Designing Poverty Monitoring Systems for MIMAP

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I.   Introduction

The MIMAP project is concerned with assessing the micro impacts of macroeconomic

adjustment policies. By micro impacts is meant ultimately the well-being of individuals and

households, with attention to the poor (Lamberte, et al., 1992). To assess micro impacts for policy

purposes, the MIMAP project, particularly in Bangladesh and in the Philippines, has developed a

set of indicators to monitor changes in well-being and poverty (e.g., in the Philippines: Florentino

and Pedro, 1992; Lamberte, et al., 1992; Reyes, 1994, 1996; in Bangladesh: Mujeri, 1993; Mujeri

and Singh, 1996). A quick review of these indicators (see Annexes 1,2 and 3) shows that they

consist of a mixture of measures of human outcomes (e.g., survival, nutritional status, health status,

literacy), of consumption of or access to goods and services (e.g., housing, clothes, food, water and

sanitation), of income, employment and inputs to production, and of participation in community and

political affairs. The multiplicity of these indicators, some of which may appear redundant (e.g.,

income, on one hand, and housing, clothing, and food consumption, on the other), suggests a need

to clarify the conceptual basis for the choice of indicators, i.e., what each indicator is measuring and

why. While many of these indicators may be taken to reflect some dimension of well-being, the

concept of well-being itself is not explicitly discussed.

Moreover, while earlier papers of the MIMAP project talk about macroeconomic impacts

on well-being, later papers talk about impacts on poverty (e.g., Mujeri and Singh, 1996; Reyes,

1996). Poverty, as discussed in the literature, has a distinct meaning and measure: it is usually

defined in terms of material well-being and measured in terms of a person's consumption of goods

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and services. However, it is recognized that such measure does not adequately capture other dimensions of well-being, such as life expectancy, health, and literacy. Hence, it might be asked whether the MIMAP project has shifted its focus more narrowly on poverty rather than more broadly on changes in well-being. The multiplicity of indicators that has been developed by the country MIMAP projects, notably Bangladesh and the Philippines, suggests that a broader concept of well-being is still being addressed and not simply poverty as conventionally measured.

Notwithstanding the title of this paper (which was assigned by the organizers of the meeting), the focus of the paper is on indicators of well-being, and the monitoring of such, consistent with the original aim of the MIMAP project, which is to assess the impacts of macroeconomic policies on individual and household well-being. Of course one could speak of the impacts of macroeconomic policies on poverty, as conventionally measured, as a special and highly focused concern; after all, poverty alleviation is a major policy objective. Indeed, we shall attempt to place the concept of poverty in the context of a larger concept of well-being. If poverty is broadly defined as a state where a person falls short of a level of well-being deemed to constitute a reasonable minimum, then in defining poverty for MIMAP purposes, there is a need to define well-being in general. The next section of this paper, thus, attempts to briefly review the concept of well-being as a way of developing a useful conceptual basis for the development of indicators of well-being for MIMAP monitoring. Section III briefly describes the work on developing indicators system in the MIMAP projects. Section IV discusses various issues in the development and maintenance of a monitoring system. The final section concludes.

II   Well-Being and Poverty

A.   Concepts of Well-Being

The concept of well-being has many dimensions or domains, e.g., physical, psychological, and material. Physical and psychological well-being are often associated with health, while material well-being is often associated with consumption of goods and services. There are several disciplinal perspectives in analyzing well-being, each stressing some dimensions or domain (SyCip, Asis and Luna, 1993). Within the discipline of economics discipline, there are also alternative approaches to the concept of well-being. A convenient framework for describing these approaches is the distinction between different categories involved in the relation between a good and a person suggested by Sen (1982). The categories involved are shown below (using the Sen's example of a bicycle).

Goods ----------------> characteristics ----------------> functioning ------------------> utility
(e.g., a bike)   (e.g. transport)   (e.g., moving)   (e.g., pleasure)

According to Sen, characteristics are qualities of goods, whereas functioning relates to a person's use of those characteristics, e.g., a bike provides transport while a person moves with it.

Given the above framework, one approach to the concept of well-being is to consider the amount of goods and services (or their characteristics) that a person consumes or can command. We might call this approach as the commodity approach to well-being. While Sen (1988) criticized this approach as inadequate at best, it is not at all clear whether the early writers of development really

equated well-being with commodity consumption (or command over commodities as measured by income) or simply viewed commodity consumption as a proxy for, or the commodity determinants of, a multi-dimensional concept of well-being that includes longevity, health, nutrition, etc. Srivinavan (1994a), for example, asserts that: "In fact, income was never even the primary, let alone the sole, measure of development, not only in the minds of economists but, more importantly, among policymakers" (p.238). A liberal interpretation of this approach then is that it considers only material well-being as a domain in well-being (distinct, for example, from psychological or physical well-being associated with health), and does not preclude the importance of other domains.

However, it is hard to think of commodity consumption as an indicator of well-being without reference to what commodities can actually do to people. On might say then that it is with reference to either the utility that people derive from consumption of commodities (utility approach) or to the functionings that they are able to achieve (functioning or capabilities approach) that commodities acquire some meaning as an indicator of well-being.

Thus another approach to defining well-being is in terms of utility. One view is to define utility as the satisfaction (subjective pleasure) derived from the consumption of goods and services (desire-fulfillment or want-satisfying interpretation). Utility, defined this way, can not be directly measured. What is measured are the goods and services that are consumed. Another view of utility from the standpoint of consumer choice is that utility is simply a way of describing preferences. A consumer is assumed to have preferences for certain bundles of commodities. These preferences are summarized in a utility function (or preference function) that says that more-preferred bundles have higher utilities than less-preferred bundles. Again, utility is not directly observed or measured. What is observed is the actual bundle of commodities that are consumed. Indirectly, the actual

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iundle of commodities that is chosen is the one which provides the highest utility. In this interpretation, well-being can be proxied by what is observed, namely the bundle of commodities hat are consumed. The important point here is that this bundle of commodities is what is preferred by the consumer.

A third approach is to consider the category of functioning (e.g., moving, being well-nourished, being in good health, being socially respected). "People value their ability to do things and to achieve certain types of being (such as being well nourished, being free from avoidable morbidity, being able to move about as desired, and so on). These "doings" and "beings" may be called "functionings" of a person" (Sen, 1988:15). These might also be called capabilities, i.e., what a person can do or can be. In this approach, goods and characteristics are seen to be merely means to the end of well-being, not the end themselves. Moreover, it views utility as only one aspect of what goods can do to people, mainly psychological, but goods also have non-psychological effects on people. As Sen argues, an undernourished person may be "happy" but might still be deprived of proper nutrition if the person "has learned to have realistic desires and to take pleasure in small mercies" (Sen, 1985).

There are, however, problems with the functioning view of well-being. Lipton and Ravallion (1995) argue that: "We rarely observe functionings or capabilities, but rather certain "achievements". The mapping from the latter to the former is not unique, but depends on factors such as preferences. For example, to conclude that a person was not capable of living a long life we must know more than just how long she lived; perhaps she preferred a short but merry life. The role ascribed to preferences ... in capabilities approach is still unclear; it is one thing to reject the strict

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welfarist view that *only* utilities matter, and quite another to claim that utilities are not at least a part of the objective."(p.2567).

In summary, we have seen three possible approaches to well-being: a pure commodity-approach; a utility approach; or a functioning or capabilities approach. Neither one can be totally defended. The commodity approach does not take into account what it is that commodities can do to people, the utility approach does not take into account the functionings of people, and the functioning approach does not take into account preferences of people. Conceptually, it is difficult to reconcile the three approaches. It is not easy to just consider a linear relationships among the three categories such that commodities are seen as determinants of functionings, and functionings in turn are the ones that directly provide utility. Certain consumption may provide utility without adding to functioning (e.g., eating certain foods can provide satisfaction without adding to nutrition, unless the capacity to enjoy good food is considered the functioning at issue). On the other hand, certain consumption does not directly provide utility, but only through its effect on functioning (consumption of medical services do not directly provide utility, in fact, certain services might involve a lot of disutility, but being in good health resulting from such consumption does).

More importantly, there remains an important implication for policy. Under the utility approach, two persons maximizing utility subject to the same income and relative prices may consume different bundles of commodities because they have different preferences. Suppose the difference in the bundles is that one of the two persons consumes less nutrients (but more of other things), and hence, might be undernourished than the other person. Under the functioning or capabilities approach, the first person might be declared having a lower level of well-being because he is deprived of adequate nutrition. From the standpoint of policy, nothing might be done under the utility approach, but under

the functioning approach, there might be a demand for raising the nutritional status of the undernourished individual.[1]

Despite the above conceptual problem of having a single approach to well-being, one might adopt a pragmatic approach purely from the standpoint of developing indicators of changes in people's situation arising from macroeconomic policies. From a practical standpoint, these indicators would include (1) commodity-based indicators, which might be interpreted by the policy maker from a utility or functioning approaches (it does not matter to the monitor), and (2) measures of functionings or capabilities to capture other dimensions of well-being.

But what about freedom? Where does it come in into the concept of well-being? The *Human Development Report 1990* (UNDP, 1991) emphasized the importance of human freedom: "Human development is incomplete without human freedom". It distinguished between two clusters of freedom. The first comprises "negative" freedoms, so called because they imply freedom from something, e.g., from arbitrary rule, from illegal arrest of from unwarranted attack on person or property. The second cluster comprises the "positive" freedom. These are the freedoms to do something, e.g., to take part in the community life, to organize opposition parties or trade union groups, etc. These include many personal rights: the right to life, liberty and security of person; equality before the law; freedom of assembly; freedom of thought, religion and opinion; the right

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[1] A balanced view of the role of utility and non-utility considerations is expressed by Ravallion (1992): "While it would seem undeniable that utility information - the preferences of people - will often have a role of some sort in the formulation of both the objectives and constraints in policy problems (particularly when incentives matter), welfarism is clearly not a universally acceptable principle for policy choices. Considered judgement will be needed in situations where poverty comparisons based on utility information (leaving aside for the moment the difficulties in obtaining such information) are in conflict with defensible non-welfarist comparisons. This difficult issue will come up repeatedly in poverty assessments and policy evaluations - as in other areas of policy..." (p.6).

to work, the free choice of jobs; the right to an adequate standard of living - including adequate food, clothing, housing, education; the right to participate in community; and so on.

One approach to describing where freedom fits in into the concept of well-being is to consider, as Dasgupta's (1993) does, a production process where commodity consumption is an input, utility and individual functionings are outputs, and the political and civil liberties enjoyed by people in society are the background environment within which people can engage in the "production process", converting commodities and services into functionings and utility. Political rights are taken to be the right of citizens to play a part in determining who governs their country, and what the laws are and will be. Civil rights, on the other hand are the rights of the individual vis-a-vis the State. Of particular importance are freedom of the press and other media concerned with the dissemination of information, and the independence of the judiciary.

The 1991 *Human Development Report* (UNDP, 1991) described 40 indicators to measure freedom based on the *World Human Rights Guide* by Charles Humana. These are the following:

- The right to: travel in own country; travel abroad; peacefully associate and assemble; teach ideas and receive information; monitor human rights violations; ethnic language

- The freedom from: forced or child labor; compulsory work permits; extra-judicial killings or "disappearances;" torture or coercion; capital punishment; corporal punishment; unlawful detention; compulsory party or organization membership; compulsory religion or state ideology in schools arts control; political censorship of press; censorship of mail or telephone-tapping.

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- The freedom for: peaceful political opposition; multiparty elections by secret and universal ballot; political and legal equality for women; social and economic equality for ethnic minorities; independent newspapers; independent book publishing; independent radio and television networks; independent courts; independent trade unions.

- The legal right to: a nationality; being considered innocent until proved guilty; free legal aid when necessary and counsel of own choice; open trial; prompt trial; freedom from police searches of home without a warrant; freedom from arbitrary seizure of personal property.

- The personal right to: interracial, interreligious or civil marriage; equality of sexes during marriage and for divorce proceedings; homosexuality between consensual adults; practice any religion; determine the number of one's children.

B.   Concept of Poverty

In translating these different approaches to well-being into poverty measurement, there arises a problem of defining a minimum level of well-being such that people falling below this minimum would be considered poor. There is the problem of measuring utility directly, and in the case of the functionings approach, it is not clear how to define a minimum level (or a minimum bundle) of functionings for a person to be considered poor or deprived.

Perhaps as a result of this, economic well-being, as usually defined in poverty studies, is measured in terms the person's consumption of goods and services, with the explicit recognition that this measure alone is an inadequate measure of well-being (Lipton and Ravallion, 1995). In the

international study of poverty, the World Bank (1990) defined poverty as the "inability to attain a minimal standard of living", where the standard of living is measured in terms of current consumption (including consumption from own production). It considers consumption is a better measure of well-being than income. Like others, the World Bank recognizes that neither income nor consumption captures other dimensions of welfare as health, life expectancy, literacy, and access to public goods or common property resources. While recognizing the limitation of the concept of "economic welfare" as "command over commodities", Lipton and Ravallion (1995) nevertheless argued that "it is not controversial that inadequate command over commodities is the most important dimension of poverty, and a key determinant of other aspects of welfare, such as health, longevity, and self-esteem."

The concept of "standard of living" can be viewed from a utility approach or a non-utility approach (Ravallion, 1992). In measuring living standards, the utility approach typically emphasizes aggregate expenditure on all goods and services consumed. By contrast a non-utility approach such as the basic needs approach would emphasizes specific commodity forms of deprivation (e.g., inadequate food consumption), while the functioning approach would emphasize deprivation in terms of capabilities (e.g., undernutrition, illiteracy).

The basic needs approach as advocated in the 1970s (see e.g., ILO, 1976) was based on the observation that poverty in developing countries has not disappeared in spite of rapid economic growth. The reason advanced for this phenomenon was that the benefits of economic growth did not trickle down to the poor. Thus, to reach to poor, it was argued that there is a need for more direct intervention in terms of providing for basic needs. Basic needs was defined as consisting of two major elements: (1) minimum requirements of a family for private consumption, which include

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adequate food, shelter, and clothing; and (2) essential services provided by and for the community, such as drinking water, sanitation, public transport, and health and educational facilities.

The resurfacing of the basic needs approach is found in the development recently of indicators of "minimum basic needs" or MBN as in the case of the Philippine MIMAP project and of the Philippine government's recent efforts at poverty alleviation. The Philippine government has redefined poverty as "the sustained inability of a family to meet its basic needs for survival (food and nutrition, water and sanitation, health and clothing), security (income, shelter, and peace and security), and empowerment (basic education and functional literacy, psychosocial and family care, and participation in political processes)". The indicators of basic needs used by the government are shown in Annex 4.

III   Development of Indicators in the MIMAP Projects

This section provides a brief description of the indicators work in the MIMAP projects, in particular the Philippines and Bangladesh. Attention will be made on the framework for the choice of indicators.

A.   Philippines

The basic issues in the development of MIMAP monitoring systems have been discussed by Lamberte, et al., (1992). These are briefly summarized here. There are two basic issues in monitoring the household impact of macroeconomic adjustment policies. The first is the object of

the monitoring system, which deals with the questions of who shall be monitored, what is to be monitored about them, and how frequent will be the reporting. The second is the design of the monitoring system, which deals with such questions as the data generators in the field; the organizational structure that will manage the data flow from the field to every geopolitical level for processing and analysis; and the relationship of this monitoring system with the existing monitoring systems.

The object of a MIMAP monitoring system are the population groups, firms and individuals most likely to be affected by macroeconomic adjustment programs. What is to be monitored is the whole range of processes and outcomes in the transmission path from changes in macroeconomic policies to firm, household and individual outcomes. The vulnerable groups are typically small entrepreneurs in the informal sector, small lowland and upland farmers, small fisherfolk, small-scale miners and daily wage workers. Within households, the vulnerable members are children and women.

For individuals and population groups, what needs to be monitored are the ultimate indicators of welfare and the immediate determinants of welfare. Human welfare can be measured by various indicators, but survival was considered the "best final indicator of human welfare". The immediate determinants of survival are nutritional status, morbidity and health status, literacy and housing conditions. These are, in turn, determined by adequate food, medical care and other public services, potable water supply and environmental sanitation, and basic education.

The indicators for the transmission mechanisms can be divided into those that operate at the market level, and those that operate within the household. At the market level, the indicators include relative prices of output, relative returns to inputs, sectoral and geographic distribution of

government expenditures, rate of natural resource depletion, gender composition of employment by sector and occupational groups, changes in the directions of investments, changes in tenure/ownership of assets, access to both formal and informal capital markets, indicators on the regulatory environment, productivity and type of technology used by informal enterprises, degree of competition in the informal sector, industry concentration and linkages with the formal sector. On the other hand, the indicators of the transmission mechanisms within the household include changes in the household consumption and human capital investment patterns, changes in the employment patterns of household members, changes in women's time between productive, reproductive, and community managing roles.

At the macro level, the information required will include macroeconomic policies and macroeconomic variables. Macroeconomic policies will include monetary, fiscal, exchange rate and trade policies as well as sectoral policies. Macroeconomic variables will include the general price level, exchange rate, interest rate, money supply, tariff structure, government expenditures/revenues/deficits, aggregate demand and output.

Further to the above considerations, Lamberte, et al. (1992) argued that the MIMAP monitoring should have the following features: (1) the indicators should be highly sensitive to changes in macroeconomic policies and allow hypotheses about impacts to be tested and simulation models developed; (2) the system should make use of existing data gathering systems and institutions with minimal additional indicators to be collected regularly as a rider where appropriate; and (3) the data collection and processing should be decentralized, although analysis can be centralized.

The work that followed that of Lamberte, et al. (1992) included those of Florentino and Pedro (1992), which developed a set of indicators together with their corresponding rationale. Further work on indicators during the Phase III of the project is described in Reyes (1994, 1996). This work reviewed various data sources and their potential for measuring household and individual welfare for MIMAP purposes. These data sources included censuses, surveys and administrative reporting systems of various national agencies. The shortcomings of each source were noted: e.g., the censuses are too infrequent to provide regular and updated information on the welfare status of the population subgroups; the sampling design of many of these surveys does not allow estimates of the variables below the provincial level, and the coverage and reference periods of these surveys are different; and administrative reports are usually incomplete in coverage and are often delayed. The review concluded that "the existing sources of information are insufficient to meet the requirements of a MIMAP monitoring system which calls for regular and frequent monitoring of the welfare conditions of the vulnerable groups". (Reyes, 1996: 2)

In view of the shortcomings of the current data system for MIMAP, the study has identified three approaches that would provide policymakers with a good information based on the possible impacts of macroeconomic adjustment. These are (1) the installation of a community-based monitoring system in the barangays, (2) extraction of these items of information from national surveys, and (3) regular surveys, e.g., a rider to a national survey (Reyes, 1996).

The MIMAP study developed a community-based indicator system and pilot-tested this in two communities. At the time that MIMAP was proposing this community-based monitoring system in 1992, there was yet no initiative on the part of the government to go into community-based monitoring. However, recently, the government implemented community-based monitoring system,

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called the Minimum Basic Needs (MBN) monitoring system, to support its renewed and more focused poverty alleviation efforts. The indicators currently being used by the government are shown in Annex 4. One problem with community-based indicators from the standpoint of measuring changes in well-being that may result from macroeconomic adjustment policies is that at the community-level, we are dealing with small sample sizes and, therefore, large variances of the estimators. It would be hard to detect statistically significant changes over short periods. Moreover, some indicators, such as births and deaths require large samples in order to have stable estimates. We shall return to this issue of sample sizes in obtaining estimates of changes in indicators of well-being in the next section.

Work on generating data for small areas from existing census and survey data have started (see Barrios, 1996). The study applied several small area estimation techniques, such as regression analysis, to generate estimates of selected indicators for municipalities such as income, literacy, school attendance and housing. While the effort is considered promising, the verdict appears to be that "the theory and methods are still loose in the sense that universal results have yet to be established" (Barrios, 1996:15).

The third proposed approach, i.e., riders to existing national surveys, have not yet been tried under MIMAP. While it would appear that the approach would be feasible and would cost relatively less than a full survey, it might not always be so. If the kinds of information that are desired are those that were enumerated above, including indicators for the transmission mechanisms, and the survey to piggy-back on is the integrated survey of households (specifically the quarterly labor force survey), then we have the case where the rider is much larger in data coverage than the main survey. Savings are likely to be minimal. Rather than conduct a strict "rider", what might be desired is a

special survey that is "linked" to the integrated survey of households; linked in the sense that while the survey may not be conducted at the same time, the sampling frame and sample households used in the main and special surveys are the same. Thus the data from different surveys can be linked (e.g., data from the Family Income and Expenditures Survey can be linked to the Health Survey).

B.   Bangladesh

As described by Mujerki and Singh (1996), the Poverty Monitoring System (PMS) is intended, among others, to develop and institutionalize a process of monitoring the prevalence of poverty on a regular basis through multidimensional indicators. Table 3 shows the indicators developed for the Bangladesh project.

The identification of the indicators is based on a framework of the impact of macroeconomic policies of household and individual welfare, with emphasis on transmission mechanisms. The effects of macroeconomic policies at the household level are seen to be transmitted through their impact on returns to asset and household income in the short-run and on factor supplies and other household decisions in the long-run. Measures of poverty based on income or consumption, though conventional, are thought to be inadequate, Hence, to capture the other dimensions of well-being, income indicators are supplemented by socio-economic indicators. Thus, the PMS has developed a set of quantitative and qualitative indicators including core indicators in twelve areas of concern: income, nutrition, health, education, housing, access to community services, access to land, people's participation, crisis coping capacity, economic diversification, employment and public expenditures. The indicators shown in Table 3 were chosen so as to be able to (1) identify the poor (e.g., through such as the quantitative indicators on income, nutrition and health as well as access to land and other

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assets; (2) reflect the other dimensions of poverty (e.g., through such quantitative indicators as education and access to community services); (3) reflect gradations of poverty (e.g., through such quantitative indicators as income, nutrition, health, education, clothing, access to land and other assets, access to credit and inputs, and access to organizations; and (4) reflect the processes of poverty (e.g., through such quantitative indicator as employment/access to labor market, economic diversification, public expenditures, access to credit and other inputs, and access to organizations).

In order to test and validate the multi-dimensional indicators of the PMS, micro-level data were collected to provide an empirical basis to the indicators and to a set of methodological recommendations for their regular monitoring at both rural and urban areas. Three rounds of survey have been completed, and the fourth was ongoing as of July 1996. As in the third round, the fourth round incorporates data on both urban and rural areas. The sample for the fist survey conducted in October 1994 consisted of 2,250 households. Little detail is available regarding the sampling design. Future survey activities are aimed at obtaining data at the sub-national level, and with this comes redesigning and expanding the past sample size, which was considered adequate only for national level estimates.

IV.   Developing Monitoring Systems for MIMAP: Some Basic Considerations

This section discusses various issues to be considered in developing monitoring systems for MIMAP, with emphasis on developing systems for monitoring changes in well-being resulting from macroeconomic adjustment policies. Many of these issues have been described in relation to the

measurement of poverty and need not be elaborated here (see, e.g., Ravallion, 1992, 1996; Kakwani, 1993; Lipton and Ravallion, 1995).

Among the critical issues from the standpoint of measuring micro impacts of macroeconomic adjustment policies, which requires looking at measures at least at two points in time, are (1) the statistical tests of significant differences in the values of poverty measures (Kakwani, 1992); and (2) the comparability of the surveys (do they refer to the same population) and measurement error.

Before we discuss these two critical issues, some prior considerations might be made regarding the content of the monitoring system. Our discussion on the concepts of well-being as well as of the impact framework of the MIMAP projects suggest that the monitoring indicators can be classified according to the following sets of indicators:

a.   micro impacts:

      i.   indicators of well-being: what can be measured are goods and capabilities; goods are often measured in summary form in terms of income or expenditures, or disaggregated by basic needs; measures of goods or basic needs include measures of access to non-market goods, such as non-market health and education services.

      ii.   indicators of certain personal characteristics that affect functionings or capabilities, such as physical handicaps or impairments due to past chronic undernutrition.

b. macro variables:

    i. variables affected by policies: interest rate, exchange rate, wages and prices, money supply, government revenues and expenditures

    ii. variables reflecting macro outcomes: employment, output, overall price level or inflation, public revenues and expenditures

c. transmission variables

    i. returns to labor and other assets or relative prices of factor inputs (often summarized in terms of the outcome, namely, household income)

    ii. relative prices of goods and services (money price, transport cost, travel time, waiting time to service, insurance coverage, subsidies)

The system for monitoring macro variables are usually in place, but not for micro impacts nor in all cases of transmission variables. Hence, subsequent discussion will focus on issues in monitoring these variables, with attention to indicators of well-being, in particular, indicators of functionings and capabilities.

A. Tests of Significance

In making comparisons on the values of the indicators of well-being between two points in time, it is necessary to be able to conclude that the observed differences in the values of the indicator are indeed statistically significant. This leads us first to a consideration of the sampling design. Some sampling designs, such as cluster sampling, have large variances than other designs. Hence,

to detect significant differences, one needs a larger sample than one based on simple random sampling.

A second consideration is the nature of the indicator itself. Certain events are relatively rare compared to others, e.g., deaths, adult illness. As such, a larger sample size is needed to obtain stable estimates than for other types of indicators. Thus, there are certain indicators, such as life expectancy, death rates, morbidity rates that are not likely to be useful indicators of well-being in cases where sample sizes are small as in community-based monitoring system.

A third consideration is the level of disaggregation desired. The MIMAP project aims to monitor changes in well-being among various subgroups of the population. The more disaggregated the subgroups are, the larger the sample size we need to be able to detect significant differences among subgroups and between two points in time. For example, the Philippines Family and Income Expenditure Survey, which is the source of basic data for the estimation of poverty measures, has used a sample size of around 20,000 households to be able to obtain estimates at both national and regional levels. To obtain estimates that are statistically representative at the provincial level, the sample size had to be increased to 43,000 households.

B.   Comparability of Surveys or Data

Several aspects need to be considered. One again deals with samples. Two surveys may not be comparable because they do not represent the same universe (e.g., a national survey to represent the nation and a special area survey that represents only a few provinces or regions).

A second consideration has something to do with measurement techniques. One survey may collect data using one technique, e.g., actual measures of heights of all children in the household, while another uses a different technique, e.g., reports of respondents (usually the mother) of the heights of children. In this particular example, Strauss and Thomas (1996) has found greater measurement error from the reports of heights than from actual measurements.

A third consideration is non-sampling error. Unfortunately, the most efficient sampling design is also the most expensive and difficult to implement in the field. To ensure high quality data, there is a need for even more highly trained, dedicated and highly motivated interviewers and supervisors. The values of the indicators might differ between two surveys simply because of differences in the quality of data collection.

Finally, a related measurement error arises from the fact that the questions being asked are difficult to answer accurately. The case in point is the consumption of goods and services. Recall of expenditures are likely to suffer the longer is the recall period, while responses regarding income are less likely to be accurate when income sources are many and seasonal. As a result, there is a tendency for income and expenditures surveys to understate income and expenditures. Income and expenditures data from The Philippines Family Income and Expenditure Survey, for example, are said to be understated by as much as 60 percent compared to the estimates from the System of National Accounts, and such understatements fluctuate from one survey to another (Mangahas, 1988).

C. Other Concerns: Timeliness and Integration of Information

In monitoring changes in well-being or poverty in particular, one might want information inexpensively, rapidly and frequently so that they can be brought to the attention of policy makers for appropriate action. Current data systems such as the national surveys usually have long intervals between surveys. These intervals range from three years to five years. However, making the surveys more frequent would entail high costs. In order to monitor poverty more frequently and rapidly, it has been suggested that a self-rated approach to poverty measurement be adopted (Mangahas, 1988, 1992). A technique used by Mangahas (1988, 1992) involves showing the respondent a small card with the word POOR written on its lower portion, the explicitly negative term NOT POOR on its upper portion, and a line dividing the two portions. Then the respondent is asked to point where on the card he or she would place himself or herself. A three-way classification of respondents is made: poor, not poor and borderline.

The self-rated approach represent a different approach to poverty measurement than the conventional approach. It emphasizes what people (the respondents) feel about their situation rather than standards of living defined by the policymakers or other people. The difference between the two approaches, in Mangahas' view, is that the former is based on the subjective norms of the people "at the bottom", while the latter is based on the equally subjective norms of "some people at the top". From a policy standpoint, "people who do not consider themselves poor should not be counted as such, including those whose level of living may appear miserable to outsiders; and those who do feel poor should be accepted as such, including those whom outsiders may regard as well-to-do" (Mangahas, 1992:1). How do the two standards compare with respect to the identification of the poor. In a comparison of the government's official estimates and the self-rated poverty prevalence,

the latter showed higher values than the former in 1985 (74% versus 59%) and in 1988 (66% versus 50%) (Arroyo, 1990). The self-rated prevalence rate does measure current self perceptions of well-being, and appear to be sensitive to major economic changes such as rapid inflation and increasing unemployment. Hence, self-rated approach could be added to the multiple indicators of poverty and well-being, not only because it captures another dimension of poverty, but also because it can be collected more readily and frequently.

Another concern is that at present different dimensions of well-being are collected from different data sources, e.g., income data come from an income survey, while health data come from demographic and health surveys that are separate from the income survey. For estimating behavioral relationships, there is a need for a wide range of data from the same households, including community characteristics (Ravallion, 1996). However, conducting a nationally representative survey with a wide range of data can easily aggravate problems of non-sampling or measurement errors, and this has to be balanced against the potential benefit of an integrated set of information.

V.   Conclusion

There are many approaches to the concept of well-being, and adopting a single approach will result in missing out on other important dimensions of well-being not captured by the chosen approach. Hence, to the extent that many conceptual issues still remain unresolved, a multiple approach to the concept of well-being, and, therefore, to the development of indicators is needed.

The requirements for MIMAP, as determined by the MIMAP projects themselves are many, and at times ambitious. There requirements are for comprehensiveness or wide range of data, indicators that are sensitive to change, and indicators that can be measured rapidly and frequently. But these are the types of data or indicators that are hard and expensive to obtain. Among the critical issues that need to be addressed are the need to undertake significance test of observed changes in well-being arising from the impact of policies and how to make the data comparable. Each in turn contain a number of sub-issues related to sampling designs, sample sizes, and various sources of measurement errors.

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MIMAP Indicators of Household/Individual Welfare: Philippines

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1. Survival
    1. Under-five mortality rate, by sex ** (CM, monthly)
    2. Life expectancy at birth, by sex * (NSO, annual)

2. Nutritional Status,
    3. Prevalence of preschool underweight, by sex ** (BHW/BNS/Midwife, annual)
    4. Prevalence of preschool underweight and wasting, by sex * (FNRI, bi-annual)

3. Health Status
    5. Incidence rate of diarrhea among under-five children, by sex** (CM/midwife; monthly)
    6. Mortality/morbidity rates of communicable diseases, by sex * (DOH; annual)

4. Housing
    7. Percentage of households in makeshift housing made of light materials ** (CM/SW; annual)
    8. Distribution of households by type of housing materials * (NSO; quinquennial

5. Adequacy of Food
    9. Proportion of households taking one meal or less a day ** (SW; monthly)
    10. Proportion of the population or households with energy intake less than 80% of recommended dietary allowance * (FNRI; quinquennial)
    11. Proportion of Grade VI pupils (households) with less than acceptable diet score, by sex * (PDO; annual)

6. Public Services
    12. Proportion of households with access to sanitary toilet facilities **(CM/BHW/SW; annual)
    13. Proportion of households with access to potable water supply * (CM/BHW/SW; annual)
    14. Ratio of RHU and BHS to population/households * (MHO)
    15. Proportion of unemployed/underemployed who availed of skills training, by sex * (PDO; annual)

7. Basic Education
    16. Elementary school enrollment rate and dropout rate, by sex ** (School principal; annual)
    17. Average educational attainment, by sex* (PDO; quinquennial)
    18. Adult basic literacy rate/functional literacy rate, by sex* (PDO; quenquinnial

8. Income
19. Percentage of households with most basic possessions (no luxury items)** (CM; annual)
20. Median family income by major occupational group of household head * (NSO; triennial)
21. Mean income of families in bottom 30% * (NSO; triennial)
22. Percentage of households below the poverty line * (NSO; triennial)

9. Employment
23. Unemployment/underemployment rate, by sex ** (CM/SW; monthly)
24. Unemployment/underemployment rate, by sex* (NSO; quarterly)

10. Prices of Basic Commodities
25. Cost of 450g of staple as proportion of average daily wage rate ** (DTI; annual)
26. Real cost of staple * (DTI; quarterly)

Legend: **=key indicator; *=support indicator; in parenthesis are individuals or institutions responsible for data gathering and the data reporting frequency, respectively.

BHW=barangay health worker, BNS=barangay nutrition scholar, CM=community monitor, DOH=Department of Health, DTI=Department of Trade and Industry, MHO=municipal health office, NSO=National Statistics Office, PDO=planning and development office, SW=social worker.

MIMAP Indicators and Variables for Various Geopolitical Levels: Philippines

Area of Concern	Indicators: Municipal/Provincial/ Regional/National Levels	Variables: Barangay Level
A. Survival Health	1. Infant mortality rate 2. Child mortality rate	Number of livebirths; number of infant deaths; Number of living children; number of deaths of children (1-6 years old)
Nutrition	3. Prevalence of acute and chronic malnutrition	Number of children (0-6 years old) by height and weight; by age and sex
Water and sanitation	4. Proportion of households with sanitary toilet facilities 5. Proportion of households with access to safe water	Number of households by type of toilet facilities used Number of households by source of water supply
B. Security Shelter	6. Proportion of households in makeshift housing	Number of households by type of construction materials used for roofs and walls of dwellings
Peace and order	7. Crime incidence 8. Incidence of armed encounters	Number of victims of crimes by type of crime Number of victims of armed encounters
C. Enabling Income and livelihood	9. Proportion of households with income greater than the poverty threshold 10. Employment 11. Underemployment	Income of households Number of household members (15 years old and above) who are either at work or with a job/business Number of employed persons wanting more hours of work
Basic education and literacy	12. Elementary enrolment 13. Secondary enrolment 14. Basic literacy	Number of children (6-12 years old) attending the elementary level. Number of family members (13-15 years old) attending secondary level Number of family members (10 years old and above) able to read and write a simple message in any language or dialect
Political participation	15. Proportion of households involved in at least one community organization 16. Proportion of households who participated in formal electoral process	Number of households with members who are involved in at least one community organization Number of households with eligible/registered/actual voters

Source: Reyes, C. M. 1994, "Monitoring Systems for MIMAP", *Journal of Philippine Development*, No. 38, Vol. XXI, Nos. 1&2. First & Second Semesters; also Reyes. C. M., 1996, "Monitoring System for Poverty Tracking", Paper presented at the International Workshop of the Micro Impacts of Macroeconomic Adjustment Policies (MIMAP) Project, Manila, July 1-5.

Indicators for the Poverty Monitoring System: Bangladesh

A. Quantitative Indicators

A.1 Income
i)   Percentage of population in households with per capita income below the poverty line;
ii)   Percentage of income accruing to each fractile (quintile/decile) of the population;
iii)   Nature of income: temporary or stable
iv)   Diversity of income sources.

A.2 Nutrition
i)   Calorie supply per head or calorie supply as a percentage of requirements;
ii)   Percentage of children 1-5 years age group having less than
        80% weight-for-age
        90% height-for-age
        80% weight-for-height
iii)   Percentage of undernourished population.

A.3 Health
i)   Life expectancy at birth;
ii)   Infant mortality per 1000 births;
iii)   Number of health auxiliaries per 1000 inhabitants.

A.4 Education
i)   Adult literacy rate;
ii)   Primary school enrollment rate (percentage of children aged 5-14 years in school);
iii)   Drop out rate.

A.5 Housing
i)   Number of people per room in a household;
ii)   Roofing materials of a rural house;

A.6 Clothing
i)   Number of cloth per capita per year;
ii)   Number of footwear per capita per year;
iii)   Number of warm cloth per capita per year.

A.7 Access to community services
i)   Percentage of population with access to:
        - potable water
        - sanitation facilities
        - public health services
        - recreational facilities

A.8 Access to land/other assets

i)   Percentage of number and areas of agricultural holdings by size, groups and tenure;

ii)   Percentage of rural households with land;

iii)   Percentage of landless agricultural labourers to the population economically active in agriculture;

iv)   Access to common property like grazing ground, forest, rivers, ponds, etc.

v)   Percentage of households experiencing increase/decrease of assets;

vi)   Percentage of households experiencing loss of assets.

A.9 Employment/access to labour market

i)   Rate of unemployment, underemployment and self-employment;

ii)   Sectoral distribution of rural employment;

iii)   Percentage increase of rural population in sectors producing tradable goods;

iv)   Average wage rate of agricultural and non-agricultural labourers.

A.10 Economic diversification

i)   Percentage of population in cottage and rural industries;

ii)   Percentage of population in informal and service sectors;

iii)   Percentage of population as industrial workers in neighbouring factories;

iv)   Extent of development of agro-industries in an area.

A.11 Public expenditure

i)   Percentage of total public expenditure for rural areas;

ii)   Percentage allocation to primary education, technical education and primary health care;

iii)   Percentage of total public investment in agriculture, rural informal sector.

A.12 Access to credit/inputs

i)   Extent of institutional credit;

ii)   Extent of non-institutional credit;

iii)   Access to agricultural inputs like seeds, fertilizers, water, pesticides;

iv)   Access to inputs for rural/cottage/agro-based industries.

A.13 Access to organizations

i)   Percentage or rural people with membership in formal and informal organization;

ii)   Percentage of rural population participating in local decision making bodies.

B. Qualitative Indicators

B.1 Crisis coping capacity
i) Percentage of population migrating out of the village;
ii) Percentage increase in number of earners (gender specific) in a family;
iii) Distress sale of land and other wealth;
iv) Reliance on relief payment and social service network;
v) Percentage increase in female headed households.

B.2 Vulnerability
i) Vulnerability to natural distress, e.g., flood, earthquakes, river erosion;
ii) Vulnerability to crop failure, increase/decrease in price of food.

B.3 Relational
i) Tenancy regulation/arrangement like share cropping;
ii) Nature of employment in rural non-formal sector, rural/cottage industries;
iii) Wage labour and wage rate.

B.4 Intra-household relation
i) Division of work
ii) Access to food, clothing.

B.5 Awareness about input/service delivery system
i) Knowledge of villagers about extension agents, government offices and non-government organizations.
ii) Knowledge about input distribution systems of agricultural and non-agricultural production.

B.6 People's participation
i) Participation in identifying felt-needs;
ii) Participation in planning and implementation of projects;
iii) Participation in monitoring and evaluation.

B.7 Security
i) Vulnerability of poor to expulsion from land, property feuds, false litigation;
ii) Access to special legal and administrative measures for protection;
iii) Violence against poor such as murder, assault;
iv) Percentage of expenditure for legal and administrative purposes.

B.8 Self-categorization by the poor
i) Self-categorization in terms of income, food consumption and housing;
ii) Gradation in relation to other members of the same group/class;
iii) Reasons of such changes.

Source: Mujerki and Singh, 1996

Annex 4

Minimum Basic Needs Indicators

A. Survival

1. Food and Nutrition
    1. Newborns with birthweight at least 2.5 kgs.
    2. No of severely and moderately underweight children under 5 years old
    3. Pregnant and lactating mothers provided with iron and iodine supplements
    4. Infants breastfed for at least 4 months

2. Health
    5. Deliveries attended by trained personnel
    6. 0-1 year old infants immunized
    7. Pregnant women given at least 2 doses of tetanus toxoid
    8. Not more than 1 diarrhea episode per child below 5 years old
    9. No deaths in the family due to preventable causes within the year
    10. Couples with access to family planning
    11. Couples practicing family planning in the last 6 months
    12. Solo parent availing of health services

3. Water and Sanitation
    13. Access to potable water (faucet/deep well within 250 m.)
    14. Access to sanitary toilets (water-sealed, antipolo, flush)

4. Clothing
    15. Family members with basic clothing (at least 3 sets of internal and external clothing)

B. Security

5. Shelter
    16. House owned, rented or shared
    17. Housing durable for at least 5 years

6. Peace and Order/Public Safety
    18. No family member victimized by crime against person (i.e., rape murder, etc.)
    19. No family member victimized by crime against property (i.e., burglary, theft, etc.)
    20. No family member displaced by natural disaster
    21. No family member victimized by armed conflict

7. Income and Employment
   22. Head of family employed
   23. Other members of the family 15 years old and above employed
   24. Families with income above subsistence threshold level

C. Enabling

8. Basic Education and Literacy
   25. Children 3-5 years old attending day care/preschool
   26. Children 6-12 years old in elementary school
   27. Children 13-17 years old in high school
   28. Family members 10 years old and above able to read and write and do simple calculation.

9. People's Participation in Community Development
   29. Family members involved in at least one people's organization/association, community development
   30. Family members able to vote at elections

10. Family Care/Psycho-Social Needs
    31. Children 18 years old and below not engaged in hazardous occupation
    32. No incidence of domestic violence
    33. No child below 7 years old left unattended

Source: The Philippine Minimum Basic Needs (MBN) Approach to Improved Quality of Life: Manual of Operations.