growth and local capacity-building are expected.

Rural access roads, the focus of this method, are expected to reduce the cost of transport from remote farms to markets, of both products and of inputs, thus stimulating production. Improved access roads enable residents to visit towns, friends, kin and services, such as health care, credit facilities, markets, and schools. Extension agents, traders, middle-men, and others can in turn reach once isolated communities. Communication, mobility and inflows of cash stimulate increased economic activity and new enterprises throughout the region.

The logic of EI approaches derives from conditions of labor-surplus conditions and high unemployment, coupled with sparse infrastructure and macro-level financial crises of many less-developed countries (Gaude and Waztlawick, 1992), which underly the expected synergy in targeting infrastructure, poverty allevation and long-term economic growth through labor-based strategies. To further encourage these beneficial linkages,

- EI programs work with local governments and contractors, promoting use of labor based methods, and building capacity to extend the use and benefits of the construction methods and resulting infrastructure throughout and beyond the region.

- EI projects are explicitly poverty-oriented, as the location and labor-based implementation are designed to bring short-term and long-term benefits to the poorest. Wages for workers on roads, example, are set at or just below the agricultural wage so that participation is "self-targeting;" only those with a low opportunity cost --the poor --will choose to work.

- EI projects integrate long-term maintenance contracts with local institutions and contractors to ensure long-term operation of the public works and to provide more local jobs.

- EI approaches, by replacing imported machinery and inputs with local labor and materials, save governments scarce foreign reserves, freeing up funds for other social, health, and public works investments in the country.

Thus, employment-intensive works programs are not simply make-work temporary jobs for the poor as "food for work" relief can be. Nor are they simply "public works projects," as these do not necessarily incorporate labor-based construction methods nor build local capacity and long-term sustainability through maintenance agreements. EI projects are not a donor-driven exercise, but cooperative agreements with local governments, private sector contractors and/or community institutions.

Labor-based works projects, especially roads, have been carried out all over the world. Hundreds of thousands of person-months of work have been generated, and roads and other durable public assets created, particularly in China and Southeast Asia, and increasingly in Sub-Saharan Africa (von Braun et al, 1992). The use of EI methods, i.e., the hiring of poor for the actual construction, does alleviate poverty in the short term, by all accounts (Gaude et al, 1987, p. 443). Low-wage jobs for the poorest have increased net incomes among participants (in the Maharashtra EGS program, as well as in Bolivia: Lipton, 1996, p.44). The percent of income from nonfarm work among the poor rises.

Long term impacts of asset production and sustained reduction in poverty (severity or incidence) is less certain. There is no firm evidence of such long-term impacts, concludes Keddeman (1997) from a review of evaluations of EI programs around the world since the 1970s. Justifications tend to rely on readily available data about macro-level savings from labor-based methods, such as reduced foreign exchange requirements, as well as noting the obvious short-term benefits of increased food security.

Researchers opinions range from "hopeful" (Lipton) to somewhat skeptical (Keddeman) regarding the likelihood of the long-term impacts being positive. Indeed, projects may fail altogether to adequately combine short-term benefits with long-term durable impacts, perhaps due to design flaws (such as Lipton's "rules,: Lipton, 1996, p. 44, for the design of successful public works projects). Failure to allow for chronic ill-health or other special needs of the poor is evidently a common one. Roads may lack a maintenance plan, which is a crucial determinant of its long-term success (Howe, 1993). Implementation problems abound, whether related to wage levels, worker organization, and other issues which can affect long-term impact on poverty levels (Majeres, 1995, p. 289). In the larger picture, political will, institutional support, and other social, economic and environmental conditions are likely

to influence potential impacts of projects, regardless of technical achievements and number of construction jobs. Lipton thus recommends that "total impact" be assessed, covering not only the direct effects of immediate and short-term employment for the poor, but also the indirect and longer-term multiplier effects of the new public works, the spin-offs from local capacity building, and the opportunity costs of the poor who well their labour.

Successes in alleviating poverty per se over the longer term are thus scarce, while statistics on mean incomes, earnings, wages, production, mobility, transport, and other economic indicators prevail. Thus, inevitable questions remain: do these projects actually reach the poor and help them not just with jobs but with long-term improvements? Or do only the larger land-holders and wealthier residents benefit from the roads in the long-run, as the poor lack capacity to increase production or travel much anyway? Do the landless become poorer, further disenfranchised and marginalized as irrigation schemes arrive, increasing the price of land? Roads are not enough, but are other conditions met to enable long-term impacts? A major concern is whether proper maintenance is ensured, to allow the road to continue to serve its purpose.

Information is needed on poverty impacts over the longer-term, not just short term food security or long-term transportation patterns, keeping in mind the need to be realistic in scope and expectations. Ambitious studies yielding under-whelming but over-priced findings are too common in project evaluations. Most evaluations of EI projects tend to lack either a temporal component (the before/after comparison) or a control (the with/without intervention) (Keddeman, 1997); yet both elements are essential to capture the net impact of a project in an area. Indicators miss poverty *per se*, collecting masses of general "socio-economic indicators," which are of unknown quality since income and earnings data are difficult to measure well. Data sets remain un-analyzed for lack of time and funds. Studies across sites may use different approaches and assumptions, and findings are presented without adequate documentation or definitions and belie comparison or interpretation. A standard, rigorous approach to data collection, simpler poverty indicators, as well as a format for presentation, should not only ease implementation of poverty impact assessments, but contribute to comparability of findings across sites. Eventually, meta-assessments of a body of impact studies could be carried out to reveal --for example --the basic political and socio-economic conditions under which small-scale EI projects are shown to contribute to net positive, long-term poverty reduction. Factors such as differing degrees of political will, forms of local organization, initial levels and severity of poverty, and macro-level constraints on entrepreneurial activity would be of interest. In the near future, however, it is desirable to know simply whether single projects in fact contribute to durable reduction in poverty levels and severity in a given region.

2. Poverty Monitoring and Assessment

Awareness of the lack of evidence of long-term impact may be inspired and highlighted by another ongoing effort at the ILO: poverty monitoring. The ILO has examined poverty and problems of measurement and monitoring for years, with the aim of trying to more efficiently reduce it by knowing who and where the poor are. One recent product is the monograph by R. Bilsborrow, D. deGraff and R. Anker (1995), the *Rapid assessment and monitoring*

of poverty. The major conclusions of the monograph are summarized below, as it is the immediate precursor to and foundation of the RAPI method described in this report.

In addition, a selection of other contributions from the ILO range from a monograph by Fergany (1981) on the nature of poverty to collections of poverty statistics which provide overviews of existing data and conditions (Tabatabai, 1996). Tabatabai (1991) examines the use of existing data sources to serve as poverty indicators. A massive survey of poverty alleviation "successes" (and especially relevant for this, a section on public works programs) has been produced (Lipton, 1996). Also relevant for this report is a review of the impacts of employment-intensive schemes, with poverty one of the variables of interest (Keddeman, 1997). Support systems for poverty monitoring in sub-Saharan Africa (de Haan and Koch-Laier, 1997) and a review of gender dimensions of poverty alleviation approaches round out the collection of recent works on poverty.

Poverty monitoring and measurement have been receiving much attention from other donors and researchers, as well, including researchers at the World Bank, whose enormous literature on income, poverty concepts and living standards measurement surveys is too long to cite. Research among European agencies and scholars has influenced ILO approaches to poverty monitoring and definitions used here, highlighting as they do the use of non-monetary measures of deprivation (i.e., Chambers, 1995; Danida, 1995; Hopkins and Bartsch, 1995; Buch-Hansen, 1995; de Haan and Koch-Laier, 1997). A broad range of research approaches and efforts at conceptualizing poverty has influenced the formulation of the RAPI method, and this eclectic foundation will be made evident in the discussion and definition of poverty below. Participatory research methods receive increasing interest (i.e., Carvalho and White, 1997; de Haan and Koch-Laier, 1997; numerous World Bank country participatory poverty assessments;). These methods are not fully integrated into RAPI because of the focus on rapid quantitative indicators. Qualitative methods and, more importantly, subjective measures to reveal poverty from the perspective of the people involved can, however, be joined with a RAPI study. A technical note (# 4) describes these methods and how they might be linked to a RAPI survey-based method.

Rapid assessment and monitoring of poverty (RASP)

The monograph by Bilsborrow, DeGraff and Anker (1995) suggests procedures for undertaking rapid and relatively inexpensive surveys on a regular basis, to assess levels of and changes in poverty in low-income countries. Regular, reasonably accurate measures of poverty, in combination with other information, can allow governments to infer the contribution to poverty reduction and alleviation of different policies and programmes. Improving the poverty-reduction impacts of policies is the eventual aim. RASP is a general methodology which is to be adapted to a given country or area, depending on specific needs and constraints. It focuses on urban areas, and indications are given of how to adapt the method to rural areas. The method reflects previous efforts in poverty measurement and related "rapid" survey research; experiences (positive and negative) of the World Bank's Living Standards Measurement surveys, national income/expenditure surveys, UNRISD research, and the WHO Expanded Programme on Immunization (EPI) are the primary influences. Modifications based on authors' experiences in fielding household surveys were introduced to further simplify the approach. The RASP method was developed based on the following criteria:

- Information collected must be minimal to allow for low cost, repeated data collection.
- Data collected should be subject to minimum measurement error to ensure that relevant concepts are reasonably well captured.
- Data must be fairly quick to process.
- Data must provide measures of poverty which are comparable over time so that trends reflect real changes in poverty rather than artificial changes deriving from measures used.

- The poverty indicators selected must be sensitive to changes in poverty in order to capture and identify trends over time.

The method recommends the use of a set of absolute, objective poverty indicators. This set should include: earnings and other income; expenditures or consumption; employment; assets; household living conditions; and a variety of "non-traditional" poverty measures. Additional measures such as access to facilities and services and community participation/organization can be used.

The RASP method suggests yearly data collection, utilizing surveys at the household and community level. Prototype short survey instruments are presented. A rapid, modified cluster-based method of drawing a household sample is suggested, relying on census enumeration areas as the basis for the sample frame. This provides a probability sample, but clustering requires a larger sample size for a given precision (due to the "design effect"; see technical note #2). Other aspects of the rapid method are in-field continuous data entry, for data quality checks and to speed production of final statistics. Management by a national statistical agency is recommended, possibly utilizing private research institutions to carry out the field work and analysis. Targeting high poverty areas is suggested as a way to provide important information at lower cost.

The RAPI effort outlined below follows these major criteria and recommendations, and "takes off" where the RASP "left off". The RAPI focuses on the specification of indicators, thresholds and questionnaires for the purposes of project impact assessment on a small scale (regional or local level) within stricter constraints on funding and institutional support. The RAPI method is elaborated in Part II below in the context of pilot rural road projects as a typical application. Indications of how the method would be expanded or revised for different sectoral projects, multi-sectoral projects and projects at a higher scale are provided in technical note #3.

The main differences between the RAPI method presented in this report and the RASP (1995) approach lie in (1) project impact assessment needs, (2) predominantly rural locations, and (3) institutional or management aspects of the exercise. Impact assessment requires attention to attribution of project impacts (the use of a control area for comparison) and capturing change in the region over time (use of a baseline/follow-up sequence). Second, these small-scale projects are intended to reach the poor in rural areas, so no attention is paid to urban conditions. Finally, management of the impact assessment study and individual surveys is not necessarily (or even likely, for small projects) to lie at a national level statistical bureau, but at the donor/project management level. It may be under supervision of the regional ILO office, and be carried out in coordination with other project activities.

B. Purpose and Objectives

The method described here has been developed as a cost-effective means of examining the net impact of EI public works projects, particularly rural access roads, on poverty in rural locations. The purpose of this document is to outline the general method, show how it can be adapted in detail for the specific case of rural roads projects, discuss how the method can be applied for a proposed trial in Ethiopia, and indicate the potential for using the basic method to asses impacts of other types of projects. The method will eventually be tested in the field, and feedback and lessons from the application used to refine and enhance it for future work.

Some discussion of the justification for developing this method is needed. Data on net impact are desired so that planners, officials, donors, and other observers can judge whether the EI project, both the labor based methods used and the new asset itself, actually contributes to reduction of poverty in an area. The focus on poverty, not just socio-economic change, is desirable because so far this aspect of project impact has not been assessed properly. A road project, for example, can be sure to provide jobs in the short run, and to increase mobility and reduce costs in the long run (if maintained). It is hoped it will stimulate the local economy, but knowledge of the long-term impacts on poverty reduction and alleviation remains uncertain. Furthermore, positive economic indicators may be inversely correlated with poverty, as certain sectors or individuals may benefit leaving others stagnant or even worse off.

Information on project impact on poverty is needed for different audiences. Two represent levels of project planning: the level of donors and country-level decision-makers, and the local/regional planning level. In addition, data from "rapid" studies on poverty can be used for methodological studies to advance knowledge of feasible and simple indicators. These three audiences are dealt with in turn.

Knowledge of impacts will help the ILO, other development agencies and donors, and national governments judge whether or not these projects contribute to poverty reduction, in addition to their other desirable influences on local economies. Decisions about how to allocate significant resources hinge on this knowledge. If findings are favorable, then that is as hoped; if not, donors, designers, planners (and it is hoped, the participants) must decide how to proceed. At a local level (the second audience), government officials and planners want to know the condition of their people --they need detailed poverty profiles---but lack resources to field a large scale survey. Most likely, the region was missed by any national sample survey of living conditions; while the census provides insufficient detail on livelihoods. They desire to judge the impacts of a major intervention in their district, such as a two year project to rehabilitate roads or build irrigation channels. Do these help the poor, or hurt them? Who and where are they, and why are they not helped?

The third audience is interested for methodological reasons, in addition to humanitarian and economic motives; how can we more quickly and easily, as well as reasonably accurately, capture status and change in poverty? The emphasis on measuring poverty as lack of income and/or consumption (expenditures) has led to increasingly detailed and top-heavy surveys, producing rich, complex data sets not easily managed for local planning, certainly not rapid, and too expensive for many purposes. Less data from smaller scale surveys should be

adequate, but which data (i.e., indicators) can we be sure will function well? How small a survey will suffice? Data from a RASP-type study (such as RAPI) implemented at a similar time and place as a larger, detailed income/expenditure study can be used for a series of statistical validation exercises. Various standard methods, such as correlations, confirmatory factor analysis or discriminant analysis, would be used[1] Another approach would compare survey responses to subjective perspectives, to determine how well survey responses match people's own perceptions of poverty.[2]

Because of the multiple aims of the method, and in particular the need to accurately gauge impact over time, the recommended, standardized research approach is quantitative and survey-based. This orientation is intended to produce a body of objective, statistical data on poverty, for specific geographic regions and with known precision. These data will speak more readily to decision-makers, and the design will be more easily replicated. Application of standard principles common to each project impact evaluation allows the assessments made from many disparate studies from different sites to be comparable and easily comprehensible.

Based on these criteria and objectives, the general elements which characterize the RAPI method are:

(1) definition of the (geographically bounded) study area and a separate control site,
(2) use of rapid, but rigorous, methods of random sampling,
(3) household-level analysis,
(4) use of 5 classes of simple poverty measures, eschewing income or expenditure measures.

These are elaborated in Part II and only mentioned here as an introduction to the method. A representative sample from a specific geographic study area enables known statistical precision and generalizability to the geographic region, and change measures over time for that region, whereas focusing on only 2-3 "representative" villages introduces biases in poverty indicators. A modest sample of quality data on households is augmented by community surveys. Household level analysis, rather than only community-level measures, captures change at a level close to where poverty is felt; individual level data are desirable, but too time-consuming for a rapid context. Measures for five dimensions of poverty, representing aspects of material deprivation, are recommended, namely: basic needs, assets, livelihood (security), social services, and perceived quality of life. Each class would be represented by 1-4 distinct, carefully selected variables for each dimension. Information on household characteristics and project "participation" enable the generation of poverty profiles. Community surveys provide background data and supplementary indicators.

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[1]These types of exercises would be of interest to many researchers concerned with poverty and well-being and deserve special attention to design. Results must be interepreted with some caution, whether the exercises work, or do not --which has been the case so far, evidently. Proxies for income, for example, are not the same as measures of poverty. Correlations caused by relationships between high income and ownership of certain assets can disguise "poverty" altogether. Number of head of cattle may correlate statistically with income, even while the poorest 30% (for example) own no cattle whatsoever.

[2]The gold standard would be the subjective data reflecting poverty indicators or the state of poverty from the perspective of the poor. The aim would be to determine "how close do indicators actually represent these conditions?" How close do people's stated perceptions of what it means to be poor or deprived "correlate" with indicators such as types of food consumption, land-holding size, regularity of non-farm sources of income, having a school and clinic nearby?

Rapidity and lower cost relative to other poverty surveys is achieved through using a short questionnaire to collect just the information needed, a small geographic area, a carefully determined sample size, and simple methods of data analysis. For any given application, users adapt the indicators (variables), sample size, geographic extent, even the use of additional "modules"[3], to fulfill specific needs. (It is important to note that the emphasis should be on reducing the long-term, overall costs of the poverty study, rather than just the costs of fieldwork, so that inappropriate short-cuts are not taken.)

The method and principles underlying (1) the definition of poverty and indicators, (2) the "rapid" modifications from a conventional survey, (3) the approach to net impact assessment (control, baseline/follow-up sequence), are not individually innovative. Each reflects extensive prior conceptual work and empirical applications of poverty concepts and indicators, rapid methods of survey data collection, and standard project impact evaluation methods (Yoon, 1992; ILO, n.d.; Keddeman, 1997). The RAPI method integrates them and applies them to the context of employment-intensive works projects, especially rural access roads. In principle, the RAPI method is applicable to the analysis of many other small-scale interventions focused on poverty-reduction (see technical note #3).

Aims and objectives of the RAPI method can be further clarified by mentioning what it does *not* intend to achieve. The following items reflect decisions made to narrow the focus of RAPI to make it as rapid and cost effective while meeting the objectives of scientific rigor and precision for the programming purposes listed earlier.

- Poverty, not broad "socio-economic" status, is the focus. Studies of the latter gather a wider, richer body of information, yet often neglect the type of data needed for a detailed measure of poverty status at the lower end of the economic spectrum. (Even a limited poverty survey contributes a substantial body of socio-economic knowledge, however; see questionnaires and format for data tabulations in technical notes.)

- Project evaluation is not an aim, nor is RAPI a monitoring tool to provide feedback to the technical aspects of the project, as in whether it hired "X" number of laborers or used only local suppliers and materials, or whether the road's technical design was appropriate for the site and then adequately carried out. This information should be documented by the project as it will contribute background and contextual information to the final assessment. (Some questions in the surveys elicit knowledge and participation in the project, but that is not the same as detailed knowledge of the project.) Similarly, the poverty assessment does not provide a cost/benefit type of assessment of whether the project was cost-effective or worth the investment.

[3]Qualitative methods, namely methods borrowed from participatory rural appraisal, could be one type of "add-on" (see technical note #4). These are not explicitly included in the approach because they require considerable, specific skills (different from those needed in a RASP/RAPI approach), and are complex to process. They are less likely to be "rapid". These methods are of course distinct from rapid rural appraisal (Chambers, 1981), which is a "quick and dirty" method of gauging local conditions and needs to provide inputs for project planning. Other add-on techniques might be anthropometric measures or selecting a sub-sample for detailed intrahousehold data.

- Household-level measures provides an upper-bound on poverty. The RAPI method is limited in the extent to which it reveals intra-household inequities in distribution of resources and burdens, as collecting that level of detail will be time consuming and difficult to process. Thus individual persons may be poor in households which are not "poor" by the objective measures used, by having a decent home, adequate food, reliable sources of income, etc. Gender dimensions of inequality can be revealed indirectly through RAPI by examining, for example, the poverty status of female-headed households. Studies of intra-household resource allocation, time-use, participation in the project, earnings, etc. could be added on to the RAPI method, for a random sub-sample of households selected for the main survey.

- Material deprivation is the target, not non-material forms of deprivation. Poverty of food, water, shelter, assets, land and forms of livelihood, access to publicly provided social services and perceived quality of life are examined. Other "dimensions" of well-being (or its lack, "ill-being"), such as lack of political participation, powerlessness, self-esteem are intentionally left out.

- No national estimates emerge. The method is oriented towards small-scale, local and regional impact assessments.

- Cross-country comparisons are not a major aim, thus allowing greater specificity in indicators, and less concern with universal comparability. The following (hypothetical) statement could eventually be generated, however: "Meta-analysis of results from 7 recent RAPI assessments of the poverty impacts of pilot rural road rehabilitation projects in 5 countries shows that 80% of the time, there was a statistically significant reduction in levels of 'poverty' (indicated by several measures) in the region benefiting from a road-construction and rehabilitation project compared to the control area which lacked the intervention." This type of statement could be produced (over time and with an accumulation of studies) for the different dimensions of poverty.

- The RAPI method is not intended for urban locations; it has been developed for rural agricultural regions. The original RASP document is a better source of prototypical questions and indicators, although some principles can be retained. Thus an urban RAPI would focus on a geographic area, identify a control, apply scientific principles of sampling, combine household and community-level data, and produce data for 5 classes of poverty.

- Finally, the RAPI is not a "turn-key" method nor is this document a manual for conducting the field survey. It takes the RASP methodology several steps closer to field application; additional steps are outlined in Part II.

C. Poverty concepts, definitions and indicators

This section builds on recommendations made for RASP and also follows the advice of Fergany (1981) to "take a closer look at the phenomenon to be measured and monitor it in the most efficient way possible." Poverty in an everyday sense is understood as a condition of deprivation, of want. In recent years this condition of deprivation has mostly been measured by lack of income, a uni-dimensional, abstract medium of exchange; convenient but inadequate to capture "poverty and other forms of deprivation" (Chambers, 1995). Income and expenditure measures (themselves "proxies" for actual consumption) lump together "apples and oranges" -- the different dimensions of poverty . The RASP document summarizes the conceptual and methodological problems of relying on income measures alone, and recommends using a set of absolute poverty indicators to overcome methodological shortcomings of any one measure, and help capture some of the many dimensions of poverty. As noted, this set should include income or expenditures, as well as housing, assets, health status, education, employment (especially in urban areas) and access to services.

Poverty is multi-dimensional, even while it can be considered just one of several dimensions of deprivation.[4] Poverty, following Chambers (1995) is only the material or physical dimension of deprivation, others being social, political, psychological and subjective: such as having power and ability to participate in communal life, or possessing high self-esteem, dignity and autonomy. This basic classification is illustrated in Figure 1, which shows poverty as one "concept" of deprivation, particularly material, in relation to other dimensions of deprivation. Social/psychological deprivation should be as much of a concern to policy-makers and donors as is poverty, as should be political deprivation, but monitoring them all is realistically beyond the scope of RAPI.

Even the economic or material aspects of poverty are multi-dimensional, and include immediate basic needs, producer assets, land and skills (livelihoods), and social services, as well as individual perceptions of adequacy. These are additional dimensions of material want (in ovals in figure 1) reflecting different aspects of poverty. They can be fulfilled in different ways: private, communal and public. They can be distinguished by temporal considerations: lack of food today is a problem distinct from the total lack of land or work to generate food through the year. Food or other aid given today may provide for immediate nutritional and caloric needs, but does not necessarily contribute to producer assets. On the other hand, the poor may starve to save seed grain and other "assets" (in a broad sense) in order to be able to plant later (Chambers, 1995).

Inevitably any definition is debatable; a definition of poverty for the purposes of RAPI is proposed:

- Poverty is the state of deprivation of possessions and services considered necessary for a full and active life both in the short term and over the long run.

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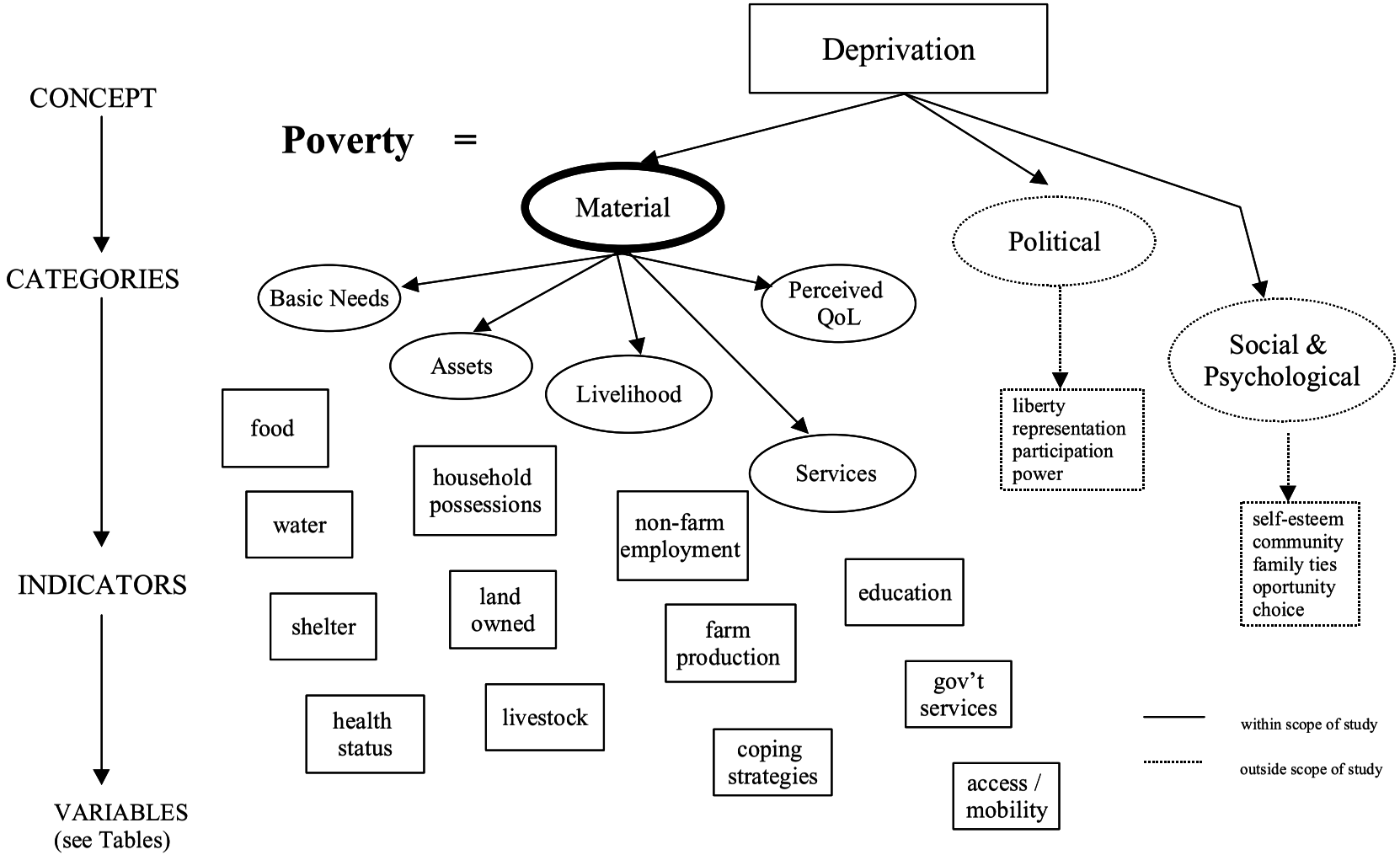
[4]Dimensions, as used here, means distinct and identifiable components which are not readily "aggregable" as they are not actually substitutes, or at least capture aspects which are distinguishable and worthy of note, and not immediately affected by another. They are often measured in different ways; they cannot be "disaggregated" any further. Dimensions of deprivation generally include categories such as material, psychological, political and social aspects.

Figure 1. Poverty: From Concept to Indicators



Source: Chambers, 1995, Danida, 1995, and other sources

The types of goods considered necessary generally include basic human needs such as adequate food, water, shelter, clothing, health, and energy to cook (and sometimes heat). A safe and clean environment can be included, as well as adequate sanitation, security from crime, and a minimum level of education. Certain services provided by public agencies, such as health care, education, credit and technical assistance can be considered necessary. Other assets, such as tools and land, are important possessions necessary to make a living over the longer run. Access to other forms of making a living -- such as through non-farm employment in rural areas -- can be considered necessary to avoid a state of poverty.

Five basic categories reflect these distinctions in the nature of the good or services and the time frame. These are (1) basic needs, (2) assets, (3) livelihood security, (4) services and a subjective measure of (5) "perceived quality of life." These categories are indicated in figure 1, and potential indicators are noted.

1. Basic needs are the food, water, energy, decent health and shelter needed by every person to function on a daily basis. This captures the immediate nature of deprivation, focusing on short-term, daily needs. Basic needs indicators should include several of these measures, probably food, shelter, health status, and water supply or cooking fuel. A household living in a well-run, high-quality refugee camp might score fairly high on a number of these indicators (but poorly on assets, livelihoods).

2. Assets are items a household owns and uses for household reproduction and income production, but are more importantly a form of savings and the result of prior earnings. They contribute to the production of food and income through direct use or sale to raise cash (and less directly by supporting the maintenance of the household). They can be excellent indicators of a household's severity of poverty and vulnerability in the face of external shocks, such as illness, especially combined with the next category.[5] The categories of assets includes household items, tools, livestock and land owned (vs. rented, see 3). Each should be assessed using a few indicators to reflect the differences between the value of items used or accumulated locally. This follows the recommendation of Bilsborrow et al (1995) to disaggregate assets into value classes reflecting degree of poverty. A destitute family with no furniture or livestock, and only a few hand tools and cooking pots, must be distinguishable from a less poor household with crude beds, blankets and benches, a cookstove, and some chickens.

3. Livelihood measures are longer term indicators of a household's capacity to sustain itself. In rural areas, this is usually through having access to land to grow food and raise crops to sell for cash. (This category can include access to fishing waters, or grazing and hunting lands, among some populations; the focus here is on rural agrarian communities). This land may or may not be owned, but could be rented or provided through some other arrangement. Another important component of rural livelihoods is employment, which can provide an alternative to

[5]One could consider a blanket or bed to be a basic need, or the shelter to be an asset -- both are true. They are listed here because it is important to include assets of different value in order to distinguish the degree of poverty. Thus, these categories in part reflect methodological considerations, rather than aiming for purity of conceptualization.

farm-based income among the landless and land-poor; employment generation is thus a major priority of the ILO. Among small farmers, a variety of off-farm or non-farm income-generating activities, such as occasional off-farm work or sale of home-made products -- which might not be classified as "employment"-- contribute to household food security and spread risk among diverse activities across seasons and over the years. Since rural households often divide their labour between different pursuits, combining work on the land with work off the land, these different activities must be considered together to indicate long-term livelihoods. A household which has access to adequate land and can also engage in numerous off-farm activities in slack times and which has a household member fully employed in a project-related activity, for example, can be considered better off, and is likely to be more secure, than one with more on-farm production but no off-farm possibilities.

Coping strategies are also used in addition to farm and nonfarm "work", especially by the very poor. These can include belt-tightening, sending members of the family away, reciprocal exchange and transfers, distress sales of assets and livestock, resorting to emergency loans and other creative forms of survival. A household may have to withdraw a child from school, (further) reduce food consumption for months on end, or sell off livestock or other major producer assets to buy food. These differ from the ordinary sale of items (calves, milk, weavings, etc.) for regular income-generation and from "diversity" of income sources, which are desirable; coping strategies have a negative connotation and reflect hardship. Thus, three indicators of livelihoods -- farm-based production, non-farm income (sources) and employment, and coping strategies --should be used jointly.

4. "Services" refers to programs and services generally provided by the government, such as health, education, financial credit and technical assistance programs. All of these externally-driven programs may be lacking in a community (or for households) which are otherwise not poor in basic needs or land. Or, households may be rich in health care and education levels, but eat simple foods and own few consumer items or other indicators of wealth, and thus appear quite poor. These variables will generally be captured at the community level through clinics, schools, and/or group interviews. "Access" measures of health services and education and general mobility are recommended.

5. Finally, perceived quality of material life and its change over time is important. Physical quality of life may seem miserable to some, despite positive external indicators; perhaps because conditions are declining, or because the neighbors are thriving. Perceived quality of life may be high despite evident hardships, on the other hand, perhaps because the individual has seen much worse and is grateful or hopeful for the future. One indicator is thus the perceived adequacy of the present quality of life, and another is a reflection on how it is changing.

Using both subjective measures, representing opinions on the quality of life, along with the more objective "quantitative" indicators of material possessions and status, will enhance the understanding of the nature of poverty in a specific location. The combination can also be used to provide a check on the validity of specific measures generated in a survey. If there is a consistent mismatch between the subjective responses and certain "objective" indicators, then either or both questions would require further attention; a consistent match would conversely

indicate a potential minimal set of indicators. Such additional verification of indicators would be especially useful for a pilot study.

Continuing the flow of figure 1, these major dimensions of material deprivation are now identified as the ovals, which leads to relevant "indicators." The category of daily "basic needs," for example, has several constituent dimensions, as food cannot replace water in the body. These steps lead to specific variables (see Table 1; technical note #1) and then a questionnaire to elicit them from the population (technical notes #6 & 7). The RAPI method thus eschews any attempt to measure income or expenditure. In addition to conceptual shortcomings, these measures are too ambitious and problematic to collect in a rapid survey and highly prone to measurement error, particularly for the poorest households.

EI projects and poverty

How might EI projects be expected to contribute to "poverty" alleviation (or reduction) in an area, in light of these categories and indicators? Can these indicators reasonably be expected to change over the duration of the project and thus be visible? Assumptions about the expected behavior of the poorest, along with consideration of the time-frame of expected impacts, together suggest the most relevant indicators.

In the short run, an EI project is expected to provide wages to the poor, through self-targeting. They will most likely consume more food, as already 80% of the low incomes of the poorest are spent on food. They may buy smallstock (chickens, poultry, goats) and useful items for the home and farm (tools). They may have slightly increased mobility (through greater availability of cash and the presence of the road, when it is finished) and better use of existing social services. Life will probably look much better. Short-run positive impacts on poverty through the labor-intensive methods are those listed in the first column in Table 1. Negative impacts are possible, too, such as reduction in farm production and home-grown food because of time taken to work on the project, and thus less net benefit.

Other the longer-run, after several years, durable changes that might occur would be the purchase of more and high value assets for production (oxen, plough), reproduction of the household (improved stove, radio, furniture). Improvements in the land may become visible, made possible by indirect impacts of the project, such as the availability of inputs and the preservation of soil through terracing. Social service access is affected by external changes (placement, staffing, funding) which may improve net "access" over the course of the study. Some changes may only be visible over the much longer-run. This would be the case where increased local capacity in construction and cash availability eventually enables the "self-help" construction of a new village water supply.

Changes that might not be reasonably expected to occur over the short-term or even medium-term (five years) include large changes in land distribution, particularly where land is already scarce. A visible increase in life expectancy may not be visible for a decade. Changes in the burden of fuelwood collection where wood is scarce may not be apparent within five years, much less within 1 or 2 years, unless reforestation is part of the project. (Although, after the road is completed, households in a fuelwood-scarce region may purchase more charcoal, which could then be trucked in from other areas...These considerations are specific to a site.)

Table 1: Potential positive short and long run impacts on poorest households of typical EI road project		
Type of poverty	**Short-run effects on poorest Year 1, 2 of project**	**Long-term impacts on poorest Year 5 of project**
	direct wage effects	**indirect effects, more jobs, cash flow**
Basic needs	consume more and better food, buy soap, candles, etc, improve house (variables include meals/day, quality of foods; nonfood purchases, roofing)	new house; new village water supply
Assets	purchase bed, blanket, utensils, a few small livestock, basic tools only; no change in land ownership expected	own more valuable items, such as radio, oxen; small change in land ownership
Livelihood	have a regular source of income, probably no change in access to land/farm income, may use fewer / less severe coping strategies	more production on-farm, start new non-farm enterprise; work more as hired laborers; steady employment among land-less; few distress sales
Services	slight increase in visits to town, health clinic, children stay may in school, HH may travel	durable, large increase in mobility/access; presence of new facility because of road?; more use of credit
Perceived changes	life should look better	hope it seems better overall; perhaps worse over long run for some

These and other measures of baseline poverty status and change over time would be represented through area-based averages, proportions possessing certain characteristics, and thresholds (numbers and proportions below a specified minimum for some characteristic). Average measures include "mean hours to health clinic" and "mean land-holding", represented as current condition and (in follow-up surveys) as change since the baseline. Proportion measures would include "proportion of households owning only some 'low-value' items." The technical note (#1, poverty indicators) discusses in more detail how these data would be manipulated to construct these measures. Furthermore, thresholds of "ultra-poor" and "poor" in various characteristics can be defined based on pre-specified levels for each variable (food, water, assets, livelihoods, services). These can be used for each indicator and for larger categories, i.e., "basic needs poor:" households would be considered poor in basic needs if they are considered deprived in a majority of the basic needs deemed most important (and measured) for a given location. Suggested definitions of thresholds are also provided in the technical note on poverty indicators (#1).

Changes in means, proportions below these thresholds and other variables would be observed over time. Poverty profiles can be generated on sub-populations, i.e., female-headed households, member of special ethnic group, by distance from road, or other characteristics. Precision of estimates for sub-samples will of course be much less than for the overall measures, owing to reduced power.

D. Assumptions and Conditions

Implicit in many of the above paragraphs are a number of implicit or explicit assumptions and required conditions for a poverty impact assessment, whether "rapid" or not.

1. Reaching and measuring the condition of the poorest is crucial; projects are intended to serve the poorest rather than those more comfortable and better off. The consequences of a "type I" error of excluding the poor from the benefits are assumed to be worse than the consequences of a type II error of including non-poor (in addition to poor participants). Variables, methods and level of analysis are influenced by this decision. The very poor have numerous, diverse, sporadic income sources, making income measurement all the more troublesome; thus the focus on basic needs. Less precision is needed at the upper end of the economic spectrum, so that moderate and large land-holders can be grouped together, for example. The very poorest are more likely to be far and invisible, so the sample must be sure to reach the remote and obscure. Household level measures are needed to represent who "participates" (and to what degree) and its association with poverty; as well as who does not, to determine who benefits.

2. Basic conditions for the project to have any plausible effect, such as those outlined above, must be met. Achievements or problems must be documented throughout the course of the project. The will to achieve, among institutions and officials, must exist. Approvals and support from local organizations must be procured. The technical design and implementation must be appropriate, from design through construction and maintenance (see Majeres, 1995; Lipton, 1996). The external environment must be conducive to the study: no war or local ethnic strife, severe shortages of supplies, including labor: it must be in over-supply during project implementation in the region.

3. The causes of poverty are assumed to include "lack of work" as a major determinant. This furthermore assumes that a surplus of willing labor exists among the poorest, who are able, ready to work and economically rational. Poverty is assumed not to be caused mainly by other factors, such as physical disability, systemic discrimination, favoritism, lack of supply of inputs or other technical bottle-necks, chronic macro-level constraints on or disincentives to entrepreneurial endeavors and commercial production, or war and ethnic strife which consume resources, although these factors may aggravate the situation.

4. The theoretical cause-effect linkages between EI projects and poverty have been described earlier, and it is assumed that these relationships hold in practice. That is, wages increase incomes in the short-run, the poor invest earnings in productive assets to help generate future income. New assets, mobility (or other direct benefits of the works project) and institutional capacity generate long-run economic change, which provides ongoing jobs for the poor in the farm and nonfarm sector. Savings in foreign exchange at the national level will be reinvested in social and economic services or other public works projects, but not necessarily in or near the study site; these indirect benefits are felt in the study area only over a much longer time frame.

5. The behavior of the poor in every location is more or less the same. That is, the very poor will buy food and make marginal improvements in physical quality of life, small assets, increases in mobility and access to services, and other small changes. They respond in an economically rational way to opportunities, balancing desire for some leisure with other goods, assets and better quality of life. While a focus on the "other goods" will miss an increase in leisure time, this is not expected to introduce a major bias in measures of poverty for the very poor, who are the primary concern.

6. Additional assumptions may need to be framed for a given application. This may be especially true for other types of projects, where cause-effect linkages are not similar to those outlined for general EI public works projects. (See technical note #3 for more on this.)

Part II. The Rapid Assessment of Poverty Impacts (RAPI) Method

A. Overview

This section describes a systematic, standard "rapid" approach to judging the net poverty impacts in the site of a small-scale rural EI development project, called "RAPI" for short, for the "rapid assessment of poverty impact. This method was developed specifically to examine impacts of labour-intensive roads and other infrastructure projects at the local or regional scale in developing countries. This type of poverty assessment operates as a stand-alone exercise, but can contribute to a larger project overall evaluation. Table 2 illustrates how a poverty impact assessment coincides with other components of a typical rural road project, whose construction (direct employment - generation) aspect lasts about two years. The baseline, for example, should be conducted during planning and before construction, and the overall assessment benefits from other information gathered throughout the lifecycle of the project. This type of road project forms the basis for recommendations regarding the sample strategy, impact area, timing, implementation and other elements made here. Indications for applying this method to other types of projects and of increasing the scale of analysis and are provided in Technical Note #3.

Table 2. Project Timeline and Sequence of Activities. *Typical Rural Road Pilot Project*

Activity	Year						OUTPUTS
	0	1	2	3	4	5 - 6	
Planning	_____						
Implementation (construction)		_____	_____				Road, jobs, businesses...
Project monitoring		_____	_____				
transport studies	X	X	X				transport statistics
Technical progress reports		_____	_____	_____ _	_____	_____	road length, quality, labor....
Road maintenance				_____	_____	_____	local capacity
Poverty Impact Studies	_X_		__X	__		_ __X___	poverty indicators over time for site and control
Overall evaluation				_X__		_X	Assessment of overall impact, outputs of project

Notes :_____ = planning / follow-up to activity; X = conduct of field study/survey

What is "rapid"? How quickly will results be provided? The meaning of "rapid" is defined relative to the scale of large national sample surveys conducted in developing countries to provide data on topics such as living standards, household income and expenditure, family planning use and health status. Five criteria apply. To be rapid, the exercise must (1) have a short feedback time between data collection and delivery of report to policy-makers; (2) be relatively inexpensive, (3) use a short questionnaire to gather minimal, strategic, data, (4) use a

reduced sample size (i.e., minimum for acceptable levels of precision), and (5) incorporate field data entry to enable validation (Macintyre, 1997). Rapid, however, does not mean immediate or "dirty" (although "quick and dirty" may be acceptable at times). The RAPI method utilizes the most cost effective and direct means of single-purpose, primary data collection available which can produce acceptably accurate quantitative data for the purposes of assessing changes in poverty levels and severity, given typical conditions of employment-intensive (EI) project sites and limits on resources. Because projects are generally located in regions where suitable administrative or survey data for poverty studies are scarce, the data to assess poverty impacts are assumed to derive from a single-purpose field survey, but other sources of data may suffice at times (see section '4' below). The description of the rapid survey method constitutes the bulk of this section.

Important components of the RAPI survey method can be summarized briefly. The RAPI survey method follows the basic guidelines of Bilsborrow et al (1995) adapted to a smaller scale for impact assessment. Thus it is characterized by:

- the use of simplified ("proxy") indicators of poverty, not income or consumption
- a short survey instrument to capture just the data needed
- selection of a clearly defined geographic area of study within the "influence area"
- identification of a matched control area for comparison
- collection of baseline and follow-up data
- random selection of households for interview (but no repeat visits to households)
- sample size chosen based on sampling principles to provide acceptable (known) precision
- in-field data entry and verification to speed turn-around of results
- systematic, standardized presentation of results

Looked at from start to finish, as in Table 3, the sequence of components of a typical poverty assessment extend from planning in year '0' to the assessment of long-term change and impact several years later, year '5'. The survey itself should be seen as a piece of a larger project, which begins with clarification of desired outputs, acceptable precision, adequate level of analysis, the nature of "participation" and consideration of financial, human, and materia resources. Specific boundaries for the project study area and potential "control" are defined. Background data and information are gathered and reviewed. The design, planning and actual fielding of the baseline study--including recruitment of personnel-- follows. Analysis, documentation and poverty profiles for the site and control are produced. A minimum of two follow-up stages of data collection will enable assessment of short term (mostly direct) effects and long term (mostly indirect) impacts several years after project construction has ended. The final presentation and interpretation of survey data should take into account the larger context of the specific location, the particular project, and macro and meso- conditions. As indicated in Table 2, poverty assessment is linked with other forms of data collection and monitoring going on in the project, such as transport studies, procurement, maintenance contracts, and other technical aspects. The poverty assessment data stand alone, but the meaning of the data, that is the judgement of net impact, should not be interpreted in a vacuum.

Table 3. Poverty Impact Assessment. Estimated Timeline and Sequence of Activities

Stage	Year 0, Preparations			Year 1 1 2 3 4 5 6 7 8 ... 11 12			Year 3 month 1-2	Year 5 month ?
	Desired Output	Conditions	Survey planning	Baseline	Analysis		Follow-up	Follow-up
Activities	quantitative poverty indicators acceptable precision output tables net impact level of analysis "participants" & "non-participants"	accept assumptions & limitations determine funds define impact area, identify study site and control	maps, census-based sample frame gather other data available* recruit survey team revise Q's, translate sample area units approvals for survey	pre-test, hh survey community survey data entry, checking, results	fill in dummy tables document-ation more analysis,		hh survey community survey data entry, checking, results Tables on "P" change	hh survey community survey data entry, checking, results Tables on "P" change
Outputs					Poverty profile		Assess short-term effects	Assess long-term impacts

"P" refers to a set of poverty measures

Planning prior to data collection, particularly the baseline, is essential. This includes internal (project) discussions, background information review and decision-making, and hiring of the survey coordinator. About 4-6 weeks of intensive survey design (adaptation) are needed for the baseline, to construct the sample frame, revise and translate instruments, recruit and train teams, prepare equipment, etc. (all discussed below). The "rapid" baseline endeavor is intended to produce basic baseline data and profiles within 5-6 months of planning, if all goes well, and depending on the scale of effort. Follow-up surveys should proceed faster. Speed of turn-around compares favorably with other poverty survey efforts which require one or more years from the commencement of field work before data are presented. (For example, most of the World Banks' LSMS studies, other income and expenditure surveys, Demographic and Health Surveys).

Within this standard framework there is room for flexibility in adapting the method to particular local needs, resources and constraints. More or less precision may be required. Problems may arise in gathering data for the "sample frame," in reaching selected random household sample, and dealing with compound or polygamous households. Logistical issues and prices of various components will vary, leading to different trade-offs in team size, number of vehicles, number of computers, etc. In some cases, additional resources and demands will suggest and support the addition of extra "modules." These other modules might include an anthropometric study (for nutrition and health indicators) or focus group exercises with selected sub-groups to provide qualitative data to explore specific themes. Elaboration of all alternate methods is beyond the scope of this report, but a variety of participatory methods and their potential use within the context of RAPI are described in note #5.

The RAPI method is rigorous, but is not rigid in design and is intended for implementation in locations where road and other infrastructure projects are planned and needed. These sites are some of the poorest and most under-developed regions of the world, which present numerous problems. Given constraints, the method is intended to be as straightforward, cost-effective and "rapid" (in turn-around of results) as possible in a world of increasingly complex survey designs and research methods. It does require a minimum foundation of survey skills, equipment and resources. These are described below (B.7). In particular, careful planning will avoid waste during data collection and analysis stages, such as through drawing an inappropriate sample or employing too lengthy a questionnaire. Many household surveys, including those intended for development project evaluation, fail to generate usable data due to these or other faults. The RAPI method is intended to help project planners undertake valid and manageable poverty impact assessment studies.

B. Elaboration of a Rapid Survey-based Method for Poverty Impact Assessment

This section elaborates on major issues in a poverty impact assessment, from planning discussions to implementation. These are presented in a rough sequence, but the real process will be iterative, for example, the process of balancing number of indicators and questions with sample size and available budget. These sections are meant to provide a summary of RAPI and are supplemented by technical notes in Part III, covering poverty indicators (data processing and tabulation), sampling, considerations in application to other projects in general, use of participatory methods, illustrative application to the Tigray/S Wollo road projects, and the annotated prototype survey instruments.

(1) Clarification of Outputs and Indicators

The planners (project personnel, donors) of the overall "impact assessment" must consider and debate, and eventually agree upon the specific poverty indicators to be used for (1) basic needs, (2) assets, (3) livelihoods, (4) social services, and (5) perceived quality of life. Within these five categories, actual variables to indicate poverty status would be chosen for relevance to the region.

Suggested measures of basic needs include adequacy of consumption of food, as well as water, energy, shelter and other non-food essentials. Formulation of questions would take into consideration local foods and problems in housing, fuel and water quality/source (if needed). Different types of household assets are likely to be common and others inappropriate. Livestock are a key asset and source of food and income among rural people, but the type of animal listed will be chosen to reflect local conditions, such as water buffalo in Southeast Asia or cattle in much of Africa. Assets must distinguish the types kept by the poorest as well as the less poor, and non-poor. The quality of administrative, health center or school data are likely to affect the types of questions needed for community-level work: the more administrative or other statistics are readily available, the simpler the job of gathering community-level data on population, education, infrastructure, health care facilities, etc. Specific needs of a project may suggest adding some indicators --perhaps reflecting environmental change -- but at the same time other

indicators may be left out to keep the final survey (instrument) short. Choice of indicators then guide revisions of prototype household and community-level questionnaires (technical notes #6 and #7).

A useful exercise at this stage is to generate "dummy" (blank) output tables. Specimen tables are attached for the baseline and first follow-up (technical note #1). These illustrate the types of statistics that should be produced for comparison of change across regions, over time, and between participant and non-participants in the project. Not only tables, but graphs and charts can be produced from simple statistics, such as proportions, means (and standard deviations and confidence intervals), median values, and range values.

Generally, data will come from a single-purpose, specially designed rapid household survey, as it is assumed that suitable data do not already exist. The assessment exercise will also draw on other background sources of information. On rare occasions, however, early planning may identify census, survey or other sources of data which can provide part or all of the baseline (study and control), if the timing, location and variables coincide. This decision also depends on the specificity of poverty indicators and other needs of the impact assessment exercise.

(2) Definition of Study Area and Control

Each project has an expected "impact area," such as the road corridor, where the project is expected to have an influence on communities and households. This should be clearly defined on a map of the site, along with an estimate of population size, distribution, location of towns and villages, and other basic data on the area. The poverty "study site" is defined as the specific geographic area which is the focus of the impact assessment. It can be larger or smaller than the project impact area, depending on the nature of indirect effects. (Laborers are likely to come from an area somewhat larger than a narrow road corridor, for example.) A somewhat larger area is likely to capture greater variation in participation and project influence, but will be more expensive to cover. A smaller area will be more manageable, but less representative. This study area is is the region from which data on poverty are to be collected and which the data will represent. The study site should thus be large enough to cover a large number of distinct villages or communities, as well as different distances from the road (in a road project), markets, services and employment. One or two hypothetically "representative" communities alone are not sufficient as a study site, as they will not be representative of the range of conditions, access to the project, level of community organization, and potential for impact.

The geographic area must be clearly defined and the population size and distribution known in order for poverty measures to be representative and for a comparison to be possible over time. Data from households and communities--if randomly collected, as proposed here --will then be representative of the specific geographic region from which the sample was drawn. A desirable and convenient approach is to equate the poverty study area with an existing and known administrative boundary, such as a district or sub-district. It can be an aggregation of census enumeration areas (CEAs) (blocks of 80-200 or more households) or numerous villages which encompass or overlap the project impact area. The aim is to enable the use of existing CEAs to construct a "sample frame") for drawing a random sample. Coincidence with existing political and administrative boundaries facilitates the use of existing administrative statistics, census data and other survey data to supplement the survey.

Alternate designations of a study area are possible and some in cases required, for example, where no census has been conducted recently, boundaries and populations have moved, and no current maps and enumeration areas exist. In other cases, administrative regions may provide a poor overlap with the project impact area, (i.e., a road that winds through several sub-districts) and thus not provide the additional data and savings to justify their use. Alternatives are to identify a specific, well-defined geographic area which overlaps, covers or is a transect of the project impact area. This is ideally a recognizable region that will not change over time, such as the "road corridor" itself (the area of a given width along the length of the road) or a perpendicular "slice" of it (to provide variation in distance from the road project). Natural geographic boundaries, such as watershed, may be used. The absence of basic data on population size would require additional preparation of maps and location and size of villages and settlements to provide a "sample frame" needed for random sampling. This effort is justified for the purposes of impact assessment, as without population size and boundaries, it is not possible to represent a wide geographic area or to randomly select villages. In most cases, census data provide the basic maps and population estimates. (The "command area" of an irrigation scheme is not adequate).

A Control: Where, why?

A control area is a region which in every possible way is similar to the actual project impact area except that it lacks the project intervention and is not expected to be affected by it. It will be used to compare the net effect on the population of the project, assuming other factors to be similar over time. The control area can be somewhat smaller in geographic extent and size, and this will enable savings as well as facilitate locating a matched site. The following further clarifies the 'where?' and 'why?' of a control as well as what to do when a designated control site is truly impossible.

For a remote rural setting which is the target of an infrastructure project, some important factors to consider are:

- (1) agroecology, farming systems, and major crops,
- (2) water resources (irrigated/rainfed), soil and terrain,
- (3) population density and ethnicity,
- (4) presence of and access to public services, infrastructure and development projects and agencies;
- (5) economic status of the population.

It is not expected that regions are perfectly matched, but that they are broadly similar in important ways. For a road project, a control area obviously should not have a similar road project, but should have similar economy and level of living (i.e., predominantly subsistence peasant farming of a similar variety of crops/livestock). It should possess similar potential for impact were a road project to come to the area (i.e., in their response to work transport opportunities and monetization).

Thus, information on the general characteristics of the study site must be gathered and processed early to aid selection of a control, so that the baseline surveys can be conducted at about the same time in each site, to account for seasonality. This preparation includes a "desk study" of existing sources of data, plus brief field visits, and discussions with officials and people who know the general area. Since most pilot projects are relatively small (such as a 25 km stretch of road) it should be possible to identify a small sub-district or small division at a distance considered great enough to exclude it from falling within the "impact area" of the road.

In rare cases, collection of data in a control area is not possible, because of political constraints or serious funding limitations. An alternative to data collection in a control site is to use data from another household survey, such as the World Bank LSMS surveys or a national sample survey of living standards, food security surveys, or other small studies conducted in a similar region that lacks the proposed intervention. This would reduce costs of data collection and appears attractive. It may be feasible to use such data if the survey implementation coincides with the project timing and location of the study site and/or control. However, unless these data already exists, delegating data collection to a separate agency reduces control over data quality, variables and timing of data collection and reporting. Data may be collected in a different season, for example, or be delayed by as much as a year.

Even more rare would be a case where a suitable control site simply doesn't exist, owing to the wide variation in regional characteristics or the presence of development projects throughout all the potential sites which might serve as a "control". In this case, one solution is to follow the typical path chosen by many impact assessments. This assumes an implicit "control" as the baseline situation, i.e., it assumes that nothing would have happened without the project. This may be a reasonable assumption in the short run, but is less appropriate over the course of a two-year project and follow-on maintenance and evolution of an area over a five year period. Many things will change, including local population, macro-economic policies, and governments. This is a last course option and is not recommended as a standard practice. Since most pilot projects are relatively small scale, it is likely that a suitable control, even if it is a very small area, can be identified.

(3) Time Frame for Impact Assessment

Issues of timing include (1) when to conduct field surveys and how many to conduct; and (2) how much time is needed to conduct them. These are dealt with in turn.

In order to determine change over time in an area, baseline data and follow-up data for least two time periods are needed. At least two follow-ups are recommended here, the short-run and long-term. Baseline data should be collected very early, before major interventions in the area change the initial conditions. The number of and timing of follow-up surveys depends on the duration of the project and the nature of expected effects on local population. If funds allow, more frequent follow-up surveys will provide a time series, say every year. In general, funds will probably not allow yearly poverty assessment studies, and these are not needed for the purpose of project impact assessment.

Two follow-up studies are recommended to capture both short-term effects (i.e., those due mostly to the use of labour-based methods) and long-term impacts (due to indirect and multiplier effects). The first would take place during or immediately after project completion. This first follow-up is needed to determine short-term effects of the employment opportunities due to construction methods and short-term improvements in mobility and reduced transport costs due to the road improvement. (For other project processes and procedures, whether irrigation, forestry or other project: see technical note #3). Given a typical pilot road construction project of about two years duration, the first follow-up would be implemented no later than month 25 following commencement, but it could occur in the middle of the project, as long as it is the same season or time of year as the baseline.

The second follow-up survey provides evidence of structural, long term impacts of the presence of the road, increased skills among the population, and local maintenance. This final follow-up could be implemented anywhere from year 4 to year 6, for a two year construction project. The closer the final survey is to project activities, then the less likely it will capture long-term, structural changes in poverty due to permanent positive or negative changes in employment, food production, transport, and services. Similarly, the later it is, the more difficult it becomes to attribute changes in the region to the road and construction techniques, as other "confounding" factors will intervene.

Seasonality may affect the results, as a survey conducted before the harvest, when cash and food are scarce, will yield different poverty statistics than a survey conducted in the same area two months later after the harvest. The surveys should be conducted at about the same time of year.

The second issue in timing is the duration of the field survey, preparation time prior to actual fieldwork, and follow-up analysis. Rapid surveys should require a few weeks to a month in the field, depending on the number of enumerators and the size of the samples in each site. The baseline is likely to take longer, as it is the first time in the site, and questionnaire refinement, study area boundaries, and sampling frame and procedures must be decided upon. Extra time should be allocated for the baseline study, and it should not be rushed. It would be preferable to conduct it a few months "late" (i.e., some months into the project construction) than to hurry it in order to meet an arbitrary deadline. Follow-up surveys would be conducted more quickly and smoothly, as they will have benefited from baseline planning, maps and questionnaires. (Ideally, the same supervisor and enumerators would be employed.) The actual data collection and entry must be preceded by several months of planning, as stage which involves questionnaire revisions, recruitment, procurement, etc. The fieldwork will be followed by about 2 months of analysis and report-writing. These issues are discussed under "Implementation issues," section (7) below. Thus each poverty assessment survey is actually a 4-8 month project.

In the worst case scenario, a baseline is not possible. This is the case when evaluating a project which has already been conducted, or is well underway. The alternative to conducting a baseline survey is to gather retrospective data during the post-project survey (the "follow-up", but without a baseline). This type of data is subject to problems of recall error at the household and community level, and is not recommended. However, in the case where a project has already been conducted and some type of impact assessment is desired, then a post-project survey is the only recourse. This would benefit from special attention to research design and methods. Rather than haphazardly applying a standard "follow-up" questionnaire, attention should be given to phrasing of retrospective questions needed to determine original conditions. Also, a household survey could be combined with selected

qualitative methods, in-depth interviews from multiple sources for a "representative" site (i.e., a case study), and careful review of administrative statistics to provide alternate indicators of prior conditions and of changes and probable impacts in the project, compared to another. The prototype questionnaires attached would of course need to be revised.

(4) Data and Information Needs

This section summarizes the types and sources of data and information and why they are needed for a poverty impact assessment study. Information is needed for

- (1) general background on the context of the study and population, especially for refining questionnaires,
- (2) construction of the "sample frame" for choosing households to visit in a survey, and
- (3) planning, scheduling and budgeting fieldwork.

In rare cases, a review of other information sources and household data (such as a high-quality food security survey by IFPRI) may reveal a suitable alternate source of data, at least for a control baseline, if not for the actual study area. Maps and listings, price and budget information, and guidance on suitable variables are the most important types of information sought. These may come from census data, household survey data, a famine early warning system, administrative statistics, and field experiences.

Census data should be collected first. Maps and listings of the individual enumeration areas (with size estimates) are highly desirable for both the study area and control. If the census has been conducted within 4-5 years of project commencement and the area has not experienced significant in or out-migration, then these estimates of population size or numbers of households are probably adequate.

Famine early warning systems are sophisticated integrated-information programs to monitor weather, rainfall and agricultural production and household food security in much of sub-Saharan Africa. They might provide satellite-based maps or aerial photos of sufficient resolution to plan a survey sample, or even a suitable set of household survey data or indicators (De Haan and Koch, 1997). A FEWS would provide indicators of production, rainfall and "vulnerability" during the course of the project and follow-up, so can provide important contextual information.

Other information and data are likely to come from national level (sample survey) studies on poverty status, living standards, agricultural surveys, income/expenditure of households, and fertility or health status (as in the Demographic and Health Surveys, or DHS). These data may or may not have involved data collection in the actual study site. Still they are likely to suggest specific variables and indicators. Most national sample surveys utilize census data as a sample frame, and update household listings in the field. This may provide a sample frame for a study site or a control site, even if many of the variables are inappropriate.

Small-scale household surveys are often conducted for specific purposes, such as academic research, project evaluation, etc. Local officials, universities, donors, NGOs, research institutes, etc. are good places to enquire about studies near the study area and proposed control. ILO projects have introduced "local level planning exercises"

which may provide a forum for planning, as well as actual maps and statistics needed for the assessment. Other household surveys may thus provide suitable baseline data, a pre-existing sample frame, potential (and tested) indicators, field experiences, and experienced enumerators. Planning of the Ethiopia survey, for example, can benefit from experiences of at least two fairly recent household surveys near the project sites (see technical note #5).

Local level administrative statistics (from villages, sub-districts) may provide necessary population estimates, in- and out-migration, health clinic/post data, etc. Knowing where the data are, what type of data are available and how good they are will facilitate data collection from these sources during the survey.

Finally, experiences of project officers, ILO staff and survey personnel recruited for the study will be essential. Personal knowledge of modes of travel, distances, how to contact and deal with communities, and information on prices, lodging, and transport facilities, are needed for estimating the cost and time frame of a survey. The internal budget for the survey should be estimated (discussed under item ‘ below). Other sources of funding might be needed. A joint effort with another agency might provide additional funds to field the survey, with an agreement to share data. This approach has other problems, in administration, planning, decision-making about variables and questionnaire design, which have been encountered in numerous sample surveys: the Kenya RARP, for one (Howe, 1993).

(5) Sampling Strategy

A sampling strategy is made up of a plan for the selection of specific households in the field and the number of households to be interviewed. This section lays out the recommended sampling strategy for the RAPI method, which provides a sample of households which is representative of a geographic area. This is the type of strategy needed to and assess both the short-term and long-term (i.e., both direct and indirect) impacts in a region. Technical note #2 discusses some relevant issues in sampling theory, sample size calculation and alternative sampling strategies. Alternatives include a rotating sample to visit the same households over time and thus provide details on impacts over time on individual households; while a purposive sample of households directly employed in the project would provide more information on the direct impacts of wages, but would not capture indirect effects in the larger area. The discussion of the Tigray/S Wollo road project in technical note #5 illustrates the application of the sampling strategy for a specific site.

The recommended approach is a two-stage sample of an area, relying on a random sample of census enumeration areas or other area-based population units for the first stage. In rural areas, these will generally be small villages, settlements or parts of large villages or towns. A rapid random procedure is used for selection of households as the second stage which does not require household listings. This follows the approach laid out in Bilsborrow et al (1995). This sample will be drawn from the pre-defined geographic “study site” area (and control.) This strategy enables a probability sample, as each household will have a known chance of selection. A cluster approach is assumed to be needed in order to economize on travel time in the field, and because detailed lists of households for the entire study area probably do not exist.

For the sake of simplicity in presentation here, the study site is assumed to be an administrative unit such as a small district which is affected by and includes (most of) the road project. It will have a population of about 10,000 to 20,000 households (50-100,000 persons) residing in villages and towns of varying size. In most cases, census enumeration areas (CEAs) will already have been defined and mapped within this larger administrative unit. Otherwise, lists of villages and settlements in the area and estimates of size will serve. The map and list of CEAs , or equivalent small clusters of populations with known (or estimated) population size, constitutes the "sample frame." (The "clusters" are the primary stage sampling unit, or PSU). Each CEA will contain roughly 80 to 300 households. A predetermined number of first-stage area units (CEAs) are selected with probability proportional to size (pps) or estimated size (ppes), so larger clusters are thus more likely to be selected (see note #2). This procedure is performed by the survey planner before arriving in the field, even before enumerators are hired, but before the "clock is ticking" on the fieldwork. A predetermined number of first stage units (villages or CEAs) is selected randomly. Their name, rough location, and boundaries are noted on a map for planning fieldwork.

In the worst case, where maps do not already exist, information on the location and size of communities appears difficult to collect, and census data are difficult to procure, it may be tempting to simply select 2-3 distinct communities or villages and conduct household surveys only in these sites. This is the approach used in many evaluation studies. In the case where only a few communities or villages are chosen based on judgement of apparent "representativeness" or simple convenience, then the sample of households is of course no longer statistically representative of the project study area, and therefore of the site. This method is not recommended as a general procedure. Indirect effects occur throughout the area, not just in villages with obvious participants or recipients (i.e., farms being irrigated, towns along the road.) If selection of a few communities is the only option, however, then more detailed information on each community should be gathered to generate case studies of communities over time. While interesting and worthwhile efforts, these cases are not to be confused with statistically representative quantitative data for a larger area. Communities can vary considerably in local resources, organization, leadership, and other characteristics which prohibit generalization to the study area. Those selected are likely to be the most vocal or the closest to the road.

In most cases, where a project is already approved and contacts have been established with local officials and leaders, it should be possible to gather the necessary information with some footwork. This means constructing a simple map, identifying boundaries of the area ("sample frame"), sketching population areas (villages, settlements, towns and other "clusters"), and noting estimated population size. This preparation is needed to ensure that a representative smaple of households and communities is included in the potential universe, including those far and hard to reach. The additional time needed to identify the study area correctly is an essential step, and one that is a relatively inexpensive part of the poverty assessment in the long-run and enables statistical representativeness (and determination of sampling error) necessary for the purpose described in the introduction.

Sampling households

Once communities (clusters, or CEAs) have been selected, the next step is to select households within each cluster. This is done as the survey is underway and enumerator teams are in the field. A rapid method is used which does not require constructing (or updating) a list of all households within the community. Avoiding listing at this stage -- while the data collection is underway and enumerators drawing a wage and vehicles rented --saves time and money.

The supervisor will accompany enumerators to the cluster, which for simplicity here is assumed to be a single village (it may be scattered households or a part of larger village or small town.) He/she will sketch the community boundaries and the rough location and dispersion of households through the village. This will be done with the aid of a village leader, group of elders, etc. upon arriving in the village. (This procedure is written in to the community interview as step 1.) The map does not have to be to scale. One of the following procedures, either the "segment" or "ray" method, is then applied.

For the "segment" method, the supervisor will the split the village into segments of roughly equal number of households. These can be in the rough form of a grid, polygons or pie-shaped wedges emanating from a central point. They do not have to be equal in geographic area, and will in fact not be if households are not evenly dispersed spatially. It is important that the boundaries be identifiable, i.e., paths, fences, fields, ponds, woods, trees, rivers, wells, schools, churches, and other highly visible natural or man-made features. (They should not, however, be divisions that also separate by economic class, caste or religious/ethnic group.) The identification of segments will be facilitated with a more detailed map of terrain. The number of segments created should be such that any one would contain about the number of households that are desired for interview (say, 20) in each community (cluster). Once segments are identified, then one is chosen at random, say by numbering each segment and then selecting a number at random that falls within the range (for ten segments in a village of 200 households, then a number between one and 10). All of the households within the segment are interviewed.

An alternate method is pick a "central point" of the village or cluster, based on the sketch map, and randomly pick two directions by spinning a pencil or randomly selecting points on the compass (i.e., N, NNE, NE, etc.). Draw two rays running from the "center" of the community to its outskirts. Then, enumerators interview every "nth" household beginning from the middle and moving out in each direction until they reach the desired number of households and/or the edge of the cluster. The spacing of households ("n") can be determined by a rough estimate of the number of households that can be expected along these two routes, divided by the number to be selected. For example, if 50 households are estimated to fall upon the two routes together (judging from the sketch map) and a sample 20 are needed from the cluster, then every 2nd household should be interviewed.

How to choose between these two methods? The ray method is suited to locations where households are settled evenly together such that a straight line in most directions will intersect a large number of households (within the bounds of the community: enumerators should not overstep bounds and interview households in another village nearby.) This method may thus be more suitable for dense villages in Southeast Asia (or a town or urban neighborhood.) The geographic "segment" method may be needed where settlements are somewhat irregular and dispersed, as in much of Africa and Latin America.

Whatever method is chosen should be documented. Pre-tests of questionnaires should include a test of household sample selection procedures, which will help determine the best method.

Sample size

How many households and communities to interview? Households are the unit of interest, so the number of households is the primary question, and the number of community-level interviews follows from that decision. The selection of sample size requires consideration of the budget, the acceptable level of precision, and reasonable estimates of the statistics to be calculated (i.e., current "poverty" levels, change over time, and differences between sites). Careful planning can help ensure that limited funds can be spent most efficiently, that is, used to produce the most precise estimates necessary for the lowest cost.

Sample size should not be decided based on a fixed percentage of the population to interview, as this would obviously vary enormously with the size of the study site: 10% of one (small) sub-district would yield 100 households, and 10% of another region, 1000, with vastly different implications for statistical precision.

Instead, given a prior estimate of the proportion "poor" that one is attempting to estimate and a given level of confidence and acceptable precision, then the required sample size can be computed from a standard formula (see Bilsborrow et al, 1997; Kish, 1965; and technical note #2). Assuming a population which is 50% "poor", for example, statistical theory says that a **simple random sample** of 384 is needed to produce estimates of the proportion that lie within (+/-) 5 percent of the true value 95 percent of the time. If the proportion poor is higher, say 75%, or lower (25%) then a smaller simple random sample of 288 is adequate for a current estimate that is within 5 percent of the true value, 95% of the time.

Unfortunately, true simple random samples are rare in practice. Cluster sampling used to economize during field work requires a larger sample because of intra-cluster correlation (technical note #2). A typical design effect is 2.0 (see technical note #2; also Bilsborrow, et al 1997), which requires a sample twice as large, or 768 households in the case of 50%-poor. A slightly larger target number of about 800 households allows for modest non-response, likely to be small in rural areas in general, and especially where the questionnaire is short, say 15-20 minutes (Macintyre, 1997). Since budget considerations will often determine the sample size, this approach can indicate the degree of precision and confidence in the results. If funds go no further than 300 households (in a clustered sample), for example, then estimates of simple proportions "currently poor" (in the 50% range) would lie within 8 percent of the true value, 95 percent of the time.

To evaluate change in poverty status over time, the sample size in each survey must be large enough to produce sufficiently precise statistics to distinguish real change from normal random variation due to sampling. This requires consideration not only of the level currently poor but also the expected degree of change; detecting a dramatic drop from 50% to 30% poor would require a smaller sample than needed to detect a change from 50% to 45%. The former could be detected with precision within 8 percentage points, using a sample of 300 (assuming 95% confidence level and a design effect of 2). The second measure requires precision of at least +/- 2 percent of the true value, or a sample of 4,800 (assuming a design effect of 2 and 95% confidence). The latter scenario is unlikely to be possible for a low-cost, rapid survey.

This cost consideration means that indicators (at least, several key indicators) should be selected for their ability to show change over the study period (over 2 or over 5 years) and be measurable within given limits of confidence. Otherwise, apparent differences may be random variations due to sampling. For example, the proportion of households with "regular non-farm income sources" can be expected to rise dramatically --perhaps from 40 to 70%-- during the course of the project; such a change will be visible without a large sample. Other statistics will be more difficult to discern without a large sample: The proportion owning major equipment or a vehicle will probably not change dramatically within two years, perhaps from 20% to 24%. At least +/- 2 percent precision, and thus a fairly large sample (3600) would be required to determine that this small rise is not due to random sampling error. More discussion of sample size calculation is provided in technical note #2. For most purposes, a set of poverty indicators will be used as suggested (technical note #1) which wil indicate trends in poverty status over time. Even if confidence intervals overlap (where precision is too small to detect a modest change with confidence), the accumulation of data over several follow-ups and for a number of indicators, will strengthen confidence in findings.

This discussion has focused on indicators and change within the project study area. Sampling for the control site follows the same principles, although different levels of confidence or degrees of precision may be considered acceptable for the purposes of monitoring conditions in the control. A smaller sample size in the control would reduce costs. However, comparison of changes between the study site and the control is subject to the same sample-size concerns mentioned above for the case of change over time in the site: if the sample size is too small, the confidence intervals for estimates will overlap.

For each of the follow-up surveys the same procedures are repeated. The same geographic boundaries of the study site (and control) are used. A new random sample of CEAs (clusters) is drawn at the first stage, and households selected following one of the "random" procedures mentioned above. Communities selected the second time around are likely to be different from those visited in the baseline. In the rare case where the same community/cluster is revisited, a new sample of households would be drawn, and are not likely to be the same. Thus, the samples of households drawn for the baseline and each of the follow-up surveys are independent. Each would provide unbiased estimates of poverty measures at the level of the geographic study area (i.e., not only the direct project participants). This approach is simpler than a repeat (panel) visit (see note #2) and provides data representative of the study area. Smaller samples can be used in interim follow-up surveys (especially if conducted ever year) if somewhat less precision is acceptable and a general indication of the direction of change desired.

(6) Rapid Survey Instruments

Two prototype survey instruments, a household questionnaire and a community-level questionnaire, are briefly described here. The full and annotated questionnaires are attached as technical notes #6 and #7.

The Household Questionnaire

The RAPI prototype was revised from that in Bilsborrow, et al (1995). It is intended to provide a set of minimal poverty indicators and profiles over time for rural regions (at household and per capita). The setting is assumed to be a small rural district or sub-district which is targeted for poverty-alleviation projects. It is likely to

have well over 50% of households "poor" by typical national indicators. The questions need to discriminate among rural poverty levels using specific indicators of basic needs, assets, livelihoods, access to (and use of) services and perceived quality of life.

To be rapid, the questionnaire is intended to be used in a single visit interview with the head or his/her spouse or other adult respondent. (A second visit may be possible in some cases, where enumerators remain overnight.) The household data are intended to be supplemented by community-level data on prices, distances, transport, facilities, health services, etc. Not all questions listed are required for each site; guidelines and explanations are provided in the accompanying annotations. Fairly simple, straightforward questions should be easy to record.[1] The estimated time to administer is 20-30 minutes, and shorter times can be achieved by deleting parts not critical to poverty change assessment (perhaps sections on crop yields, inputs, hiring of labor; fuelwood use and perceived quality of life).

The major elements are the household roster, dwelling characteristics, household possessions, food consumption, farming, non-farm income sources and perception of quality of life. Poverty indicators for basic needs, ownership of items/assets, nonfarm income sources, participation in the project, farm production and quality of life are accounted for (and mentioned in Table 1). Household head characteristics are needed for poverty profiles.

This builds on the prototype questionnaire in Bilsborrow et al (1995), but differs from it in several ways. This EIP questionnaire has a reduced household roster. A minimal household "roster" is suggested which yields household size, and number of members by sex and major age group. These are required to generate per capita measures and "adult equivalent" size. The age, sex, education and race/ethnicity/religion (as relevant) of the household head is elicited for generating poverty profiles by these characteristics. Dwelling quality would be reflected by one of several questions, depending on local conditions. Questions on fuelwood collection time are suggested. Tables of assets, tools, and livestock are broken into economic class categories, i.e., low medium and high value goods, which will simplify revising the questionnaire, data entry, poverty level and severity thresholds. Food questions are important, so the number of meals/day and reliance on food aid are added. Less information is requested on non-farm income. In particular, questions elicit only sources and general type of work undertaken by members of the households, rather than actual earnings/income per person. Additional questions are needed to identify households who are project "participants;" details will vary according to the nature of the project. The section on farming retains total land-holdings and major crops, and approximate amounts sold. Optional questions on use of inputs may be desirable to determine project impact, but can be excluded as they are not poverty measures per se, and questions on changes in farming patterns and inputs can be solicited at the community level.

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6 An exception is a question on livestock ownership among pastoral communities, but they are usually not a major target of rural works projects. If they are present in the population, then some special consideration must be paid to gathering wealth information among pastoral groups

The Community Questionnaire

The community level questionnaire was adapted from RASP (Bilsborrow et al, 1995) to focus on rural areas, project influences and expected changes. It will be administered by the supervisor in each community selected at the first stage, and/or related "reference" communities of households, with groups of informants. Interviews with a group of respondents is recommended to minimize biases, especially on sensitive topics such as poverty and land-holdings (ibid.). The community questionnaire is intended to provide supplementary information on population size, change, prices, facilities and other contextual information, as well as specific indicators of social services and mobility. Major modules include the sketch of the community, which facilitates sampling of households and provides information on facilities, water sources, land distribution, and other features. Population questions (size, relative in or out migration) are essential. A chart of facilities is adapted to typical rural conditions, but should be refined for each site. It is organized to identify different types of facilities: official, commercial/financial,community/recreation, health, and education. Questions about farm land distribution provide contextual variables on inequality and provides yields, changes in crops, inputs, and hiring, if desired. These can be asked at household-level or the community level; the former provides better measures of links between household farming practices and poverty, while the community-level provides general indicators of change in the project area. Questions on other economic activity solicits information on non-farm income sources, wage rates, participation in the project, access to work and changes associated with project. Questions on overall quality of life, problems and changes are intended to elicit responses which indicate project impact.

(7) Implementation Issues

This section summarizes requirements in terms of personnel, equipment/supplies, and budget for a poverty assessment, focusing on survey implementation. The aim is to highlight basic resources needed, even in context of a rapid and simplified method. This is not, however, a manual on survey implementation or project impact assessment, so it may be helpful to refer to other references (Yoon, 1992; ILO, nd) and local experience.

A RAPI is associated with a larger project, for example, rehabilitation of a rural access road. The whole sequence of activities beginning with construction, but not including negotiations and technical revisions, lasts several years. The final desired output is a set of data on poverty for two study areas (both the "case" or project area and the control). These will be combined with other information on project achievements and outputs in the study area, other interventions, recession, drought, in- and out-migration, etc. This final output will not be available for several years, although interim data (baseline and first follow-ups) will provide much useful information. The "rapid" aspect thus refers only to the survey implementation and turn-around of immediate data, not to speed of the long-term, overall assessment.

Because it is a long-term project (see Table 3), a poverty assessment must have a "manager," someone to follow it through. This is likely to be only a small part of a longer job description, but the duties must be made explicit. The manager is responsible for tracking all the necessary activities over time and putting into place activities at the right time. He/she will monitor associated activities of the project (i.e., actual progress, actual outputs, any changes, findings from transport studies). He/she will maintain documents, questionnaires and data files

safely and securely, oversee budget expenditures, supervise the survey work (i.e., hiring, budget) and participate in reporting and assessments. Turnover on a long, 5-6 year, project may be a problem, so attention to continuity is desirable. Management also requires an office and the usual infrastructure such as electricity and communications, computer, salaries, and other supplies. Here it is assumed that this part-time position will be built into the job of an existing project manager, say at ILO, or a suitable project manager on the (road) project, or with an affiliated agency. This support system provides savings for the survey/poverty assessment, in the form of computers, supplies, communications, work and storage space, and these are not itemized further in cost considerations below. The "manager" will be funded by other sources, it is assumed, and his/her salary is not considered here.

The rest of this section is concerned with the survey itself. How will it be carried out, by whom? How long will it take and what might it be expected to cost? This section discusses requirements in terms of personnel, vehicle/transport, logistics and perdiem, and equipment and supplies for the baseline survey, which will be the most expensive. The same issues arise in conducting a field study in the control area. Management of follow-up surveys can be expected to be simpler, as they will follow similar principles, build on experiences of the baseline.

The rapid survey: managing field data collection

The survey itself requires specialized skills and careful planning, particularly for the baseline, during which the study (sample) area will be identified and lots of raw data brought together. Thus the survey will be led by a **survey coordinator,** responsible for the process of planning, sampling, recruitment, data collection, analysis and writing up results from the survey. Requirements are (roughly) a graduate degree, experience with household surveys and statistical analysis, familiarity with the study area, knowledge of sampling issues and questionnaire design, and good managerial skills. He/she will work with project personnel to make decisions about the study area, sample frame, etc. in light of the budget. He/she will oversee revision and translation of the questionnaire (and have it translated back, to check for meaning), and gather data and maps to construct the sample frame. He/she will recruit the survey team and assistant, coordinate the training, oversee pre-tests of questionnaires, data entry procedures, and supervise overall data collection. During fieldwork he/she will supervise data entry and quality checks, and help out with decisions, problems, and logistics.

The rest of the survey team consists of a **fieldwork coordinator**, the supervisors and enumerators (6-12), 1-2 data entry clerks, and a driver. The assistant will coordinate logistics, help run the training and pre-test, and trouble-shoot and directly supervise weeks of fieldwork (in two sites). Logistics of fieldwork include scheduling visits and drop-off and pick-up times, determining routes to villages, provisioning with food, water; supplying blank questionnaires and delivering of completed ones for data entry, and decisions in-situ about samples, replacements, accidents, ill enumerators (have back-ups) and other unforeseen problems that are likely to arise. He/she will fill in when needed, collect community-level data, and other tasks that arise.

An enumerating team consists of the supervisor(s) and 1-4 enumerators who visit communities and collect data. The supervisor conducts the community-level interviews (including mapping), draws the household sample and reviews questionnaires each day (night) for errors. Enumerators conduct household interviews. Enumerators and supervisors should be recruited locally, near the study area. Generally, high school degrees are required, plus

relevant language skills and a good personality suited to working closely together for weeks in difficult conditions. (Men and women are both suited to the work; specific needs may vary with the site and culture).

To improve quality and simplify logistics, a small number of teams and of enumerators should be used, perhaps only 2 or 3 teams of 3 persons (i.e., 2 enumerators plus supervisor), which with questionnaires, food, spare gas, water, etc. would fill a large 4WD or pick-up. Thus, fewer teams, or a smaller team size, facilitates fitting everyone into a single (4WD) vehicle. (The vehicle and driver should be locally hired, so he is more likely to know roads and villages.).

Duration of fieldwork: For illustration, imagine a typical site where hiking on foot, and overnight stays in villages, is required to reach many of the selected clusters: how long will it take to survey 800 households, selected from about 30 clusters/ communities scattered throughout the study region?

- the rate of enumeration using short questionnaires will range from 8 completed household questionnaires per enumerator per day where dwellings are quite dispersed (as in Latin America) to 20/day/person in dense villages (Asia), assuming time is needed to reach the village, make introductions and determine the sampling strategy, and allowing for a few return visits to reach respondents in evenings.
- the aim is to complete a "cluster" of households a day, per team, including the community-level work, so the team can move on to another cluster.
- the specified cluster size (# households/community), expected rate of enumeration/person, and size of teams determines the pace of completion.

Thus, a cluster size of 20 could be achieved by a team of a supervisor and enumerator averaging about 18-20 households/day (with some assistance from the supervisor), or two enumerators working at 10/day. A cluster of 26 households per community could be achieved by teams with 2 enumerators working at an average of 13 completed households per day. A cluster of 24 dispersed households could be reached by 3 enumerators (i.e., a team of 4) working at a rate of about 8 per day.

A mid-range rate of completion rate of 13-14 per day per enumerator is the basis for estimates here, assuming a village setting where households are reasonably close to one another, averagingt 2-3 per hour, about 5 "interviewing hours" after arriving at a location. A team of two enumerators would complete 27 questionnaires in a day. The 30 targeted clusters would be reached by three teams working simultaneously in about 10 days, yielding 30X 27 or 810 households. The survey team would also complete 30 community-level questionnaires. Allowing for a safety factor of 1.5, especially in a baseline where procedures are new and the land unfamiliar, and where conditions are particularly taxing (the very poor roads, lack of facilities, distances on foot great) then 15 days of (paid) fieldwork for one study site would be a conservative, safe estimate for budgeting purposes.

Local conditions and requirements, the desired sample size and number of clusters, questionnaire length, and number of teams interact to determine actual duration and daily rates of completion. In general, fieldwork could be achieved more quickly by fielding more teams at once, but at the cost of quality of data, unless supervision is increased in proportion.

Data entry is ideally performed on a daily basis so that immediate checks on quality of data are provided. This requires a pre-programmed laptop computer (i.e., with software such as EpiInfo, see technical note #1) and a dedicated, trained data entry person in the field along with the enumerators. This will be difficult when enumerators require an overnight visit, which will be needed much of the time in the locations planned for these projects. Three teams in the field in different locations would thus require three laptops, which adds to expenses. Electricity will be non-existent in villages, while batteries are inadequate. Even in towns, electricity may not be reliable. (In the 1994 Nepal LSMS survey, the teams in remote areas used solar-panels to power the computers [Grosh and Munoz, 1996]). This technology-based solution might be relevant for some sites, but would require substantial funds, and entails risk of equipment failure, damage, or theft.

A compromise might be as follows, reflecting the underlying aims of data quality and speed of turnaround. A single data entry person (or a team of 2 to share the work) and laptop/notebook would be based in a nearby small town at lodgings (the survey "base camp") with electricity (at least part of the day). Interviews completed in clusters nearby (within an hour each way) could be entered on a daily basis (electricity allowing) to enable data checks and debriefing with enumerators each day to clarify errors. For clusters which require 2 days to travel there and return, no return visit is possible after data entry. After a few days, a bundle of about 2-3 times the usual number of questionnaires will arrive back in town, but since this is too much to enter all at once, a random selection would be entered right away to check the data, and the rest saved for later. At the end of fieldwork, a large portion, say two-thirds of questionnaires will have been entered, some from very cluster and enumerator, so that quality will have been checked throughout. (Data entry and checks are discussed in technical note #1.)

Training is an essential part of the survey fieldwork. About 5 days of training of enumerators, supervisors (and data entry) should be adequate for the short HH and community-level instruments. This period includes **pre-testing** in the field of both, as well as data validation, revisits, and data entry procedures. This period should not be reduced, say to a single day of orientation, presuming that the questionnaires are straightforward and easily administered without practice. Training is always needed and is a small additional cost to increase the likelihood of better quality data. More enumerators than desired (say 15% more than the desired number of persons to start) should be trained. The best are identified as supervisors, the best of the rest the enumerators. The remainder are let go, with several identified as potential back-ups but not kept on salary.

After fieldwork, the survey coordinator will oversee data analysis, write the report, and document the sampling, fieldwork arrangements, decisions, problems encountered, etc. Report writing should probably done in two stages: first, a preliminary report including basic statistics which require little manipulation, such as simple means for

each region on a number of major indicators for each site. This should be completed within 2 weeks of fieldwork, and could provide a second check of data quality. Following that step, a longer, more comprehensive "profile" can be produced from more complex manipulations, construction of thresholds, and bivariate statistics for all the clusters and regions. A complete report of the survey sample, location, non-response rates, final questionnaires, budget and other administrative details should be made for the record, to aid future studies. Data tabulation methods and approaches are described in technical note #1.

Elements to include in the **budget** for a household survey are: personnel, equipment and supplies, travel, per-diem, overhead, and contingency (insurance). Rates, wages, prices, etc should be carefully thought out for the baseline, and then will be simpler and cheaper for interim follow-up studies.

There are minimum costs in any size survey, which cover the survey coordinator and preparation, the fieldwork coordinator, computer and supplies, and a vehicle. Basic supervision and planning costs will not vary significantly for a small survey of 300 households to a larger one of 2000 (for both sites). In either case, the survey planner must gather information, oversee revisions of questionnaires and translations, plan the sample, recruit persons, and train them. After the survey he/she must document, debrief, analyze and report.

A total of around 5 months is estimated for planning (1-2 mo), fieldwork (1 mo), and follow-up analysis and report writing (2-3 mo) (for a one-month field effort as below). Funds for a visit to the site, travel to visit agencies and purchase maps, etc., and possibly to consult with a local statistician (one of the contingencies). Translation, photocopy of questions for pretest, procurement (purchase, borrow, rent) of computer(s), installation of software, printer and other supplies are included here. The fieldwork coordinator will be recruited a few weeks before fieldwork is to begin, and will work about 2-3 months (through to documentation and data analysis). Training and pretest is estimated to require about 5 days, and costs include wages and perdiem for (potential) enumerators and supervisors and data entry persons, plus room rental and a vehicle for 2-3 days (pretest in the field), and various supplies. These are minimum costs for this type of small-scale household survey, regardless of total sample size, although very large samples are more complicated.

Then, fieldwork or actual **data collection** costs include wages, per diem and vehicle (rental/maintenance and operation) for a team data collectors, data entry and field supplies. Estimates of fieldwork duration and team size needs are based on the desired sample size of households, assuming the community-level survey will be completed "along the way" by the supervisor. For the sake of illustration, the above calculation of about 800 in each of the study area and control is assumed to be the objective, divided among 30 clusters, with about 26 households per cluster. The sample will be reached in about 10 -15 days by 3 teams of 4 persons (3 enumerators and a supervisor). They will be drawing a wage and perdiem, using at least one 4WD vehicle (pick-up). The same team continues working in the second site, assuming the same sample size, requiring another 10-15 calendar days or 20-30 "team days" in the field. All enumerator teams would work for 20-30 days of data collection, thus preceded by a 4-7 days of training, for a total of 3-5 weeks.

Data entry needs are based on an estimated rate of entry per day. The "rapid" ideal is to supply each team with a notebook computer, which they carry with them and enter into daily. However, this may not be workable with limited budget, little electricity, poor batteries, and lots of hiking. This may be possible for areas near the roads. In general, the aim is to keep up with fieldwork. The above plan would generate 78 HH and 3 community level questionnaires each day. Assuming a person could carefully enter about 25 pre-coded short questionnaires a day (3 per hour), then 3 persons are required (and three machines) simultaneously to keep up. If only one computer is available, then 2 persons could conceivably work in shifts.

Summary of major cost/quality considerations:

- More teams could reduce the calendar days of fieldwork, but will become harder to handle by one fieldwork coordinator, require more vehicles, and reduce quality.

- A larger team of enumerators (i.e., 4) would be useful for a rapid survey only if the expected rate of completion were much slower, as no more than 20 HH per cluster (village) should be collected to minimize design effect.

- More households may be more quickly interviewed when they are close and cooperative, fewer where they are dispersed and difficult to reach, and perhaps require more persuasion or introductions.

- Rates of completion here take into account that some clusters (villages or settlements) can be expected to be reasonably close to the base of operations, such as a small sub-district town, such that teams can arrive early, work all day, and still return to lodging each night. Questionnaires can be entered and software-checked that day or the next. Some will be quite far, 2 days from a road. A number will thus require overnight stays. With careful planning, remote villages can be linked and several visited over the course of a few days, (one a day) so that there will be little delay. However, the teams may need a rest.

- The sample size is illustrative, but plausible and probably acceptable for most purposes. Actual sample size should be based on a consideration of acceptable precision and available resources (see technical note #2 and the section above on sampling). A larger number of first-stage units are suggested as this reduces the degree of "clustering". If only a few communities are visited, costs will be lower, but precision much less even if the same total number of households are visited.

- In-field computerized data entry may be problematic, for reasons noted. The principle is to provide high quality data. If continuous daily entry is not possible (and thus some computer-software based validation), then the paper questionnaires should be carefully checked (as usual, but perhaps twice). Much more burden lays on the supervisor to check each day's work, so these people become important, and deserve careful selection and training.

- Data entry may be carried out after fieldwork, but with loss of quality and some delay in turning around data. It is better to build in and test procedures early (i.e., involve the data entry persons in training, pretests and practice data entry early). Even if not all the questionnaires are entered by the end of the fieldwork, the process of data entry and checking will itself improve quality, by providing feedback to enumerators about typical errors that arise (Grosh and Munoz, 1996).

Part III. Technical Notes

Attached are stand-alone sections which discuss selected issues in greater detail than appropriate for the body of the report and description of the method. (Each is paginated separately.)

(1) Rapid Measures of Poverty Impact: Criteria and Indicators

(2) Sampling Strategy and Problems

(3) Expanding the Method to Other Projects and Scales

(4) The Use of Participatory and Other Qualitative Methods in Poverty Assessment

(5) Tigray and S. Wollo Road Rehabilitation Project

(6) Annotated Prototype Household Questionnaire

(7) Annotated Prototype Community Questionnaire

Technical Note #1

Rapid Measures of Poverty Impact: Criteria and Indicators

This note summarizes major decisions made (sections I, II) and discusses approaches to adaptation (III) and makes suggestions for data entry, tabulation and presentation (IV, V).

I. Criteria for selection of poverty indicators

A set of poverty indicators is recommended in this method. These are indicators of material deprivation, thus exclude other forms of deprivation. Poverty indicators are grouped into five major categories reflecting important distinctions: "basic needs," "assets," "livelihood," "social services," and "perceived" quality of life. Basic needs refers to daily needs such as food, water, shelter, energy, good health, and nonfood essentials. Assets refers to ownership of typical household (reproductive) and producer items and livestock. Livelihood refers to ability to support the household over a longer-time frame, and includes possession of land and steady non-farm income sources, as well as other "coping" strategies that support many poor households. "Services" refers to access to -- usually external, government- provided-- health care (i.e., not health "status"), education, credit and technical assistance, and other services. Since many are located in towns, this is associated with overall mobility. Perceived notions of quality of life reflect the fact that subjective perceptions of poverty may differ from observed, objective measures; they will, however, likely reflect actual conditions, as well as relative status and perceived prospects for change.

There is some overlap among categories, but these are suggested as they capture major dimensions of material poverty. Five main criteria were used to identify indicators and broad classes of indicators as the most relevant for a rapid assessment of the poverty impacts of employment-intensive schemes. These reflect standards developed in the report of Bilsborrow et al (1997). The indicators have to be (1) meaningful, that is relevant for understanding multiple dimensions of household poverty given the context under study and the nature of the project, and able to distinguish the poor and non-poor (but not necessarily all economic classes); (2) measurable, using a fairly simple, short instrument in a single visit, without the threat of large measurement error; (3) readily manipulable for presentation and interpretation by local planners as well as ILO and other agency personnel, without long and complex analysis requiring sophisticated techniques, knowledge or preparation; (4) useful for monitoring and distinguishing change in poverty status over time, especially in the short-term effects and impacts of the project on basic needs, assets, etc., rather than long-term structural change in fertility, life expectancy, etc.; and (5) minimal, that is provide only the information needed to assess poverty status and change, and not a wider range of variables, in order to speed data collection and processing. The indicators discussed here meet these criteria, and can be gathered with a simple household questionnaire such as in technical note #6.

II. Why not use income or consumption?

Two measures used most often for determining poverty status are total household (per capita) income and consumption. These fail when examined in light of criteria (2) above, as both require extensive and detailed questioning of household members, usually over several visits, if reasonably accurate data are to be generated. Income is often underestimated, and income of the poorest persons (households) in a subsistence economy is difficult to determine as it will come from many different sources, in-kind and in-cash. Similarly, good measures of consumption required detailed questions covering many aspects of expenditures. These measures, even if good data were collected, are also more difficult to analyze, as the data files will need much more preparation and management before any useful measures can emerge. Finally, for all the effort in collecting these measures, each is only a single dimension of poverty, and provides less information on a household's actual state of well-being or deprivation than the class of measures suggested here. The advantage of an income or consumption/expenditure-based measure is its amenability to computation of various poverty thresholds, including the headcount, poverty gap index, and the P_α class of poverty severity measures. As shown below, however, the "proxy" measures used in this method are amenable to the construction of similar types of thresholds to determine the ultra-poor, poor and non-poor.

III. Adapting measures to the local situation

Modifications will be necessary to apply the general method discussed here to the specific situation, including choosing the best indicators and specific thresholds. The five major categories ("basic needs," "assets,"

"livelihood," "social services," and "perceived quality of life" should be kept. The specific indicators and their formulation will vary from site to site.

What are "the best" indicators? In general, the best indicators will be those which meet the five "M's" above as well as possible given constraints. An indicator of water supply is probably not necessary where all people in a region use the same poor source, or for whom fresh rainwater is plentiful (thus, it would not be a particularly "meaningful" measure). The survey planner must draw on knowledge of the site, of communities under study, and the expected impacts of the project. Familiarity with the site and with measures used in other surveys may be helpful. Feedback from a preliminary community-level questionnaire (before pre-test stage) to test potential measures may be needed. Other household survey results and indicators will be helpful, such as food security studies. It is best to rely on multiple sources of information, and seek convergence of opinion. No single source is necessarily best: personal experience may reflect biases of individual observers.

Some examples of how to move from the prototype questionnaire and dummy tables to a specific application are useful. A measure of livestock ("% owning any cattle or oxen") is likely to be used in most rural settings, as livestock are a major multiple use asset. Distinguishing among the very poor and the better off will, however, require identifying additional characteristics of livestock. These may be breed, age, and perhaps purpose (traction or food). Knowledge of their association with economic status is essential: Which livestock are only owned by the richest households? Oxen, beef cattle, hybrid milk cow, camels, horses, etc. may fall in this category, depending on the location. Which livestock are likely to be owned by the poorest, when they get a little money (if only in small numbers, i.e., chickens, rabbits, guinea pigs)? Which livestock are owned by almost everybody? A question in much of Africa about "number of goats" might not distinguish anyone but the absolutely destitute. About 2-3 types of livestock are needed. (Note, livestock is a sensitive question among pastoral communities, and if they are part of the target population, than indirect ways of determining head of cattle, etc. are needed.)

Actual health status (not services) is a difficult quality to capture without physical and clinical measurements (weight-for-height, clinical tests, etc.; and even with those). Where chronic ill-health reigns, questions about "number of days off to illness/injury" may be misleading. Poor people tend to put up with a number of problems: parasites, malaria, back injury, etc., and may under-report everyday diseases. The focus should be on acute crises and injuries affecting adults, which are more memorable and constitute major set-backs and loss of income (cash or in-kind). Indicators of health services must be examined in light of local conditions and service provision. For example, where immunization services are good and statistics indicate very high rates of coverage, there will be little variation and no point in asking households about their child's records. However, as in the study case (Ethiopia), full vaccinations are the exception, and may serve to distinguish those who are marginalized from health care, vs. those who have access them. (Pre-tests are desirable.) This measure may be easier to procure from community health post/center records.

To the extent that the information can be gathered at the community level, this will save time. Information on water and fuelwood sources is an example; poor villagers may all use the same distant source. Certain questions must be collected at the community level for a rapid survey, including average wages, prices, developments projects and other interventions, population in- (out-) migration, and new enterprises, services and facilities.

IV. Turning raw survey data into poverty measures.

The stages of dealing with data include cleaning and checking in the field, data entry and computer-based checking, production of simple statistics and poverty profiles (outlined in a tabulation plan), and determination of and presentation of more sophisticated indices or thresholds of poverty. These items are handled in order, with emphasis on tabulations. (Thresholds are dealt with in section V below.)

Questionnaire responses must be carefully reviewed and potential errors clarified with enumerators (and respondents, if needed) while in the field. Pre-coding of responses, good training and careful supervision are essential, especially if data cannot be immediately entered into the computer (if enumerators are staying overnight, for example, and continuing to other remote locations).

Clean questionnaire responses are entered into a computerized database system, such as Epi-Info. This package is free, readily available, enables skip patterns and screening of responses to improve quality, allows for data management and variable manipulation, and produces simple (univariate and bivariate) statistics. Data entry is handled by a trained data entry clerk during fieldwork as much as possible, following the "rapid" ideal of continuous data entry to the extent possible given local constraints (see "implementation" in Part II B.7) Codes for missing data should be specified in advance. Household data ideally would be entered as single observation (line) per household, with details on project employment and other intra-household variables summed to the level of the household, greatly simplifying the analysis and management of data files. For basic poverty indicators, there is no need for a

separate file with a household roster with lists of individuals, as this is more information than required for most purposes (see dummy tables of output: only information on the head and household-level data are needed). If desired for purposes of project assessment, a separate file (roster) of all persons participating in the project may be created from a question regarding project-related employment in the household questionnaire. Community-level survey data will be managed in a separate file with a single line per community. Selected household and community-level statistics would then be presented jointly in tables of statistics for each region.

Raw data are then cleaned and checked as with any other survey data. Frequency tables for each variable are produced, which allow "range-checks." If any variable is much smaller or larger than expected, it will show up, and can (hopefully) be corrected. If landholdings are not over 10 ha, then 50 ha should look suspicious. This technique does not correct for errors within range, i.e., entering land holding as 5 ha when it is really 2. There is no substitute for careful data entry, so this should not be left to an untrained, careless person working quickly. Simple cross-tabulations of major indicator variables should be done, such as mean and minimum and maximum land-holding per village. Inspection of these statistics by informed persons, such as the fieldwork coordinator and enumerating teams may show other problems. During this process of checking data, a codebook would be created to document all the variables and new variables created with text descriptions and range/means.

For the baseline survey, a number of statistics will be generated; selected ones used to represent poverty status in reports. Follow-up surveys will generate matching statistics, and also compute "change over time." Means (standard deviations), medians, ranges, proportions, and yes/no measures will be used, since poverty indicators are coded differently, data can be represented in different ways, and different statistics represent different things. Mean size of land-holding is an indicator of <u>average</u> land-poverty in an areas, for example, while the same data can generate "% of households with .25 ha/HH or less" which is a better measure of land-poverty. The difference between the minimum and maximum size of holding could also be used as a crude measure of land-inequality. This data processing will be supervised by the survey manager, who should have a good understanding of statistics. Standardized tables should be generated for background data for each region, contextual information, and poverty indicators for each poverty category, i.e., basic needs, assets, livelihood. Variables can be generated at the level of the household as well as per capita, when divided by the number of persons or the number of "adult equivalent" persons in a household (i.e., weighting the consumption or labour provided by females and children by a factor less than a male member).

A set of "dummy tables" are attached to provide an indication of these steps and outputs. Dummy Table I-a, for example, shows a suggested format for tracking change in simple poverty-related indicators over time and across study areas. These statistics, such as "percent of households owning any cattle or oxen" in Region A (study site) and Region B (control) are close to the original responses and require little manipulation. Graphs and bar charts can be used, too, to present proportions. Contextual measures that should be recorded for each region include population size, mean age and size of household, km of road, number and type of facilities, etc. For the follow-up survey, similar tables will be constructed, with a focus on identifying the direction and magnitude of "change in status".

Some general guidelines on tables follow. "Dummy" or blank tables such as those attached should be prepared in advance of the survey, as part of planning and decision-making about indicators and specific questions. Their construction will facilitate faster turn-around of survey data, as well as guiding the collection of data from other sources: population size, schools, roads, etc. Each table should be clearly identified, with a descriptive title, definitions of variables, level of analysis or units clearly noted (i.e., whether per household or per capita, hectares or acres, etc.), the size of the sample, and geographic definition of study sites or regions. Tables should be formatted to present data for: (1) the Project Area vs. Non-Project Area, and for (2) Project "Participants" vs. Non-Project Participants within the study area. When viewed together, these will indicate changes in the region due to the project, and changes in status in households associated with participation (i.e., employment) in the project.

Poverty profiles can be constructed to show the distribution of poverty across other sub-sectors of the population, such as female-headed households, minority groups, households more than 5 km from the road, and others that may be of interest. Table V-e shows a profile using thresholds. Poverty profiles for the population can be represented using direct poverty-related indicators, such as "mean size of holding," " % landless," or "% owning only low-value assets" for each poverty category, as discussed above. These measures are the most transparent and closest to the responses given in a survey. Cell sizes, or the number of households used to generate estimates for each row/column item in a table, will be small for many sub-samples, yielding less precise and perhaps only suggestive statistics.

Poverty profiles can also be generated to indicate thresholds used in most poverty studies, such as the proportion "ultra-poor," using measures of food, land and nonfarm income sources, and other "proxy" indicators. This approach is described in the next section. These measures require more sophisticated data management, and

should not be used to the exclusion of the simpler, more direct and more transparent indicators discussed above.

This discussion has focussed on household-level measures; community-level data will be reviewed, cleaned, tabulated, checked, analyzed for each region, and presented in basically the same way. Statistics from both sources will be combined in tables, such as Table I-a, which shows community-level measures of travel time and school attendance alongside household-based measures of land holdings and income sources.

V. Poverty "lines" based on rapid survey data

The RAPI method does not use a single, uni-dimensional continuous measure such as income or consumption, which--with all its shortcomings --is highly amenable to the construction of a "poverty line." However, with some effort, direct measures of food, water, possessions, land, etc. can be used to construct thresholds, too, which will be a convenient way of presenting poverty status and change. The steps required to get there are somewhat involved, however. These types of non-monetary poverty thresholds have a conceptual foundation and empirical counterparts. In a study on Ethiopia, for example, the "ultra poor" were defined as households (with 5 members) with less than a hectare of land and no employment (World Bank, 1993).

At least two thresholds of poverty, the "ultra-poor" and "poor" are recommended, as well as one or more categories of non-poor. The "ultra-poor" line is the lower threshold at which households (or persons, when multiplied by number in the household) do not get "enough to eat" : they can be considered "highly deprived and extremely vulnerable" to any external shock or disruption. The "poor" threshold indicates those who have just enough to eat most of the time, plus some for minimal non-food essentials, such as lighting, soap, or shoes. They are still "highly vulnerable." Above the poverty line are households (persons) who may be more comfortable and less deprived at present, but still vulnerable to shocks, as they have little of a cushion. The more affluent or prosperous classes lie well above the poverty line and have secure livelihoods, and above average levels of consumption.

These thresholds can be used to indicate incidence as well as severity of poverty, that is, the degree of deprivation of the poor in an area. A population which is 40% "poor" and 10% "ultra-poor" can be considered better off than if it were 20% poor and 20% ultra-poor. In the latter case, fewer persons fall below the poverty line, but a larger number are desperately poor.

Following the same reasoning, one can define "poverty of food" or "poverty of health," for example, which reflect a household's (persons) degree of deprivation from an agreed upon minimum level of "consumption". (These disaggregated poverty lines have been discussed in poverty literature, too.) These are absolute measures which are comparable over time, allowing comparison of the proportion of "ultra-poor in basic needs" in the project impact area before road construction (for example) with the proportion two years later, and five years later (vs. the same statistics for a control area).

Along these lines, the recommended approach here is to define four classes of poverty status: the ultra-poor, poor, modest and prosperous. Those who are poor or ultra-poor are below the "poverty line" while the rest lie above it, varying in their degree of security, or vulnerability to falling below the line. Following the categories used in this report, poverty of basic needs, assets, livelihood security and services can be defined, as in Tables Va, b, c, and d. Subjective measures of poverty are somewhat harder to classify in this way, and Table V-e is intended to be suggestive. Recommended definitions of poverty are as follows, with more concrete applications shown in accompanying tables:

(1) The "ultra-poor" are those who are "extremely deprived and highly vulnerable" to any external shocks, such as drought, loss of work, illness. A household may be "ultra-poor" by one measure, say food consumption, but "poor" by another. A household which is "ultra-poor" by all measures is indeed in a miserable state. Reflecting the major indicators used in this method, the ultra-poor would report extremely inadequate consumption of food, water, etc.; possess virtually no goods or tools, own no land, and make few purchases of nonfood essentials; have low farm production, irregular work, and few other sources of income/food and are often reliant on coping strategies; suffer chronic poor health which frequently disrupts daily activities and lack access to health services; are illiterate and lack access to schooling. They may report no improvement in quality of life, but perhaps a decline since last year.

(2) The "poor" are those who are "highly deprived" and "vulnerable" to external shocks. A household which is "poor" by all indicators reports barely adequate consumption of food, water, etc; possession of few goods, tools, some (lower value) livestock and (if any) very little, marginal land; they have barely sufficient food/farm production, few work (income-generating activities) to support the household, and reliance on coping strategies; chronic health problems which disrupt work occasionally; less than primary school education and limited access to schools for children. They may report no perceived change or some improvement or decline in quality of life over time.

(3) "Modest" households are just above the poverty line, but still somewhat vulnerable to drought, illness, loss of work, etc. They usually consume an adequate diet, and have access to water and fuel; possess basic tools, household items, and livestock and adequate land to support the household; they also have a reasonably steady source of nonfarm income or work; the have some education and access to schools for children. They may report change for better or worse in quality of life.

(4) "Prosperous" households are well above the poverty line and secure from most shocks. They consume adequate, high-quality food, water, fuel; possess expensive goods and livestock; have more than adequate land; generate substantial farm and off-farm income; are relatively well-educated for the population, and send children to school; may report change for better or worse in quality of life. This category covers a range from prosperous peasants to rich businessmen, but since the aim is to determine change in poverty status, such a wide range is considered acceptable.

Because these measures remained disaggregated and can be directly related to specific questions in the survey, these thresholds are more transparent and comprehensible than a single abstract and composite measure; although such a composite indicator of "poverty" status can also be constructed: see below. These separate measures of poverty can be aggregated to define households which are "poor" or "ultra-poor" in basic needs, assets, livelihoods, etc. as well as in overall status, by aggregating them using some algorithm. Used jointly, they provide more information on actual conditions than would a single measure based on total income. Households in the region under study may be water and energy poor, for example, but possess adequate housing and have adequate land to provide for subsistence needs most of the time.

How should one determine where and how to draw these lines for a specific site? Which variables will be used? At the level of a specific indicator, say "food", the determination of who is ultra-poor will require manipulation of one or more food consumption indicators to represent conditions shown in Table V-a, "Basic needs poverty." Adequacy of food consumption is difficult to measure, so it may represent a "worst case" scenario for determining thresholds. Several indicators should be examined carefully. Depending on familiarity with types of foods, quality, and how the poor procure and spend on food, some reasonable cut-off points can be determined, and a household placed in a specific class. Households who consumed meat last week, along with the main staples and a variety of foods, and who ate at least 2 cooked meals a day, would be placed above the food poverty line. Those households who barely ate one cooked meal a day and whose diet is restricted to staple grains are likely "ultra-poor," especially if they also relied on food aid. (This assumes that food is distributed among all members equally, which may not be the case.) The same type of procedure, somewhat simpler for most variables, would be followed for other categories and variables: ultra-poor in energy source, ultra-poor in household assets, etc. Many variables are likely to be much simpler. Decisions (algorithms) should be documented. As time allows, some sensitivity tests should be performed. (i.e., "How much does the proportion of ultra-poor in assets change if it is calculated in another way?")

At a higher level of abstraction, an algorithm for determining whether a household is "basic needs poor" is suggested. An example is the following: a household which is "extremely deprived" of a majority of basic needs is considered "ultra-poor in basic needs." A household which lacks adequate and regular food, for whom collection of water is a burden, who rarely if ever make minimal purchases non-food essentials (such as candles or medicines), and who live in substandard housing will be considered ultra-poor. Not all of these indicators need be used in any case, but at least 3 should be used so a majority is possible.

Dummy tables V-a through V-e lays out suggested definitions of "basic needs" and other measures. "Poverty of assets" and other goods is based on ownership of household items/tools, livestock and land. Asset-based non-poverty status is determined by whether a household owns any high value items, and degrees of poverty by ownership of low only, or low and some medium value items. "Livelihood poverty" is based on three elements: having access to land and farm-based income sources, non-farm work or income sources, and reliance on coping strategies. At least two variables, such as access to adequate land to support the family and having other sources of non-farm income/work should be used in combination. "Poverty of services" is based on health services, education facilities, and mobility and access (distance/time) to towns where technical assistance, banks, shops, etc. are located. This table may be based on community-level measures of distance to health clinic, number of schools in the area and attendance rates, and travel time to a major town. This would thus define communities as "ultra-poor, " etc., by selected measures. Table V-e suggests subjective quality of life thresholds, one based on current perceived adequacy of quality of life. A second could be based on perceived future prospects (i.e., a person with a positive outlook on conditions would be considered "prospect-rich").

At higher level of abstraction, a composite indicator based on an aggregate of measures for different

poverty categories can be calculated. Dummy Table V-g suggests a way to present this type of composite indicator as a summary of poverty by type across the study region and over time. The table can show all those below the poverty line--those either "poor" or "ultra-poor" by this distinction -- or can retain the distinction between ultra-poor and poor. A category of "overall poverty status" can be determined based on a household's standing on other poverty categories. For example, a household that is ultra-poor in a majority of dimensions would be considered "ultra-poor" in overall poverty status. This type of composite, summary statistic should be examined carefully before presented and interpreted in publications, and should not be presented on its own. The higher level of aggregation loses much of the richness of specific indicators and combines different dimensions of poverty without weighting them.

In general, results from the threshold measures must be interpreted carefully. Assessment of the net project impact on poverty in the area will take into consideration who participated, whether other crises or positive changes occurred, and many other factors, including how poverty is defined and measured. The most transparent direct indicators should not be left out of presentations, tables and reports, even if these artificial thresholds are constructed and used. Definitions, the justification for decisions made, and specific variables used to construct these measures should be documented in each project, so that the same measures can be used over time to show real change. Simple definitions should be clearly stated in tables to aid readers.

Technical Note #1

Rapid Measures of Poverty Impact: Dummy Tables

Table I-a.
Suggested format to track "Selected Simple Poverty-Related Indicators in Study Sites over Time" (No thresholds needed)

Suggested Categories and Indicator to Use*		**Selected Poverty Indicators by Region and Year**							
		Region A					Region B (Control)		
		Baseline	Follow-up #1 P	Follow-up #1 NP	Follow-up #2 P	Follow-up #2 NP	Baseline	Follow-up #1	Follow-up #2
Demographic	Population of study area								
	Mean size of household								
Transport	mean time (hrs) to travel to town								
	% HH with regular bus <1/2 hour								
Social Services	% <12 attending school regularly								
	# primary schools								
(education, health facilities)	distance to nearest fully-staffed clinic								
	number of health clinics								
Livelihoods	mean size of land-holding/household								
(land ownership, nonfarm income)	mean ha per person								
	% with any regular non-farm income								
Basic Needs	% HH who spend disproportionate time to collect water								
	% HH who spend long time to gather fuelwood								
Assets	% owning any oxen								
Subjective perceptions	% who think quality of life is better than last year								
Sample size									

Notes: Estimates are based on household survey data from a random sample, plus community level interviews for information on facilities, schooling, etc. and transport studies for information on transport....
"P" stands for "participant" households, those ever employed by the project; "NP" stands for non-participant households.

**These are meant to illustrate the types of basic data that would be needed. Specific measures can be expected to vary according to the site.*

Dummy Table V-a: Suggested definition of poverty based on deprivation of basic needs

	Definition of "Basic Needs Poverty"			
	Ultra-Poor	**Poor**	**Modest**	**Prosperous**
Deprivation of	*"extremely deprived and highly vulnerable"*	*"deprived and highly vulnerable"*	*"not deprived, still vulnerable"*	*not deprived, not vulnerable"*
Food	totally inadequate; never eat meat and short on staples; sub-standard # cooked meals/day	often inadequate; rarely eat meat; only 1-2 cooked meals /day	sometimes eat meat, >2 cooked meals/day	often eat meat; 2-3 cooked meals
Water	extreme burden; very long time to collect and/or very poor quality water	burdensome; long time to collect and/or very poor water	small or no burden, relatively close and clean	no burden
Shelter	inadequate, inferior materials (livestock under same roof); no sanitation	barely adequate, simple materials; no sanitation	adequate, can afford some improvements; latrine	more than adequate; expensive materials
Energy	extreme burden; very long time to collect (scarce)	burdensome; long time to collect	small burden (gather or purchase)	no burden
Nonfood essentials	rarely or never purchase	sometimes purchase	often purchase	regularly purchase
Health	majority of adults chronically ill or disabled and often unable to work	adults often ill or disabled and unable to work at times	often ill or disabled, but does not often interrupt work	ill or disabled, but does not interrupt work as a rule
Expected changes after "project"	*improvements in food, nonfood essentials, perhaps other measures over long-term*	*improvements in food, nonfood, shelter; perhaps other measures over long term*	*improvements in food, nonfood, shelter, water, perhaps others over long-term*	*improvements in housing, nonfood (assets -- other table)*
Basic Needs Poverty Status	Household is placed into one of four categories for each of food, water, etc if meet criteria listed. Household is "poor in basic needs" if the meet majority of criteria (i.e., poor in majority of rows).			

Notes: Each would be defined using specific variables, for example: "extreme deprivation of water refers to households who must spend 2-3 hours a day gathering water for drinking purposes from an unprotected source." Not all of these measures may be used in a given survey, so the total number of criteria could be less. It is recommended that at least 3 be used, say food, water and health; or food, nonfood items and fuelwood. Selection should depend on local conditions (problems) and results of a pretest.

Dummy Table V-b: Suggested definition of poverty measure based on deprivation of "assets"

Deprivation of	Definition of "Poverty of Assets (and Other Goods)"			
	Ultra-Poor *"extremely deprived and highly vulnerable"*	**Poor** *"deprived and highly vulnerable"*	**Modest** *"not deprived, still vulnerable"*	**Prosperous** *not deprived, not vulnerable"*
Household goods & tools	possess only a few "low value" household items and hand tools*	possess most or all low-value goods, some medium value household items and tools	possess all low-value, numerous medium value items and tools	possess all low-value goods, some medium value items, some of high-value items
Livestock	possess no or few low-value livestock	possess low value livestock and few medium or high value	low-value, medium value livestock, a few high-value	possess numerous high-value livestock
Land (ownership)	own no land	own very small, marginal plot	own small plot	own large (above average) plot
Possible changes since last year	*none, or had to sell items to raise cash*	*none; or may have added some, or sold some item/land for cash*	*no or modest net addition/sale*	*added since last year; if sold any, still well-off*
"Asset" Poverty status	Household is placed into one of four categories if the meet 2 of 3 criteria for ownership of household items & tools, livestock and land.			

*These are indicated in the household questionnaire, but refer to very simple, common items such as blankets, pots and pans among "low-value" items; a radio or bicycle among "medium value;" and vehicle among "high value" items.

Dummy Table V-c: Suggested definition of poverty based on deprivation of means of livelihood

	Definition of "Rural Livelihood Poverty"			
Deprivation of	**Ultra-Poor** *"extremely deprived and highly vulnerable"*	**Poor** *"deprived and highly vulnerable"*	**Modest** *"not deprived, still vulnerable"*	**Prosperous** *not deprived, not vulnerable"*
Farm-based income	none or extremenly low farm production; live from non-farm work	production barely adequate for subsistence and some cash sale; must supplement with non-farm sources	own production adequate for family subsistence and sale; may supplement with non-farm income	above average production to meet family needs and provide surplus; do not need to supplement with non-farm sources
Nonfarm employment / income	irregular, low-skilled work only option	live from low-wage work; occasional wage work/ non-farm income supplements own production	have skilled job or nonfarm enterprise; may be occasional supplement to farm production	have regular source of high-wage source of non-farm income
Coping strategies	typically use numerous strategies to survive: sell assets, food aid, remittances	use 1-2 strategies regularly but not main source of income/food	rarely use any, or perhaps 1-2 for short period of drought, famine	regularly send aid to others
Expected changes after "project"	*project wages become major source of income*	*project wages supplement farm income, trade more*	*will not work on project, or only short time; work in shops, trade*	*will not work on project, start new enterprise*
"Livelihood" Poverty status	Household is placed into one of four categories if the meet 2 of 3 criteria for land-based, non-farm or coping strategy indicators of livelihood security.			

Dummy Table V-d: Suggested definition of poverty based on deprivation of social services

	Definition of "Poverty of Services"			
	Ultra-Poor	**Poor**	**Modest**	**Prosperous**
Deprivation of	*"extremely deprived and highly vulnerable"*	*"deprived and highly vulnerable"*	*"not deprived, still vulnerable"*	*not deprived, not vulnerable"*
Health Services	virtually no access to any modern health care (i.e., great distance; no immunizations; cost beyond ability to pay)	limited access to modern health care; children mostly immunized	can access modern health care most of the time, children are immunized	have best access available in region, all immunizations
Education	children do not go regularly to school	most of children usually attend school	children attend at least primary shool	children attend school, can go to high school
Access to other services (TA, credit)	do not travel often to towns, rarely received visits from extension agents	rarely travel to town; sometimes receive visits	can travel much of the time, have some access to extension services	travel when desire; full access to other services
Expected changes after "project"	*improvements in mobility-based access, and in health & education over long-term*	*improvements in mobility-based access, and in health & education over long-term*	*improvements in mobility-based access, and in health services over long-term*	*greater mobility; car ownership?*
Poverty of Services	Household (community) is placed into one of four poverty categories if meet majority of criteria in each column.			

Notes: Each would be defined using specific variables; items mentioned are given as examples based on questions in prototype instruments.

Dummy Table V-e: Working definition of poverty based on subjective perception of material deprivation

Deprivation in terms of	Definition of "Subjective Poverty Status"			
	Ultra-Poor	**Poor**	**Modest**	**Prosperous**
	"extremely deprived and highly vulnerable"	*"deprived and highly vulnerable"*	*"not deprived, still vulnerable"*	*not deprived, not vulnerable"*
Current status	perceive quality of life as very poor, totally indadequate	QoL is bad, but could be worse	Qol is entirely adequate for current needs	QoL is excellent
future prospects	have no or little hope that things will get better	have some hope that it will improve	have modest expectations; things will probably improve	expect QoL to get better
Expected changes after "project"?	*hope that perceptions will change for better, but QoL may seem worse in comparison to others*	*expect improvements in perceived status, prospects; may decline*	*expect continuing positive outlook,*	*positive outlook, expected to benefit*
Subjective Poverty Status	Household is placed into one of four categories for each of the two indicators (separately) if meet criteria in the column. No overall indicator yet.			

Notes: Each would be defined using specific variables; items mentioned are given as examples based on questions in prototype instruments. This is a work in progress, and is only presented here to suggest directions for further work. Households could be poor in current perceived status, and rich in sense of prospects. These categories are thus distinct, one measuring judgement of the present and the other of promise and expectations.

Dummy Table V-f: Suggested format for "Baseline Asset-Poverty* Profile for Region A by Characteristics of Household Head, using Threshold Measures"

Household Characteristic	**Proportion of Households in Region "A" (9/1998) by Asset-Based* Poverty Status and Selected Household Characteristics.**				
	Ultra-Poor	Poor	Modest	Prosperous	Total
Male-headed household			*(expect more here)*		*100 %*
Female-headed household (FHH)	*(would expect more FHH to fall here)*				
Illiterate head of household (no primary school)	*(expect more here)*				
Member of minority (ethnic/religious) group	*(expect more here)*				
Located more than 2 km from main road (project)	*(expect more here)*				
Landless	*(expect more here)*				

"Notes: Estimates are based on a random household survey sample of 'N' households in Region 'A'."

**Asset-based poverty measures are defined in Table V-b. This type of table can also be constructed based for threshold-based poverty measures of deprivation of Basic Needs, Livelihood, and Services. It can be constructed using simpler, direct measures such as those in Table I-a, i.e., "% owning any cattle".*

Dummy Table V-g: Suggested table to represent "Change in Proportion Below Poverty Line Over Time by Region"

Table # : Summary Table of Proportions Below Poverty Lines by Region and Time of Survey											
Poverty Line Measure	**Baseline Situation**		**Follow-up Survey #1**				**Follow-up #2**				
	Region A	Region B	Region A			Region B	Region A			Region B	
			Project participants (p)	Non-Participants (NP)	Total		P	NP	Total		
Basic Needs	*50%**	*38*	*35*	*30*	*33*	*37*	*35*	*25*	*30*	*33*	
Assets											
Livelihood	*60*	*65*	*20*	*40*	*30*	*60*	*50*	*40*			
Social Services	*80*	*75*	*50*	*60*	*55*	*70*	*45*	*50*			
Overall poverty status											
Sample size											

Notes: Proportion under the poverty line refers to the percent of households surveyed who are either "ultra-poor" or "poor" according to specific criteria for each class, i.e., basic needs,assets, livelihood and social services. Overall poverty status is determined by the intersection of other measures; proportion below the overall poverty line are below the poverty line on a specified combination of the other four thresholds.

**Numbers in cells are merely suggestive. There may be apparent improvements or worsening over time on different indicators for participants, depending on who participates in the project, other crises and problems, etc. This table should not be produced, presented or interpreted without careful examination of all other tables, statistics, data on project sucesses, etc. For example: are participants those who most needed work, or those who are closer to it? Are non-participants those who were better off already, or those who were too far away to participate?*

Technical Note #2

Sampling Strategy and Problems

This note discusses sampling issues related to RAPI method, in order to clarify the principles and reasoning and highlight potential problems in application. This is not a proper primer on sampling, so the reader is referred to standard texts on sampling theory (Kish, 1965). One clear and simple overview, with many additional definitions and step-by-step procedures outlined, is Yoon (1992). Frerichs (1989) discusses computer applications to assist sampling.

(1) Sampling approaches

Sampling strategy refers to method of selection of households (or other units: individuals, farms, etc.) to be interviewed through the field survey. Sampling can be conducted randomly or not. Random selection is recommended here. Broadly, random selection methods include "simple random sampling" and variations such as stratified sampling, systematic sampling and cluster sampling. Non-random selection includes methods such as judgement or purposive sampling, mentioned below.

Random sampling from a well-defined domain with known population, such as from within the geographic boundaries of the study site, enables survey results to be statistically generalizable to the entire study site. The degree of sampling error in sample estimates of population measures can be calculated through standard formulae (Yoon, 1992). Random sampling --correctly done--will produce unbiased poverty statistics with a known level of precision, statistically representative of the larger, target population, such as the study site. This is essential for gauging poverty impacts over time. In contrast, if the aim were "gaining a feel for the poverty status and needs" of the population than a non-random, non-survey based method might be used.

When individual units (households) are randomly sampled from a complete list of all units in the population, this is a "simple random sample." This is not usually possible for household surveys, in practice, because of the level of detail required. Stratification is used when it is expected that sub-sections of the population will vary a great deal on certain characteristics of interest, say urban vs rural areas and their income levels, education or fertility. This enables more precise estimates of particular measures that vary considerably from one "strata" to another. Stratification is not necessary for the local or regional level survey of fairly homogeneous rural populations, and is not recommended here as it introduces other problems in aggregating the data for analysis.

Cluster sampling uses population "clusters" (geographic areas or administrative boundaries within a province, census tracts within a county, etc.) to simplify selection of households and to reduce costs. Use of clusters avoids having to list all households in the larger area of interest. A number of clusters are randomly selected from all within the larger area of interest. Generally, for those that are selected, households are listed within and randomly selected. (Rapid methods avoid listing.) The use of clusters also simplifies fieldwork and considerably reduces costs, as the enumerators travel to fewer sites: say only 30 different areas, rather than 200). Since cluster sizes are likely to vary, to avoid having to weight the household level data, the first stage units are selected with probability proportional to size, i.e., larger units will be more likely to be selected (Frerichs, 1989, describes the procedure.)

Cluster-based sampling can introduce other problems which must be kept in mind. Since households are selected from pre-existing clusters, those within a cluster are more likely to be alike one another than if they were selected from a completely random sample. Clusters will represent neighborhoods or regions which are more urbanized and industrialized than others, more remote and subsistence-oriented, or settled by different ethnic groups. This "design effect" of clustering means that the final sample size must be larger to enable suitably precise estimates. Generally, the design effect is considered to be on the order of 2, or even as high as 4, in national sample surveys in developing countries (Bilsborrow et al, 1997; Macintyre, 1995). This means that a cluster-based sample usually should be at least 2 times the size estimated based on simple random sampling. This can increase costs, but the savings from targeting fieldwork to fewer sites usually make this design worthwhile. Usually, 30 randomly selected clusters are recommended to minimize the design effect and provide cluster (community-) level estimates (Bilsborrow et al, 1997). With limited funds, perhaps only 8-10 clusters (villages) might be selected in some studies. This severe reduction in number of clusters will increase the design effect, reduce precision of household-level estimates, and preclude precise community-level measures. This may be an acceptable trade-off but should be kept in mind.

Judgement or purposive sampling of a few villages or communities for study based on their apparent "representativeness" according to several criteria is not recommended as a standard practice. There is no way to know whether they are indeed representative of the entire impact area, and instead they constitute case studies. This is of course a valid strategy for selection of sites to study, and has been the approach of many project evaluations. It is a worthwhile approach for many research questions, especially ones which aim to elicit the "why" and "how" of a phenomena, such as why poverty exists, and how some benefit from the project.

Similarly, purposive sampling of specific households known to be involved in (employed by) the project has some benefits, but many disadvantages for the purposes of the RAPI effort, as defined in part I. In one approach, interviews could be carried out with a number of individuals working in the project who are considered to be representative, i.e., of different types of households or work contracts. This would provide valuable insights into project mechanisms and impacts, but would not meet the criteria of the RAPI endeavour, i.e., to provide the statistically valid data on poverty status in a known area over time. A better option would be to randomly sample project participants (households) from a carefully constructed list of households known to be employed in the project (during a known time period); this list could be compiled from project records. Data on this sample of households would indeed provide more accurate information at lower cost on the direct benefits of the wage element and labour-based methods; such a sample would have smaller variance, and a smaller size sample could be used than when sampling the larger population. These data would be useful to gauge variation in project impacts on different households, varying (say) by size of household, prior poverty status, location, work contract, etc.. Two separate random samples of participants over time could be used to compare change in average status over time among participants.

Problems arise with this sample, however. It is only representative of direct project participants, and is not generalizable to the geographic area. Participants are likely to vary systematically in poverty status (and other characteristics, such as location or disability) from non-participants. Furthermore, perhaps more importantly given the justification for RAPI, the long-term impacts which are expected due to the growth of transport, establishment of other local industries, multiplier effects and other indirect effects will not be adequately captured by interviewing only those involved in labour-based activities. For these reasons, the recommended sampling strategy is based on a geographic region.

If, for a particular application, greater precision is needed in the statistics on project participants alone (i.e., the for cells labeled "P" in dummy tables in technical note #1), then a larger overall sample size is needed for the "cell size" to be adequate. This size would be estimated based on a notion of the proportion of households in the study site who are expected to be participants; if about 50% of local households are expected to participate, then random sample from the geographic area should be twice as large. This is likely to provide a sufficient number in the "participants" category to provide the desired level of precision and confidence, as discussed under sample size considerations below; it also provides a sample which is generalizable to the geographic area. However, the cost of this option may be too great. Alternatively, a separate random sample could be drawn of households "participating" to supplement the geographic-area based sample. This would provide two samples, potentially overlapping: one is representative of an area, and the other representative of wage-earners, or direct project participants. A targeted, smaller, and more efficient sample of participants would be possible. Any of these alternative approaches have implications for the cost and complexity of planning, field operations, data management and analysis, and probably do not constitute "rapid" surveys.

(2) Sources of Error in Sample Surveys

Error is introduced in any sample survey, simply by not interviewing all the individuals in the population. The estimates of poverty, for example, may be slightly higher or lower than the true level of poverty in the population. This sort of "sampling" error can be calculated, and a confidence interval provided for each estimate. It can be reduced by increasing the sample size. However, increasing the sample size is not the obvious solution to improve quality of survey data, as other "non-sampling" sources of error are aggravated as the sample size increases.

Non-sampling errors are introduced through procedural errors at all stages, from questionnaire design to interviewing procedures and supervision, data entry and cleaning. Much non-sampling error can be controlled or reduced through proper training of enumerators and their field supervisors, and through careful design and pre-testing of the questionnaire. Pretesting and ongoing supervision of interviewing to determine and repair systematic biases (leading questions, lazy enumeration) is necessary. Careful oversight of completed instruments (questionnaires), data entry and validation (such as range checks built-in to data entry software) are important.

Another source of error is systematic non-response, as when households which are "not at home" consistently differ from others interviewed, and are similar to each other: They may be the richest in the area who area away at market or attending to business, or the landless poor who are off working in another village/farm. Either scenario would introduces clear biases; in the former case, data would consistently over-estimate poverty (more poor are home to be interviewed), and the latter case would under-estimate poverty. If interviews are conducted only mid-morning, some households may have no one at home, and these may consistently differ from those who remain. Survey teams should aim to reach communities at a time when most are likely to be home, or nearby. Non-response also occurs

when particular questions are ignored, for example particularly sensitive questions on income (fear of the tax-man) or personal behavior. Those who do not respond to the question may be systematically different from everyone else, and their missing responses bias the results.

Non-sampling error can be introduced by improper sampling, such as choosing the wrong sample frame or none at all. Interviewing only land-holders (based on land registries, or people benefiting from an irrigation scheme) will leave out landless. Interviewing passers-by "at random" in a village is not the same as "random sampling." Selecting a "convenience" sample of households along a road or in town are common ways of introducing errors. If authorities direct the research team to specific communities, rather than allowing a random sample from an area, then important biases are introduced; these are more likely the most prosperous villages, not the poorest.

For these reasons, a small, carefully collected random sample of a size sufficient to serve the purposes of the exercise is desirable, rather than a larger and poorly supervised effort. Careful planning in questionnaire design is needed: misleading or confusing questions can be fixed during pretest. Attention to the quality of data collection; i.e., the people hired to run the survey and their training, supervision and support during fieldwork is essential.

(3) Sample Size Calculation

Calculation of sample size for a binomial variable such as "poverty status" is based on consideration of the desired degree of precision and level of confidence, along with a prior estimate of the statistic to be determined. This may range from 30% poor to 90% "poor" depending on the variable and population; a figure of 50% is often assumed because this is the "worst case" scenario when determining sample size needed to produce current estimates. The standard formula is $n=(z^2\ pq)/d^2$; where "n" is the sample size, "z" is the value of the standard normal deviate (1.96, for a 95% confidence interval which is assumed here), "p" the estimated level of poverty for the population, q is 1-p, and d the desired level of precision (i.e., +/-5%).

As illustrated in Bilsborrow et al (1997), a simple random sample of 96 would suffice to produce an estimate within +/-10% of the true value, 95% of the time. Measures of poverty (and assessment of change over time) of greater accuracy require a higher degree of precision, but this comes at considerable additional cost. Furthermore, most samples in practice are not actually simple random samples, but are cluster-based designs. The design effect due to sampling clusters of households --likely to be more similar to one another--increases sample size needed by a factor of over 1.0, and the figure 2.0 is taken as a convenient multiplier (Bilsborrow, et al, 1997) although in reality the actual design effect may be much larger (Macintyre, 1995).

The following table summarizes different sample sizes needed for different degrees of precision and estimates of poverty status in a population, assuming a design effect of 2.0 and confidence level of 95%. Larger design effects would increase the sample size by a proportionate factor (i.e., a design effect of 3.0 would mean multiplying the figure in the following table by 1.5); greater confidence in estimates similarly requires larger sample size.

Table II-1: Sample Size Calculations (95% confidence interval)

Estimate of % "poor"	Degree of precision desired									
	+/-1% (d=.01)		+/-2%		+/-5%		+/-8%		+/-10%	
	SRS	Deff=2	SRS	deff=2	SRS	deff=2	SRS	deff=2	SRS	deff=2
10%	3457	6915	864	1728	138	276	54	108	35	70
25%	7203	14,406	1800	3,600	288	576	113	126	72	144
50%	9604	19,208	2401	4802	384	768	150	300	96	192
75%	7203	14,406	1800	3,600	288	576	113	126	72	144
90%	3457	6915	864	1728	138	276	54	108	35	70

Note: SRS = simple random sample; deff= design effect due to clustering.

For determining sample size needed to detect real changes over time, the magnitude of the expected change (i.e., a 2% drop, a 10% drop or a 30% drop) must also be considered, as well as an estimate of current poverty for a given variable. Detecting with confidence a drop from 50% to 45% over two years in a site requires at least a 2% degree of precision: the confidence intervals would thus be 48-52% for the first period and 43-47% for the second, thus indicating a non-random change. For comparing estimates across control and study sites, i.e., attributing change to the presence of the project rather than other factors, the same considerations hold. If a given poverty measure is at 80% in year "0" in both sites, and assuming a 5% precision level and 95% confidence, then a sample size of over 576 in each site (with deff=2) will be more than adequate to detect a drop in poverty in the study site (using this measure) to 65%; this size is barely adequate to attribute it to the presence of the project, since the same measure declined to only 75% in the control site during the same period. As the figures in the above table indicate, however, this sample size would not be adequate to detect (with reasonable confidence) smaller changes or changes in proportions where the initial level is around 50%. Many indicators can be expected to change more dramatically, so a 5% precision level will probably be adequate for gauging change in poverty status for most indicators. Furthermore, a large number of measures will be used and documented over time. The surveys will generate a large body of evidence, and broad trends and patterns will probably be quite helpful in gauging impacts in practice. If, over three survey periods, a large number of indicators show a consistent decline in the study site, but not in the control area -- even though confidence intervals overlap because of small sample size --then it is still possible to conclude with reasonable confidence that poverty is declining due to the project.

(4) A rotating panel design

An alternate but more complex design would allow for some repeat visits to the same households. This would provide measures of change in poverty status of specific households over time, and of selected communities, rather than solely at the level of the study area as a whole. This rotating panel design is used in many national sample surveys to provide longitudinal data. The principle would be applied to the RAPI method as follows.

One-half (for example) of the original community "clusters" (say, 15 of 30) are selected at random for the second follow-up. Repeat visits are made to the same households as in the baseline to provide "panel" data. Another sample of new communities is drawn from the original sample frame to make up the rest of the sample. For the final (the third) survey one- half of the clusters who were visited twice are selected at random and revisited. This would provide a final sample in which about 1/4 of all households interviewed will have been visited three times. The rest of the sample are selected as before. Data on changes in poverty status of specific households, comparing those who are participants vs. non-participants, for example, would provide persuasive indicators of impact and greater depth of understanding of underlying processes.

There are several problems with this approach, however. Tracking households over time, finding them again in the field, and managing the panel data complicate an otherwise straightforward survey. Bias is also introduced if there is systematic attrition or out-migration of households. People may leave an area because drought has forced the worst off to leave, for example, so that poverty measures produced by the panel are systematic over-estimates of the poverty status of the original sample of households. Strictly speaking, it is necessary to follow the original households to wherever they live, and conduct the second interview there, so as to have accurate measures on household status. This tracking is inconvenient and time-consuming. (At the same time, new households may arrive, particularly where a project offers employment and the economy is improving. A full repeat survey would miss these new residents, although drawing a new sample will hopefully capture in-migration.) Follow-up questionnaires would have to be revised to deal with re-visits versus first-time visits, entailing multiple questionnaires, and logistical complications.

This approach may, however, be desirable, and manageable, if the local population is stable and project management, document storage, and record-keeping sufficient to facilitate return visits to specific households. If a repeat visit to households is desired, special survey expertise should be engaged to develop a plan appropriate for the project.

(5) Variations on constructing a sample frame

The main discussion assumed that fairly recent maps and census area data are available, or that administrative data can provide estimates of population size. If neither of these sources are available or can be used then the following approach to identifying the population "clusters" or first-stage units to sample should be adapted.

A geographic area must be defined as the "study site," bounded by visible geographic landmarks or geographic coordinates on a map or high-resolution satellite image (see the mention of FEWS above). It should be an

area which is large enough to capture the project impact area and a variety of characteristics, i.e., an extending several kilometers to both sides of the road, encompassing several villages. It may be a watershed, plateau, or artificial cross-section of the road corridor. It must be small enough to manage the work of mapping. The area must be readily identifiable and boundaries clearly documented so project personnel can return to it for follow-up and refer to it clearly in reports.

This area is then "mapped," i.e., the rough location of villages and settlements and estimates of their size noted as well as possible, and indications of how to reach them. Discussions with local officials, residents, village leaders, extension agents, etc. would be relied upon to determine where and who lives in the region, with attention to those who are distant, remote, poor. This may require days of discussions and meetings with a group of informed residents. This method was used with success for a project evaluation in Samburu district, Kenya (Balfour, 1996), a region where census data and maps were not reliable. These maps and estimates of size and location of villages and other population clusters then serve in lieu of a pre-existing census enumeration areas, and sampling proceeds as discussed in Part II B.

This work seems cumbersome, but is necessary to draw a representative sample of an area that is needed for impact assessment. It is only done once. Since project personnel are already present in the site and will be working with local officials and residents, then this additional mapping should be feasible. (It may present a few more obstacles in an unfamiliar "control" area, where project people are not as well known.)

Technical Note #3

Expanding the Method to Other Projects and Scales

How relevant is the RAPI method, developed with rural roads in mind, for other types of projects and interventions? How can it be adapted for assessments at not the local/regional but the province, or multi-province? This note suggests some ways of approaching alternative applications, and provides examples and issues that arise from examination of other projects. The basic conclusion is that adaptation to other types of projects at a small scale is generally feasible, although less relevant for multi-sectoral projects. Application beyond the small, pilot-project scale is problematic, but not impossible. In addition to the added expense of a larger scale, problems lie in the attribution of impact to "the project," identification of a control site, and need for more sophisticated methods. Otherwise, the general approach to poverty concepts and indicators, the rapid survey methods, study area definition and prototype questionnaires can be applied with the usual considerations. With increasing larger scale, the problem approaches that of the original RASP focus on poverty monitoring.

Other applications are reviewed against some basic elements of the RAPI. To summarize, these are (1) the use of a clearly defined small geographic area and control site, (2) a set of (material) poverty indicators, (3) household-level surveys (supplemented by community-level), (4) probability sampling, and (5) a baseline and short-run and long-run follow-up surveys, to generate (6) statistically representative area-based measures of change in poverty for selected indicators, over time with known precision, to assess short-term and long-term impacts of the project on poverty. In general, the project purpose, objectives, scale of operation, duration, subject matter, nature of participation, and methods should be examined in light of these elements and other assumptions listed in Part I. If the basic assumptions are not met regarding the objective of the assessment (i.e., net impact to demonstrate the merit of the project), the causes of poverty, and proper implementation, among others (in part I above), then the adaptation should receive more attention and the method may not be the most appropriate.

(1) Other sectoral and multi-sectoral projects of ILO

Labour-based irrigation schemes, forestry projects, and multi-sectoral community-based projects are other programs of ILO. Sectoral projects (mostly roads and irrigation and other public works projects) are generally supply-driven (although they can be demand-driven); they are arranged through government-donor collaboration for the purpose of public infrastructure development, focusing on a single project, in which community participation and capacity-building are an out-growth of pre-specified activities. "Multi-sectoral" programs differ in that they are fundamentally needs-driven, in which community participation is integral in defining the nature of the activities, which are numerous.

Irrigation schemes aim to alleviate poverty (through jobs), promote agricultural production, and stimulate long-term economic growth and employment (through farm labor and other enterprises). Participation takes two forms, working on the construction of dams and ditches, and receiving the irrigation water (and maintenance). The poverty-impact study area should be larger than the "command area" of the irrigation scheme, and should comprise the "catchment area" for jobs, as "88% of labor came from other villages" in the Bhorletar project (Marten, 1989, p. 33). Poverty indicators proposed here can be supplemented by questions distinguishing "wage work" participation from households in the command area. Indicators of negative impacts, especially environmental (over-cropping, salinization) might be considered for the long-run survey. The household level of analysis does not seem problematic, although care should be taken not to sample from lists of "farms" instead. Sampling approaches should apply without a hitch, as long as the broader impact area is defined adequately. The recommended baseline with two follow-ups may need adjustment for the time frame of the project.

Forestry projects in general cover a huge range of methods, scale and purpose. Activities at the Kita, Mali pilot study are taken as a reference point. Some background is needed to illustrate the adaptation required (is it a sectoral or multi-sectoral project? It evidently has aspects of each.) The context of the project is complex: population growth and rising demand for wood led to pressure on forests, which were then "protected" by the forestry agency, excluding villagers from native forests and cutting off their fuelwood supply, a serious deprivation. At the same time, townsmen poached wood, but were able to pay the fines and still make a profit. The aims of the project are employment and revenue generation, resource protection, and local capacity-building. Local villages (13 federations of 60 villages are involved) manage selective harvesting of wood from protected forests, using labour-based methods (i.e., axes, saws). Revenues from wood sold in town (Kita) return to the village association; the forestry workers (mostly young men) get a wage from the village association. Reforestation aims to maintain the areas set aside for selective harvesting, which in turn provides more jobs. The villagers have access to the forest. Other projects and

possibilities have arisen over time: sustained exploitation of a variety of products, not just fuelwood but building materials and other items. Comments of participants suggest that major impacts have been the sense of relief, renewed dignity and autonomy that they feel as they have access to traditional forests which had been "coopted" and from which they had been ignominiously barred.

The impact area can be defined by the borders of the participating villages, as only their residents work in the forest and received direct benefits from enhanced revenues. The benefits of environmental protection are at a larger scale and over a longer time frame, and probably would be considered separately from "poverty" assessment. Potential control sites are any of the numerous similar villages not involved, but care must be taken to identify several which are not excluded for significant reasons. Random household surveys within randomly sampled villages should be quite feasible and can gauge the direct benefits of the wage work. However, the high degree of community-level participation in planning and running the project means that different village associations can have a large effect (impact) on local benefits over the long run, such as in deciding whether to finance a school or water system or less productive endeavours. Additional attention to issues of community organization are needed at the community level, and perceptions of and participation in village association from the household level. This project would be a candidate for mixed methods, such as some of the participatory rural appraisal methods described in technical note #5. Furthermore, notable self-reported changes in self-worth, etc. (non-material deprivation) related to the indignities suffered by the villages merit consideration, probably through participatory methods. Environmental implications indicate additional measures.

Multi-sectoral projects are community-based development projects which integrate many activities simultaneously, such as irrigation, tree-planting, water supply, income generation. The Thally project (Singla, 1995) is one such "demand-driven" project, as local community participation (not just local governments at an administrative level) is a force in the project's existence and nature of activities. Because of its origins, the site itself is likely to be different from other areas: it likely has a stronger sense of community and is better organized. Designation of a suitable control and interpretation of "net" impacts may be problematic.

The direct impact area is a single community, rather than a larger region, unless one is interested to see if there are links to and benefits in outlying areas. The nature of project participation is more complex, and men, women, children and special groups can design and participate in (i.e., earn income from) individual activities ranging from irrigation works to agroforestry to handicrafts. The entire community is a direct beneficiary of improvements, too. The purpose of the project is not only durable economic growth, employment, and poverty alleviation, but also empowerment and enhanced local capacity to undertake more projects. Indicators of poverty would be supplemented by more sophisticated indicators of "participation" and non-material benefits reflecting increasing skills, control, community organization. Because of the participatory and evolutionary nature of project design and activities, a more participatory approach to impact evaluation could be used. Identical methods, however, cannot be used in a site without the project. It would be misleading (and unethical) to intrude and initiate discussion on problems, changes, and the nature of poverty and well-being, without also providing the corollary of some assistance in a course of action. A less intrusive and disruptive baseline survey or existing source of data on poverty would have to be used from a similar (control) area that lacks the multi-sectoral project, as a comparison.

(2) Expanding the scale

The RAPI method was developed for pilot projects at a local or regional level, such as a district or smaller unit. This size area is considered to be homogeneous, relative to the national level. Reducing the scale, say to a single community or village, is not a problem, although it means that data are only statistically representative of that community. Expanding the study area to a larger scale, such as a province or multiple provinces, introduces more serious problems. The main problem is designating a control and attributing net impact. First, it may be more difficult to identify suitable areas for a control. Population characteristics, agro-economic conditions, major crops and forms of livelihood, distance and access to cities and facilities, among other characteristics, are more likely to vary across large regions/provinces. An area which is not being intervened or receiving the project is likely to differ in many significant ways which affect interpretation of poverty status and change. Multivariate regression is needed, with statistical controls for additional important factors which are considered to influence poverty characteristics. This has implications for the requirements in personnel, precision, and number of variables. A related problem is the need for stratification, which further complicates analysis. If areas within the study site (say a province) are distinguished by different rainfall patterns, seasons, crops, ethnic groups, etc., then several distinct strata need to be examined.

Implementation --if a special purpose survey is implemented -- would accordingly be more expensive and complex. More time is needed to plan, revise questionnaires and indicators to cover a range of sites, translate (how many languages?), train more interviewers, and conduct it across a range of sites. Analysis of stratified, clustered (multi-level) data using multivariate techniques requires specialized training, experience and time: months, rather than weeks. The effort approaches that of many national sample surveys. It can be made as rapid as possible by using a minimum questionnaire, similar methods of "rapid" selection of households, and simultaneous data entry, but analysis is a major undertaking. The institutional set-up suggested in Bilsborrow et al (1995) (i.e., within a national statistical institute) might be needed.

Consideration of alternate forms of data, such as use of other national sample surveys which provide basic, adequate poverty-related indicators, is recommended. Also, small areas of the large region with a project, say a province, may not be affected. This would be the case if a province were targeted for a large number of rural access road improvements, but did not reach all of them at once. A small study site and control area might be designated from within the larger area for data collection and analysis over a period of, say, five years. The pockets of population which are not benefiting from or receiving a project may be different in important ways, however, and this aspect should be considered carefully. Use of "virtual" controls, such as through modeling of the counterfactual, may suitable in some cases.

Technical Note #4

The Use of Participatory and other Qualitative Methods in Poverty Assessment

Qualitative research methods include techniques such as social mapping and modeling, daily time use analysis, wealth ranking and oral histories. They can be useful in the assessment of poverty and the evaluation of project impact on poverty in a target area, since the use of these methods can provide a wealth of information not normally accessible through the use of quantitative methods alone. Specifically for the context of poverty measurement, use of qualitative methods can provide a richer and more profound understanding of poverty. Because qualitative methods most often include flexible open-ended research approaches, they permit individuals in a community to express themselves and thus analyze their own circumstances. In addition, qualitative methods allow for an examination of issues not usually addressed by quantitative approaches, namely certain forms of non-material deprivation, such as vulnerability and lack of dignity, or the definition of characteristics of the poor according to the standards of their own community.

A wide variety of research methods incorporate a qualitative approach. These methods include:

- *Social mapping and modeling:* study subjects draw a map of their community and identify infrastructure and institutions important to them and the community.

- *Wealth or well-being ranking:* individuals rank themselves or their households in terms of their own criteria of wealth or well-being.

- *Focus groups:* a small group (6-12 people) is brought together for discussion informally guided by a moderator.

While these different methods are used for a variety of purposes and are administered in diverse manners, they have in common the active and integral participation of the study "subject" in the data collection and analysis process.

Although qualitative research methods can stand alone in their analysis of a situation or phenomenon, they are generally considered subjective and thus are best used in combination with quantitative methods. This is in part related to several limitations of qualitative research methods, which include:

- *An inability to generalize beyond the research area*: generally a small population, selected through non-probability based sampling techniques, is covered by qualitative research initiatives.

- *Difficulty in verifying information:* qualitative data tends to be difficult to reproduce as it is often collected through the use of non-structured interviews, observation and other techniques which gather highly subjective information.

- *Difficulty in estimating interviewer or moderator bias:* in order to increase the accuracy of data collected, the interviewer generally makes an effort to collect data from an "insider's" perspective, getting to know study subjects and to understand the context of the research setting. The impact of the interviewer's presence on the study setting, however, is difficult to assess.

The use of qualitative research methods thus imposes a necessary paradigm; while these methods may increase the depth of understanding of study context and dynamics, the accuracy and representiveness of results obtained must be carefully weighed in light of the limitations noted above.

Requirements for the execution of qualitative research methods

Qualitative research may mistakenly be perceived to be easily designed and executed. While the substance of qualitative research differs necessarily from that of quantitative, the requirements for its implementation are similarly demanding. Considerable reflection is required concerning methods to be used, training of interviewers, the

costing of line items, the time frame of the study, as well as the analysis strategy, in order to execute an effective qualitative study. Several limitations deserve particular mention:

- *Study design should be carefully considered and selected*. Different qualitative methods are appropriate for the accomplishment of different tasks and objectives. Goyder (1995) notes, for example, that it is important for participatory methodologies to be pursued "at all the stages of the project cycle from initial formulation to final evaluation."

- *The study team should be highly skilled in the application of participatory methods*. During an assessment of the use of participatory techniques in Nepal, researchers were found to need prior experience in the use of participatory methods as well as to be "open minded, full of patience and committed toward the work." (Regmi, 1995)

- *The execution of a qualitative study often takes much longer than its initial design and execution*; the training of interviewers in participatory techniques and transcription and analysis of data following the collection of data can both add significant time to the length of a study using qualitative methods.

- *Qualitative studies are neither inexpensive nor necessarily fast to execute*. An average sized (LSMS) Poverty Assessment was found to cost as much as US$150,000, while the Focused Area Study Technique used in Tanzania cost approximately US$52,000 and took fifteen weeks to execute (Carvhalo and White, 1997).

- *Statistical methods are inappropriate.* The analysis of qualitative data relies on non-probability based methods, so generalizability of study results beyond the particular site is minimal at best.

Given the benefits and limitations noted above, the benefits and usefulness of qualitative methods in the assessment of net project impact on poverty in an area must be carefully examined in light of other priorities and potential uses of available resources. Qualitative research approaches are not exempt from issues of timeliness, cost and the importance of meticulousness, but they do have the capacity to provide rich, in-depth information useful in understanding the mechanisms and perceptions of change in poverty status within a community. In addition to their ability to produce a more appropriate local, self-definition of poverty, these approaches allow for the multi-sectoral examination of issues related to poverty, including livelihood activities, education, health and the environment. In addition, qualitative methods are particularly suited to community-based research and can be easily adapted to respond to issues and concerns of study participants due to the emphasis placed on participatory techniques.

Within the context of the rapid assessment of changes in wealth and well-being, qualitative methods can be particularly appropriate for the in-depth examination of changing attitudes and definitions of poverty or well-being within a given study area over time. Small target areas can be selected from the overall project zone and qualitative research conducted periodically in order to evaluate changing processes and perceptions. For example, focus groups and key informant interviews can be conducted at baseline, two years and five years in order to assess the impact of project activities on livelihoods, access to health care and to education, among others. The examination of the implementation of interventions can result in increased effectiveness and appropriateness, but it should not be undertaken without consideration of necessary limitations mentioned above: qualitative research approaches are neither inexpensive nor easy.

Finally, the use of information gained through qualitative research requires effective and appropriate management and presentation. While qualitative results are often presented in the form of anecdotal information, it is also possible to develop indicators based on information amassed through the use of participatory methods. These indicators are beneficiary-identified and thus are necessarily specific to the site and intervention being studied.

Technical Note #5

Tigray and S Wollo (Ethiopia) Road Rehabilitation Project

The purpose of this note is to demonstrate the application of the survey method to a real case to aid in planning and to illustrate the sort of issues that arise in a particular context. This should help in planning a field test of RAPI to further refine the approach, methods and mechanisms for implementing it. This note focuses on the baseline survey, as this is considered to be the most problematic and timely concern. This discussion assumes, furthermore, that a special-purpose survey must be done in at least one of the approved road sites because of lack of adequate data from any other source.

Three sites are proposed for rural road rehabilitation in northern Ethiopia. Two are located in Tigray and one in Wollo region. Each is short, about 24-28 km, and thus constitutes a pilot project. These can be considered typical labor-intensive road projects, self-targeting based on local agricultural wage (8/6 birr/day, each region, respectively, at about 7 birr/US$). Particular issues (in addition to the usual logistical issues) are the construction of a sample frame given flux in administrative divisions and outdated mapping, (after years of war, drought, famine and upheaval) and the fact that three distinct projects are proposed. For the sake of simplicity, an application of the survey method is discussed in terms of a single road site. Indications of how and why it would need to be done in all three sites is provided. Sections discuss issues related to (1) the study area, control and sample frame; (2) poverty indicators; and (3) timing, logistics and cost.

(1) Study area

For illustration, one study area is chosen, the impact area of the Hidmo-Debub road south of Mekele, encompassing some 500 sq km. The long-run study area may be slightly larger or smaller than this transport "corridor", depending on expectations about who will work on the road, and who may benefit over the long run from economic change in the area. A study area for this site should cover households and settlements of different types and a range of distance from the main road and road proposed for rehabilitation.

The 1994 census (CSA, 1994) will provide the basic sample units for the first stage, which are peasant associations ("PA"), averaging 80 households each. Lists and maps identifying the name, location and size in households in the general vicinity of the study area must be gathered from the Central Statistical Agency in Addis (or possible in Mekele). These will draw on the original 1994 census enumeration areas. The "sample frame" for the study will consist of an agglomeration of contiguous peasant associations (area units); together they should encompass an area overlapping the road corridor. The agglomeration of PA's may be on the order of a few hundred associations, or about 8,000 households; more if the impact area includes as many as 15,000 households. (A rough population estimate of Hidmo-Debub impact area suggest a target population of 11,000 persons, which at 5 persons per household and 80 households per association, is only about 38 peasant associations and 2000 households. This may be an underestimate, as the Wukro site nearby has an impact area of 80,000 persons for roughly the same geographical area, about 16,000 households).

The study area will (hopefully) coincide with convenient administrative boundaries, such as tabia or an area as large as a wereda/sector. However, this relies on administrative divisions "settling down" after being in flux. They may not be known in the field by people, nor necessarily coincide with other maps. (Experience of other survey researchers in 1997[1], and comments of ILO staff suggest that the administrative divisions may not be that helpful yet, because of recent changes. Additional investigation is worthwhile once census lists are in hand).

A rough map and list of the study area would be created which identifies PA's, size and location. A list of associations with their size are used to sample, with probability proportional to size (PPS), the desired number of first-stage units (Frerichs, et al, 1986 describe the computations). If associations are equal in size, then a simple random selection of clusters is possible. The number would be equal to the desired number of clusters of households, just as in the RAPI sampling method. These are located on the map, in reference to the road project, towns, known landmarks, etc. so that they can be found in the field. Additional consultation with local officials, extension agents and other resources should help locate the PA s selected for interviews. Approvals to visit them should be obtained; presumably

[1]Specifically, a household survey fielded by university researchers in January 1997 in the region west of Mekele reached 900 households in 10 days with a team of 19 enumerators. Information and maps they used and their attempts to match administrative boundaries with census frames, together with information provided by the ILO office in Addis Ababa, form the basis for observations on sampling. The university team also provided suggestions on logistics which are reflected in the budget.

project associations would facilitate this procedure.

Sampling of households at the community level is not likely to present a problem. The peasant association files/lists might allow simple random sampling, thus improving the quality of data. If not, the transect method may be simplest, but households are somewhat dispersed; this is an empirical question for the pre-test. Warm cooperation among communities -- in community-level surveys and hosting enumerators during overnight stays -- is likely.

A control area would be formed in the same way, to cover a small area at some distance, but with similar characteristics. Important factors to consider in Tigray are altitude/terrain/climate (susceptible to drought at same time, same seasons), population (same ethnicity, religion, language), distance to major town (Mekele, Hidmo), density/land distribution, and lack of major intervention (note, other donors active in the area.) A region whose center located some 25-30 km north or south of Hidmo (east of the main highway, or west, if it meets criteria) should suffice.

This procedure would provide two study areas, one representing the Tigray road impact area and another control. If data are desired for all three sites, or for Tigray and S Wollo, then other factors must be considered (below).

(2) Poverty Indicators

Some indications follow of how the RAPI approach can be adapted; these are merely suggestive (and should be taken in spirit, as illustrative of possibilities for application), being based on quite limited knowledge of the site.[2] An in-depth survey of living conditions, food security and other household-level poverty-related themes was conducted in 1994 by the Relief Society of Tigray, in collaboration with the Agricultural University of Norway (*Farming Systems Resource Management and Household Coping Strategies in Northern Ethiopia*, 1995). The book documenting its findings should provide much basic information needed by the survey manager to refine the survey instruments to near-final state before pretests. The book should be available in Mekele or Addis.

Excluding fundamental issues such as language (presumably Amharic, possibly Tigrinya) and how to treat households vs. "dwellings" as used in the census (CSA, 1994), then household questionnaire revisions appear straightforward, for the most part. Major food items are well known from food security studies (i.e., teff, finger millet, wheat, sorghum, pulses, various others, goat, beef, chicken). For housing, the census used several measures including materials (walls, roof, windows), number of rooms, type of door, and possession of a separate kitchen. Examination of the data and discussions with individuals who use it, plus familiarity with the site would indicate 1-2 suitable questions and specific pre-codes (i.e., stone, mud, brick...). Water is a major problem in the region, as is fuelwood / charcoal for cooking, so both questions should probably be retained. Among asset measures, oxen are of course a major indicator of poverty status, and other livestock include donkeys, sheep, cattle, goats, chickens, beehives. Different types of lanterns, from simple kerosene to more expensive pressure lanterns, are the sort of distinction needed at the lower end of the spectrum. Additional attention must be gleaned from recent surveys and other knowledge of the area, plus recent or upcoming policy changes, regarding land ownership. Land has for years been "allocated" to individuals (households) and a market in land does not (or so far has not yet) existed. Land holdings are thus an imperfect measure of assets, but lack of land is associated with poverty. Farm production questions can be refined drawing from local knowledge and REST or IFPRI survey questions. Non-farm income sources include weaving, trading, construction, farmwork, or military service. Coping strategies such as food aid, distress sales of oxen, famine foods, and perhaps (foreign) remittances are very important, and special care should be taken in ensuring that local coping strategies are included, even if the activities aer not explicitly mentioned in the prototype questionnaire.

Social and economic services have been poor because of years of disruption; health clinics are scarce, under-staffed, and underfunded (perhaps they exist only on paper). These may be changing quickly under the new government, and will likely be an important contribution to well-being over time. Visits to health clinics in the region are called for, as part of the community-survey. A question on women's use of prenatal care may be a desirable and effective measure of true access to health services. Ethiopia has scored poorly on most welfare measures, but all are likely to change under a new regime; all social and economic service measures should be recorded in the baseline and gathered from all available sources. A project-based (i.e., "home-made") map of the area could be used to help document the location of clinics, schools, etc. in case new, official maps are not available in the next year.

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[2] These include various statistics provided by the Osei Bonsu and staff of ILO's Addis Ababa office, the road project document; World Bank, 1993; various IFPRI reports, and personal communication with J. Lampietti and C. Poulus, December, 1997.

(3) Implementation

The road project is scheduled to begin in January, 1998 and a baseline should be conducted soon after this to avoid too much contamination of the data by the project in areas where the road construction is underway (does it begin at the main road, or in several places at once? Does construction commence in January, or after several months of planning?) The dry season extends through February, and with quick action in recruitment, a survey might be fielded by early February. In general, fieldwork will be done in a dry season so that roads and tracks are passable. It should be conducted at the same time of year in each future study.

To facilitate a short period in the field, and to reduce costs, the teams should be based as close as possible to the site, say in Hidmo. Training would probably take place in Mekele, where facilities for a training, pre-test and questionnaire revisions are sufficient (i.e., adequate meeting space, reliable electricity, a printer and photocopy to reproduce questionnaires). Supplies such as sleeping bags, jerrycans for spare gas and water, etc. must be procured. Mekele is close enough (within 1 hour) to the area so that site visits can be made during training. (Pre-tests should be done in non-selected PA's, however.)

Personnel. The overall survey planner may be someone closely involved with the census or one of the recent surveys in Tigray, thus familiar with sampling and questionnaire design problems, and capable of conducting analysis. (ideally post-graduate degree, probably English-speaking for convenience). The fieldwork coordinator should be someone very familiar with the area and population, also conversant in English (if possible) and knowledgeable about sample surveys. He/she will most likely come from Mekele, from a university, research institute (REST), or an extension service and have experience with another survey. Supervisors and enumerators would be drawn from Mekele or Hidmo and other towns. Consultation with the CSA may be necessary in procuring, reading, applying census maps and lists. Drivers should be local (i.e., Hidmo or smaller towns in the area) so they know the site. Sseveral local guides may be necessary, too, to help the teams locate associations in the field.

Duration. Teams of fieldworkers will probably include a supervisor and 2 enumerators, so that 2- 3 teams could rely on a single pick-up or large 4WD (perhaps with some juggling of teams, and not hauling everyone all at once every day, because some will be away in the field.) Assume a target sample of about 780 households (for one site), as in the text, in 30 clusters (PA's). Owing to modest spatial clustering of dwellings, each team of 2 enumerators could probably complete about 26 short household questionnaires a day, or 13 each. (This rate should be investigated in the field, and checked with other sources.)

An overnight visit will be required for about half of peasant associations, as they will be over 5 km from the road, and the "road" at present, is still a rough track. Teams will need to spend several nights overnight with respondents, sometimes several in a row as they reach the most remote locations. Fieldwork (carefully planned) should conservatively require 15 days, (10 days at 78/day (3 teams) X safety factor 1.5 for delays). This is for one site.

A simultaneous survey (different teams) or immediate follow-on survey (with the same teams) should be done in the designated control area. A simultaneous survey would be needed if the rains were coming, and the fieldwork had to be completed quickly; double the number of teams would be hired to start, say 6, for a total of 18 persons. This adds problems in supervision and quality control, so it would be desirable to have another fieldwork coordinator in that site. The control site might have a smaller sample size, if less precision is necessary and/or budget constraints are tight. Costing is based on sequential enumeration by the same teams.

Cost estimate. The format is based on the items listed under Part II of this report, section B.7, on "implementation" of RAPI. Rates are based on estimates provided by the ILO office in Addis Ababa, translated into US$ (aiming for the higher end, to attract quality). This estimate is based on surveys in two sites, at about 15 days each. (Rates for translation, photocopy, total per diem in Hidmo are "guesstimates"). If local pickups or other types of transport suffice for some of it, there may be savings in transport. Perdiem rates might be pitched too low or too high, and this is a major expense. In sum, this is merely suggestive of real costs and is intended to aid in further planning.

- Personnel:
  survey coordinator, 4 mo @ $525/mo, $2100
  FW coordinator, 2 mo @ $325/mo, $650
  supervisors, 3 persons at 1.25 mo @ $215, $806
  enumerators, 6 persons, 1.25 mo @ $175/mo, $1312

data entry, 2, 1 mo each @ $200, $400
($5268)

- Perdiem (food and lodging)
  training (15 persons x 5 days @ $30/day/person), $2250
  fieldwork (11 persons X $20/day av X 30 days), $6600
  driver (35 days X $20/day av.), $700
  ($9550)

- Transport
  4WD vehicle, 1 mo @ $110/day, $3300
  other ground transport (bus, taxi), 1 mo @ $20/day, $600
  ($3900)

- Equipment & supplies, misc
  laptop, printer, software, 1 @ 3000, $3000
  field supplies (sleeping bag, candles, medicines, jerrycans), 3 X $100/team, $300
  "guides" in field, $100
  gifts/incentives, $10/community, $300
  ($3700)

- Questionnaires
  Translations, $4/page (100 birr/day into hours) x 20 p (x 2 times), $160
  Copying questionnaires. 2 Q x 10 page ea X 1000 copies @ $.05/page, $1000
  ($1160)

- Contingency
  $1000

Total for Baseline survey in 1 project site (study and control) plus planning and reporting: $24,878

(4) Additional thoughts on study area designation

What is the appropriate study site? What is the purpose of the study? There are 3 distinct road sites, and each could be considered separate projects, each deserving its own poverty assessment. Factors to consider in deciding where to conduct a survey include the purpose of the assessment, similarity among (or differences between) regions and sites, and the available budget.

If this information is needed for local planning purposes, then additional surveys in all sites may be justified (and possible, if funding were made available). If statistics on net poverty impact of the project in a "typical site" are needed, than one of the three will probably serve, and this will save money and time. The sites in Tigray may be similar enough that they do not vary significantly in any way that might affect project implementation or impacts; either site (or half the sample in each) would serve, with a single control.

This leaves the Tigray/Wollo distinction. If it is deemed necessary to have detailed knowledge of differential impacts in Wollo vs. Tigray, then a study of the Wollo site must be done as well. If it differs considerably from Tigray in climate, soil, ecology; administration, government and public services; population (ethnicity, religion); or basic infrastructure, then results from one site may not reflect the reality in another. If the regions differ greatly, then a separate control is needed.

The cost considerations noted above relate to a site in Tigray, and it is not known how they might vary for Wollo. Assuming they are roughly the same, then if it were decided that sites in both regions were needed, then as a rough estimate, the figure above should be multiplied by a factor of 1.5 - 1.75. There are some economies of scale (management, computer, questionnaire revisions), but much of the cost is consumed in per diem and wages for enumerators, plus transport. Also, the Kare-Kore - Fursi road is in much worse condition, and getting enumerators to the sites is likely to be more problematic.

Technical Note #6

Prototype Household Questionnaire
(see annotations following)

RURAL EMPLOYMENT INTENSIVE PROGRAMS
POVERTY IMPACT ASSESSMENT
PROTOTYPE HOUSEHOLD QUESTIONNAIRE

CONFIDENTIAL
Information for
research purposes only.

IDENTIFICATION

Province: _____ District: _____

Sub-district: _____ Village or community name: _____

Cluster number: _____ Household number: _____

Name of respondent: _____

Interviewer visits:	1	2*	#Result codes: 1 Completed satisfactorily 2 Incomplete 3 Desired respondent not available 4 Refused 5 Other (specify _____)
Date			
Result #			

NOTE: ADMINISTER HOUSEHOLD SCHEDULE BELOW ONLY TO HEAD OF HOUSEHOLD OR SPOUSE. IF NOT AVAILABLE IN FIRST VISIT, AND SECOND VISITS ARE POSSIBLE*, THEN MARK CODE 3 ABOVE FOR VISIT 1. ASCERTAIN WHEN EXPECTED TO BE AVAILABLE, AND RECORD HERE:

(Expected time available for interview) DATE: _____ HOUR: _____

A. HOUSEHOLD CHARACTERISTICS

I would like to begin by asking you some questions about the people who live here.

A1. How many people are members of the household, that is, how many persons normally sleep and eat here? (ENTER INFORMATION IN TABLE 1, BELOW, BY AGE GROUP AND SEX)

A1a. How many (girls and boys) are under age 5 (at their last birthday)?
A1b. How many are between 5 and 14?
A1c. How many women are there over age 15?
A1d. How many men over age 15?

A2. Have any of these persons been seriously ill or injured in the past 30 days? In other words, has anyone been confined to bed, temporarily disabled/injured and unable to work or help out on the farm as usual?

1 Yes 2 No

A3. (IF YES to A2) How many of the ill persons were adults? How many children?
Note by age group the number of persons ill/injured in the table, particularly adults.

Table 1. Minimal Roster of Household

Age Group	Number of persons in each age group by Sex		Total number of persons in each age group	Number of persons seriously ill in past 30 days by age group
	Male	Female		
0 - 5 years 6-14 (15)* years 15 (16)* and older				
Total				

*Note *actual thresholds to be used will depend on local determination, i.e., using country designation of child labor.*

A4. Who is the head of the household? Name _____
(Do not code)

A4a. (Note if Head is Male or Female, ask if necessary) 1 Male 2 Female

A4b. What was the head's age (at last birthday)? _____ years

A4c. What was the highest level of education the head has received? _____ (years or level)
no school
some primary
completed primary
literacy training
some high school
completed high school
some college/vocational
completed higher degree

(If no or some primary)

*A4d. Can the head of household read a newspaper? 1 Yes 2 No 3 With difficulty

A4e. Is the head of household permanently crippled (disabled) or blind ?

1 yes 2 no

A4f. What is your ethnic group (and/or religion)? (TO BE CODED FOR PROJECT APPLICATION)

B. DWELLING CHARACTERISTICS

Now I would like to ask you a few questions about how long you have lived here, your house and sources of water and fuel.

B1. Have you always lived in this village (sub-location, community...)?

YES 1 *(SKIP TO B2)*
NO 2 B1a. Were you living here two years ago? 1 Y (skip to) 2 N

B1b. Why did you move here, to this village/location?

employment opportunities offered by project (specifically)
work available in area in general
just bought (or rented, or allocated) land here
marriage
retired to ancestral home/live near family
other reason

(NOTE: CHOOSE 1-2 OF QUESTIONS ON HOUSING MATERIALS, DEPENDING ON SITE)

B2. What is the FLOOR of your home made of?

CEMENT, BRICK	1
TILE, LINOLEUM, WOOD	2
STONES	3
STRAW, CANE	4
PACKED CLAY/DIRT	5
OTHER *(SPECIFY _____)*	6
HAVE NO DWELLING	8

[*Optional/exchange with above....*
B2. What are the WALLS made of?

CEMENT	1
WOOD, BAMBOO	2
STICKS, STRAW	3
MUD	4
CARDBOARD, MAKESHIFT	5
NONE, OPEN	6
OTHERS (SPECIFY _____)	7

B2. What is the ROOF made of?

tile	1
corrugated iron/tin	2
thatch/straw/reed	3
cardboard	4
other]	

B3. Did you make any major improvements in your house in the last year, such as adding a room, replacing the roof, etc.?

1 Yes 2 No

B4. What is your usual source of drinking water?

PIPED, IN HOUSE	1	)
PRIVATE WELL/TAP IN HOUSE OR YARD	2	) *(SKIP TO B5)*
PRIVATE RAINWATER CATCHMENT SYSTEM	3	)
PROTECTED WELL or SPRING or TAP IN VILLAGE	4	
UNPROTECTED WELL IN VILLAGE	5	
UNPROTECTED SURFACE WATER (POND)	6	
UNPROTECTED SPRING	7	
PERMANENT RIVER	8	
PURCHASED IN CONTAINERS	9	
OTHER *(SPECIFY source, protected or unprotected* _____*)*	10	

*B4a. *(If not piped to house*) About how long does it take to fetch water each day, most of the time?
_____ minutes per day, each way

*B4b. Who usually collects water each day?
(precode responses for each application, these are suggested)

female head/spouse of male head
older daughters
all the children
male head of household
everyone in the household
other

*B5. What kind of toilet facilities do members of the household use, most of the time?

FLUSH (PRIVATE)	1
PRIVATE LATRINE FOR DWELLING	2
PUBLIC LATRINE, TOILET OR OTHER FACILITY	3
OPEN PIT	4
NONE (OPEN FIELDS, ETC.)	5
OTHER *(SPECIFY* _____*)*	6

*B6. What is the usual source of fuel for cooking food most of the time?

charcoal (purchased)	1
kerosene, propane "	2
fuelwood (gathered)	3
dung	4
crop residues	5
other source, purchased	6

*B6a. (IF GATHER) About how many minutes or hours is spent each day gathering fuelwood/ dung, most of the time?
_____ (minutes or hours each way, on average, every day)

*B6b. Who usually collects fuelwood/dung each day?
(precode responses for each application, these are suggested)

female head/spouse of male head
older daughters
all the children
male head of household
everyone in the household
other

C. HOUSEHOLD POSSESSIONS

C1. Do you or anyone in your household have any of the following household items now, in working order?

(note: LIST OF ITEMS NEEDS TO BE SELECTED FOR EACH SITE)

C2. Did you or anyone in the household sell any items in the last year to raise cash for everyday expenses, such as food? (NOTE IN LAST COLUMN)

Table 2. Household Possessions (Mark X in appropriate column)

Value group	ITEM *(NOTE, USE ONLY 3 IN EACH GROUP)*	Does anyone in this household own this item now, in working condition? YES	NO	Did you own any of these types of items 12 months ago, but sell it to raise cash? (Mark if Yes;identify items sold) YES	item
(1) Low value	*bed,* *blanket,* *utensils* *(also might include clothing, baskets, pots and pans, table, chair/bench, flashlight, clock, watch, shoes (adults), etc.)*				
(2) Middle value	*pressure lantern* *radio/cassette* *improved cookstove* *also, sewing machine, bicycle, school uniforms, gold jewelry, eyeglasses)*				
(3) High value	*electricity generator* *refrigerator (kerosene/electric)* *motor vehicle (car or truck)* *(also, TV/VCR, *electric fan, iron, if house is wired for electricity, etc.*				

C3. Do you or anyone in your household have any of the following tools in working order?
(LIST OF ITEMS NEEDS TO BE SELECTED FOR EACH SITE)
(Mark X in appropriate column in Table 3)

C3a. Did you or anyone in the household sell any tools or equipment last year to raise cash for food or other expenses?

Table 3. Household/Farm Tools

Value class of tools	Items (NOTE, USE ONLY 2-3 IN EACH CLASS)	Does anyone in this household own this item now, in working condition? YES	NO	Did you own any of these types of items last year, but sell it to raise cash or meet expenses? (Mark if Yes, and identify item sold) YES	item
(1) Low value	*hand tools (hoe, axe, adz, etc.)* *fishnets*				
(2) Middle value	*wheelbarrow/cart* *plough* *loom* *(special hand tools, etc)*				
(3) High value	*tractor* *chainsaw* *rice/posho mill* *water pump*				

*C4. I would like to ask about purchases. How often do you or any member of the household spend at least $* on small NONFOOD items, such as soap, candles, batteries, medicines, needles, etc.? In other words, would you say you make a purchase of "$" frequently (every day), often (1-2 times a week), occasionally (2-4 times/month), rarely (once a month) or practically never (1/year)? (This does not include items such as fuel, transport, repairs, or major purchases on durable goods.)

* *[PRECODE a small sum, say about 1/4-1/2 the daily wage, based on local conditions)*

practically never	1
rarely (1/month)	2
occastionally (2-4/month)	3
fairly often (about 1/week)	4
frequently (every day)	5
don't know/not sure	6

D. FOOD CONSUMPTION

D1. I would like to ask you a few short questions about food consumption in your household. Please tell me if people in this household consumed the following types of food in the past week, and how often.
(Note: Mark X in appropriate column in Table 4 below, and leave blank other columns)

Table 4. Food consumption

If the household consumed some, then note the amount in then appropriate column	None (0 days last week)	Rarely (1 day)	Some days (2-4 days)	Most days (5-6 days)	Every day (7 days)
(a) Grains *(NOTE: substitute names of 1-2 major staples, i.e., rice; maize; teff; sorghum, etc.)*					
(b) Legumes/pulses *(specify 2-3 for site)*					
(c) Fruits *(specify 2-3 for site)*					
(d) Vegetables *(specify 2-3 for site)*					
(e) Milk/dairy products/eggs *(specify 2-3 for site)*					
(f) Meat/fish *(specify 2-3 for site)*					
(g) Any processed foods/ "luxury" items *(i.e., sugar, biscuits, bread)*					

D1a. Was last week a more-or-less typical week in terms of food consumed by the household members?

YES 1 *(SKIP TO D2)*
NO 2 *(INTERVIEWER: REDO D1)*

D2. Each day, how many cooked meals, i.e., major meals, are eaten in this household by most of the members, most of the time?
(circle number of cooked meals/day on average) 0 1 2 3 4

*D3. Did your family rely on any official food aid during the past year? 1 Yes 2 No

*D3a. For about how long did you receive food aid?

few days/ 1 week 1
weeks-month 2
2-3 months 3
most of the year 4
don't know/not sure 5

*D3b. Was this food aid received in exchange for work of any type? 1 Yes 2 No

E. Farming

E1. Do you (or any member of your household) own or operate a farm?

YES	1	
NO	2	(skip to E5)

E2. How much land do you farm right now?

Table 5. Land-holdings {----------OPTIONAL----------}

Type of tenure/holding	Total # hectares*	# hectares rainfed*	# hectares* irrigated	*Overall quality relative to average in area 1=good, 2=fair, 3=poor
own (mortgage)				
rent (tenant)				
sharecrop				
other				
Total all units/parcels				

Note: Use appropriate units of land. Use major types of tenure arrangements that are found in region.

(NOTE RESPONSES IN TABLE 5 ABOVE)

*E2a. What is the type of tenure for the land-holding? (MULTIPLE RESPONSES ARE POSSIBLE)

*E2b. How much is irrigated, and how much is rainfed only?

*E2c. How would you rate the overall quality of land, relative to other farms around here?

E3. In the last 12 month period, what were the main crops that you grew each season?
[IF ONLY ONE SEASON, COMPLETE COLUMN (1) ONLY AND WRITE NONE FOR COLUMN (2].

Table 6. Crops and Yields

Major Crops Grown	**1st Season** Enter Yields (/ha) Code amount sold		***2nd Season**		Modern Inputs Used? 1=yes 2=no	Hired labor used? 1 = yes 2 = no
	YIELD	SOLD	YIELD	SOLD		
Main crop: _____						
Second major crop: _____						
*Third major crop: _____						

**The need for columns for additional seasons depends on the study site (i.e., the climate, whether reliant on rains or use of irrigation, soil). Use local units for the crops (to match prices for crops from community-level questionnaire).*
Codes for amount sold are: 1= Sold None, 2= Sold some, 3= Sold most, 4= Sold all

*E3a. What were typical yields for this crop? [FILL IN COLUMNS IN TABLE]

E3b. Did you sell none, some, most, or all of this crop?

*E3c. Did you use any purchased, modern inputs, such as fertilizer or pesticides?

*E3d. Did you at any time used hired farm labor?

*E4. Did you make any changes in crops grown or amount since the road project began? For example, cultivating more land, using fertilizer or other inputs, or switching to new cash crops?

(Circle one) 1 Yes 2 No (Go to)

*E4a. What did you change? _____
(precode for follow-up survey based on pre-test results)

E5. Do you or anyone in the household tend to keep any livestock or farm animals, whether for traction, food, wool, or to sell?

YES 1
NO 2 (SKIP TO F)

E5a. What types of animals do you have? How many of each type do you have **right now**?
(FOR EACH TYPE, COMPLETE TABLE BELOW)

E5b. Would you say you have less, the same, or more than you did this time 12 months ago?

(NOTE, MAY HAVE NONE AT PRESENT)

Table 7. Livestock

***Value class of livestock**	**Type of animal (NEED TO SPECIFY 1-2 FOR PROJECT SITE)**	**Number owned now**	**Number compared to last year**
LOW VALUE (owned by almost everyone)	Poultry** (goats...)		
MIDDLE-VALUE	Donkey (Swine, sheep, fish ponds, beehives...)		
HIGH VALUE (expensive, owned by better off)	Oxen (buffalo, cattle, horse, camel, etc.)		

* Type of livestock to enquire about in each category will be determined prior to actual survey and pre-tested.
** Give range for small-stock, if exact number not known (i.e., none, 1-2, 3-6, 7-12, 13+)

E6. (Additional questions for coastal or lakeside fishing communities, to be elaborated as needed)

F. NON-FARM INCOME SOURCES AND EMPLOYMENT

Now I would like to ask you some questions about types of employment and income other than from farming. I am interested in the activities of all members of the household during the past 12 months *(NOTE: RECALL PERIOD COULD BE 6 MONTHS).*

F1. In the past 12 months, did you or anyone else in the household work for for someone else for a wage or salary, or sell or trade items or some service for cash? For example, did anyone sell things made at home, work for wages on other peoples' farms, run a shop, or earn money from a job?

YES 1
NO 2 *(SKIP TO F3)*

F1a. What were these other sources of income, other than from your own farm, in the past 12 months? Please mention as many sources of income or work that you or other household member are involved in.

(CHECK AS MANY AS APPROPRIATE)

		Regular	Occasional	Irregular
*work on road project *(fill in table 5)*				
work as hired labor on other farms	1			
sale of food products, clothes, items made at home	2			
services (washing clothes, cutting hair, owning a restaurant)	3			
trade (carpenter, mason, potter, etc.)		4		
white-collar job (accountant, civil servant, teacher...)		5		
other source of non-farm income (specify, i.e., pension...)	6			

F1b. Would you say that these other sources of income were quite regular (some income every month), occasional (i.e., seasonal, somewhat predictable but not full-time), or irregular (sporadic)?
(Mark X next to items above)

(Interviewer: If respondent did not mention the road project under F1, then ask question F2, otherwise skip to F2a)

F2. Do you know about the road construction project?
*(*identify specific road(s) or other project by local name)*

*F2a. Have you or anyone else in the household ever worked on the road construction project at any time?

1 Yes 2 No (skip to F3)

(RECORD ALL RESPONSES IN TABLE 5)

Please tell me who in your household who worked on the project at some time, for any length of time, during the past 12 months. [INTERVIEWER: NOTE NAMES IN COLUMN (i) of Table 8]

For each of these persons, please tell me the following information:

*F2b. About how many months (days/weeks) did _____ (name the person) work in the past 12 months?

*F2c. During which months (or which season) did this person work on the project?
(pre-code responses for the location)
*F2d. How much did this person earn (each day/week/month) ?
*F2e. What job did this person perform when he worked on the project?
*F2f. Did he/she want to work longer on the project, but was unable to for some reason?

Table 8. Participation and Employment in Project (Note: only for follow-up surveys)

Household Member (i)			Time worked on project last 12 months (ii)	Season (iii)	Wage for this person (average) (iv)	Total earnings past 12 mo. (v)	*What job did this person perform? (vi)	Did this person want more work on the project? 1 Yes 2 No (vii)
Person (name & position in household) #1 #2 *etc., list each household member who worked on project in past 12 months*	Age*	Sex*						
Total number of persons in household who worked on project: _____	*Mean & median age of workers: _____*	*# male: _____ # female: _____*	*Total time on project _____ (/HH)*		*Mean wage for household: _____*	*Total earnings from project: _____*		

NOTE: Specify units used for local area, whether number of months, weeks, days or hours. This should match units used for wage; the wage information is needed if wages are expected to vary by the person (age/sex) hired.
Estimated earnings can be asked of respondent, or computed by the interviewer as column (ii) multiplied by column (iii).
**Age and sex of the worker are optional details needed for gender analysis of employment and project impacts.*
**Details of "job performed" are needed only if different types of work are available on the project.*

F3. Did you or any other household member want to be employed on the road but were unable to do so, for any reason? 1 Yes 2 No (Skip to F4)

F3a. If Yes, Why? (CHECK ALL THAT APPLY)
(will need to precode and pretest responses for the location; these are some possibilities)
refused a job by project foreman
could not leave household/children
could not leave farm
too much other work to do
could not reach site/lacked transport
timing inconvenient
other _____

*F4. Did anyone in the household start a NEW enterprise, such as a shop, in the past 12 months? 1 Yes2 No

*F5. Do you or anyone else in the HH have plans to start a business within the next 12 months? 1 Yes 1 No

*F5a. What kind of business is planned?_____

F6. In the past 12 months, did you or anyone else in the household RECEIVE any money, food or goods sent to you from others living elsewhere (such as family members, relatives or friends)? (Please do not include small ordinary gifts like birthday presents for children.)

YES 1
NO 2 *(SKIP TO F6)*

*F6a. About how much would you say was received in the past 12 months?

____ $ in money ____ $ in kind (CONVERT TO $ VALUE)

*F6b. Do you receive money or these other items on a regular basis, such as every month?

1. Regular 2. Irregular

F7. Did you or any household member living here SEND cash, or food, or goods to others not living in the HH in the past 12 months?

YES 1
NO 2 *(SKIP TO F8)*

*F7a. How much would you say you sent in the past 12 months?

____ $ in cash ____ $ in kind
(INTERVIEWER: CONVERT TO $ VALUE)

*F7b. Do you send money or other items on a regular basis?
1. Regular 2. Irregular

F8. On the whole, would you say you sent more than you received in gifts and aid, or received more than you sent, in the past 12 months? Or are the amounts about the same?

Received more than sent	1
Sent more than received	2
About the same	3
Don't know	4

F9. I would like to ask about other sources of income to the household. Please let me know if you or anyone in your household received any income from ANY of these sources in the past 12 months. I am not going to bother you asking about the amount of income you received from any of these sources.

Did you (or anyone else in the household) receive any income from:

(a)	renting out a house or room,	1 Yes	2 No
(b)	rental of farm equipment, machinery, animals, vehicles, etc.	1 Yes	2 No
(c)	personal loan to meet food and other expenses	1 Yes	2 No
(d)	interest, such as from a savings deposit or a bank	1 Yes	2 No
(e)	pension or retirement income	1 Yes	2 No
(f)	any other source (Specify _____)	1 Yes	2 No

F10. During this interview, you have mentioned several different sources of food and income for this household. These include ____ , ____ and ____. (INTERVIEWER: REVIEW ABOVE RESPONSES AND SUMMARIZE HERE) Is that right? (IF NOT, CLARIFY)

Of these, which would you say has been the MOST important source supporting the household in the **past 12 months?** (CIRCLE ONE).

#1. Wages from the road project
2. Wage from working on other farms
3. Petty trade, small business
4. Other non-farm income (rentals, etc.)
5. ALL NON-FARM
6. Farm (cash) income from crops (fishes) sold
7. Farm income from animals sold
8. Food grown for own consumption
9. ALL FARM INCOME/GOODS
10. Remittances/transfers from others
11. Loan for food, expenses
12. Food aid
13. Distress sale of assets/livestock
13. Other (specify _____ _____)

G. Perception of QOL

To conclude, I would like to ask for your general impressions about the quality of your life here in _____ (name of village/location)

G1. How would you rate your overall quality of life right now? For example, considering your housing, food, water, land, availabilty of work, would you say that the overall quality of life is adequate for your household, less than adequate, or more than adequate, right now?

less than adequate, overall adequate more than adequate

G2. All in all, compared to your situation last year, do you feel that you and your family are better off now, about the same, or worse off as compared to one year ago?

	compared to one year ago
Better off	1
Same	2
Worse off	3
Don't know/not sure	4

G2a. What would you say was the major reason for the change for better (worse) for your family?
(precode and pretest for site, list will likely include some of these)
road is getting worse
no transport/expensive transport
easier to travel (after project)
more jobs ''
worked with the project --earned income ''
can get to markets to sell produce ''
have more money now
can't get work around here
everything is more expensive
household is larger now
household is smaller now

*G3. How would you rate your quality of life compared to that of your neighbors here in _____ (village or community). Would you say that your quality of life is the about the same as, worse than, or better than that of your neighbors around here?

worse than neighbors same as neighbors better than neighbors

END: THANK YOU

Technical Note #6

Annotations, Prototype Household Questionnaire

* Optional questions
# Follow-up only

The purpose of this section is to explain the purpose of each question and how it would be used or altered. Questions which have been revised or altered from the RASP have lower-case codes, and the original RASP are in capitals. Some questions are optional, especially topics which are included in the community survey. Asterisks refer to the optional questions. Others are intended more for the follow-up survey, noted by a pound (#) sign. Additional coding that will be necessary will include "don't knows" wherever appropriate. The questions referring to the project (participation, changes since, etc.) assume a typical road project and would of course have to be altered for another application.

(1) Administration of household questionnaire

The questionnaire is intended to be administered to the self-stated "head" or spouse or other "adult" member of the household. The aim is to complete the interview on the first visit. Return visits should be used only if there really are no adults around. (If not there, then the team should follow a standardized protocol on what to do in case of "non-response"). The enumerator should describe purpose of visit, use of data, confidentiality of responses, enquire about willingness to participate. An simple oral "consent form" should be read out loud. Location questions on the first page are to be completed by enumerator. There may be several names for a single place: this should be mentioned. Distance from village center to household should be noted if location is large, dispersed area.

(2) Explanation of Questions/Responses

A. HOUSEHOLD CHARACTERISTICS

A1. This presents a minimal household roster, rather than a conventional complete roster, to simplify and speed data collection. This is the minimum information required to generate basic poverty indicators, so none of these items are optional. This provides essential information to calculate percapita measures and the indicator of low health status, based on the proportion of adults who suffered poor health in the past 30 days. Numbers of boys, girls, youths (m/f) and adults (m/f) will be coded, plus total numbers in household. Additional information on economic activity of household members is gathered in section F.

A2-3 Questions on illness or disability are geared toward major events; critical illness or injury, particularly among (working) adults. "Number of days lost" could be noted, but the results can be misleading (i.e., better off households "take time off" and the question could be misunderstood in a rural context.

A4. Additional information on the household head are needed to construct poverty profiles. Major characteristics solicited here are: age, sex, ethnicity, education/literacy, and whether disabled. These details are not needed for all other household members. (Refer to the RASP questionnaire for a standard household roster if that is needed for a particular application).

B. DWELLING CHARACTERISTICS

B1. This provides an indicator of residency status, i.e., whether long-term or recent in-migrant. This will help relate employment impacts and in-migration.

B2. Use only one measure of housing quality from the options presented here, selected based on local conditions and a pretest. Alternative indicators used might be: number of rooms in the house; or having a room where people sleep that is separate from where livestock sleep.

*B3. The question on improvements in housing is optional, and can be used along with possessions/assets as an indicator of (positive) change after project.

*B4. Water source and time to collect are standard questions. This information can also be gathered at the community level to further reduce the household questionnaire. An additional optional question on who gathers water may be used if this information is deemed useful.

*B5. The question about sanitation (toilets) is standard, may be unnecessary, as it is probably a poor indicator of relative status in some rural areas. It is optional.

*B6. Fuelwood and other sources of cooking fuel are included because fuelwood collection is a major burden among the poor, especially in arid and semi-arid regions. It can be left out if local conditions do not require it. Also, this may not be expected to change over short or even long-run, so is less likely to show change from project. An optional question about who typically gathers fuelwood in the household may be added if desired for a particular site, but is optional.

C. HOUSEHOLD POSSESSIONS:

C1. This table is required as it provides data to classify households into asset poverty categories, but the contents or specific items to be noted must be determined for each application. "Household items" are separate from "Tools" (Question C3) to aid data entry, but could readily be joined to make one table of household items/tools if that distinction is not helpful. A question is included to provide an indicator of negative change in possession/asset ownership in the past year, i.e., a distress sale of goods to provide for food or other needs. The reference period is long but probably adequate for very poor locations, as major purchases or sales are noteworthy. The period can be changed to 6 months, but should be consistent from baseline to follow-up, or results will not be comparable.

Items that are listed in each category (in italics) are suggestive, based on estimates of their relative value for a variety of rural settings. In a given site, a particular item (or a particular name brand of an item, such as a lantern) may actually fall into a different category than the one mentioned here. The thresholds should be distinct, i.e., items in "middle value" row should be about 2-3 times the price of any in "low value", based on prices in local markets. Estimated prices will be needed before formulating the questionnaire for a specific application, and will be updated through the community questionnaire.

C2. Tools - same comments as above. Items listed are merely suggestive and should be revised for the site. This question can be merged with C1 to make one table, if that is useful in pretests.

*C3. The question on "small purchases made" is intended to show ability to buy non-food essentials. It is optional and should be pretested carefully. The phrasing and amount and reference period should be considered for each site.

D. FOOD CONSUMPTION.

D1. This table is required, since food purchases are expected to be a major indicator of reduction in poverty status. Specific major staple foods and representative items from the fruit, vegetable, legumes, meat, and processed or "luxury" category should be determined for each application and identified by a specific, local name. The question (D1a) about a "typical week" is used to be sure the responses do not reflect a week which is particularly "rich" or "poor." A food-rich time might be one of celebration or feasting, and a food-poor season due to a recent drought, shortage in the shops, or other temporary hardship. This question is intended to provide information on the overall quality and quantity of food consumed by a household, which is not the same as nutritional status of individuals.

D2. Additional questions on "number of cooked meals" provide information on the relative quantity of food for a population (assuming all members of a household consume a proportionate amount)

D3. The item on "food aid" is suggested because it is a major coping strategy in some areas, but the use will depend on the site. It is important to distinguish relief aid from "food-for-work" schemes, and D3b. does this.

E. FARMING

The formulation of questions on land, production, livestock and fishing will vary for the site (and type of project).

E1. This is a screening question; skip to the next section if the answer is "no."

E2. Minimum information collected should be "size of all holdings managed by the household". Tenure is a secondary issue, but the question/categories should take into account local conventions and arrangements. Irrigation, obviously, is not relevant everywhere. The question on "overall quality" is optional, and would be used to "weight" land holdings. It should be pretested to see whether it shows variation.

E3. This section will provide information on crops grown, typical yields and rough proportion sold. This provides information on farm-based food and income sources (livelihoods) and can indicate changes in farming (% growing cash crops, % selling most of cash crop, % use of inputs, etc) in the site associated with the project. The number of crops to be listed and number of seasons may vary but should not be more than the few "major crops" or listing them will be time-consuming. Questions on use of hired labor and inputs are optional.

#E4. An explicit question on changes "since the project began" is optional and is for the follow-up. This will provide another measure of economic changes associated with the project. It can be used at the community-level, as well.

E5. Questions on livestock are important and required. Livestock are usually a major asset. This question requires careful preparation re: the type of livestock to list in each class (1,2 or 3). Breed, age and sex might be important. It might be useful to distinguish, for example, the number of milk-producing cows vs. the number of calves if those are the sole livestock. In general, it is desirable to reduce the number of details, but maintain categories of low-value, medium value, and high-value. Determination of these groups should be based on going prices in markets, combined with observation, discussion with extension agents, etc. and pretest.

E6. The farming and livestock questions will usually be needed, but some rural communities live from fishing in lakes or coastal waters (to be distinguished from fishponds). This section should be elaborated for a given site.

F. NON-FARM SOURCES OF INCOME / EMPLOYMENT

The emphasis in these questions is on identifying (1) sources of income to the household and (2) the degree and importance of participation in the project of household members. No information is requested on amounts of income or wages for non-project work. Instead, average wages for different types of work will be solicited in the community questionnaire and can be used to determine relative status of different types of work for a given location. Details on project participation are, however, included as this will help gauge who the project has reached, who directly benefits and who does not benefit from the labour-intensive employment component.

F1. This is a basic screening question; skip to F3.

F1a/b. Information is sought on the number and type of sources of income, and whether they are regular or not. The general type of work will differentiate unskilled low-wage physical labor from higher-wage labor and retail or service jobs, in combination with average wage information from the community questionnaire. There is no intent to gather detailed information on amounts earned or who from the household is involved in non-project work (i.e., that would be needed to conduct gender analysis of participation in economic activities). More than one response can be listed. Pre-coding should reflect only important distinctions in the nature of the work/wage levels, however. The follow-up surveys would also include "work on project" as an explicit category.

#F2. This section includes "Table 5" and is intended to identify households who directly "participate" in the project, i.e., are or were (in the past 12 months) engaged in wage work on a daily, weekly or monthly basis. The appropriate units must be determined during questionnaire adaptation and pretest. It would be included in follow-up surveys only (presuming that in the baseline scenario the project does not yet exist). As presented, this solicits

details on each household member who worked on the project, the length of employment, wages, the type of job (if relevant) and whether they wanted more work than they actually performed. The individual responses can be aggregated to yield household totals ("total person-months employed on the project per household"). The reference period used here is 12 months, but it depends on the timing of the follow-up survey and the specific nature of the project; it could also be "in the past six months". The questions would be altered for different types of projects or conditions of employment. These data could be aggregated to the household level as shown in the bottom row of the table.

F3. This question solicits information on problems in getting work on the project, which will help determine how and why the project worked/did not work. Codes for F3a are suggestive.

F4-5. Questions on "new" enterprises and "planned" activities are suggested to provide information on increases in economic activity related to the project. These can be considered optional, as long as the information is gathered at the community level.

F6-8. Remittances and transfers can be an important source of income, especially for very poor households. Details on amounts and regularity can be left out if needed. The net amount (i.e., sent>received, or received>sent) is the variable most of interest, but the others should help to improve quality and jog the memory.

F9. This question probes to make sure that all sources of income are mentioned.

F10. This is an important question ("most important source of income") and has a large number of possible responses, grouped as "All non-farm," "All farm," and "All transfers/aid/distress sales" (coping strategies). These will be used to (along with other data) to classify households by livelihood poverty status.

This information can be used in combination with project participation data: suppose it turns out that those households who (in total) worked very little on the project report it as a major sourceof income; then the project is evidently reaching its target. If the poorest in the sample report no association with the project, but other households report it as a minor source of income, then it is missing the target.

G. PERCEPTION OF QOL

G1. This elicits an opinion on the household's current quality of life, focusing on material goods.

G2. This elicits an indicator of present conditions compared to last year

#G2a. This is intended to elicit responses which indicate positive or negative changes in an area due to the project. These data would be presented statistically as "the proportion who say life is better here because of _____". The list of codes includes negative and positive reasons. These would be refined for a site and checked in a pre-test.

*G3. This is suggested as an additional indicator of subjective poverty status, based on a households perceived relative quality of life in an area. It would enable comparison of households' objective poverty status with relative measures.

PROTOTYPE COMMUNITY-LEVEL QUESTIONNAIRE

IDENTIFICATION

Village _____

District _____ Sub-District _____

Location Description _____

Roads taken to reach location_____

Names and types of respondents

Name	Type of respondent
_____	_____
_____	_____
_____	_____
_____	_____

CODES
1. Elected leader
2. Government official (excluding teacher or health worker)
3. Teacher
4. Health worker
5. Religious leader
6. Head of Cooperative/Farmer Association
7. Other (Specify_____)

Date_____

Name of interviewer _____ Interview's ID number _____

A. POPULATION SIZE AND COMMUNITY SETTING

A2. What is the geographic area of this community? _____ sq km

(SKETCH BOUNDARIES HERE. NOTE MAJOR FEATURES OF BOUNDARIES AND LANDMARKS. INCLUDE NAMES OF NEIGHBOURING COMMUNITIES. IDENTIFY LOCATIONS OF HOUSEHOLDS WITHIN COMMUNITY BOUNDARIES)

(LEAVE THIS PAGE BLANK FOR MAP)

A2a. How does this geographic area break down into the following broad types of land use? (GET ESTIMATE)

Agricultural land (in use or fallow, including private pasture land) Total _____
privately held _____
common land _____

Built-up land, not farmland (roads, paths, dwellings and lots, public space) _____

Land not used for economic purposes:
Protected areas and parks _____
Steep slopes, mountains,
Deserts/wasteland _____

swamp, wetlands _____

Bodies of water _____

Other (specify _____)

A3. Latest population estimate according to census/administrative records (COMPLETE BEFORE BEGINNING FIELD WORK IF POSSIBLE):

Population: _____Households_____ [Reference used: Source and year _____]

A3a. Current population according to respondents:

Population_____ Households_____

[Source (type of record or estimate, i.e., village roster)_____]

(INTERVIEWER: IF POPULATION OR NUMBER OF HOUSEHOLDS INDICATED BY RESPONDENT DIFFERS GREATLY FROM ADMINISTRATIVE ESTIMATE, RESOLVE DIFFERENCE. ENSURE THAT YOU AND RESPONDENTS ARE TALKING ABOUT SAME COMMUNITY AREA AND BOUNDARIES AND SAME REFERENCE YEAR.)

A4. Has there been a tendency in the past two years for new people to come to live in this community?

0 None 1 Few 2 Many

A4a. Has there been a tendency in the past two years for persons to leave this place to live elsewhere?

1 None 2 Few 3 Many

A4b. Which is the greater tendency?

1. More people arriving 2. More people leaving 3. Neither, about the same

*A5. What are the main religious, ethnic/tribal, or caste-related groups represented in this community ? What are their approximate proportions (i.e., how many out of 10 on average are in each group)?

[RECORD MAXIMUM OF THREE, FROM LARGEST TO THIRD LARGEST; USE CODES BELOW IF NECESSARY]

_____group _____%
_____group _____ %
_____group _____%

CODES:

1. none
2. very few (<1 in 10)
3. some (1 in 10 to 3 in 10)
4. about half (4 in 10 to 6 in 10)
5. most, many (7 in 10 to 8 in 10)
6. almost all (9 in 10)
7. all

A6. What proportion of the boys and girls age 12 in this community regularly attend primary school? (use CODES from A5 if necessary)

Boys _____% or CODE = _____ (0 - 7)

Girls _____% or CODE = _____ (0 - 7)

A7. What proportion of the boys and girls in this community finish primary school (receive a diploma)? (use CODES from A5 if necessary)

Boys _____% or CODE = _____ (0-7)

Girls _____% or CODE = _____ (0-7)

A7. Among children who live here, what proportion of those under age 5 would you estimate are vaccinated against the following? (use CODES from A5 if necessary.)

Against DPT_____% Against Measles _____% Against Polio _____%

Comments: _____

B. FACILITIES WITHIN THE COMMUNITY

B1. What is the condition of roads traveled to reach this community from _____ (*name the largest market town*)?

[INTERVIEWER: FILL IN TABLE BELOW FOR EACH SEGMENT OF ROAD OR TRACK THAT WAS TRAVELED TO REACH THE COMMUNITY]

Road/Track name	Distance along (km)	Current Condition	In what months is this road impassable?	Type of vehicle which can pass	What was its condition 12 months ago?
Primary road/highway: (name _____)					
Secondary road (name _____)					
Tertiary road (name_____)					
track/footpath					

Codes for this table:
"Current condition": note whether: good, fair, poor, extremely poor
"Months passable": None (i.e., year-round); or specify months or season when road is impassable due to weather
"Type of vehicle": note whether 4WD only, pick-up, sedan, or horse/mule/foot travel only
"Condition 12 months ago": note whether same, worse, or better

B2. Is there regular public transport to this community from _____? 1 Yes 2 No

B2a. Frequency of bus _____ per day or _____ per week *(# trips or visits)*

B2b. Cost __ ____per person _____per unit of cargo

B3. Does this community have any of the following facilities or services right here (even if only some of the time)?

(OBSERVE AS MUCH AS POSSIBLE, BUT ALSO CHECK WITH RESPONDENTS. BE SURE TO ASK SEPARATELY ABOUT EACH FACILITY.

IF NOT PRESENT IN COMMUNITY, ASK WITH RESPECT TO THE NEAREST ONE:

B3a. About how long does it take people to get to the facility using the most common mode of transport?

B3b. What mode of transport is used by most people to get to _____ ?

Codes:
1 walking
2 bicycle
3 bus
4 train
5 boat
6 private car, truck, motorized vehicle
7 other (specify_____)

B3c. Has the mode or time of travel changed in the past 12 months [since project began]*?
(*for follow-up surveys)

Type of facility	Facility or Service	Available here? 1=Y, 2=N	Typical time to reach facility (minutes)	Usual mode of transport (codes above)	Change in transport mode/time **
Official	government office(s) (specify:_____)				
	extension agent/vet				
	post office				
	development project (_____)				
	other (_____)				
Commercial	bank/credit				
	feed/seed supply				
	bar/"restaurant"				
	grain mill, warehouse				
	shop selling foodstuffs				
Community/ recreational	church, mosque				
	Farmer's cooperative				
	other self-help organizations				
	community building				
	athletic field				
Education	primary school (incomplete)				
	primary (complete)				
	high school				
	Technical/agricultural				
Health	clinic/post				
	pharmacy				
	hospital				
	Trained TBA/midwife				
OTHER	[NOTE HERE]				

** suggested reference period is 12 months ago, or "since before project" for follow-up

B4. Please provide an estimate of what it might cost to replace the following items if you were to buy it today.

Item *(match HH survey)*	Price in nearest market		
	Respondent #1	Respondent #2	Enumerator
bed *blanket* *simple table* *(etc.)*			
radio *bicycle* *clock/watch*			
TV *refrigerator* *car/motorcycle*			

B5. How much does it cost now to purchase each of the following items here, wherever people usually buy them?

Staple (most important) food _____$ per _____(unit)
Second most important food _____$ per _____(unit)
meat/fish
Oil/sugar other essentials noted in household Q

Farm input #1 (i.e., fertilizer, herbicide, seed)* _____ $ per _____ (unit)
Farm input #2 _____$ per _____ (unit)
Livestock (head of _____) _____$ per _____ (unit)

**select two commonly used local inputs and a typical livestock purchase.*

*INCLUDE THE FOLLOWING WATER QUESTIONS IF NOT USED IN HH QUESTIONNAIRE

*B6. What is the main source of water for most people here during the year?

protected well or spring	1
rainwater catchment	2
unprotected well or spring	3
river, pond	4
purchase in containers	5
other	6

*B7. Are there ever shortages of water during the year, say during a dry season? 1 YES 2 NO

*B8. For most people, how much time does it take each day to collect drinking water?
(RECORD IN MINUTES)
During usual / non-shortage months _____
During shortage months _____

B9. Have there been any development projects conducted in this area during the last five years? (PROBE)
1 YES 2 NO

Describe briefly_____

_____

C. FARMING/AGRICULTURE

I would like to enquire about farming and land-holdings here.

C1. How large are the three largest (private) landholdings in this community, in ha?
(ONLY ASK IF NOT ALREADY KNOWN FROM MAP)

1. _____hectares
2. _____hectares
3. _____hectares

C2. How is other farmland distributed here? In other words, about what proportion of households own or have access to: (USE APPROPRIATE LOCAL UNITS AND SCALE CLASSES TO SITE, KEEP DETAIL AT LOWER END)

No land	_____	.75-1.0 ha/HH	_____
< .25 ha/HH	_____	1-2 ha/HH	_____
.25 -.50 ha/HH	_____	2-5 ha	_____
.50-.75 ha/HH	_____	>5 ha	_____

C2a. What is the most common form of land tenure here?

1. freehold/own outright
2. rent
3. sharecrop
4. communal property allocated among households/families
5. other

C3. Is most of the land in this community considered to be of good, average or poor quality? _____

1. Good 2. Average 3. Poor

C4. How does the overall condition of the local farm land compare to three years ago?

1. worse 2. better 3. same as before

C5. What are major constraints to higher yields on farms here?

1.lack of/poor land 2. lack irrigation 3. lack $ for inputs 4. cost to transport/sell
5. other (specify _____)

*C6. *[Optional module here on crops grown, average yields, use of inputs, labor, etc. if not used at household level. Use same format as in household questionnaire, i.e., a table to note each crop/season and typical harvests]*

D. ECONOMIC ACTIVITIES AND NON-FARM LIVELIHOODS

I would like to ask about employment and other economic activities here other than farming.

D1. What proportion of HH have someone running a regular small enterprise or earning regular income from any non-farm occupation ? (Example: a vendor, shop, blacksmith, weaver, carpenter) _____ (CODES FROM A5)

D1a. How has this changed since last year? 1. Less 2. Same 3. More

#D2. What proportion of households in this community had someone working on the road project last year? _____ (CODES FROM A5)

#D2a. Would you say that most of these participants were from the poorest households, households about average, or the relatively well-off households in this village? _____

1. relatively poor 2. about average 3. better off 4. don't know

D3. Do households sometimes have a member go away to work elsewhere to earn money? 1 Yes 2 No

D3a. (If Yes) About what proportion of households do so? _____

D3b. (If Yes) How has this changed since 2 years ago? 1. Fewer go 2. No change 3. More go

D4. About how much does a typical male worker earn per day for different types of work here? How much does a typical female worker earn?

D4a. Would you say that, in general, wages are increasing, decreasing or about the same compared to 12 months ago?

type of work	Estimated Current Wage (in "$/day")			Changes in overall wages since 12 months ago? (1= increase; 2= decrease; 3= same)
	Men	Women	Both	
farm laborer				
other unskilled work				
skilled laborer				
school teacher				
work on road project*				

**this category can be differentiated further as necessary*

D5. In the past year, for men living in this community, has it become easier or harder, or is there no change in the ability to find work as wage earners, whether in this community or nearby?

D5a. And how about for women who work?
Men _____ 1. Easier 2. No change 3. Harder
Women _____ 1. Easier 2. No change 3. Harder

D5b. Why? _____

D6. Are there some months or seasons in the year when people from this community often find it difficult to get wage employment? _____ 1. Yes 2. No

D6a. During which months or which season? _____

E. PERCEIVED QUALITY OF LIFE

E1. Does this community have any of the following problems? _____ 1. Yes 2. No

(IF YES)

E1a. How serious do you think each problem* is?

a. Contaminated/polluted water	1. Very serious	2. Not very serious
b. Flooding	1. Very serious	2. Not very serious
c. Drought (periodic)	1. Very serious	2. Not very serious
d. Long dry season	1. Very serious	2. Not very serious
e. Soil erosion	1. Very serious	2. Not very serious
f. Poor quality land	1. Very serious	2. Not very serious
g. Shortage of fuel wood/less forested land	1. Very serious	2. Not very serious
h. Less wildlife to hunt	1. Very serious	2. Not very serious
i. Lack grazing land	1. Very serious	2. Not very serious
j. Religious/ethnic conflict	1. Very serious	2. Not very serious
k. Other _____	1. Very serious	2. Not very serious

Comments: _____

*(*this list of items is suggestive; include only those relevant to the location; add or delete as necessary)*

E2. Has this community had any major natural disaster in the past two years that affected large numbers of persons who live here (including earthquake, flood, drought, or disease)? 1 Yes 2 No

(MULTIPLE RESPONSES ALLOWED)
Describe the disaster, the type of damage and its extent
1._____
2._____
3._____

E3. Compared to this time 12 months ago, do you think that overall, people here are worse off, about the same, or better off,

1. Worse 2. About the Same 3. Better 4. Don't know

E3a. What do you think has caused this change? _____

(PRECODE BASED ON PRETEST RESPONSES, WHICH MIGHT INCLUDE: MORE WORK AVAILABLE; STABLE GOVERNMENT; GOOD RAINS; PRICES GOOD THIS YEAR; #HEARD OF THE PROJECT; #THE PROJECT HAS HELPED, ETC.)

THANK YOU FOR PARTICIPATING

F. COMMENTS OF INTERVIEWER

F1. ON COOPERATION OF RESPONDENTS:

_____

_____

F2. ON KNOWLEDGE LEVEL OF RESPONDENTS:

_____

_____

F3. ON THE DYNAMICS OF THE GROUP INTERVIEW:
WHETHER ONE PERSON DOMINATED (IDENTIFY WHICH), CONFLICTS, ETC.:

_____

_____

F4. JUDGEMENT OF OVERALL RELIABILITY OF RESPONSES:

_____

_____

Technical note #7

Annotations for Prototype Community-level Questionnaire

*=Optional questions
#=follow-up survey

(1) Introduction

The community-level questionnaire is intended to supplement data collected from households. It also serves an important purpose of providing the household sample frame (map) for selecting households to interview in the cluster. It is intended to be administered by the team supervisor in selected clusters, i.e., in locations where households will be interviewed. Groups of respondents, i.e., leaders, head of the cooperative, respected elders, etc. should be interviewed together for information on the population, farming and economic activity. The teacher, health worker and other professionals should be interviewed for statistics on schools, vaccinations, etc as appropriate. The questionnaire can be filled out in pieces at different times during a team's visit to a village.

The community-level questionnaire may take 1-3 hours to complete. The sketch map alone may take an hour, depending on the local pace, size of community, and respondents' ability to understand the purpose. It must be done as soon as possible upon arrival so the rest of the interviews can get underway. Other questions should not pose a difficulty, but locating persons and getting a group together may take some planning. Much of the remainder of the questionnaire (after the map/sample frame) may be completed at night when a team is staying over in the community, or late afternoon/evening when people return from work/fields.

The survey contains the following modules: Identification; Population and Community Setting; Facilities within the community; Farming/Agriculture; Economic Activities and Nonfarm Livelihoods; Perceived Quality of Life; and Interviewer Comments.

(2) Discussion of Questionnaire

IDENTIFICATION

This page is to be filled in by the enumerator, noting administrative divisions, location in relation to the road (project) and conditions of the road. Names and positions of persons interviewed should be recorded. Codes reflect categories of potential respondents and may vary by location.

A. POPULATION AND COMMUNITY SETTING

A1. The map is the most important first step. The supervisor should draw on his/her own knowledge of the site and work with respondents to sketch boundaries in a way that will allow the team to draw a sample. The map does not have to be to scale, but should indicate rough distances, landmarks, density of houses and location of distant households. If it is a very small community of about 200, this step can be quite detailed to draw out fairly accurate information on current population (at least in terms of households). Location of facilities, water sources, sources of fuel, paths to other villages, etc. will be useful in filling in the rest of the questionnaire, but this can be done in stages. Most important are the boundaries of the village and households sufficient to choose the direction in which enumerators will work.

A2. This layout of land use can accompany the map. It is intended to provide insight into land distribution and availability.

A3. Population size from existing administrative records will be compared to population from local estimates or a map, to determine the size of the community. There may be inconsistency in boundaries, names, or in and out-migration to account for the differences.

A4. These three questions elicit perceptions of trends of in- and out-migration. This information is important for understanding project impacts and changes in an areas; for example, after the project begins, in-migration may increase as people arrive seeking work, perhaps displacing local residents.

A5. Information on ethnic, religious or other divisions or social classes is optional here, as it will be asked at the household level. If this is considered to be a major distinguishing factor desired in a poverty profile then it is desirable to gather it at both levels, especially if households may be spatially clustered within a community according to ethnicity (for example); the sample may be biased. Community-level and household responses should be compared for consistency.

A6. This is a straightforward question on school attendance. This will be used with "distance to a school" as measures of education services/access.

A7. Questions concerning immunization provide an important indicator of health care service use/access; these can be asked of a health worker if there is one, or of community leaders. Information on prices (if any) of services and mechanisms for delivery (mobile unit, specific days) can be gathered as additional background information.

B. FACILITIES WITHIN THE COMMUNITY

B1-2. Detailed questions on road conditions and cost and availability of vehicular (public) transport are needed to monitor road project progress and maintenance and to gauge road project impacts. A different project (i.e,. irrigation) would have equivalent questions reflecting the local project, but would retain some questions about local transport and roads as well. This type of information may already be available in other project documents, in which case it can be removed from the community-questionnaire.

B3. This is a detailed table on community facilities to provide contextual information on important services and change over time in availability of the service/facility. These items provide information on economic changes that are expected to occur in relation to the project, as well as monitoring other development interventions that are likely to influence poverty rates in each region. Enumerators should observe as much as possible, i.e., visible offices, shops, etc; then confirm with respondents, enquire about numbers, whether new, etc. Specfic items to be noted would vary somewhat with the location and application.

B4. This table records price information for possessions used to identify poverty status of households. These will be monitored over time, as some items may become pricey or inexpensive and change their relative value. This sort of question should be used in a pre-test with a larger number of items to help frame the household question on asset ownership. Three columns reflect the desireability of gathering 2-3 different price estimates from different sources, and using the average. To facilitate gathering prices and improve accuracy, items should be described in as much detail as possible (i.e., not just "radio" but "new cassette-player/radio" or even by local brandname).

B5. For the same reason, prices of typical foods and inputs are needed for monitoring changes in the cost of living. A table such as in B4 can be used. Specific items should be noted for a site, i.e., a particular common brand and package of fertilizer or seeds, to aid in monitoring.

B6-8. Information on water sources are needed at the community level if not asked at the household level. Details on shortages and time to collect provide additional contextual information.

B9. This question will help confirm the presence or arrival of other development projects in the area which might have an influence on poverty levels and changes during the course of the (road) project.

C. FARMING/AGRICULTURE

C1-2. Size of large landholdings, along with % landless, provides an indication of relative inequality in an area. These should be asked in a group, to avoid biases due to inquiring only of a major land-owner who wants to conceal his/her true holdings (for example). These are sensitive questions. Answers could emerge in the drawing of the map, if the topic is probed carefully.

C3-4. Quality of land and changes in farmland condition over time can be considered optional questions, as land quality is difficult to gauge and highly subjective and may not serve as a good indicator.

C5. It is important to identify perceived obstacles to farm production; this informationwill help in understanding the nature of project impacts.

C6. An additional box or module on crops and average yields, use of inputs, hiring, etc.in the local area will be neeed if this is not gathered in the household level questionnaire.

D. ECONOMIC ACTIVITIES AND NONFARM LIVELIHOODS

D1. This provides some evidence of the extent of reliance on non-farm income and how it is changing. This is important, as the project is expected to influence this behavior, and both project and non-project impact areas must be monitored.

D2. This targets project-participation specifically, to provide a the community level indicator of the degree of involvement in the project. It is desirable to know "who" is participating; the poorest? or only people from villages within a given distance? The question (as others of this form) can be phrased as "number of households in the community" or "estimated proportion" or "number out of every 10 households"; the latter seems to be workable (Bilsborrow, et al 1997) for most cases, but a pre-test should indicate which is best.

D3. This provides some information on the extent of out-migration to other areas for work, and how this is changing before and during the course of the project and longer study period.

D4. Wage information: this table records disaggregated data on wages in different parts (communities) of the study area, and how they vary over time for, say, villages over 3 km from the road corridor, etc. This also provides information needed to gauge the relative importance of different non-farm income sources.

D5-6. Difficulty in procuring work, along with out-migration, is important to understand the nature of off-farm work in the area and how it changes over time or with seasons.Seasonality may effect the ability of households to participate in the project. Problems in getting non-farm income are expected to decline as the labour-intensive project enters a region. Retrospective and seasonal information is needed for a community/cluster to provide a historical context on the importance of wage work, from which to extrapolate change due to the project.

E. PERCEIVED QUALITY OF LIFE

E1. Documenting typical problems faced by the local community will help monitor broad changes over the duration of the study and assess the project impacts in the context of other factors affecting poverty status. Some areas may be affected by drought, for example, and show little improvement in poverty statistics, while others were not and showed a large improvement. The specific items listed are suggestive and need to be refined or elaborated for given location.

E2. Documenting disasters is important for the same reasoning. This provides important background information on events and conditions in the region which influence project impacts and poverty status of the population.

E3. This question is intended to elicit information on respondents' perception of the trends in quality of life in the area over time. The direction of change and the reasons provided will provide insights that may be useful for understanding why the project has had, or not had, observed impacts. Depending on the location and cultural norms, this type of subjective question may not provide very reliable information, however; respondents may either respond more negatively (to appear to need more assistance) or positively (to please the enumerator) than they believe to be the case. Part E3a may be more useful, as a discussion of why or how changes are occuring will be interesting.

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