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INTERAGENCY PROGRAMME FOR STATISTICAL MEASUREMENT OF THE ACHIEVEMENT OF SOCIAL GOALS AND HUMAN DEVELOPMENT PROGRESS IN THE 1990'S

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INTERAGENCY PROGRAMME FOR STATISTICAL MEASUREMENT OF THE ACHIEVEMENT OF SOCIAL GOALS AND HUMAN DEVELOPMENT PROGRESS IN THE 1990'S

I. INTRODUCTION

1. This paper reviews progress in the development of an inter-agency project on programme for statistical measurement of the achievement of social goals and human development progress in the 1990's. The project is being developed by an Interagency UNDP/UNICEF/UNFPA/UN Statistical Office working group. The project, going under the name Statistical Services for Measuring the Achievement of Social Goals and Human Development Progress (STATGOAL), is to be the statistical centerpiece of a major effort of technical cooperation in the 1990s by the United Nations system to give guidance, assistance and support to developing countries as they strive to ascertain progress in the achievement of social goals and human development. When finally formulated it is expected to be co-sponsored by the United Nations, the United Nations Development Programme (UNDP), the United Nations Children's Fund (UNICEF) and the United Nations Population Fund (UNFPA). Although many of the programme details and institutional arrangements for STATGOAL are still under discussion, the broad outlines of the proposed project are presented in this paper.

II. BACKGROUND

2. STATGOAL is the culmination of a major interagency initiative begun in 1989 for the purpose of helping individual developing countries measure the achievement of certain social and human development goals and targets which they have adopted for the decade of the 1990s. The interagency working group, undertook the initiative in the context of a number of social targets to which UN member countries have subscribed. These include priority statistical indicators for measuring progress and degree of overall achievement in the 1990s jointly agreed upon by UNDP in the context of its work in human development, by UNICEF in connection with its interest in monitoring the situation of children and women in general and more specifically in monitoring progress towards the goals set by the World Summit for Children, and by UNFPA in context of the Amsterdam Declaration on Population in the 21st Century. The set of indicators also captures key goals and targets of WHO's Health-for-All by the Year 2000, particularly those relating to children, women and family planning which are common goals for WHO, UNICEF and UNFPA.

3. The Joint Conference of African Planners, Statisticians and Demographers had at its 6th Sessions in 1990 deliberated on a joint UNICEF/UNFPA/UN Statistical Office proposal on indicators for monitoring progress towards achieving social goals and progess in human development in the development decade of 1990's. The

Conference had been invited to comment on the preliminary review of measurement objectives and methodological requirements. The Conference endorsed the broad outlines of the proposal as well as the rationale of the initiative. The proposal has also been reviewed and endorsed over the last-three years by the ACC Sub-Committee on Statistics at its meetings in 1989, 1990 and 1991 and by the 26th Session of the UN Statistical Commission in 1991.

4. The Inter-agency working group has during this period continued with the development work on the proposed initiative. Five pilot studies have been conducted in Ecuador, Kenya, Mali, Mexico and Philippines to ascertain inter alia the availability, quality and use of the priority indicators, as well as other indicators of key interest to the national Governments concerned. The pilot assessments, were undertaken by joint missions involving independent consultants and included representatives of the interagency working group and the respective regional commissions. Each mission has examined the availability of data for 28 priority indicators and 6 indicators on the situation of women. Assessment of the situation on each priority indicator identified by the Interagency working group and by the five countries themselves is detailed in the Annex to this paper. These pilot studies have identified a number of problems which can broadly be categorized as: lack of timeliness of data produced; inadequate understanding or ability to use data for planning, programme formulation and monitoring; lack of data or gaps in data for some of the important indicators; inadequate quality of data in terms of reliability, coverage, accuracy and relevant disaggregations; demand for tools which provide rapid data feedback in many situations where standard systems do not exist or are inappropriate, particularly for monitoring; and inadequate coordination of statistical resources and donor inputs. These problems are highlighted in a synthesis report of the five pilot studies. This report was reviewed recently at a roundtable meeting convened by UNICEF in Cairo, as part of the proceedings of the 48th Session of International Statistical Institute.

5. The five pilot studies have brought to light some of the issues that are likely to be encountered in any national monitoring programme which relies on statistical data as necessary inputs. They have also highlighted the problems of inter-country comparisons in any global assessment of progress towards the attainment of social goals. Important lessons learnt from the pilot studies include the need to promote the use of data, the political commitment to monitoring, co-ordination of statistical activities within each country, the need for user-producer dialogue, the advantages of donor co-ordination of assistance to statistics, and the importance of all monitoring programmes to take account of similar activities taking place in the country to avoid unnecessary duplication of effort. Rivalries at national level within both

national and international agencies have sometimes proved to be a major stumbling block to the adoption of a co-ordinated approach to the development and improvement of statistics in some developing countries.

6. The success of any monitoring exercise it has been recognized depends primarily on the priority accorded to it by the national Governments. In this context therefore the indicators to be monitored should be those selected to reflect national priorities. The Governments need to be convinced that monitoring progress towards the attainment of social goals is in the interests of Government themselves and their people. Governments also bear priority interest in the break down of these indicators by geographic, sex and other socio-economic categories.

7. The convergence of several related factors highlighted in the pilot studies points to the need for a concerted effort by the United Nations system with respect to development and coordination of the statistical aspects of measurement of social goals and progress in human development in the 1990s. Among these factors are the following:

(a) Statistical guidance to many developing countries is needed as they strive to set targets and assess progress over the decade. Such guidance is essential to establish consistency of approach in concepts and definitions at the national level, as well as beginning the process of striving for international statistical standards and comparability with respect to measurement of social goals and progress in human development. The requisite guidance is seen to include technical assistance and training. Technical assistance is needed to help countries formulate strategies and statistical plans for their measurement efforts and to provide ad hoc advice on specific development aspects of measurement of social goal and progress in human development including use of data for action, survey/sample design, data processing, analysis and specialized techniques and tools (synthetic estimation methods, rapid assessment methodologies, surveillance methodologies etc.). Training has to be a key feature of the technical assistance to be provided.

(b) Statistical indicators promulgated in support of various international programmes of the United Nations are profuse and overlapping. Inasmuch as measuring the achievement of social and human development goals will be a major operation both nationally and internationally in the 1990s work must continue on developing and further refining a set of core indicators that countries would want to adopt for compilation and utilization.

(c) More importantly, however, it is the purpose to which indicators are to be put which is of primary concern. They are not for the primary use by international agencies but by the individual countries though a core set of indicators would be of considerable use for comparison across countries. There is thus a need for flexibility in supporting limited sets of indicators which are more specific for some countries than others, or for some purposes more than for others. Related to this is the need to develop and promote workable models for assessing progress statistically, perhaps indicator-by-indicator.

(d) The further development of special methods such as rapid assessment techniques and the subsequent preparation of related technical studies, manuals and other relevant materials are seen as necessary to help guide countries deal with the somewhat amorphous task of measuring social and human development goals and monitoring progress. Provision of practical guidance on these specialized methods, especially techniques for using existing data more effectively, is required in order to further the prospects of assessing a country's current situation quickly. Thus, not only is evaluation of "rapid assessment" and other tools for monitoring a necessity but practical solutions for improving such methods is the key. Though there exists a body of literature on social indicators, there is very little practical documentation available on monitoring per se on related statistical methods and procedures. As a result, individual countries do not have the well-grounded reference material or documentation they need to tackle a decade-long challenge as demanding as measuring the achievement of social goals and human development progress.

8. The UN Statistical Office under the guidance of the Interagency Working Group and working in collaboration with the specialized agencies and regional commissions will be the focus for the statistical work in connection with STATGOAL described above. There remain promotional aspects, however, which are somewhat outside the purview of the UN Statistical Office and which will have to be actively pursued by the participating agencies. These include availing the benefit of the significant presence of some of the specialized agencies in the countries to promote adoption at the highest levels of Government of social goals and targets on human development. This too may entail provision of technical assistance to countries to institutionalize mechanisms to monitor these goals and targets.

9. In context of Africa it should be noted that a concerted effort is already underway on the part of UNDP and ECA to collaborate in proposing a strategy for the development of statistics in the 1990s, with emphasis on building the capacity for self-sustaining statistical systems for countries to respond to country needs for data. In that context, effective coordination between that effort and the development of country proposals under STATGOAL will need to be put into place.

III. OBJECTIVES

10. The objectives of STATGOAL are to assist developing countries ascertain the degree to which their social and human development goals will have been achieved at the end of the decade and to measure and monitor progress (that is, change) toward those goals during the decade. One of the significant benefits to countries from STATGOAL will be further strengthening of statistical capacity to measure goals more accurately and with better timeliness. The projects primary thrust will be in promoting ways and means for countries to improve their own monitoring capability so that data are effectively used to stimulate and strengthen action toward achieving progress in meeting goals and targets.

11. The immediate objectives for STATGOAL, to be accomplished over the initial 3-year phase of the programme and in collaboration with the specialized agencies and the regional commissions are varied and include inter alia project formulations at the country level, technical assistance, research in methods and technique of measurement and training.

12. It is anticipated that, in the first phase, as many as sixty countries would avail assistance in the development of plans for measurement of and progress in human development in accordance with their national programmes. Assessment missions to ascertain problem areas and suggest strategies for building a viable programme of measuring progress including models for baseline and periodic estimates will be undertaken. Technical assistance will also be provided to developing countries in the implementation of their plans for measurement of social/human development goals focusing on specific aspects of timeliness, use of data, filling data gaps, improving quality and improving coordination.

13. As its second immediate objective the project would through research, undertake the development of appropriate techniques for improving the measurement process at the country level. A series of technical studies need to be undertaken on techniques and strategies for monitoring and for statistical measurement, as dictated by country needs. These may include methods for making provisional estimates of birth and death rates in the absence of 100 percent coverage; design of coverage studies to estimate degree of undercoverage in civil registration and preparation of

concomitant adjustment factors; design and utilization of sampling methods for processing administrative records in health and education sectors; design of sample registration systems; design of viable data processing strategies for timeliness in measurement and monitoring; design of appropriate statistical models (baseline figures, issues of frequency) for monitoring, perhaps indicator-specific and which promote to the maximum extent use of all major sources of data; techniques on how to integrate social variables into development plans and policy formulation; development of improved techniques for dissemination of data and information; methods on building and/or strengthening computerized information systems, especially in health and education; methods for making various technical improvements in statistical systems, especially rapid assessment methodologies and household surveys including survey methods, master samples, techniques for sampling the urban poor, estimation techniques and analysis methods; and study of the feasibility of developing a core questionnaire for monitoring. This is an illustrative list of the various possible topics for technical studies. Other options will be identified and undertaken as appropriate particularly in the area of using data for action.

14. The third immediate objective pertains to training in methodology for statistical monitoring which will be organized in cooperation with specialized agencies, regional commissions and regional teams. Interregional and/or regional workshops on statistical models and methods, and analysis techniques for social monitoring will be carried out. Workshops on statistical methodology for social monitoring at the country level will be conducted for statisticians and data users. Promotional contacts will also be made with international statistical training institutes to add statistical courses on measurement of social goals and progress in human development to their regular curricula for training developing country statisticians. The development of training materials that can be used in improving the skills of junior personnel, especially in data collection aspects, in ministries responsible for administrative statistics will be promoted.

IV. COORDINATION

15. Effective coordination of major data collection programmes such as DHS, INFS, LSMS, NHSCP, PAPCHILD, SDA etc. will be a cornerstone of STATGOAL. Effective coordination with WHO, UNESCO and ILO will also be ensured on matters of definitions of standard and concepts for indicators through consultations of the Interagency working group.

V. EXPECTED END OF PROJECT SITUATION

16. Universal achievement by the year 2000 of the social and human development goals discussed here entails an immense measurement effort. It will require human and financial resources, focused and strong coordination, continuing development of statistical infrastructure and innovative techniques for monitoring progress and measuring change. It is anticipated that at the end of 1994 a minimum of 60 countries will have, in varying degrees and modalities, established mechanisms and procedures for measuring periodic progress throughout the decade of the 1990s in the attainment of social and human development goals. STATGOAL will have facilitated this process substantively and technically by providing directly or assisting in providing the following:

(a) Assessments of country needs.

(b) Project plans, strategies and models for measuring progress at the country level.

(c) Research and development methods for guiding the process.

(d) Technical documentation of methods for measurement and data utilization.

(e) Training tools and implementation.

(f) Ad hoc and specific technical assistance and backstopping in a wide array of statistical applications.

(g) More standarized concepts and definitions for key indicators.

(h) Capability for countries to produce requisite data on key indicators, with timeliness, reliability, utility and validity.

ANNEX

INDICATORS

The missions undertaking the pilot studies had endeavoured to ascertain disposition of each of the respective countries on each of the 28 indicators and 6 additional indicators on women. These had been pre-identified by the Inter-agency Working Group to facilitate the work of the mission. The missions also endeavoured to ascertain status on availability of data on these indicators and on any additional ones that the countries concerned had accorded priority to. This note details the findings of the pilot studies on these indicators as reported in the synthesis report. The 28 indicators have been classified into five subgroups on Mortality, Health, Education, Demographic and Economic categories.

Mortality

(1) Infant Mortality Rate (IMR)

For all five countries, IMR has been available mainly from censuses or surveys as estimates using direct or indirect techniques. In the two African countries (Kenya and Mali), the civil registration system suffers from poor coverage and thus no meaningful estimates based on it can be derived. The same is true of the remaining three countries. For example in Mexico IMR is available from both vital registration and household surveys but the two rates diverge significantly. Thus the Mexican National Population Council (CONAPO) bases its estimates of IMR not only on one source but from all available survey data as well as vital statistics derived from the civil registration system.

(2) Under Five Mortality Rate (U-5MR)

Due to the fact that there are still defects in the civil registration system in all five countries, the main source of U-5MR like IMR is household survey based estimates. All five countries have continuing programmes of household surveys and thus in the immediate future data for deriving the indicator should be available on a regular basis, at least once in 5 years. However as a properly functioning civil registration system is the best source of mortality data, efforts should be made to improve the system in all five countries so that reliable mortality rates can be derived from it.

Some countries with some mechanisms for monitoring in place like Philippines do not monitor U-5MR but rather Child Mortality Rate (CMR), that is deaths to children aged 1-4 per 1000 population in that age group.

(3) **Maternal Mortality Rate (MMR)**

There is a general state of disarray with respect to data on maternal mortality. Information on MMR is available on a regular basis in Ecuador, Mexico and the Philippines. However, in some of them problems of coverage and timeliness as well as the accurate certification of cause of death bring into question the reliability of the estimates so derived. Similar data are not available for Kenya and Mali, even though they are considered very important. There are problems of definition which are linked with the proper certification of cause of death. Since all countries consider MMR an important indicator, WHO and other relevant UN agencies need to assist countries to overcome the definitional and other problems that make it impossible for reliable estimates to be available.

(4) **Number of deaths from neonatal tetanus per 1,000 live births**

This indicator is published annually in the Philippines and is based on cause of death statistics. In Africa data on cause-specific mortality are generally difficult to obtain due to problems of coverage and certification of deaths in the civil registration systems. The health information systems in these African countries are also generally defective, since the persons who use the health services covered by the health information system are not representative of the whole country. Nevertheless, data from the health centres can provide some indication, however, biased of cause-specific mortality rates among children. The biases may be corrected by adjustment factors which can be developed after methodological and evaluation studies have been carried out.

(5) **Number of deaths of children under 5 years of age from diarrhoea per 1000 live births**

The comments made about neonatal tetanus apply here. There is also a problem of interpreting the data particularly whether diarrhoea was the underlying cause of death or merely a contributory factor.

(6) **Number of Under 5 Deaths from pneumonia per 1000 live births**

The indicator suffers from the same problems as the preceding one. In Ecuador, for example, 20 per cent of deaths cannot be classified by cause of death. Also, even the certification of hospital deaths is not always accurate. A study in an area of the country showed that 30 per cent of the deaths were incorrectly registered. Another general problem with the indicator is the difficulty in distinguishing pneumonia from other Acute Respiratory Infections (ARI's).

HEALTH

(7) **Proportion of Children under 5 years of age underweight**

While Mexico has had a regular supply of information on this indicator for the past ten years, Ecuador had an estimate based on a survey in 1986. Philippines on the other hand has multiple sources of data on nutrition. Two of these sources publish their data as soon as they are available. However the third source, the Department of Health's "Operation Timbang" (OPT) programme has the data in unpublished tabulations. Like most data in the Philippines from multiple sources the OPT data differ considerably from the data from the other two sources. The former suffers from significant undercoverage and weighing accuracy problems. In Kenya, although all four surveys were carried out by the same agency, (the Central Bureau of Statistics), the use of two reference populations (Harvard and NCHS) and analysis of data based on percent of median cutoff points have made analyzing trends over time a difficult if not impossible undertaking.

(8) **Proportion of infants breastfed exclusively for first four to six months**

Information on this indicator is not available in Kenya. There is a perception among researchers in that country that the recommendation of "exclusive" breastfeeding for the first four to six months is not a reasonable one. It was argued that it was difficult to expect, say, a five month old child to be exclusively breastfed. However, data is available from at least one of the surveys conducted in the country (the Demographic and Health Survey) from which an estimate of exclusive breastfeeding can be derived. In Mali, while the Demographic and Health survey (DHS) shows that over 92 per cent of the children under one year were breastfed, it is not clear whether this can be taken as an indicator of the proportion of children exclusively breastfed even though that information can be directly derived from the DHS data collected.

In the Philippines, the indicator can be derived from the National Nutrition Survey (1982 and 1987) as well as the National Health Survey of 1987. The latter data are regarded as being of a higher quality. There is one problem however, with the way the question was worded. Questions on "age at which reference children were first given food or drink other than breastmilk" do not always properly screen out use of water during that period.

Mexico has some data on the indicator but this covers the period 1982 to 1986. Ecuador does not appear to have any information on exclusive breastfeeding.

(9) **Proportion of population with access to safe water**

The use of the indicator on a worldwide programme of monitoring suffers from the fact that no universally accepted definition of "safe" water or "access" exists. Mexico has information from the 1980 and 1990 population censuses on population with piped water. Information has also been collected by other agencies such as the National Commission on Water. The Philippines has multiple sources of information for this indicator including the population and housing censuses and the programme data from the Department of Health's Environmental Health Service (EHS). Ecuador has also collected but not yet published information on this for the year 1990. The two agencies that have collected the information independently of each other are the National Institute of Statistics and Censuses (INEC) in its 1990 Population Census and the National Employment Institute (INEM).

In Kenya, different categories have been used for the classification of water in the various sources and it is thus difficult to establish a one to one correspondence between the categories on the one hand and safe and unsafe water on the other. The 1987 Kenya Nutrition Survey, for example, classified water sources into clean, unsafe and spring water. Mali on the other hand has information on the proportion of the population having access to safe water for the year 1989. According to this, 41.0 per cent of the population have safe water coverage.

The word "access" in developing countries, especially in Africa, does not always imply that population with access is the same as the population that actually uses a facility.

(10) **Proportion of population with access to sanitary means of excreta disposal**

While all five countries have information on this indicator there are problems in making temporal and international comparisons. Mali, for example, has relevant information in its 1987 Population Census report which indicates that 1.3 per cent of households had flush toilets while 51.3 per cent used latrines. Mali considers latrines as a sanitary means of disposing of excreta. However, some African countries do not see the issue in the same light. In Kenya the problem is complicated by the non-comparability of classification categories used in the different surveys, even by the Central Bureau of Statistics. Unless there is consistency and standardization of concepts, definitions and classifications and of certain elements of survey methodology, there will be great

difficulty in analyzing patterns and trends over time in the same country. In the Philippines the data for the indicator are considered to be relatively more accurate even though problems with the interpretation of "access" still remain.

(11) **Proportion of population with access to adequate shelter**

There are conceptual problems with this indicator relating to the terms "access" and "adequate". All five countries collect information on housing and housing characteristics from their population and housing censuses. Some supplement such data with more detailed sample data. However, traditionally such data have been classified by type of roofing, floor and wall etc., and very little effort has been made to calculate indices of overcrowding such as persons per room ratios. Kenya has attempted to adopt a definition, in which adequate shelter is defined as a standard affordable house with two or more sleeping rooms with amenities, such as water and sanitation, and in urban areas this would include waste disposal and landscaping such as planting of trees and grass. Sanitation should either include water-borne sanitation or VIP (ventilated improved pit) latrines. Even such a definition does not completely deal with the issue of overcrowding. Each country will have to construct an index of housing adequacy before progress in monitoring improvements in housing over time can be achieved.

(12) **Proportion of children who suffer physical or mental abuse**

This is a very sensitive indicator. It is therefore not surprising that the five countries studied did not routinely collect information relating to this. There is firstly a conceptual problem of what constitutes physical or mental abuse in the cultural context of different developing countries. Secondly there are questions relating to the use likely to be made by organizations outside the country of such data. This, however, should not be interpreted to mean that Governments of developing countries are unaware of the existence of child abuse in their countries. In Kenya, elements of this were identified as child battering, child abandonment, sexual abuse and exploitation of children through work. No useful information is likely to be obtained for the construction of this indicator until these conceptual and other problems are solved.

EDUCATION

(13) Primary school enrolment (gross/net)

Information on gross enrolment is available for all five countries with some unacceptable time lag (more than one year) in most of them. Philippines has this information from multiple sources but the Census of Population and Housing data appear to be the most reliable. In Ecuador the information is available on a yearly basis but there is a time lag of about two years before the data is made available. Mexico has two main sources: the population and housing census and the secretariat of Public Education. The latter produces data on a yearly basis while the former carries out its population census at intervals of ten years. In Kenya, enrolment ratios are "gross" rather than net. Net enrolment ratios can be derived approximately from the returns of the school census. Mali also publishes gross rates. However, in both Kenya and Mali the population census can be used to derive net ratios. In addition, the annual school census schedule in Kenya can be slightly modified to obtain net enrolment ratios.

(14) Secondary school enrolment (gross/net)

Data for this indicator are available from the same sources described above under (13). Here again, gross enrolment rations are easier to obtain than net. However, there is a tendency in countries like Mali to publish crude data only and not rates or ratios.

(15) Proportion of first-graders completing grade 4

In some countries like the Philippines, this indicator is based on a cohort survival rate. However, in other countries like Kenya the approach is, to compare the enrolment figure for grade I with the corresponding figure four years later. Where "repeaters" are not a problem and the same schools are used, this does not pose a serious problem. The choice of grade 4 only was also questioned in Kenya, as it was thought important to consider proportion of first-graders completing grade 8 also which is the end of the first cycle institution in that country.

(16) Mean years of schooling per person 25+

For most of the countries surveyed, the primary source of information is the population census, though some also collect data on the indicator in surveys. Philippines for example has three main sources: the population census, the labour force survey and a special Functional Literacy, Education and Mass Media Survey. Care has to be taken in deciding which of the data to use. In the case

under consideration, there has been no effort yet to evaluate any of the data. In Mali, the relevant figures from the 1976 and 1987 Census give some basis for measuring progress in achieving the target of education for all by the year 2000. The figures 0.4 (0.6 for males, 0.1 for females) in 1976 contrast with 0.7 (1.0, 0.4) for 1987. In Kenya, highest level completed is available from the census and it is possible to calculate the median years of schooling from the census data collected.

(17) **Adult literacy rate**

Ecuador has two main sources of information for this indicator - the household survey conducted by the National Employment Institute and the population census. Mexico also has two similar sources, except that quarterly employment survey is limited to 16 urban centres. Philippines, Mali and Kenya have adequate information for measuring literacy. However, in the Philippines, data from the census assume that all household members who have completed 4th grade are literate. This assumption has to be tested since some persons even in developed countries that have nominally completed a higher grade have been realistically found to be illiterate. Another problem in Kenya was that the cut-off point for age for enquiring into literacy has moved from 10 to 12 to 15 over the past ten years and therefore data over time are not comparable.

(18) **Tertiary Science Graduates Ratio**

Here, the question of what constitutes a scientist has to be more clearly defined. The notes on the Interagency list prepared for the pilot study missions defined this as tertiary education graduates in the natural and applied sciences as a percentage of the total number of third level graduates. Clearer guidelines are required because there are several options in a university course. In some countries, a person can take chemistry, physics and geography in the first year, chemistry and geography in the second year and geography in the third year. Also as the mission to Kenya found out disciplines like agriculture, science, architecture, engineering, medicine, veterinary science, forestry, wood science, agricultural science etc. are all regarded as science in some countries and it is not clear whether this interpretation of the term is universally accepted. Within the limits of national definitions therefore, information was available or could be made available at a cost in all five countries. In Mali and Kenya, the number of tertiary level institutions is small and thus the data can be compiled readily easily, even though this is not done now. In the Philippines this could be a major exercise since the Department of Education, Culture and Sports maintains data only on

such institutions in the public sector. The private sector tertiary level institutions are numerous and would require a major effort to obtain the data. Mexico and Ecuador produce data for the indicator on a regular basis, even though delays of 18 months between data collection and dissemination exist.

(19) **Scientists and technicians/1000 population**

The comments made in the preceding paragraph on the disciplines included under science also apply here. In addition, it was not clear whether what was required was scientists and technicians by training or occupation. In the Philippines, a proxy indicator based on "Highest degree obtained" was used while in Kenya scientists and technicians according to work done in the public sector formed the basis of the information which was used to construct the indicator. The Mali mission confused the issue even further by excluding professionals from the group. The confusion could be due to language differences. The indicator was translated as "... technical and scientific cadres". In Ecuador and Mexico, the National Council for Scientific and Technical Research publishes data on the indicator but it is not clear whether the information is based on training or occupation. To assist countries in providing the necessary information, clear guidelines need to be issued, specifying for example those occupational titles in the International Standard Classification of Occupations (ISCO-88) which should be included under scientists and technicians.

DEMOGRAPHIC

(20) **Life Expectancy**

This indicator depends on knowledge of mortality at different ages and as such information especially at adult ages is not reliable in most developing countries. Calculations of life expectancy are based on a number of assumptions which may or may not be valid. The estimates of life expectancy although better than guesstimates are still of questionable reliability. All countries which carry out censuses and collect data on age and sex, together with surveys which provide some information on mortality, can therefore be used to provide estimates of life expectancy. All five countries therefore do provide such information but its reliability is open to question. Until the civil registration systems start producing reliable data, the situation will remain largely unsatisfactory.

(21) **Distribution of age of mother at first birth by age group**

Survey data are available in all five countries for the calculation of this indicator.

(22) **Mean number of children ever born (CEB)**

Data for this indicator are derived from two main sources: censuses and surveys. The census question on "Number of children ever born alive" does not always elicit reliable responses. There is a tendency in some societies to understate this number. Not even the approach which divides the question into parts, namely "Number (of children) living in this house"; "Number living elsewhere" and "Number dead" gets rid of this bias. Survey data which gather complete pregnancy or birth histories are more reliable. All five countries have data on CEB with varying degrees of reliability.

(23) **Median number of months since previous birth**

Information on the indicator was not readily available in Kenya and Mali. In the Philippines, data were available from three survey series which collected information on fertility histories. Mexico and Ecuador also had survey data which could be used to obtain the indicator. In the case of Ecuador, a problem, which is not often highlighted in using data for monitoring, may exist with respect to a probable sample bias in the National Demographic Maternal and Child Health (ENDEMAIN) survey. Such bias may be quite common in some of the surveys whose results are usually disseminated to planners and policy makers.

(24) **Proportion of births to females aged 20 to 34 years of age**

Two interpretations appear to have been considered in respect of the above indicator in the five country reports. The one interpretation was based on the number of children ever born by age of mother. The alternative interpretation which appears more correct in terms of the purpose for which the indicator is required is the number of live births occurring to females aged 20 to 34 years during a twelve months period as a proportion of the total number of births to all females during the same period.

Data on both interpretations are either readily available or can be retabulated from census on survey data. In Kenya, such data were available in published form in respect of the first but not the second interpretation, even though the latter is available from the raw survey data. The question that also arises from the studies is whether in view of indicator 21 above, this indicator should be accorded any priority.

(25) **Proportion of households with female heads**

Data for this indicator are available from population censuses and surveys in all the countries. However, caution has to be exercised in using the data, since in certain countries, for example in parts of Africa, absent male heads (away from households for long periods) are still regarded as heads of household.

(26) **Contraceptive prevalence rate**

Data for this indicator were available in Mexico for married women only for 1987 and for all women for 1987 and 1989. For Ecuador, information was available from the 1985 ENDESA Survey. However, the National Demographic Surveys of 1983 and 1988 are regarded as the most reliable source. Mali had a low rate of contraceptive prevalence - 4.7 per cent for women of whom only 1.3 per cent were using modern methods. Kenya had three different sets of data: 7 per cent for 1977-78 (Kenya Fertility Survey), 17 per cent for 1984 (Kenya Contraceptive Prevalence Survey) and 27 per cent in 1989 (Kenya Demographic and Health Survey). These figures are quoted here to highlight one problem in monitoring. Do the rates show a clear trend or has the pattern been confused by improvements in survey techniques? Only additional surveys will throw light on the issue.

ECONOMIC

(27) **Total expenditure in social sectors as percentage of GNP**

One issue raised in the Kenya study was the need to define total expenditure more precisely. Is it total aggregate, recurrent or just consumption expenditure, i.e. expenditure on labour costs and other goods and services (excluding rest of the recurrent expenditure e.g. transfers, etc). Another question raised is why GNP and not GDP. Kenya has data for this indicator for the latest financial year 1989/90. For Mali on the other hand, the data are available only for 1989. However in neither country is the information at a lower level of disaggregation. The same problem exists in Philippines. Mexico also has data on expenditures at the national level while disaggregated data are not available. In Ecuador, data on public expenditure in the social sector are also available. Data on private expenditure in all the studies considered can best be obtained from household income, consumption and expenditure surveys.

(28) Public expenditure in the social sectors as a percentage of total public expenditure

As implied in the previous comments, data for this indicator are more readily available. The only problem encountered is that some of the figures are budget figures (i.e. amounts expected to be allocated to the sector) and not actual expenditures. In some countries like Mexico the actual expenditures are normally only available to government officials and are not routinely disseminated. Since budget figures and actual expenditures in many countries diverge significantly, it is important to make sure that the information supplied relates only to actual expenditures.

ADDITIONAL INDICATORS ON THE SITUATION OF WOMEN

(1) Females per 100 males, population under age 10 and 60 and over

There was no difficulty in obtaining data on this indicator since they are obtainable not only from population censuses but also from household surveys.

(2) Women per 100 men in wage and salary employment, urban and rural

Data for this indicator are not available in some of the study countries. In Kenya and the Philippines such data are not routinely available. Labour force surveys can provide the information but they need to be reprocessed to produce the

indicator. The Mali, Mexico, and Ecuador studies did not report on the status of the indicators on the situation of women but the comments made above would no doubt also apply to them.

(3) Women per 100 men unpaid family workers, agricultural and non-agricultural

Data are normally obtained from population censuses and labour force surveys. However these are not routinely tabulated in the prescribed form and in some countries considerable reprocessing will be required before the indicator can be derived. Kenya in its previous censuses did not include economic questions and thus the indicator can only be derived from the 1989 population census. The categories on the status of employment used in the rural labour force survey did not specifically identify the unpaid family worker. The Philippines however collected all relevant data which will have to be reprocessed to produce the indicators.

(4) **Females per 100 males in rural to urban migration**

The Philippines reported two main sources of data for the above indicator: the Population Census and National Demographic Survey. For other countries, lifetime migration can be investigated. However, in countries where de facto population is counted (i.e. population at place of census night) as against de jure population (i.e. population at usual residence), the concept of migration calculated in respect of place of enumeration has some serious defects.

(5) **Percentage of women participating in grassroots and community organization, economic cooperations and others, urban and rural**

There is no available central source for the data required to produce this indicator in any of the countries that reported on it.

(6) **Women per 100 men agricultural holders**

Data on holders are not generally disaggregated by gender. In the Philippines, a proxy indicator on "female operators" can be obtained. In Kenya, since there are cultural obstacles to women being holders, it was considered that the indicator though important should be accorded a low priority.

THE PERCEPTION OF COUNTRIES OF THEIR OWN PRIORITY INDICATORS

Most of the indicators reviewed above were considered as priority indicators by the five study countries, with the exception of the following which were not accorded high priority by at least one country: proportion of infants breastfed exclusively; proportion of children who suffer physical or mental abuse; mean years of schooling; tertiary science graduates ratio; scientists and technicians per 1,000 population; proportion of births to females aged 20 to 34 years; proportion of households with female heads; percentage of women participating in grass-roots and community organizations economic cooperatives and others; and women per 100 men agricultural holders. The following additional indicators were proposed by at least one country:

Mortality

Neonatal mortality rate
Post neonatal mortality rate
Crude death rate
Child (1-4 years) mortality rate

Health

Coverage of health systems
Percentage of pregnant women receiving prenatal care
Percentage of women receiving postnatal care
Percentage of persons under 1 year of age immunized against DPT
Percentage of under 1 immunized against polio
Percentage of under 1 immunized against tuberculosis
Incidence of ARI in under 5 years of age
Incidence of diarrhoea among under 5
Percentage of pregnant women with anaemia
Percentage of iodine deficiency disorders
Percentage of births attended by trained personnel
Incidence of diabetes

Education

Net enrolment ratio (6-14 years)
Percentage of repeaters in primary education
Percentage of dropouts in primary education
Teacher - pupil/student ratio (primary, secondary and tertiary levels)

Demographic

Total fertility rate
Crude birth rate
Total population
Population growth rate
Urban population as percentage of total population
Population density
Age - dependency ratio

Economic

Unemployment rate
Underemployment rate
Economic - dependency ratio
Labour force participation rate
Consumer price index
Per capita GDP
Per capita GNP
Savings and investment (as per cent of GNP)
Per capita spending on social sector at the household level

Financial input of donors in development
Technical assistance for the social sector