Indicators of Household Income for Use in the Evaluation of Agricultural and Rural Development Projects

Beatrice Lorge Rogers
Tufts University School of Nutrition

June 1988

1. Rationale: Why Measure Income?

Indicators of household income are used for a number of purposes in the development and implementation of agricultural interventions. First, income levels indicate locations where, and specifically among which households, development assistance is needed. In this manner, information on income can be used as a basis for targeting communities and households during the process of project design. Income information is important also for identifying resources available within target communities and households. Such information is critical for assessing the feasibility of project plans. Finally, information on changes in household income is central to the evaluation of program and project success. The intent of agricultural development projects, as of any economic development intervention, is to improve the level of living of poor households and their members. Changes measured by indicators of income let project planners and managers know whether their activities are having the desired effect. If the collection of data on income indicators is carefully designed, the resulting information can also be a guide to modifying the design of programs if their outcomes do not appear to be entirely positive.

The focus of this paper is to illustrate indicators of income which can be used to evaluate the effectiveness of agricultural interventions and, if necessary, as feedback to modify the interventions appropriately. This focus on evaluation dictates that indicators must be constructed to measure change at the level of the household, and even of the individual within the household. Using indicators that measure improvements in community wealth and income can provide misleading conclusions on the effectiveness of projects if the most vulnerable households have not benefitted or have even suffered a loss of income.

2. Direct and Indirect Income Indicators

Income is used as an indicator of the economic status of a household. Economic status is closely associated with welfare. Household income does in fact measure a household's access to resources, to the extent that these are purchased. However, income is limited as a proxy for welfare by the following considerations:

1) Many rural households have resources or access to resources which they do not purchase. Some examples are home produced goods, unpaid family labor, freely available plants and animals which family members gather and catch, and building materials. To the extent that these are used, information on income alone will understate the economic status and the welfare of households.

2) The uses of income are in part determined by who earns and who controls it. Income increases the range of consumption opportunities available to a household, but whether additional consumption will lead to an improvement in any particular indicator of welfare (such as health status, educational achievement, or land ownership) can not be determined only by knowing the level of income.

3) Similarly, the uses of income are affected by the period in which the income is earned, its reliability, and its form (cash, goods, or services). In order to measure welfare effects, changes in the patterns of the income flow as well as in the amount, may be important.

4) Income is best understood as a flow of benefits, and it must be measured in terms of some fixed reference period. The level of income for any household, but perhaps especially for marginal, rural households, varies considerably by season and year-to-year. This means that income measured at any particular point in time may not be an accurate representation of the household's welfare, unless saving and dissaving (i.e., buying on credit or drawing down savings) are taken into account.

A variety of indicators should be examined in any evalution of project impacts. Several categories of impact indicators of well-being can be used to measure changes in an evaluation study. These categories include wealth (household assets), income, expenditure, consumption, and, for want of a better term, quality of life.

2.1 Wealth

The wealth of households can be measured by their ownership of a set of assets. These assets can include productive resources such as land, farm implements, and irrigation systems; and they can include consumption goods such as housing, water supply, plumbing, household appliances, cars and bicycles. Some of these "consumption" goods can be considered productive, at least in the sense that they represent investments in human capital. For example, availability of piped water is associated with improved health status.

There are several advantages to using asset or wealth indicators to assess economic status. First, assets generally are readily observable. An interviewer or even an extension agent can observe whether a house is constructed of mud, brick or cement; whether the roof is metal or thatch; whether or not there is a refrigerator in the house. Even when assets are not readily observable (eg., radios), questions about ownership are simple and concrete. Many difficulties in the measurement of household economic status arise not from respondents' unwillingness to answer questions, but from their inability to do so, either because they do not know the answer, or because they do not fully understand the question. Unless the respondent has a motive for lying, he or she should be able to understand and answer questions about asset ownership.

Another advantage of using assets as an indicator of economic status is that asset ownership is much more stable over time than income. Thus, changes in the ownership of assets reflect relatively longer-term shifts in economic status. They may not be good indicators of short-term economic fluctuations which may have important implications for welfare (eg., seasonal shortfalls in income which result in periodic nutritional deficiencies), but they are more reliable than income in reflecting of relatively permanent changes in economic level.

The measurement of asset ownerhsip has some difficulties, however. One possible problem is that the concept of ownership may not be perfectly clear. Especially with respect to land, there are often culturally-specific definitions of different aspects of ownership which complicate the issue: use rights may be assigned differently from rights to sell or pass on a piece of land; formal ownership (with written title) may be defined differently from traditional access, although for most purposes both forms of ownership are equivalent. These culture-specific definitions of ownership must be fully understood, and a

decision made about which is the appropriate one to use, before the concept of ownership can be used to measure welfare for project evaluation purposes.

Land ownership as an indicator of economic status poses other difficulties as well. Landowners may be reluctant to reveal the amount of land they own because they fear taxation or confiscation due to land reform. Furthermore, land is not the only source of wealth, even in agricultural communities. Land can never be taken alone as an indicator of economic status, because this would misclassify wealthy merchants and moneylenders who might not own land. Other possessions, such as high-quality housing and transportation, for instance, may be more universally applicable indicators of level of living.

Another caveat about using asset ownership as an indicator of economic status is that the choice of particular assets that measure wealth is highly culture-specific. It is absolutely essential to understand what assets are valued in a given location, and not make any assumption without prior testing. For example, a survey in rural Pakistan found that indoor latrines, far from being an indicator of wealth, were owned only by households poor enough to be clustered together. In wealthier households, latrines were not used. In Mali, access to piped water was not reliably associated with other indicators of wealth. In some areas, a well in the compound was preferred to piped water just outside the house, while in other areas the preference seemed to be reversed.

While there is no substitute for a thorough knowledge of the communites under study, and no data collection effort should ever be undertaken without adequate pretesting, there are statistical techniques, such as principal components and factor analysis, which permit testing after the fact to see whether or not all the presumed indicators of wealth indeed group together.

Despite these concerns, asset owndership is one of the least expensive types of information to collect. In many cases, data on asset ownership can be collected by simple observation with minimal intrusion into households. And it can be aggregated to the community level so that, for example, the number of households owning houses with tin roofs can be compared between a base year and a subsequent year of the project, or between a project community and a suitable control.

2.2 Income

Income represents a flow of resources to a household or an individual over a specified period of time. Income can be defined in terms of cash received, but such a definition is likely to leave out important resource flows, especially in rural areas. "Real" income is defined as the flow of cash and non-purchased goods and services, measured in terms of their monetary value. Recently, the concept of "full" income has been introduced in the literature on measurement of economic status. Full income includes cash received, the monetary value of goods and services, and the time of household members. The inclusion of household members time in a definition of income is important, because it represents a valuable contribution to the welfare of households. Cash and physical resources can be conserved to the extent that household labor is used to substitute for purchased goods for household maintenance.

Income is a highly sensitive subject in some cultures, while in others people are quite willing to talk about what they earn. In places where questions about income are considered so intrusive that no one will cooperate, it is necessary to find indirect indicators of economic status, such as asset ownership, expenditure, consumption, and direct measure of welfare. As we have mentioned, many of these measures may be closer to the concept of true economic status which is of interest in an evaluation of agricultural interventions.

The biggest advantage of obtaining information on income is that it permits the analysis of the relative importance of different income sources (for example, agricultural versus non-agricultural, females versus males or adults versus children, earned versus unearned), and of the reliability and period of income. This is important information. An intervention which does not raise agricultural income, but which, through new technology perhaps, frees household members to take wage employment, may significantly improve household welfare. An intervention which evens out the flow of income during the year, perhaps by introducing a new crop variety with a different growing season, may raise a household's economic level because of increased income stability even if annual income remains unchanged. An intervention which alters the flow of income among members may significantly alter the consumption level of the household, because different members' preferences may be served.

It is difficult to achieve exact accuracy in the measurement of income in any survey, no matter how carefully

designed. Errors result from memory lapses, deliberate misstatement, and fluctuations in income which do not reflect real changes in economic status. For the purpose of assessing only the relative importance of different income sources, such error may not matter very much, as long as it does not involve bias. That is, as long as all sources of income are equally subject to errors of reporting.

2.2.1 Cash

Measurement of cash income is complicated by the choice of reference period, the need to ask separately about each possible source of income, and the need to question earners individually about their earnings. Perhaps the most intractable problem is that, in places where income is received irregularly in small or relatively variable amounts and without written records, people simply do not know or have difficulty in remembering the amount earned in the past monthy or year.

For most studies in the area of agriculture, the appropriate reference period for income is a year, since this covers most agricultural cycles. However, different income sources require the selection of different reference periods. Wages should be measured in terms of the pay period (week, month, day), with appropriate questions about the number of periods worked in the past year. Other sources, such as informal transfers from family members and formal transfers like social security, should be measured with respect to the period in which they are normally received. Moreover, inter-year income variation can be substantial, so that information on any given year may only provide an approximate estimate of permanent economic status. For example, if cash income from agricultural sales (or from agricultural labor) is low because of poor rainfall in a given year, this should not necessarily be taken to indicate poor performance of the agricultural intervention under evaluation. In an investigation measuring income, an interviewer must explicitly identify each possible source, because respondents often forget irregular income sources from which they have received no income recently.

Each earner needs to be questioned individually about his or her earnings, preferably in private, because it is quite common for household members to keep their earnings secret from each other. It is also important to probe for information on earnings, especially from women. It is now well recognized that women often report that they do not work for pay, because they primarily identify themselves as homemakers. Howver, women may have significant earnings

from casual businesses, like selling home-made goods or produce, or even wages. Children can also be important providers in low-income households.

The interpretation of information of income is problematic for a variety of reasons. As was mentioned above, not all income is used in the same way for household welfare. The income of older children, for example, may not be pooled (that is, contributed to the general resources of the household) to the same degree as that of the adults in the household. It has been suggested that women's income is used differently from men's income. Specifically, that men are more likely to spend income the basic consumption needs (especially food) of the household. This is a controversial point, but the importance of knowing not only the amount of income but who earns it is clear. Also, income received in small, regular increments will more likely be spent on short-term consumption, while large, irregular payments such as income from crop sales will more likely be spent on large, lumpy expenditure items such as school fees and long-term investments. In summary, many aspects of income aside from its magnitude need must be considered to provide an accurate assessment of income as a direct indicator of welfare.

2.2.2 In-Kind Payments

The problem of measuring income-in-kind is that it requires evaluation in monetary terms. This problem is perhaps most easily resolved for food, where purchase prices (for households which do not produce food either for sale or for their own consumption) or farmgate prices (representing income forgone for producers) can be used. Evaluating the monetary value of payments in the form of prepared meals, clothes, housing, and so on, is a more difficult task, partly because the variation in quality is difficult to assess, and the recipient's loss of choice on how to use the income must be taken into account.

The problem of which period to use and the choice of earners are as important for in-kind pay as they are for cash, and the problems of choosing a reference period are the same.

Another issue arises in monetizing the value of home-produced food. Many households derive a substantial percentage of their food from home production, but they can not estimate an annual figure for the quantity consumed because they collect from their fields or gardens just the quantity needed for the day's meals. This is an issue for

foods such as fruits, vegetables, and tubers, and for eggs and milk, which do not have one short, specific harvest period. The only way to estimate the value of such in-kind income is to measure actual consumption in a given reference period, and estimate its annual value, taking seasonal variations into account. This can be done either by measuring consumption at several points during the year or by asking questions about the seasonal availability of the most important foods.

2.2.3 Time

Monetizing the value of household members time is an intractable theoretical problem for measurement. One approach used is to estimate the market wage rate commanded by people with the same characteristics (age, sex, educational level) as the individual under investigation, and use this as an estimate of the income forgone when an hour of that person's time is spent in unpaid home production. However, this does not account for the self-selection or non-working household members, nor for the fact that wage labor involves fixed inputs of time in a fixed location, so that its relevance to relatively unstructured time at home is questionable. Also, clearly not all time in a 24-hour period can be valued the same way.

There is no simple solution to the problem of valuing home labor. For the purposes of an evaluation, what is important is to record the number of working and non-working (for pay) adults in a household, and to recognize in interpreting the data that households of equivalent size and real income are better off (in terms of resources available to promote family welfare) if they have more leisure time available. That is, the availability of time does not necessarily have to be measured in the same terms (monetary units) as cash and in-kind income, but it must be taken into accounbt to assess a household's level of living.

2.3 Experditure

Household expenditures are often easier to measure than household income. There are several reasons. First, respondents are likely to know and to remember how much they spent on something. Also, expenditure may be a less sensitive subject than income. In many places one simply can not ask direct questions about income, but people are willing to report on their expenditures. Furthermore, the permanent income hypothesis holds that expenditures are more stable than income: as income fluctuates, household will save or dissave in order to maintain a level of expenditure

which matches their longer-term expectations of economic status. One may argue that in very poor households, day-to-day expenditures are determined by short-term income; they do not have the luxury to save or to dissave. This hypotheis is not supported by evidence of the widespread use of credit in poor communities. In any case, if this were true it would mean that expenditure is no better than income as an indicator of economic status; not that it is worse. One can also argue that expenditure is more closely related to the underlying concept of economic level than income, since expenditure represents goods actually consumed by the household, while inocme represents potential consumption.

Choosing an appropriate reference period poses similar problems in the measurement of expenditures to those of income measurement. Expenditures should be measured in the logical reference period for the item in question. For example, transportation costs may be weekly; rent, if paid, may be monthly. Food may be a daily or weekly cost depending on local patterns. In some cases, the reference period for food staples may be as long as a year. if people are in the habit of buying one large sack of grain for long-term use. This is probably less characteristic of poor families, who are unlikely to have the cash for such large purchases.

The purchase of consumer durables also poses problems of interpretation. If large numbers of households in a community are beginning to invest in such items as cars or major appliances, this may be an indication that the general level of wealth in the community is rising, and it may indicate program impact. But the purchase of such items can not be added to regular periodic expenditures and included in an estimation of expenditure as a proxy for annual income. Probably such purchases should be analyzed separately from more regular expenditures.

2.4 Consumption

As with cash income, expenditure measures only those items purchases for cash and thus may leave out major categories of consumption obtained from home production or from gifts and pay. A study of household economic status, especially one conducted in rural areas, must include non-purchased, consumption goods in any assessment of economic status.

Measuring the value of non-purchases, consumption goods requires assessing the market cost of the items if purchased. In the case of food consumption, households

which produce the food they consume should probably have the food valued at the farmgate price, thus representing the level of consumption of other items which they could have purchased if they had sold the food. Households which obtain food as pay or gifts should probably have the food valued at the retail price. In many rural areas, some foods are sold directly by producers to consumers, so the farmgate and the consumer price are the same. In the case of housing, many rural communities have no rented housing, and ownership simply requires finding free materials and building on unoccupied land. Where this is the case, it may not be meaningful to monetize the value of non-purchased housing.

Reference periods for the measurement of consumption, as with expenditure, should be chosen to suit the time being measured. In the case of food, an appropriate reference period may be a few days or a week, but the issue of seasonality needs to be takin into account. Food is both cheaper and more available from home consumption during some seasons than others. Season festivals involving feasts or fasting (such a Ramadan, Eidh, and Christmas) are not appropriate to include in a reference period intended to represent the household's usual level of food consumption.

2.5 Quality of Life Indicators

Perhaps the most indirect measures of income, but also the most direct measures of welfare, are indicators which measure the physical quality of life such as nutritional status, health status, morbidity, and mortality. These indicators are closely related to income and expenditure levels, but they are determined by many factors other than economic ones. Nonetheless, they should be included, when possible, in evaluations of project impact, because they provide information directly related to the welfare goals which represent the underlying purpose of economic development initiatives.

The nutritional status of children in households is relatively easy to measure. There are widely recognized standards of height- and weight-for-age and weight-for-height which can be used for assessment. Generally, height-for-age is interpreted as an indicator of long-term dietary adequacy, and weight-for-height is interpreted as an indicator of changes in the short-term. The nutritional status of children is one indicator of the availability of resources at the household level, and changes in the prevalence of malnutrition are probably good indicators of changes in the level of welfare of a community over time.

Infant and child mortality are also indicators of resource availability and welfare at the community level. This indicator, however, is not suitable for assessing household-level changes, because the frequency of such mortality is low.

Quality of life may also be assessed using variables such as the number of children in school at a given age, and the amount of leisure time availabe to adults. These are both indirect measures of the severity of need for household labor. As a households' economic level improves, it is better able to spare labor from income-earning activities so that time may be spent on consumption (leisure) and investment in human capital (education).

2.6 Choice of Indicators Measuring Community Household and Individual Level Changes

In this section, a variety of indicators of household economic status were discussed. Each indicator measures economic status using different information, and each could be considered as part of an impact evaluation. A number of measures were mentioned which can be interpreted at the community and the household level. Both levels should be included in an evaluation. Community level changes are a powerful indicator of the success (or failure) of a project. There are cases of economic change in which the improvement in community standards of living was obvious to casual observers simply from the number of tin roofs, electrical connections, and television antennae on houses. However, there are also cases where the visible change in the communitie's general level of economic status masked the failure of some categories of households to receive benefits. One study even found that the apparent change in household economic status as a result of an economic development project was due to a change in the number of households in a community, those who benefitted from the project stayed, but many households simply moved and were not taken into consideration during the follow-up study. Inclusion of individual households in all assessments is clearly important.

Consideration of indicators that focus on individual household members is also important. Changes in the flow of income among earners is not only an issue related to how income is used (as discussed above), but may also become an equity issue if some household members lose income or access to resources while others gain.

3. Sources of Data

In this discussion we are concerned with the evaluation of agricultural interventions in rural areas. The scale of the intervention and the scale of the evaluation study will determine the range of possible data collection methods and sources of data which can be used. Possible sources of data include the following:

1) Secondary date which include censuses, household income and expenditure surveys, and health and nutrition surveys.

2) Adminstrative records of government and non-governmental agencies and programs.

3) Data obtained which is used to administer the agricultural intervention project under evaluation.

4) Observational data collected for the evaluation study.

5) Interview data collected in a household survey for the evaluation study.

These five sources of data are discussed below in some detail.

3.1 Secondary Data

In many countries data is available from large-scale surveys including censuses, income and expenditure surveys (typically conducted to develop a basis for consumer price index), and special purpose surveys.

The value of such data sources for evaluation of a specific project is likely to be limited. There are several reasons for this. First, access to the data may be difficult to obtain, because the institution responsible for the study may not wish to release it. Second, the level of detail is rarely sufficient to permit the type of analysis needed for project evaluation purposes. Third, even though the costs of data collection have already been paid for, the time and money costs of cleaning and analyzing large survey data sets should not be underestimated. In most countries, these large-scale surveys are usually not undertaken frequently enough to be useful for evaluation purposes. Finally, the quality of the data collected should be a concern for any user who was not directly involved in the design and supervision of the collection effort.

Still, it is worth investigating the availability and usefulness of secondary data sources in a given setting, as there may be cases in which none of these problems exist. When good data are available, and if the level of detail is sufficient to disaggregate by appropriate region, surveys may be valuable. Most likely such data sources are used to provide baseline information with which changes brought about by a project can be compared. Information often times useful for evaluation purposes covers expenditure levels, consumption of different classes of goods (as an indicator of economic status), type of dwelling, and ownership of assets.

3.2 Administrative Records

The main concerns with using administrative records are those of bias in the population represented by the records, and systematic errors of measurement due to incentives for misreporting. For example, records of landholdings may systematically exclude owners of the smallest holdings, or those whose title or access to the land is informal or questionable. The size of landholdings may be systematically understated if the information is used for tax purposes. Information on use of agricultural inputs may include only those households regularly visited by the agricultural extension agents; and these agents may have an incentive to overstate the use of modern inputs if their own effectiveness is judged by the number of farmers who adopt modern methods. Production and yield information may be inaccurate if producers withhold some of their product for sale through unofficial channels.

Once again, administrative records may provide useful information on changes in an area, but the user of such information needs to be aware of the possible pitfalls.

3.3 Project Records

It is ideal if agricultural projects can build in a process for collecting information useful in assessing the income changes in the project area. However, care must be taken not to burden project adminstrators with tasks not directly relevant to what they perceive as their jobs. Indicators directly related to the project's own activities, such as irrigation wells dug, pumps installed, or tractors purchased, may be useful as indicators of changes in the economic level of households. But it is unlikely that agricultural project workers will keep track of changes in

household food consumption, children's nutritional status, or the time use of individual members of selected agricultural households. Nor are they likely to be the most suitable people to collect that information.

Those responsible for designing agricultural projects may feel that building in a separate, ongoing evaluation component represents a diversion of resources from the project's primary goal. However, tracking the impact of an agricultural project on the income, consumption levels, and welfare of households and their members is highly relevant to implementation. Such evaluations can identify problem areas early so that any negative effects can be countered at an early stage.

Oftentimes, a serious conceptual problem with monitoring a project's effects on household income in project sites, is that such an effort does not include an appropriate comparison or "control" group. Such efforts provide the possibility for before-and-after comparison, but do not provide for a control group. This limitation would not exist for formal evaluations.

3.4 Primary Data Collected for Evaluation Purposes

Secondary data may provide some useful information on agricultural project impacts, if evaluators are lucky and suitable data are readily available. However, in most cases a reliable evaluation will require a focused effort including the collection of primary data. However, this does not necessarily imply a massive data collection effort. A judicious combination of direct observation, informal interviews, and possible small-scale surveys, can produce the necessary information efficiently, especially if the effort is carefully planned and it makes use of existing knowledge and experience in the field.

It is worth pointing out that placing too much emphasis on avoiding the expense of primary data collection may prove disastrous. It is rare to find sources of secondary data sufficient to assess the impact of a particular agricultural intervention in a given region. Relying on secondary data alone may give inadequate or worse, misleading information on the effectiveness of interventions. Well-planned evaluation studies can provide this information and, even more important, a basis for understanding what aspects of the project, if any, need to be modified. The ideal structure for evaluation studies is a small-scale but realtively frequent effort, rather than a one-time, large-scale study. One reason for this is that a low-cost

but ongoing evaluation study can provide data useful for modifying the program. This is clearly more useful than a large final evaluation which simply points out whether or not the project had the desired impacts, when it is too late to do anything about it.

Several researchers have suggested approaches suitable for relatively rapid and low-cost data collection (eg., Scrimshaw and Hurtado, 1986; Kumar, 1987; Rogers, 1988). In the following section, largely taken from Rogers, 1988, one such approach is presented.

4. On-Site Data Collection Methods

Direct observation and informal and formal interviews with local informants at the site(s) of the project and at suitable control sites are essential to a reliable evaluation. Experienced social scientists and development professionals, including local prefessionals if feasible, should be involved. Direct observation should be used whenever possible to complement and validate the information obtained from group and individual interviews.

4.1 Avoiding Bias in Data Collection

Data collection for project evaluation may be undertaken on a smaller scale than a survey and techniques used may be less formal, but the principles of sampling are essential to ensure that a representative range of respondents is studied. In survey research, bias in the selection of respondents is avoided by applying proper techniques of sampling which ensure that every member of the population being studied has a known, non-zero change of being observed. The population being studied may be households, persons, farms, extension agents, or a variety of ther units.

Observations should be conducted at randomly selected locations and times of year. If this is not possible, recall should be used to account for seasonal variations. Households or other units selected should be drawn from the full range of geographic locations and characteristics which exist in the project area. It will be too costly and time-consuming to draw up an exhaustive sampling frame for households or other units. Still, the target region may be divided into zones by distance from the agricultural extension station or the cooperative, to ensure sampling some households from each zone. If the relevant household characteristics are not geographic, but relate to landlessness or male/female headship, for instance, care

must be taken to include some representative households from each subgroup (an approach known as "quota sampling"). Sampling of observations based on convenience of time and place should be avoided at all costs, since it is bound to be non-representative and will provide misleading results.

4.2 Approaches to Data Collection

There are several well-accepted methods of data collection for project planning and evaluation which are designed to be relatively low-cost and will provide results relatively quickly (cf. Kumar, 1987; Scrimshaw and Huyrtado, 1986; Rogers, 1988). Different methods are suitable for different types of information and are described briefly in the following paragraphs. Generally, such data collection methods require trained and experienced people to work in the fields. Use of such people makes data collection efforts more cost-effective.

4.2.1 Direct Observation

Direct observation of public behavior permits the observer to validate information reported in the literature or by local informants. A format for collecting the data should be developed specifying the number of observations required and the procedure for obtaining them in an unbiased way. Observation should always be in quantitative terms when possible. Structured data collection instruments for direct observation should specify the precise information required. Exmaples are: number of women and men attending agricultural extension classes in a sample of extension sites; relative frequency of men and of women, and of different age groups performing a given (publicly observable) task, such as weeding or land clearing; time required to perform a given task; what tasks are performed together or in a fixed sequence, and so on.

4.2.2 Focus Groups

In a focus group, a small group of people (about six to fifteen) with similar interest in a project, meet with a discussion leader who guides a 45-minute to two-hour discussion on a particular topic. (See Kumar, 1987, for a fuller discussion.) Examples of such groups might include small holders growing a particular crop, or members of a marketing cooperative. The idea of focus groups is to get a discussion going among the participants rather than to conduct a question-and-answer session. The leader's job is to keep the discussion focused on relevant topics and to move the discussion along when a topic seems to be

exhausted. He should be prepared with a list of general questions which participants in the focus group can answer and in which then are interested. The questions should be designed to elicit information without suggesting responses. "What is involved in selling your coffee?" is a more appropriate opener then, "would you like the cooperative to provide transportation for your coffee crop?" Of course, focus groups must be conducted by a person with native fluency in the local language.

If several different groups have an interest in the project, then several focus groups are needed, since some people may be unwilling to discuss their opinions in front of people whose interests in the project diverge from their own. For example, landless laborers may have different interest from small landholders. Focus groups, by encouraging discussion, often reveal unanticipated aspects of a particular issue. Feelings, preference, attitudes may come out which may not be anticipated, but which might explain why a particular project outcome has occured. Since discussions are public, people may correct each other's reports and imporve the reliability of the information provided.

The process of note-taking in focus groups should be thorough but unobtrusive. If it seems inappropriate to take notes during the session notes should be compiled immediately after leaving the meeting. In a focus group, it can be helpful to have two people working, one guiding the conversation and the other taking notes.

Focus groups will not, of course, provide information about attitudes or behavior which people are unwilling to reveal to their neighbors. No form of data collection suitable to the project planning process will reliably obtain information on embarrassing or illegal activity, although sensitive leader can often address relatively private subjects. Another drawback of a focus group is that responses may reflect social norms rather than actual behavior, since people are responding in public. Furthermore, people may describe what they believe to be general practice, even if they know their own behavior in specific instances does not conform to it.

4.2.3 Key Informant Interviews

Individual interviews using a relatively unstructured set of questions or "topic guides" (Scrimshaw and Hurtado, 1987) can substitute for or augment focus groups if privacy is considered essential, or if it is difficult to reach some

people in a group setting. The questions are used to introduce a general subject area, and the respondent can answer focusing on the aspects of the question most relevant to him or herself. The advantage of such semi-structured interviews is that, as in a focus group, the interviewer can pursue a line of questioning that leads in unanticipated directions.

4.2.4 Small Scale Surveys

Surveys are distinguished from key informant interviews by the relatiely larger number of respondents, greater use of closed-ended, precoded questions, and more rigorous application of sampling techniques. A survey must be the last stage in the data collection process, because the key informant interview and focus group methods, as well as direct observation, are essential to ensure that the closed-ended survey questions are meaningful, cover all the relevant aspects of the probem, and are phrased in a culturally appropriate manner. The advantage of the survey approach is that there is greater assurance of statistical representativeness. If the sampling mehtod is indeed representative, then surveys permit one to assess the frequency of particular situations or attitudes, not just to note their occurrence. Also, the more structured approach to interviews ensures that all questions are covered in all interviews in the same way. The possibility of bias due to permitting the respondent to define the focus of the interview is thereby avoided.

5. Summary

Income is only one indicator of the economic status and welfare level of households and individuals. A variety of indicators are suitable for measuring economic status, including asset ownership and wealth, income, expenditure, consumption, and direct welfare measures such as the nutritional status of children (a household-level measure) and child morbidity and mortality rates (a community-level measure).

Income is subject to problems of measurement, including the selection of an appropriate reference period, sensibility to severe fluctuations over the short run, and in some setting, the reluctance of people to discuss it. In rural and developing country settings, a definition of income must include income-in-kind as well as cash. Wealth (that is, asset ownership) may be more stable than income as an indicator of changes in economic status. Expenditure and consumption (consumption includes cash expenditure and goods

consumed from unpaid sources) are usually less sensitive topics than income, and may also be more stable and more direct indicators of welfare.

Measures of the effectiveness of projects must be sensitive to changes in the form, timing, and flow of income as well as changes in the amount of income received by the unit of interest.

A reliable evaluation is likely to require a primary data collection effort. Secondary data sources such as existing surveys and administrative records are unlikely to provide the level of detail necessary for evaluation purposes. Also, such data collection is unlikely to be performed frequently enough to be useful for project or program evaluation purposes. Secondary data, if they are available, easily accessible, and of satisfactory quality, may nonetheless be useful as a baseline with which changes resulting from a project can be compared.

Frequent, small-scale project evaluations are preferable to larger, more expensive evaluations conducted less frequently, because on-going evaluation permits the use of the data obtained for project modification. The cost and effort involved in project evaluation is likely to be more than repaid by improvements in cost-effectiveness and the greater chance for successful outcomes of agricultural interventions.

References

Kumar, K. 1987 Conducting Group Interviews in Developing Countries. Washington, D.C. AID Program Design and Evaluation Methodology Report No. 8

Kumar, K. 1987 Rapid Low Cost Data Collection Methods for AID. Washington, D.C. AID Program Design and Evaluation Methodology Report No. 10.

Rogers, B. 1988 Incorporating the Intrahousehold Dimension into Development Project: A Guide. Paper prepared for USAID/PPC/Office of Policy Development and Program Review.

Scrimshaw, S. and E. Hurtado, 1987 Rapid Assessment Procedures for Nutrition and Primary Health Care. Los Angeles, California: University of California Latin American Center.