

Qualitative Indicators and Development Data: Current Concerns and Priorities

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I. Introduction

This report focuses on the development of indicators and the acquisition of information needed to analyse changes in levels of living as regards consumption of food, housing, clothing, education, healthcare and necessary social services. Because concerns in these domains transcend national and cultural boundaries, governments need to know how well they are addressing them over time and in relation to other countries. Also, indicators in these domains are the most important ones for developing countries since such large portions of their populations live in or near poverty.

Over the past decade, the United Nations has strongly supported efforts to develop and promulgate the use of indicators for measuring changes in levels of living and for monitoring diverse aspects of national development. Many member states and specialized organizations are involved in this project and have extended their expertise and financial resources to it. These efforts have contributed to progress on many fronts. Yet social development data and indicators remain a weak link in national planning and policy formation processes. In developing countries, where the distance between food sufficiency and malnutrition may be as close as a percentage point change in the price of a staple food, the need for timely and reliable social data is critical. Unfortunately, the large majority of developing country governments do not possess accurate information on how important aspects of their citizens' lives change from one year to the next. In its efforts to redress these deficiencies, the United Nations has supported a variety of research and practically oriented projects in the development of concepts, methods and data collection for social indicators. An activity of one such project, a high level meeting of experts on qualitative indicators of development, is the subject of this report.

The meeting was called in order to survey the latest developments in the field of qualitative indicators of development. Papers were commissioned from specialists in international organizations, academic institutions and government agencies currently working to advance research on or the application of social indicators.² UNRISD organized the meeting, which was hosted in Rabat by the government of Morocco on 8-11 April 1991.

The project under the auspices of which the meeting took place was established through United Nations General Assembly, Economic and Social Council and Statistical

1. This report is intended as a companion piece to the report UNRISD submitted to the United Nations Statistical Commission in February 1991 summarizing the experiences of Côte d'Ivoire, India, Kenya and Morocco in implementing systems of qualitative indicators of development.

2. Selected papers presented at the meeting will be published in book form in spring 1992.

Commission resolutions and recommendations to further the development and use of qualitative indicators of development.³ The four broad aims of the project are:

(a) to help orient national development and support international co-operation by assisting governments to formulate and follow policies better geared to the well-being of the population (Economic and Social Council, 1989);

(b) to promote the evaluation of progress (General Assembly, 1990);

(c) to promote the application of concerted objectives (General Assembly, 1990);
and

(d) to provide early warnings regarding conditions that demand attention and action (General Assembly, 1990).

The goals of the meeting in Rabat were to identify the most recent advances and shortfalls in selecting and applying qualitative indicators of development for these purposes and to highlight areas in which new research or better application of existing knowledge is needed.

The concept of "qualitative indicators of development", around which the meeting was conceived, took shape from the General Assembly resolution 1989/4. The resolution focused on "numerical indicative objectives" and "the adequate level of satisfaction of basic social-cultural needs in regard to food, housing, clothing, education, health care and necessary social services".⁴

To promote objective international comparison and exchange of experience, as great cross-national comparability as possible among the core indicators is desirable. Thus, United Nations organizations and other international bodies have undertaken research on standardizing definitions and data in these key areas of concern. It is nonetheless recognized that other qualitative indicators may not warrant standardization, especially if they have been adapted for cultural and social conditions that apply only in a particular national or regional context.

The structure of this report is as follows: section II comments briefly on the impact of recent conceptualizations of development on indicator research, including the argument that new comprehensive indicators of development are needed. Section III reviews data problems that hamper efforts to monitor levels of living and outlines recommendations for solving a number of them. Section IV reviews recent work on innovative and low-

3. General Assembly resolutions 40/179 (1986) and 44/234 (1990); Economic and Social Council resolutions 1987/6 and 1989/ and 1989/4; Statistical Commission, Report of the Twenty-fourth Session, E/1987/19, recommendation in paragraph 140 (e), Report of the Twenty-fifth Session, E/1989/21.

4. As noted in McGranahan, Scott and Richard (**Qualitative Indicators of Development**, UNRISD Discussion Paper No. 15, November 1990), "typical qualitative indicators are here taken to be indicators that give the percentage of the population (or of a population group such as children or women) having or not having a defined quality, such as literacy, or meeting or not meeting a given standard of adequacy with regard to some condition of living such as food consumption. Indicators may show not only the percentage falling below a given standard but also how far below they fall; or they may simply yield a distribution along a scale with the adequacy level left for subsequent decisions. In practice, the relevant indicators are much the same as those employed in measurement of "levels of living", "basic needs", "social development" or "human development".

cost methods for collecting social data. Section V discusses new research in several fields and suggestions for improving existing indicators and the data on which they are based. The sixth and final section lists a series of concrete steps that international organizations could take to improve social data used to assess development and development policies.

The discussion that follows is largely based on the content of the papers prepared for the meeting in Rabat. Additional information, including selected remarks of participants and the recommendations of the three working sessions,⁵ is included as deemed appropriate. A list of the papers prepared for the meeting is attached as appendix I.

II. The New Development Challenge and the Need for New Indicators

As thinking about what constitutes development has evolved, especially over the past decade, so too have the use and, in certain cases, the indicators desired to monitor development. Perhaps the most significant trend over the period has been the move to emphasize putting people and their needs at the centre of the development process. Development has therefore come to be conceptualized as the process of broadening the scope of life enhancing opportunities and the individual's capacity to take advantage of these.

While economic growth may be a prerequisite for such changes, it by no means guarantees them. Development is therefore conceived as encompassing growth that is:

- (a) participatory - allowing for private initiative and broad based people's involvement;
- (b) distributed well - benefiting all people; and
- (c) sustainable - since raising future production may demand current sacrifices.⁶

It has thus been proposed that governments must have at their disposal improved tools of analysis with which to assess the impact of policies on human development. Indeed, it has been further argued that governments must also have at their disposal appropriate tools for monitoring the process by which economic growth is converted into advances in human development.

Both the keynote address and one of the session papers (11)⁷ highlighted these aspects of the current debate on development and its indicators, and set the context for the subsequent papers and discussion. The substantive review of the meeting begins, nonetheless, by analysing contemporary issues in data collection and processing, as inaccurate or out-of-date primary data severely limit the utility of even those indicators that are conceptually quite sound.

5. On the third day of the meeting, three concurrent working sessions were held in order to synthesize key issues raised in the papers and to make recommendations for further work. The topics of the three sessions were: Conceptual Issues in Assessing Development; Methodological Issues in Assessing Development; and Least-cost Ways for Improving Current Techniques of Data Collection and Management.

6. UNDP, *Human Development Report 1991*, Oxford University Press, New York, 1991, p. 13.

7. Numbers in brackets refer to the papers prepared for the Meeting. These are listed beginning on page 19.

III. Current Obstacles in the Collection and Processing of Data for Social Development Indicators

The problems associated with assembling social or qualitative indicators typically relate to the choice of what to measure, how to measure it, and how to collect and process data on the phenomenon in question. Regarding indicators in the domains enumerated in the introduction, consensus appears to be emerging on questions of what to measure and how. The major challenges now seem to lie in the collection and processing of data. Although many advances have been made both in information technologies generally and in procedures for handling data for measuring living standards and monitoring poverty specifically, data problems continue to limit the utility of many indicators. For this reason, the current state of social data, the major causes of their continuing unreliability or unavailability and solutions to some of the problems were reviewed at the meeting.

1. The state of existing social data

Recent research by FAO (6) and ECLAC (11) highlights the paucity of quantitative data on key aspects of human welfare in many African, Asian and Latin American nations. The evidence from these and other studies discussed below suggests that most developing countries do not yet systematically collect even the most basic data, including those on mortality, food consumption, access to clean water, healthcare and suitable housing. Where the data are collected, their utility is often limited by a variety of defects. The papers on India (16), Kenya (10) and Zambia (15) show that data may be out of date for most decision-making purposes or unsuitable for analysis at disaggregated levels. Sometimes the data are even misleading.⁸

The lack of data based on observation continues to be a major problem. Data on poverty and mortality illustrate the extent of the dilemma. FAO's efforts to implement the programme of action adopted at the 1979 World Conference on Agrarian Reform and Rural Development (WCARRD) involve extensive poverty monitoring. To this end, FAO has attempted to assemble from various sources direct estimates of the percentage of persons falling below the poverty line in developing countries. This has proven to be a daunting task. For example, the author notes that only recently did the World Bank publish pertinent data for the 1977-1980 period, and these covered only 37 countries. FAO's efforts to fill the gaps have been less than successful. Having solicited data directly from the governments, FAO had received direct estimates from only "some" of the 64 countries submitting WCARRD progress reports by February 1991. Mortality data are similarly patchy (13) as "less than 40 developing countries have vital registration systems recording 90 per cent or more of deaths".⁹ However, even complete vital registration systems do not guarantee accurate mortality rates. Data for some of the indicators on income, education, housing and access to community services, to name but a few core concerns, are even less available and/or amenable to accurate measurement.

8. For example, recent publications by a relatively sophisticated statistical office in an African country contain conflicting entries on the same item at different locations in the same volume.

9. This number is misleading, however, as many of the developing countries with complete vital registration systems are small islands.

2. Causes of poor social data in the 1990s

The basic explanation for the paucity of reliable data is that most of the statistical systems in the Third World lack adequate human and financial resources. As a result, some countries do not systematically collect data; others that do may not publish them very quickly or at all. Poor management of existing resources, particularly in data collection and processing, also hampers efforts to obtain timely, high quality data.

Paradoxically, efforts to expand and improve statistical output may actually have the opposite effect. For example, mounting large-scale household surveys or comprehensive poverty monitoring programmes may divert resources from crucial existing or planned activities. In the case of poverty monitoring, the goal of providing adequate information for decision-making purposes requires annual, if not more frequent, collection of data that is reliable at high levels of disaggregation. Moreover, such data, if they are to be truly useful, have to be made available to decision makers with a minimum delay. Typically, if the cost of such a programme is underestimated, and hence the project itself is underfunded, trade-offs will have to be made. Either resources will be diverted from other statistical activities - causing them to suffer, or the scope or processing speed of the monitoring programme will be reduced.

The experience of Kenya demonstrates the difficulty of raising the quality and quantity of social data in the context of an existing statistical programme with limited resources.¹⁰ It has been argued that Kenya tried to provide too much disaggregated data too fast with too few resources (10). Indeed, from the inception of the National Household Survey in 1974/75, Kenya's Central Bureau of Statistics (CBS) aggressively sought to provide highly disaggregated data, progressing from national to provincial and, finally, to district level disaggregation by the early 1980s. But the CBS had neither the financial nor the organizational resources to sustain these efforts, and, consequently, became progressively bogged down in data. As time passed and more data were collected, CBS's production fell further and further behind schedule, raising concerns that much of the valuable data that had been collected would not be published.

But, as one participant commented, Kenya's difficulties may have owed less to unrealistically ambitious planning than to the vagaries of the national economy and technological factors. Resource constraints that prevailed in the country between 1983 and 1987 were not and could not have been anticipated at the planning stage of the survey programmes in 1980 and 1981, and innovations in data processing technology planned for 1981-1983 were not adopted until late 1988.

Kenya's collaboration with international agencies and donors may also have compounded problems in the statistical arena (10). It appears that in several instances the influx of external resources diverted the attention of the CBS from its primary responsibilities. In others it resulted in a net drain on CBS resources as some projects, undertaken at the behest of donors, were inadequately supported by them.

Austerity programmes and the effects of the economic crisis have also taken a toll on statistical capacities in developing countries (15). Stagnating budgets have resulted

10. It should be noted, however, that Kenya has had one of the stronger statistical programmes in Sub-Saharan Africa over the past three decades.

in losses of key personnel, reduced training activities, postponement of planned publications and demoralization among statistical office personnel. These developments are especially discouraging since the need for strong statistical services has never been greater.

3. **Proposals for strengthening statistical capacities in developing countries**

Efforts are urgently needed to strengthen statistical services in developing countries so that they can provide timely and accurate social data. Various interrelated direct and indirect measures for accomplishing this have been proposed, including:

- (a) reorienting existing priorities in governments and within statistical offices, and
- (b) implementing managerial and administrative reforms.¹¹

These measures are outlined below. Statistical services can also improve the quality of their output by adopting appropriate innovative and low-cost techniques of data collection. These are discussed in section IV.

Making statistics a higher priority. The quality of statistics suffers because policy makers are not sufficiently aware of their value. Thus, more needs to be done to convince key policy makers of the value of statistics. This would help ensure that funding of statistical operations is not the first item cut during periods of budgetary stringency.

Enhancing co-ordination. Better co-ordination is crucial for improving statistical services. Co-ordination is needed to get objectives stated clearly, to get priorities discussed and decided upon, to avoid duplication, to plan better and to ensure that pertinent points are focused upon. Co-ordination can also be valuable in ensuring standardization and high standards with respect to concepts, methods, etc.

Past efforts indicate that, for co-ordination to be successful, the co-ordinating agency needs to have sufficient authority and capable staff to enable it to perform a co-ordinating role in practice. The agency needs to be able to exert authority and to resist pressure.

The most effective way of achieving the necessary degree of co-ordination will differ between countries and may include setting up a specific agency or committee, or using existing institutions such as the ministry of planning or the statistics organization. Additional legal powers may also be required.

Statistical planning. Statistical plans, both five-year and annual, need to be made and reviewed accordingly. Statistical planning should be integrated into the national planning process in order to facilitate defining and asserting priorities on a continuing basis.

Top officials of many statistical offices already have too many responsibilities and are thus unable to devote sufficient attention to planning functions. The shortage of resources and properly qualified personnel (see section on terms of service below)

11. The recommendations presented in this section are based on those contained in the report of the working session on "Methodological Issues in Assessing Development".

complicates efforts to remedy the problem. Nonetheless, measures must be taken to assist statistical offices in performing necessary planning functions, whether by redefining the responsibilities of senior managers or by bringing in new staff with a competence in planning, or both.

Training. Training should be given a higher priority, even during times of crisis and acute shortages of resources. Statistical offices devote a comparatively small proportion of their resources to training, even though it is vital to maintaining or improving statistical services. Moreover, hiring experts is an expensive alternative, particularly as their experience does not stay in the country after they leave. Therefore, statistical services should place greater emphasis on training of national personnel at all levels and on a continuing basis. Training for middle level employees should be considered crucial, and help is particularly needed in running training programmes for them.

Improved terms of service. The instability of employment in statistical services often leads to high turnover among capable employees. If qualified people are to be retained in statistical work, their terms of service and opportunities must be improved.

Computers and statistical systems in developing countries. In processing social data, weak management of computing resources is a greater problem than hardware shortages. Management problems manifest themselves in both traditional mainframe processing operations and in decentralized, microcomputer-based activities. The chief concern with mainframe work is that processing schedules be sensibly established and adhered to. Because microcomputers allow data input and error checking in a highly decentralized fashion, they are particularly useful for collecting and analysing data rapidly, especially for regional and sub-regional decision-making. However, this implies, among other concerns, providing training for large numbers of operators, choosing the appropriate hard- and software for statistical analysis for large data sets, and establishing protocols for aggregating and analysing data at higher levels. In these and other aspects of data collection and processing, international organizations could provide valuable assistance by conducting research on appropriate tools and methodologies.

IV. Innovative and/or Low-cost Techniques for Data Collection and Analysis

Innovative and/or low-cost techniques for data collection and analysis are expected to play an important role in improving social data sources. These techniques are urgently needed by both international and national agencies for obtaining data where none exist, for shortening the delay between data collection and publication and for facilitating monitoring efforts at high levels of disaggregation. Moreover, by applying such techniques, financially strapped statistical offices will increase the efficiency of their efforts to gather and analyse data. This section outlines current efforts in poverty monitoring where attempts have been made to develop and apply cost reducing or innovative approaches to the problems encountered. The discussion covers specific aspects of the World Bank's Priority Survey, Rapid Assessment Surveys of Rural Poverty, household expenditure surveys in India and proxy indicators for use when household survey data are unavailable. Comments by participants and recommendations of the working session on "Methodological Issues and Innovative, Low-cost Techniques of Data Collection and Management" follow at the end of the section.

The World Bank uses a broad range of indicators to monitor the social dimensions of adjustment (SDA) in Sub-Saharan Africa (9). Under its SDA project, the Bank helps African countries collect and analyse data to guide the implementation of structural adjustment policies, and undertakes a programme of research and training in support of these activities.

The data gathering and analysis component of SDA encompasses three interlinked surveys: the Priority Survey (PS), the Community Survey (CS), and the Integrated Survey (IS). The PS is a household survey used to monitor changes in the levels of living among target groups affected by adjustment policies. Its chief purpose is to identify the existence of problems. The role of the IS, which is more comprehensive than the PS, is to diagnose the causes of the problems identified through the PS. Additional information on infrastructure, demographics and market conditions is provided by the CS.

The PS is of particular interest because of its applications to poverty monitoring (10). To accomplish its monitoring/early warning function, the PS is designed so that policy makers receive reliable data on a core set of concerns within three months of the start of data collection. Teams of trained workers administer the questionnaire, which is intended to take not more than an hour to complete. Using a portable computer, they then enter, check and clean the data before leaving the survey locale. The questionnaire covers issues of health, education, housing, access to amenities, migration, agricultural production, non-farm activities, household expenditure and incomes, household assets, nutrition and employment. For each of these, data are collected to establish four or five indicators.

Compared to the IS, and its precursor, the LSMS survey, the shorter PS questionnaire is expected to make possible both large sample sizes and regular, if not annual, canvassing. The larger sample size is intended to strengthen the quality of cross-sectional analysis and, hence, the prospects for identifying more precisely those groups most affected by adjustment policies. Regular canvassing is necessary for detecting trends, which is the second key goal of the PS.

As the PS has only recently been implemented, no definite conclusions can be drawn about its overall effectiveness. Nonetheless, the Bank's assertion that the PS can be implemented on a sustained basis by developing countries has been challenged on the grounds that it is too complex and expensive for that to be so. Experts from countries participating in SDA programmes have also expressed scepticism about the costs and value of certain innovations inherent in these programmes.¹²

Rapid Assessment Surveys of Poverty (RASP) have been proposed as a quicker and less costly alternative to the PS (4). As with other recent poverty monitoring efforts such as UNRISD's work in Kerala and various ILO surveys, RASP employs multi-dimensional measures of levels of living, simplified survey and sample designs, and seeks to provide rapid data processing and feedback to policy makers. Although RASP has yet to be tested empirically, its author states that it will "collect less than half as much data [as the PS], in less than half as much time, and yet facilitate the production of indicators of poverty which are just as useful".

12. In the absence of the representative from the World Bank, comments on the SDA programme by participants were more limited than they might otherwise have been.

A review of the contents of a RASP questionnaire focusing on the poor in urban areas shows that the two questionnaires are broadly similar. The RASP questionnaire consists of a household roster containing two simple health status questions, three questions on education and two on economic activity; four questions on housing conditions; a household possessions list of 12 items; a check list to indicate which of five types or categories of food were consumed by the household during the past week (and whether it was a normal week); and 21 questions on earnings of persons working for others and 15 on enterprise or own-account income. However, a potential advantage of the RASP questionnaire is that it is still much shorter than the prototype PS questionnaire, which contains 98 questions and runs 20 pages in length.

In addition to simplifying data collection and processing, RASP is expected to lower costs further by forgoing a nationally representative sample, since it is to be administered only in areas where the incidence of poverty is expected to be high ($p=0.8$). Only after selection of such an area are probability techniques applied to sample selection. This methodology remains controversial since forgoing probability techniques in the first stage of selection means that the reliability of the results cannot be estimated.

In response to the increasing demand for monitoring the progress of poverty alleviation at a very disaggregated level, the National Sample Survey (NSS) of India has recently begun experiments with adjustments to its annual sample surveys of consumer expenditure (16). The consumer expenditure questionnaire used for the past two decades takes on average three hours to complete, and data backlog resulting from the survey prevents it from being useful as a poverty monitoring instrument. One way of decreasing the mass of data would be to take a "thin" sample (2 households per village instead of 10, as is now done). To do so, however, would result in unreliable estimates for small states, where sampling errors would become large. Another alternative would employ a two-pronged strategy: first, strengthen the NSS so that it can generate estimates at the state level and provide important bench-marks from detailed surveys; and, second, guided by the bench-mark surveys, carry out specific, low-cost surveys for short-term monitoring purposes in specific geographic areas at the disaggregated level.

The authors cite three examples of low-cost surveys, based on the regularities that emerge from empirical studies. In each case, information on the level of the variable in question is obtained by means of questionnaires that are short enough to permit large sample sizes, regular return visits and rapid processing. The first alternative is based on the close correlation between the headcount ratio measure of poverty and per capita consumption (quantity) of cereals. The second relies on the association between expenditure on food and nutritional deprivation at low levels of living, and thus would be targeted only to poor households (identified previously through an existing list of households by income). The third alternative relies on the connection between per capita total expenditure (PCTE) and level of living, and would combine a limited set of components of the existing expenditure survey with questions on the socio-economic domains commonly used to indicate levels of living. Experiments would have to be conducted to find out which set of components correlates best with the results of the full PCTE survey estimates. The shortened questionnaire could then be used to collect additional information on quantities of cereal consumption, and yet still be brief enough to be canvassed among a large number of households.

Many recent efforts to monitor poverty primarily rely on household survey data. It may be possible, however, to estimate changes in the incidence of poverty with proxy

indicators based on existing economic time series. This approach has been proposed as an alternative to implementing costly household surveys in rural areas (17). The central premise of this approach is that movements in certain agricultural output indicators (adjusted for lag effects and expressed in terms of per head of rural population) may correlate highly enough with changes in the incidence of poverty to be used as a proxy for indicating such changes. Recent tests of this technique using data for India yielded correlations between the head count ratio of poverty incidence and outputs of cereal, foodgrains, and total crops and agricultural GDP and NDP between $-.73$ and $-.80$.¹³ Similarly, agricultural sector wage rates and real and relative price data for various foods may serve as proxy indicators.

As with the PS, RASP and NSS techniques, proxy indicators also require more empirical testing to determine their reliability. Furthermore, since the interrelationships between a country's prevailing economic and social structures and a variety of other country- and data-specific characteristics determine the choice of the proxy, testing should take place under a variety of national conditions.

Additional innovative and/or low-cost methods of data collection could be useful for improving social data sources, especially if there is neither domestic capability nor external assistance sufficient to sustain full-scale household surveys. These include light surveys, observation or sentinel area studies, "travelling experts", use of local key informants and alternative sampling techniques (such as those employed successfully in WHO's surveys for the Expanded Programme on Immunization).

However, regardless of the accessibility of external resources, it is necessary to develop techniques that minimize the skills, effort and equipment required for implementing surveys, whether they be large- or small-scale. This is an area in which UNO's National Household Survey Capability Programme is making important contributions.

Questions of cost have important ramifications on the design of both the questionnaire and sample design. Yet, for the PS, RASP and other similar surveys, the term "low-cost" remains ill-defined and should be clarified. Since sample and survey designs should be determined by the overall purpose for which the data are to be collected, it is possible that a range of surveys with differing goals, costs and outputs could be equally efficient. Defining cost efficiency in this context would provide an important objective criteria for choosing the appropriate survey methodology for particular situations.

Rapid data gathering and short surveys cannot answer all questions about local phenomena. It will therefore be necessary in many instances to conduct local level in-depth investigations when a light survey reveals problems warranting rapid action by policy makers. This may help them to distinguish between real and apparent problems, to understand their causes, and to identify other locations where the same factors may be causing similar effects.

The relative merits of the various low-cost or innovative techniques described above have yet to be sufficiently assessed. To the contrary, the participants of the working session in which these techniques were discussed felt that they should be evaluated by persons with in-depth, relevant expertise and that a meeting, supported by international

13. These were significant at the .01 level when the average between the current and one-year lagged value was used.

agencies, should be organized for this purpose. They also recommended that international agencies help fund pilot experiments to test the feasibility and validity of low-cost means of collecting social data.

V. Possible Areas for More Research on Data and Indicators

The remainder of this report overviews selected aspects of current and prospective research to improve the relevance of indicators and data. Some of the issues to be discussed are pertinent to the well-defined indicators in priority areas of social and human concern; others are more pertinent to indicators and data where consensus on definitional and methodological questions has yet to be achieved. Special attention is given to issues of gender, social service delivery, levels of disaggregation and the role of international agencies.

1. Sectoral issues

The following list enumerates selected areas of concern for which research on new or supplementary methods for assessing conditions is warranted:

- (a) Status of women, children and the elderly.
- (b) Access to and conditions of work.
- (c) Environmental degradation.
- (d) Human rights and civil liberties.
- (e) Democracy and participation.
- (f) Civil, ethnic and labour conflicts.
- (g) Crime.
- (h) Access to and control of information.¹⁴

Significant obstacles to collecting data and information in these areas remain, however. In certain areas, a variety of approaches will be employed, though the results might not be indicators in the traditional sense. Nonetheless, they will be the product of in-depth research and analysis, and will serve some of the important functions of more traditional indicators. The following discussion of an environmental accounting framework, a freedom index, and an index of democracy illustrates a sampling of the complex issues being addressed by research on non-traditional indicators and data.

Numerous difficulties arise in accounting for environmental decline in theory and applying such methodologies in practice. This is demonstrated in a novel approach to allocating the costs of maintaining the atmosphere's capacity to absorb noxious gases (19). As trees contribute largely to the atmosphere's capacity to absorb greenhouse gases, the model treats forest cover as a key component of global social overhead capital or infrastructure. Since future growth and profitability are dependent in part on the quality and quantity of current investments in infrastructure, businesses and governments are expected to assume that burden. The key feature of the model is that the costs of preserving the earth's forest cover are allocated between developed and developing

14. Useful data and indicators can be obtained for many disparate purposes and for specific localities or situations. This list is by no means exhaustive; it merely indicates the variety of concerns expressed by participants in the working session on "Conceptual Issues in Assessing Development".

countries in a way that assures optimal and sustained growth in both. The redistributive mechanism is a pollution tax, to be levied against nations in proportion to their economic activity (for which national income per capita may serve as a proxy). The industrialized countries therefore pay higher taxes than developing countries since their industries produce greater quantities of atmospheric pollution per capita. The taxes are paid to an international body, which would distribute them to the countries where the contribution of local forests to social overhead capital exceeds taxes owed for that country's economic activity. Net income from the pollution tax is then to be used to protect the forest cover in the recipient country. While the model provides a general framework for approaching an extremely complex problem, a number of its basic assumptions warrant further examination. For example, is there an optimal time path of economic growth and, if so, how is it determined? How is the social rate of discount estimated with respect to the value of forests to future generations? How applicable is the global model at regional or local levels? What formula will be used to determine the value of different kinds of forests? What are the prospects of establishing the political will and institutions necessary to implement the tax collection and distribution system?

Likewise, research on the measurement of human rights and civil liberties is progressing despite the complexities involved. One output of these efforts, the human freedom index (HFI),¹⁵ takes into account 40 distinct criteria for measuring freedom, including freedom of movement, the rights of assembly and free speech, the rights to ethnic and gender equality, the rule of law and other democratic rights. The validity of the human freedom index can be challenged on a variety of grounds such as the weighting of individual freedoms, the comparability of the cross-national data and the methods for determining whether freedoms have been violated or not. Nonetheless, it is a valuable contribution to the debate on how to measure a complex domain of human activity.

Similarly, attempts to measure the extent of democracy and participation are fraught with difficulty. One such effort combines measures of **competition** and **participation** in an index of democracy (20). **Competition** is defined as the share of the vote garnered collectively by the unsuccessful political parties in an election, **participation** as the percentage of the population casting votes in an election. The two ratios are multiplied together producing an index, which has been calculated for 147 countries for the period of 1980-1988. The index is appealing because it is easy to compute and interpret, and appears to provide comparable data cross-nationally. But it has weaknesses as well. These include the fact that it is more a measure of the mechanical functioning of the election process than an indicator of democratization. As such, it does not take into account the existence and strength of intermediate or voluntary organizations, which may be extremely democratic but are not part of the formal electoral process. Nor does the index measure the stability of democracy, such as by the length of time during which democratic traditions have proceeded without interruption. The effects of increasingly skewed income distribution on participation in the democratic process are not accounted for either. Finally, if the concept of democracy itself is culturally biased, then it is not applicable to all countries.

2. Gender issues in social data

Women's issues are an important thrust of current research on social data and indicators. Still, special attention needs to be devoted to accounting practices that

15. Published in the Human Development Report 1991.

improve knowledge of women's economic and socio-economic contributions in diverse societies and social milieux. Naturally, this has broad ramifications for data collection and analysis, and indeed even for the survey instruments with which data on women are collected.

For example, many existing surveys and censuses contain gender-biased questions which result in inaccurate information. Resolving this problem will entail activities on four fronts:

(a) **Definitional:** different groups may interpret terminology differently. This implies revising the concepts used throughout the process of data collection and statistical classification.

(b) **Technical and methodological:** survey/data collection methods influence the accuracy of data. There is thus a need to better understand how women's responses are influenced by factors such as the type of questionnaire, the age and gender of the interviewer, the extent to which respondents are proxies for others, etc.

(c) **Cultural:** standards and practices of one country are imposed over those of another. Questions that assume universal norms may lead to inaccuracies in surveys and censuses. These should be carefully examined and, if necessary, reformulated to reflect the prevailing norms of the region.

(d) **Practical:** other diverse measures may be taken to improve the quality of surveys. These include more and better training and supervision of interviewers and census workers, advertising censuses and surveys to obtain optimal participation, and avoiding sexist language and attitudes (2).

Time budget surveys for collecting data on non-remunerated work within the household will also contribute to improving data on women for both socio-economic and economic analysis. Using time budget survey data for Spain, estimated GDP nearly doubles if the imputed value of unpaid work within the household is incorporated into the national accounts (7). Time budget data also illustrate how changing demographics and labour force participation rates among women can affect the economy. For example, time budget surveys facilitate obtaining estimates of the value of social services produced in the home. As more women enter the labour force, services previously provided within the family may decrease or be replaced in varying degrees by purchased services. Tracing the changing patterns such as the one just described may also reveal a great deal about changes in welfare levels. Finally, time budget data may facilitate new research on equality indicators inasmuch as "working time or time for leisure become political indicators when they show clear inequality. This side of economic research has to be connected with political science and constitutional rights analysis".

3. Continuing concerns regarding indicators of social service delivery

Consumption of social services has an important effect on the health and welfare of large segments of developing country populations. However, traditional indicators of social service delivery, primarily based on macro level supply ("input") data, are ill-suited to portraying the actual quality of the services rendered or how the consumption of services differs among groups within a country, region or community. Moreover, traditional input-based indicators are becoming less informative as the public role in

providing services has diminished in many countries. For the poor, especially, services previously provided by governments have been "informalized", and consequently there is an increasingly wide gap between official statistics and the reality of the production and consumption of many essential services.

Papers on Latin America (11) and Morocco (1,8) pointed out the need for assessing more clearly the quality of social services. The results of a survey of social trends in nine Latin American countries over the past decade revealed an apparent paradox in the field of education: in absolute and relative terms, school enrolments at all levels increased steadily while the resources allocated to public education shrunk. The explanation is that, over the same period, private education expanded rapidly to meet the demands of the wealthy for higher quality education. As a result, the educational system is now bifurcated: the rich attend private schools and universities and the others are left with a deteriorating public school system. A conclusion of this research is that information reflecting the quality of the service rendered, not simply the numbers of persons with access to the service, must be collected. Countries should also collect data on the availability of services to different sectors of society with a view to protecting the interests of vulnerable or marginalized groups.

The Statistical Office of Morocco is now implementing a series of household surveys to assess the qualitative aspects of goods and services provided by the government. The goal is to ascertain the extent to which the services provided satisfy the needs perceived by consumers. The degree of satisfaction expressed by consumers will then be compared to a basket of indicators which describe objectively measurable aspects of the quality and accessibility of the service provided. Thus, health, education, transportation and other public services may be assessed in terms of accessibility and quality, which are themselves defined in multidimensional terms. For example, the dimensions of accessibility may include the distance between the consumer and the distribution point of the service, and the associated costs in time, money and comfort of getting to the distribution point. Other factors such as cost of the service itself, whether public or private, and obstacles to its consumption stemming from custom or other cultural factors are also taken into account. Defining the dimensions of quality is more complicated than defining those of accessibility because of the specific characteristics of the service or item provided. For example, the quality of education would be determined by factors such as the availability and stability of teaching personnel, the nature of relations between students and teachers, the structure and schedule of courses, and the quality and availability of teaching materials.

The role of the informal sector in providing social services appears to be growing rapidly in developing countries that are implementing "economic liberalization" or privatization schemes (6,11,15). However, it is not known whether services offered by the informal sector truly replace those that were once provided publicly and, if so, how these differ in magnitude and quality from the services they have replaced. Answering this question may require new methods for assessing the extent and quality of essential services supplied by the informal sector. A first step in this process would be to undertake detailed case studies at the local level in order to establish the possible parameters for assessing the problem.

4. Unit of observation, levels of disaggregation and terminology

In the working session on "Conceptual Issues in Assessing Development", several suggestions were made regarding efforts to improve the relevance of social data for tracing

changes in levels of living and for monitoring the status of persons or groups for which data have not traditionally been collected.

In many developing countries, economic policies and trends may have different impacts on different groups. Data are therefore needed to show change in the status of the major social groupings which are most vulnerable to external shocks. These groups include, among numerous others, informal sector workers, rural landless peasants and subsistence farmers.

For many welfare-related indicators, the unit of observation is the family. However, if there are concerns that resources within the family are not shared equitably for reasons of age- or gender-bias, data on individuals should be gathered.

Since definitions for the same concept may diverge sharply between cultures and countries, census and survey questions should be framed to reflect prevailing social, cultural and economic patterns. For example, important concepts such as "household" have a variety of meanings across cultures and should therefore be properly calibrated in censuses and surveys to reflect local conditions.

5. The role of international agencies in the collection and dissemination of development data and indicators

International agencies, and non- and intergovernmental organizations play a leading role in the development of social data and indicators. To further enhance their contributions, these organizations should find ways to:

- (a) provide additional expertise and training to statistical offices in developing countries;
- (b) promote research on appropriate concepts and methodologies, especially in newer areas; and
- (c) support experimental and pilot projects which relate to low-cost methods of collecting information on key social indicators.

The remainder of this section outlines ongoing and proposed efforts in these areas that have not been addressed elsewhere in this report.

In a broad effort encompassing aspects of each of the three points above, the United Nations Statistical Office, UNICEF, UNFPA, UNDP and WHO have undertaken a joint effort to monitor achievement of social goals in the 1990s (18). The inter-agency group preparing this initiative has selected 28 priority statistical indicators for monitoring priority social and human development goals adopted in mandates of high level intergovernmental forums such as the World Summit on Children. The applicability and availability of these indicators are being tested in pilot studies in five countries. These studies were conceived as a means to ascertain the degree and nature of statistical and other obstacles encountered in monitoring social and human goals in individual countries. Having identified these problems, international agencies will be better able to articulate the statistical content and methodology of a full-scale programme to support the development of monitoring efforts in as many as 80 developing countries.

UNDP has also launched a major effort promote appropriate concepts and methodologies in social indicators. In publishing the **Human Development Report 1990**, with the human development index (HDI) as its centrepiece, UNDP has reinvigorated a long-running debate on the utility of synthetic indices for measuring development. The report is intended to draw widespread attention to important and emerging areas of concern in the theory and methods of assessing development. For example, the 1991 edition proposes indicators for measuring the extent of freedom and "human-oriented" public expenditures, and contains two alternative versions of the HDI, which take into account gender- and income-based disparities within countries.

Nevertheless, the HDI, which combines indicators of life expectancy, educational attainment and purchasing power-adjusted GDP per capita, remains a controversial tool for measuring development. Three of the major criticisms leveled against the HDI are that: the assignment of equal weights to the three components of the index is arbitrary; the methods for computing the three indicators do not adequately reflect the phenomena being measured; and the data used are unreliable. Several steps could be taken to solve the weighting and computation problems within the existing framework of the index. These include applying the weighting techniques of consumer price indices rather than choosing weights arbitrarily;¹⁶ and substituting a linear index of mortality (LIM) for life expectation at birth, an index of educational deprivation for adult literacy and a GNP-based measure of income for GDP (13).

A more radical proposal would be to replace the HDI with the social progress index (SPI), which combines indicators of longevity, consumption of private goods and access to public goods (5). As with the HDI, each component of the SPI is measured relative to a maximum. But where the HDI defines the maximum empirically, the SPI defines it normatively. The author of the SPI claims that, compared to the HDI, it possesses three advantages: it is a more exhaustive measure of development; it can be measured at the level of the individual; and it is easily comprehended in terms of daily human experience.

Data problems such as those discussed in section III also negatively affect the accuracy of the HDI. Moreover, publishing the HDI with flawed data "gives the false impression that we know the levels of these important activities in all developing and developed countries", and thereby undermines efforts to get real and timely information on mortality and education in developing countries (13). To avoid giving misleading information, future editions of the report might include two refinements: first, they might publish only estimates based on real data without the assumed model changes or other short cut estimates; and, second, provide the dates of the most recent empirical estimates for each country and for each variable.¹⁷

WHO is currently involved in an effort to develop a "knowledge engineering" approach to the formulation of health indicators (14). This novel methodology relies on "semantic knowledge" rather than quantitative measures to assess a variety of health-related concerns. It may also prove useful in validating traditional socio-economic indicators in a number of areas other than health, and should therefore be of interest to international agencies which support social indicators research.

16. This is the comment of a participant in the meeting.

17. A representative of UNDP who attended the meeting in Rabat pointed out that the **Human Development Report 1991** (not yet published at the time of the meeting) had responded to the plea to minimize the use of short cut estimates. He also remarked that the current and future reports would continue to highlight to the international community the gaps and weaknesses in social indicators and the need for improving social statistics.

Non-governmental organizations (NGOs), research institutes and other organizations have a role to play in advancing work on social development indicators. These entities have collected valuable data which could be made available more widely. Also, they may be well suited to undertaking experimental activities in collecting and analysing information in fields such as environmental protection, human rights, democracy, ethnic and labour conflicts, etc. Determining the comparability and reliability of such data will require further attention.

In the working session on "Methodological Issues in Assessing Development", it was noted that efforts to use indicators for analytical purposes at the inter- and intra-country level often founder because of the variability of definitions and data collection methods used to compile the indicators. Publishing the time series used for key indicators together with the definitions of the indicators and the methodologies used in collecting the data would facilitate more reliable analysis. Such information would make data users more aware of the non-comparability of certain data sets, and of the fragility of certain types of data analysis, and could form the basis of a handbook on social development data analysis.¹⁸ However, the handbook would not seek to standardize indicator definitions or data gathering methodologies. It is not always desirable to rigidly standardized definitions across countries - rather, observations should be made within specific country contexts. For instance, it is unlikely that a useful internationally standardized definition of educational achievement or employment by sector can be developed. However, it is important that data differences be recognized.

The report closes with a brief comment on the potential conflict of interests inherent in the relationship between statistical offices in Third World countries and international and bilateral agencies and donors. The latter have increasingly come to rely on national statistical offices to collect and process a wide array of social data. To ensure the quality and timeliness of the information collected, the donors often provide financial and/or technical assistance. Such help, though badly needed, may tempt the national agency to neglect crucial aspects of its ongoing or prospective statistical programme. International agencies must be careful not to encourage this, since the primary use of development data is for national planning and monitoring purposes. Moreover, an important by-product of any such co-operation should be a strengthening of the developing country's capacity to produce and control statistical output according to the nation's needs.

18. During and since the meeting in Rabat, UNRISD has held discussions to formulate a framework for the proposed handbook. In recent discussions, the handbook has been conceived as a statistical compendium featuring approximately 30 core social and socio-economic series regularly published in international reports and yearbooks. Where the same series is published in more than one source and discrepancies between the series exist, the reasons for the discrepancies would be explained, if possible. The divergent series would be displayed side-by-side and suggestions would be made for reconciling the differences or for choosing the series best suited to the user's purpose. The proposed handbook would be distinct from other recent publications on social indicators by international organizations. The United Nations Statistical Office's 1989 **Handbook on Social Indicators** is essentially a manual providing generally accepted definitions of social indicators and data presentation templates for countries and regions wishing to establish or expand social indicator systems. The World Bank's **Social Indicators of Development 1990** and UNDP's **Human Development Report 1991** are examples of the sources from which the handbook's social data series may be drawn.

VI. General Recommendations

During the plenary session, the following recommendations, put forth by the government of Morocco, were discussed and adopted. It was recommended that:

- (a) UNDP continue and expand its use of qualitative indicators, including those identified at the Rabat meeting;
- (b) the United Nations system use qualitative indicators in monitoring progress in the implementation of the international development strategy for the Fourth United Nations Development Decade;
- (c) the United Nations system and international financial institutions extensively use qualitative indicators in their reports on development;
- (d) regional commissions organize workshops aimed at disseminating the concept of qualitative indicators of development;
- (e) the United Nations Statistical Commission feature qualitative indicators of development as a permanent item in its agenda for the Fourth Development Decade;
- (f) UNRISD holds another expert meeting, in New York or Geneva, with a view to carrying forward the work on qualitative indicators of development;
- (g) UNDP consider supporting the expert meeting financially;
- (h) UNRISD submit the present report to the first ordinary session of ECOSOC;
and
- (i) the Inter-agency Working Group on Social Monitoring consider including Morocco in the list of countries identified for the implementation of the pilot surveys on qualitative indicators of development.

Appendix I

Papers presented at
A MEETING OF EXPERTS ON SOCIAL DEVELOPMENT INDICATORS
 Rabat, Morocco, 8-11 April 1991

Keynote Address

Mahbub ul Haq and Inge Kaul
 "Measuring Human Development:
 A Note on Data Requirements"
 United Nations Development Programme (UNDP) New York

Papers

1. Mohamed Abzahd
Collecte des données pour la mesure des niveaux de vie: Aspects méthodologiques et recherche des indicateurs sociaux, Statistical Office, Government of Morocco, Rabat, Morocco.
2. Lourdes Benería
The Measurement of Women's Economic Activities: Assessing the Theoretical and Practical Work of Two Decades, Cornell University, Ithaca, USA.
3. Ahmed Benrida and Tae Ho Yoo
Framework of Human Resources Development Indicators for Morocco, Ministry of Planning, Government of Morocco, Rabat, Morocco, and United Nations Educational, Scientific and Cultural Organization (UNESCO), respectively.
4. Richard Bilsborrow*
A Review of Low-cost Data Collection Techniques and Recommendations for RASP, University of North Carolina at Chapel Hill, Chapel Hill, USA.
5. Meghnad Desai
Issues in the Construction of Composite Indicators, London School of Economics and Political Science, London, United Kingdom.
6. Jennie Dey-Abbas and R. Gaiha
The Use of Socio-economic Indicators for Evaluating Progress in Implementing the Programme of Action of the World Conference on Agrarian Reform and Rural Development, Food and Agriculture Organization of the United Nations (FAO), Rome, Italy.

* Author did not attend meeting but paper was presented by another participant.

7. María-Angeles Durán
The Contribution of Domestic Work to Development, Catedrática de Sociología, Madrid, Spain.
8. Naima Ghemires
Aspects Qualitatifs du Développement: Indicateurs et Schémas de Consommation, Statistical Office, Government of Morocco, Rabat, Morocco.
9. Christiaan Grootaert*
Indicators for Monitoring the Social Dimensions of Adjustment, The World Bank, Washington, D.C., USA.
10. Judith Heyer
Issues Involved in the Organisation of Official Programmes to Monitor Living Conditions in Sub-Saharan African Countries, Oxford University, Oxford, United Kingdom.
11. Ruben Kaztman and Pascual Gerstenfeld
Complexities in the Evaluation of Social Development in Latin America during the Crisis of the 1980s, Economic Commission for Latin America and the Caribbean (ECLAC), Santiago, Chile.
12. B. Mansourian
Monitoring Health and Development, World Health Organization (WHO), Geneva, Switzerland.
13. Christopher J.L. Murray*
Development Data Constraints and the Human Development Index, Harvard University, Cambridge, USA.
14. B. McA. Sayers
A Knowledge Engineering Approach to New Health-related Indicators, Imperial College of Science, Technology and Medicine, London, United Kingdom.
15. Venkatesh Seshamani
Socio-economic Indicators for Monitoring the Development Impact of Zambia's Adjustment Programmes, University of Zambia, Lusaka, Zambia.
16. K. Sundaram and Suresh D. Tendulkar**
National Sample Surveys on Consumer Expenditure and Living Standard Measurement in India, University of Delhi, New Delhi, India.
17. Hamid Tabatabai
Poverty Monitoring in the Rural Sector, International Labour Office, Geneva, Switzerland.

* Author did not attend meeting but paper was presented by another participant.

** Authors did not attend meeting. Paper was distributed to participants but not presented.

18. United Nations Statistical Office
Report on Progress Made in the Development of a Co-ordinated United Nations System Data Base for Selected Social Statistics and Indicators of Common Interest and the Development of Related National Data Bases, New York, USA.
19. Hirofumi Uzawa
Equity and Evaluation of Environmental Destruction, The Japan Academy, Tokyo, Japan.
20. Tatu Vanhanen
Construction and Use of an Index of Democracy, University of Tampere, Tampere, Finland.

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ACRONYMS

CBS	Central Bureau of Statistics
ECLAC	Economic Commission for Latin America and the Caribbean
FAO	Food and Agricultural Organization of the United Nations
ILO	International Labour Organisation
UNDP	United Nations Development Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNFPA	United Nations Population Fund
UNICEF	United Nations Children's Fund
UNRISD	United Nations Research Institute for Social Development
UNSO	United Nations Statistical Office
WCARRD	World Conference on Agrarian Reform and Rural Development
WHO	World Health Organization

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