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Household Survey Experience in Africa

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Parmeet Singh
Landing Savane

The World Bank
Washington, D.C., U.S.A.
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# HOUSEHOLD SURVEY EXPERIENCE IN AFRICA

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DEVELOPMENT OF AFRICAN SURVEYS AND MEASUREMENT
OF LEVELS OF LIVING

I.

INTRODUCTION

The purpose of this paper is to briefly examine the African household survey experience as well as the new plans for future surveys in relation to the prospects for improving the measurement of levels of living. The main instrument to this end is the African Household Survey Capability Programme (AHSCP) which constitutes a major concerted effort to ensure an adequate flow of integrated data from the household sectors of the region.

AHSCP was proposed by the Conference of African Statisticians at its eight session in 1973 as a broader-based sequel to the successful African Census Programme. Its basic technical and practical arrangements were formulated by a regional working group in 1974 and since then has been elaborated and modified in the light of subsequent developments. A number of other bodies supported the program and the United Nations Statistical Commission emphasized its applicability to all developing regions. The outcome was the Economic and Social Council (ECOSOC) resolution 2055 (LXII) in 1977 on the National Household Survey Capability Programme (NHSCP) of which AHSCP is now a component.

The broad aims of the program are to ensure that participating countries develop permanent field survey organizations and the necessary supporting facilities in order to obtain continuous supplies of integrated data on employment, other productive activity, income, consumption and expenditure and related demographic and social characteristics. The selection of topics for investigation is of course dependent on national priorities; nonetheless it is expected that most countries will wish to examine the structure and conditions of their household sectors as comprehensively as possible and consider the inter-relationships between the various factors investigated.
II. PREVIOUS AFRICAN SURVEYS AND CURRENT PLANS

Field survey operations emerged as an important tool for data collection during the pre-independence period of the 1950s but operations at that time were necessarily on a limited scale. Surveys in urban areas were mainly concerned with the construction of retail price indexes, while those in rural areas aimed to examine various aspects of agricultural structure and production. Although a few countries achieved coverage of fairly large geographical areas, there were very few national surveys.

During the 1960s, after the majority of African countries had achieved independence, there was an initial acceleration of survey activity in order to achieve more adequate data for planning purposes. The situation is summarized in the following table which shows inquiries undertaken from 1960 to 1979 and those planned for 1980 to 1984 according to subject area.

It must be emphasized that the information in the table is incomplete because it is based only on information currently available at the Economic Commission for Africa (ECA). A second problem is that it does not adequately reflect social and other data collection carried out in conjunction with surveys in the areas listed. The table includes population and agricultural censuses in order to explain changes in the level of survey activity.

The post-independence effort to develop survey operations in the early 1960s was fairly short-lived and there was a sharp fall in the collection of economic data towards the end of the decade. The reasons for this change include the need to conduct population and agricultural censuses in the period around 1970, changes in the pattern of international and bilateral assistance and the emergence of the first political "teething problems" of the newly independent countries. The impact of the United Nations Fund for Population Activities (UNFPA) was particularly notable during this period because the
### African Household Data Collection Operations 1960-84

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1/ Includes 11 WPS operations completed and 3 to be conducted.  

N - national  
SN - sub-national  
T - total
establishment of this new funding source coincided with a decline in the United Nations Development Programme (UNDP) activity.

Concern in the earlier part of the 1970s was centered mainly on the preparation of population censuses and on the use of demographic surveys as a means of overcoming the shortfall in data from civil registration. Concentration of data collection in the population field has since continued and will continue while special funding possibilities are available.

Nevertheless, it is notable that, after having completed their population censuses, African countries renewed their enthusiasm for the collection of economic data from households. This was reflected in the 1973 initiative of the Conference of African Statisticians which requested the establishment of the AHSCP. It is even more strongly reflected in the number of household economic surveys which have been undertaken by countries with little or no external assistance as well as in their plans for the future. The position has of course been influenced by the decision of the region to embark on a concerted program of survey development which has made it possible for the United Nations and bilateral agencies to respond more effectively with technical and other forms of assistance.

A few shifts in the pattern of survey activity are now becoming apparent. Although countries have generally tended to begin their revived survey operations with inquiries of the household-budget kind, there are now indications that they wish to look at the economic and social situations of their household sectors in a more comprehensive manner. There is a growing insistence that agriculture should be properly integrated in the overall development of survey capabilities, particularly where food and nutrition surveillance is required in countries with food shortages and the FAO is taking an active
interest in this matter. In addition, the move towards modernization of African economies, together with related population problems has already led to concern regarding labor force and employment questions which are a growing element in national survey activity; in fact, the ILO is already participating directly in the AHSCP.

One other important change, in contrast to earlier survey activity, is the shift to operations of national coverage. The African Census Programme made a significant contribution to the development of statistical infrastructures and provided a means of training many people in data collection and processing. Perhaps more important, it gave countries which were at an early stage of statistical development confidence in their ability to undertake direct collection of the data required from households, establishments and other statistical units. This confidence forms the basis for the potential success of the AHSCP and all future survey operations.

Another important recent influence in the region has been the World Fertility Survey (WFS) in which 11 African countries have already participated and an additional three are likely to do so. WFS is a somewhat different kind of operation from that envisaged for AHSCP in that it is managed and operated by a central headquarters. The extent to which a residue of expertise is being gained by participating countries has yet to be clarified but there is no doubt that WFS has made an important contribution to the improvement of survey technology in general.

It cannot yet be claimed that Africa has anything special in the way of survey experience but its position is steadily improving. Nearly all countries of the region have conducted population censuses; most have done a fair amount of work in the agricultural field; the use of sample surveys for regular collection of economic, social and demographic data is increasing and, according
to information available at ECA, at least half the countries of the region have active survey operation. It can be said that there is now a very genuine interest in understanding the situation of households in the overall economic and social context and there is a willingness to expend resources in obtaining relevant data.

The general underlying concept is that households are both the suppliers of all labor and most of the expertise available for national activities as well as the recipients of the end-product of development efforts and economic and other problems. Households therefore have a central position in all the affairs of a nation and African countries are beginning to recognize that this is an area where adequate data are necessary.

III. THE PLACE OF LEVELS OF LIVING IN AFRICAN SURVEY CAPABILITIES

The NHSCP prospectus indicates that a wide choice of subjects can be covered by household surveys and specifically mentions the following:

(a) household consumption, expenditure, income, assets, debts;
(b) labor force, employment, unemployment and underemployment;
(c) demographic characteristics, household and family structure, position of women and children;
(d) fertility, mortality and migration;
(e) conditions of housing, water supply, health, nutrition, education, literacy and access to these and related services;
(f) productive activities and outputs of households, including household enterprises (agriculture, industry, trade, etc.) and access to related facilities.

If this list is examined in light of data collection arrangements and the review of African surveys in the preceding section of this paper, there are
four groups of items to be considered. (a) and (f) together broadly cover all household transactions which are a topic of continuing interest. (c) and (d), population characteristics and trends, are also well established as a high priority area. (b) on labor force and related questions is emerging as an important requirement. A number of items under (e), which covers a miscellany of conditions and services, are beginning to appear as subsidiary topics in surveys of various kinds. It is only items such as health and education which are likely to receive rather low priority as survey topics in the near future.

It can be concluded, therefore, that the NHSCP list gives a fairly good indication of the kinds of data which countries intend to obtain from households. It is also fairly clear that all the items are relevant to the measurement of levels of living. In this connection it should be noted that one of the aims of the survey capability program is to develop an ability to interrelate data on various aspects of household conditions and activities, which again implies the need for a fairly broad spectrum of information. It is along these lines that survey programs probably will develop in the future.

Nevertheless, it is possible to consider the assessment of levels of living somewhat more crudely in terms of identifying households which are affected by particular conditions such as poverty. For this purpose a set of suitable indicators would be required and their selection could be regarded as part of the general quest for social indicators. This is a perfectly legitimate aim and there is no doubt that the collection of data for such indicators could be incorporated in national survey programs. It should be borne in mind, however, that the indicators are not a substitute for the broader range of data to which the NHSCP and AHSCP are aspiring.
IV. NATURE OF AFRICAN NATIONAL SURVEY CAPABILITIES

A. Permanent Field Survey Organizations

As previously indicated, the implementation of the AHSCP calls for the establishment of permanent national field survey organizations with supporting infrastructures. The nature of such organizations will, of course, depend on conditions in individual countries; for a medium-sized country, i.e. one with more than three million and less than 30 million inhabitants, the total staff requirements are estimated to be around 180, 35 of whom are located in the central statistical office.

Of those in the central office, four are statisticians directly in charge of all aspects of survey planning and implementation. They also have to work in close collaboration with subject specialists in other divisions of the office and are responsible for maintaining contact with data users in other government agencies and the private sector through committees or less formal arrangements. Other professional staff include one data processing expert and two persons concerned with administration. The estimates provide for a little over 20 data processing personnel who deal mainly with the keying of information but not coding. The remaining central office personnel are administrative support staff.

In the field it is estimated that an average of 100 enumerators will be required, comprising a permanent staff of just under 70, some of whom may collect data from units other than households. The average figure of 100 arises because it is envisaged that the enumeration staff will need to be increased to around 200 every fourth year for surveys of the household-budget type requiring contact with individual households over long periods. Supervisory, scrutiny and administrative support staff bring the total average strength of personnel in the field up to a little less than 150. It should be noted that these estimates are based on the idea that enumerators will code their own records, which is
why provision is made for field scrutiny personnel. Without an arrangement of this kind additional staff would be needed in the central office.

Related equipment requirements of the survey capability include computer facilities, a medium-sized printing unit, motor vehicles, typewriters, calculating machines, furniture and field equipment.

Training is an essential requirement in developing the survey capability. Enumeration and office staff will normally be trained locally but special arrangements have to be made for the statisticians and senior data processing and supervisory staff. AHSCP is already organizing working groups every two years, the first of which was held in October 1979. It is hoped that special regional or national training projects can be mounted within the context of the Statistical Training Programme for Africa (STPA) and the regular courses of the 12 STPA centers are already beginning to make a more significant contribution to training in both sample surveys and data processing.

The arrangements outlined above are intended to provide for a continuous operation in data collection, processing and analysis. An essential requirement for success is an even flow of work in each of these three activities. Special attention has been given to the question of eliminating the usual bottleneck in data processing; however, the present estimates of staff needs may still be found deficient in some respects. In particular, it should be borne in mind that the figures given here relate to a staff that would be able to provide data mainly at national level. In countries requiring figures for regional planning purposes, the staff needs would, of course, be considerably higher.

B. Continuing Survey Programs

The subject coverage of national survey capabilities has already been discussed in broad terms earlier in this paper with emphasis on the need for flexibility in light of national priorities. It is now necessary to briefly consider
ways in which such programs can be organized.

The 1974 regional working group based its recommendations on the idea that survey programs would be arranged as a succession of distinct survey rounds which would each cover one subject area. Bearing in mind the number of subjects to be covered, it was estimated that the various survey rounds could be grouped in cycles of 4 - 5 years. A number of countries are already planning their survey activities along these lines; moreover, a four-year cycle is also the basis for the estimates of staff requirements given in the last section.

However, the position is more complex than envisaged in the earlier proposals. It has already become clear that requirements for data in particular subject areas do not conform to the idea of the four-year cycle. In some cases information is needed more frequently and in others less frequently. While this does not affect the original concept of distinct survey rounds, it does modify the subject pattern in the overall program. Some countries, such as Cameroon, have found that it is easier to consider this question by drawing up a tentative program of surveys over a period of about ten years.

A more important modification of the original concept of survey programs arises in countries where there are topics requiring continuous monitoring; Kenya is one example due to its emphasis on agricultural data. Employment and related questions constitute another area where countries may need data at rather frequent intervals. In such countries the survey arrangement which is emerging is a continuing "core survey" to which specialized modules can be attached as necessary. It has the advantage that data collection arrangements in the field are more stable and easier to organize; by the same token, however, they are somewhat less flexible. Furthermore, the sample design for the core survey may not always be appropriate for the modules.
The two approaches, separate survey rounds or a core survey, do not appear to be radically different and their use is dependent on the situation in individual countries. In addition, it is possible to envisage intermediate arrangements which would incorporate some elements of both methods.

C. Development of Integrated Analysis

The documentation for the NHSCP and AHSCP makes frequent reference to the provision for integrated economic, social and demographic data. The question to be considered here is the means by which the integration will be achieved.

One obvious requirement is that standard international concepts definitions and classifications should be adhered to as strictly as possible in all survey operations. Some adaptation may be needed in the light of particular regional conditions but it should be kept to a minimum and applied in a consistent manner. Without such consistency there is no comparability between data from different surveys and at different points of time and, consequently, no possibility of examining data inter-relationships.

In survey programs comprising distinct rounds, each dealing with a particular subject area, there appears to be the need for two kinds of analytical operations. The first is the analysis of data from individual survey rounds and the second aims to inter-relate data from different survey rounds to the extent possible.

Some work has already been done on analysis relating to individual subjects; it is notable, however, that guidelines are strongest in the population field. There is a clear need for extension of this work to other subjects. The inter-relationship of data collected at different times on different subjects within a given survey program is a somewhat new kind of activity which will call for technical thinking based on practical experience.
To this end, the 1974 working group proposed that every survey round, irrespective of subject, should include a common set of core questions which would facilitate the necessary statistical classifications. A considerable amount of work has already been done in developing such a set of questions by ECA in collaboration with the UN Statistical Office and specialized agencies. The list currently available is incorporated in an overall listing of household data requirements and, for the core questions only, provides definitions and suggested tabulations.

For the moment, it cannot be claimed that much more than a start has been made on the integration of survey data and it should be understood that the current set of core questions has been established on a rather pragmatic basis. In this situation there are two things that can be done. The first is a more systematic examination of the set of core questions which would involve, (a) listing the main (aggregative) variables in each subject field and then (b) identifying intermediate and explanatory variables common to most fields. Second, and probably more important, a few countries should begin to experiment with the inter-relationship of their survey data, possibly using the ECA questions, since it is only through practical experience that satisfactory methodology will be achieved.

For the sake of brevity no mention has been made in this paper of data evaluation; it should be understood, nonetheless, that both evaluation and analysis are regarded as integral parts of a national survey capability. Analysis has been mentioned as an item of special interest for the technical reasons indicated above. There is also the practical thought that, in the absence of satisfactory analysis, data are often under-utilized.
V. SELECTED CONSIDERATIONS IN MAIN SUBJECT FIELDS

A. Household Economic Surveys

The main issue considered here is the means of obtaining records of household income because it is beset by a number of conceptual and practical problems. Perhaps the first of these is the definition of household income. The position is examined in the United Nations Provisional Guidelines on Statistics of the Distribution of Income, Consumption and Accumulation, (Series M, No. 61), which recommends a basic definition of total household income.

The only practical point to be noted in this vein is that, in surveys where income is recorded in detail, there is little need for any formal concept which would influence the nature of the records. If provision is made in the household questionnaires for recording the various components of income, they can be aggregated without difficulty at the processing stage to conform with a variety of definitions which may all be useful for analytical purposes. The definition of household income appears to be an area where it is desirable to retain some flexibility and there is no special problem in doing so. This flexibility is, of course, lost when an effort is made to obtain income in response to a single question on aggregate income.

Recent African surveys have demonstrated that it is feasible to obtain satisfactory data, during the penultimate-stage of enumeration, for the establishment of ultimate-stage strata which enable a relatively large proportion of higher income households to be examined. However, there have been practical problems in selecting samples on this basis. One of the problems arises from inconsistency in the size estimates used in selecting units in the earlier area sampling stages on a proportionate probability basis. Another relates to the inequality in enumerators' workloads resulting from variation in income distribution between penultimate-stage units.
In general, the African approach to the recording of income in rural areas where there is high seasonal variation has been to maintain contact with individual households for periods as long as one year. This arrangement is also concerned with the collection of data on the structure of agricultural and other rural activity. The same sort of problem does not have to be faced in urban areas. The general position with respect to the rural areas is that various arrangements for sub-sampling and sample rotation are normally adopted to enable an assessment of individual household incomes and related activities in a reasonably economical manner. Nevertheless, the work is expensive in relation to other kinds of household surveys which require only a single visit.

In this situation it is tempting to seek a survey method which would be capable of assessing the level and sources of income of an individual household and provide supplementary data on patterns of expenditure during the course of a single intensive interview. The ECA secretariat produced a draft questionnaire for this kind of survey in 1977 and suggested that limited field tests might be useful; however, no African country has shown any interest in the secretariat’s suggestion, a position apparently somewhat similar to that discussed previously in Section III. Countries are keen to develop supplies of comprehensive data on their household sectors where they are not very much concerned with short-cut methods in a situation which they know to be complex.

B. Demographic Surveys

During the 1970s the African situation with respect to demographic data greatly improved as a result of the African Census Programme and related operations. Nearly all African countries have undertaken a respectable population census, many have carried out demographic surveys of various kinds and there is a growing interest in civil registration and migration data.
Regarding population, Africa is now in a rather unique situation. General and infant death rates have been greatly reduced as a result of attention to nutrition, water supplies, health care, sanitation, etc.; it is, however, the only region where birth rates have not yet shown a corresponding decline. It therefore faces the short-term problem of a situation where population growth may exceed production, particularly with respect to food.

The analysis of current population data is making reasonable progress but, in the present situation, needs to be more carefully related to other household trends and characteristics and to overall national economic situations.

C. Other Surveys

It has already been stated that there is growing concern with employment problems and labor force questions in general. This results partly from the efforts to industrialize African economies but is also related to the movement of population to urban areas and to overall population growth.

In particular, the problem of labor force surveys is that they require sampling arrangements which are somewhat different from those of other surveys due to high intra-class correlation. Some special thought, therefore, needs to be given to the means by which they can be accommodated into programs.

Countries with food supply problems will probably need to develop continuous monitoring of their production, distribution and stock situations as an integral part of survey operations. This is an additional reason why the AHSCP may need to extend its data collection activities to units other than households.

Data collection activities for which specific provision has not already been made are mainly in the social field and, as already indicated, they are expected to develop more slowly except in cases where the information can be incorporated as subsidiary items in economic and demographic surveys. Accordingly,
it should be noted that penultimate-stage household listings can be developed as a useful additional source of data not necessarily related to the subject of the ultimate-stage inquiry.

VI. CONCLUDING COMMENT

The aim of this paper has been to look at the development of African household survey capabilities in the light of factors having a bearing on the measurement of levels of living. A first requirement is the establishment or improvement of the capabilities themselves. Secondly, it should be noted that extensive discussions at regional and national levels have produced a widely acceptable outline of the topics to be investigated in continuing programs of household surveys.

Topics which countries intend to investigate through household surveys are all directly relevant to levels of living and an integrated analysis of survey results is required to examine the inter-relationships of household characteristics and variables. This paper has described the initial work undertaken in this area as part of a fairly long-term project.

Special short-term needs, such as the identification of groups of households affected by poverty can be met partially through the collection of data for selected indicators. However, limited data of this kind incorporated in ongoing programs of surveys should not be regarded as a substitute for the more comprehensive information needed in planning development efforts. It should also be borne in mind that such limited information cannot properly identify
vulnerable population groups and does not provide a basis for remedial action; they have to be supported by diagnostic studies of the groups identified. The effective solution is, therefore, a more comprehensive system of data collection and analysis of the kind being developed by the NHSCP and AHSCP.

Some technical and practical considerations have been mentioned only briefly in this paper and a list of the relevant ECA documents is given in Annex I.
LIST OF RELEVANT ECA DOCUMENTS

Household data requirements, E/CN.14/SM/22

Essential requirements for a national household survey capability, E/CN.14/SM/23 and Add.1

Some common sampling schemes, their advantages and disadvantages, E/CN.14/SM/24

Organization of household survey programs, E/CN.14/SM/25

Data processing, E/CN.14/SM/26

Survey data evaluation and analysis, E/CN.14/SM/27

Training of survey personnel, E/CN.14/SM/29 and Add.1

Report of the working group on organization, content and methodology of household surveys, E/CN.14/PSD.1/5

Some aspects of household survey methodology, E/CN.14/CAS.10/18
The ultimate objective of development in all countries is to impact the quality of life of their peoples. In developing countries, assessing this impact has become particularly important, since the development or planning process in these countries entails a considerable effort in mobilization of national resources to secure an optimal growth—particularly through governmental intervention. Such countries cannot win commitment of their peoples if this effort is not seen to have a perceptible impact on their quality of life. Moreover, the international sponsorship of this effort is now increasingly demanding assurance that its contribution indeed make an optimal impact through the use of optimal options, in attaining the desired objective of enhancing the quality of life of the people of the recipient country.

The only way to ascertain the success or failure of the developmental effort then is to measure its impact on the quality of life of the people concerned. At a first glance, this sounds rather "esoteric", implying the imposition of value judgements which may not all be universally acceptable to the people whose quality of life is the subject of measurement. This constraint becomes all the more serious when the criteria of measurement are aggregated into highly composite indicators. Fortunately, these apprehensions can be allayed by making clear that 'quality of life' is no more than the state of life as indicated by the health, literacy, housing, and consumption, (etc.) standards of the peoples of the countries concerned. The list of the indicators can be extended ad infinitum—depending on the degree of disaggregation desired.

The fact that, today, a 'working' statistician can be bold enough to state that changes in health, literacy, housing, and consumption standards can
be measured is, in itself, a change in the state of the art; such was not the case a few years ago. The measurement of even these standards was then considered rather esoteric!

Kenya, like the majority of developing countries, is still primarily a country in which most of the population is dependent on agriculture for livelihood. Thus, a first priority in the assessment of living standards is the quantification of the state of agriculture. The production of the small farmers and the consumption of this output directly determines the level of living of most of the population. Indeed data on production, consumption and expenditure of small farmers, i.e. rural households, reflect the incidence of poverty in the country more immediately than any other indicator.

In Kenya as in other developing countries changes in birth and death rates constitute a very fundamental measure of living standards. These measures shed light on aspects of quality of life such as the state of the mother's health, and the probability of her child's survival and its life expectancy, all of which are clearly of fundamental importance not only in an economic sense but also to the family's feeling of security and well-being. In Kenya close attention has also been paid to collecting data on the nutritional status of young children as a measure of the state of the health of the population. The nutritional status is considered to be a very good indicator of general health and feeding standards of the country, and reflects the impact that the developmental effort may have had on eradication of disease in the country.

In addition to the eradication of poverty and disease, eradication of ignorance is the third major objective of the developmental effort in Kenya. Education statistics provide data of direct relevance for an assessment of living standards. To a large extent, these data can be collected from the
institutions concerned without necessarily having to interview individual respondents. Nevertheless, data on the literacy standard, i.e. on the ability of the population at large to read and write, constitute an indicator of particular significance which, currently in Kenya, is essential to supplement the data secured from educational institutions. The two sets of data make it possible to undertake a comprehensive assessment of the nation's effort to eradicate ignorance.

Finally, there is a wide range of measures normally classified as social indicators which also reflect living standards. For example, an effort has been made in Kenya to secure data on the measures of quality of housing, access to markets, quality of water, and availability of public utilities etc.

This paper describes the attempts that have been made in Kenya, to collect and process the data on these various topics and to disseminate the results in a manner that enables the analysts and policy-makers to take into account the essential implications of development.

II. NATIONAL INTEGRATED SAMPLE SURVEY PROGRAMME: 1974 - 1979

Efforts to secure data on living standards in Kenya date back to the 1960s. However, the surveys relating to living standards were of an ad hoc nature, the topic and timing of each being largely dependent on the wishes and objectives of individual users of data, and the interests of individual surveyors. These surveys yielded data which were usually of poor quality, and very little internal consistency existed between the different data sets. There was a long time lag in delivery, and processing difficulties were such that much of the data never saw the light of day. Finally the 'cost' implications to secure the required data at the then going rates were such that the country could not afford to invest sufficient resources in this exercise to cover a comprehensive program.
These failures indicated the need to restructure surveys on timing standards in Kenya in a way that would yield 'economies' of scale on sampling and processing while securing data of an adequate quality, as well as consistency between the different data sets. It was felt that these were basically compatible requirements which could be realized through an integrated program of surveys - hence the National Integrated Sample Survey Programme (NISSP), which was initiated in 1975 and terminated in 1979. This program was designed to provide the desired data through a permanent continuous survey operation carried out with a survey capability that could handle a wide range of topics according to a pre-arranged schedule for surveys which would give each topic its due priority in a national system of data collection.

NISSP included surveys of households, individuals and trading activities, and all the surveys within the program used the same sample of primary units (clusters) with varying methods and sizes of sample selection of the final sampling unit. As the program developed, a permanent survey capability was established consisting of a permanent field force of enumerators, supervisors and statisticians, an administrative infrastructure and a computerized data storage and retrieval system. The following surveys were carried out within the program:

<table>
<thead>
<tr>
<th>Survey</th>
<th>Round</th>
<th>Year(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Integrated Rural Survey</td>
<td>Round 1</td>
<td>1975/76</td>
</tr>
<tr>
<td>&quot;&quot;&quot;&quot;</td>
<td>Round II</td>
<td>1976/77</td>
</tr>
<tr>
<td>&quot;&quot;&quot;&quot;</td>
<td>Round III</td>
<td>1977/78</td>
</tr>
<tr>
<td>&quot;&quot;&quot;&quot;</td>
<td>Round IV</td>
<td>1978/79</td>
</tr>
<tr>
<td>Literacy Survey</td>
<td></td>
<td>1976</td>
</tr>
<tr>
<td>Survey on Nutritional Status of Children</td>
<td>Round 1</td>
<td>1977</td>
</tr>
<tr>
<td>&quot;&quot;&quot;&quot;&quot;&quot;&quot;&quot;&quot;&quot;&quot;</td>
<td>Round II</td>
<td>1979</td>
</tr>
<tr>
<td>Survey of Handicapped Persons</td>
<td></td>
<td>1978</td>
</tr>
<tr>
<td>Survey of Rural Non-Farm Activities</td>
<td></td>
<td>1978</td>
</tr>
<tr>
<td>Survey of Non-Formal Education</td>
<td></td>
<td>1979</td>
</tr>
</tbody>
</table>
Survey on Division of Labor
Survey of Labor Force
Survey on Marketing Habits and Sales
Survey on Food Purchasing Habits
Crop Forecast Surveys (twice yearly)
Survey on Market Prices and Structure of the Market
Survey of Intermediate-sized Farms - Round I
Survey of Intermediate-sized Farms - Round II
Urban Food Purchasing Survey
National Demographic Survey - Round I
National Demographic Survey - Round II
Kenya Fertility Survey
Survey on Consumption of non-conventional sources of energy in rural areas

For a very sound reason much of the data collected in NISSP related to the household as a reporting unit. The household is of particular relevance in Kenya as a reporting unit for assessment of living standards, since it is not only the main unit for the preservation of family welfare but also the unit of production. Essentially the Integrated Rural Surveys were the core of the work program. These surveys had a cyclical construction which constituted the main component of the work program through each survey year. They were, however, supplemented with other modules both cyclical (e.g., Labor Force Survey) and single-interview surveys (e.g., Literacy Survey), though one of the latter types of surveys, i.e. the Kenya Fertility Survey was phased over three stages across the country.

An administrative infrastructure was needed to conduct such a survey capability and it was developed during the program leading to the establishment of a
field survey unit as a major section of the Central Bureau of Statistics (CBS). During the NISSP, provincial statistical offices were strengthened and a start made on the establishment of nucleus district offices which were responsible for the maintenance of field survey operations. In the early years of NISSP individual surveys were organized by the corresponding sections of the CBS, e.g. the demographic and rural survey sections of the CBS. By the end of the NISSP a start had been made in bringing the routine control of field operations of all surveys under a single unit of survey statisticians responsible to the Director of Statistics with the individual subject matter specialists being closely integrated into the operation for the surveys of relevance to them.

By 1979 the survey operations were almost totally under the control of the national sample and field coordination statisticians in the CBS who, in collaboration with the administrative and individual subject matter specialists, supervised the provincial statistical officers and assistant provincial officers who, in turn, were responsible for field operations in their respective provinces. Enumerators were stationed in each national sample cluster, with supervisors acting as the link between the enumerators and the provincial statistical officers. There were, on average, four enumerators under the guidance of each supervisor. The duties of the supervisor included the editing and correction of questionnaires before their delivery to the provincial statistical offices as well as the general communication to the enumerators of day-to-day instructions. By the end of NISSP substantial progress had been made towards transferring the corps of supervisors and enumerators from temporary employment terms of service to permanent status within the Civil Service.

This development of the field survey infrastructure was, however, not achieved without some problems. The training program for professional officers,
i.e., the statisticians, had to be expanded and a large training program instituted to train the mid-level personnel. Secondly, the creation of a permanent supervisor and enumerator force required that career prospects be offered to these cadres also. Organization of schemes of service for the staff required a considerable amount of bureaucratic interplay to secure satisfactory terms of service. Thirdly, the program was considerably constrained by a lack of material resources, mainly of transport equipment. A permanent national survey capability and a survey program at the stipulated level of sophistication required, as it turned out, field movements of all personnel from the controlling statistician to the supervisor - with the enumerators during NISSP in the main being static within one cluster. This case of mobility is an essential prerequisite for efficient field data collection, particularly if the benefits of a permanent capability are to be achieved. Fortunately Kenya possesses a relatively efficient communications network which enables the achievement of the required mobility. Furthermore, the individual surveys, e.g. of land use, nutrition, market prices, etc. required special equipment that had a limited field life and could not be transferred from one survey to another. 1/

A single master national sample, used in its entirety or by sub-sampling was the essential integrating pivot for the NISSP. Previously the sample for each survey was independently designed and selected, with the result that the demarcation of areas, i.e. sampling unit, and listing of the population within each unit was repeated for each survey. The use of a master national sample yielded great economies in individual survey costs, and it became apparent that

1/ For example, the scales used to weigh children may be inappropriate for weighing sacks of maize.
if the single master sample were carefully designed and demarcated, an un-
biased sample could be easily achieved for each survey together with greater
control of non-sampling errors during the survey. The use of a common frame
of primary sample units does not, of course, preclude the adoption of dif-
ferent final sampling units which may range from informal businesses to
households to individuals. Thus, the first national sample as developed for
NISSP was designed primarily to rationalize sample survey methodology and to
provide a basis for well-coordinated and integrated sample surveys. As the
program developed, the advantage of building up a data base using common pri-
mary sample units became more and more apparent, particularly because it pro-
vides the opportunity to conduct analyses across surveys, e.g. linking child
nutritional status from one survey with data on socio-economic variables col-
lected in another.

It is necessary to note, however, that a single multipurpose national
sample is not necessarily the optimum design for any one survey. Some trade-
off in terms of sampling error is necessary in order to achieve the advantages
described. The experience of NISSP has demonstrated that this balance is very
much in favor of the multipurpose master design.

The first national sample design adopted for NISSP was not truly
'national' since parts of the country were excluded. These excluded areas
comprised North Eastern Province, and certain districts of Rift Valley and
eastern provinces occupied by the pastoral peoples of Kenya who cannot be
covered in a static area sample. In terms of population, however, the ex-
cluded areas accounted for only 5 percent of the total population.

The frame for the NISSP sample was based on administrative locations —
the smallest geographical unit for which easily identifiable boundaries exist.
Using the 1969 Population Census figures, projections of the population in each location were made for the base year of the NISSP, i.e. 1975. The frame was stratified by urban and rural categories. The urban category was further stratified into the two major centers, Nairobi and Mombasa; all other townships and municipalities identified as such at the time of the 1969 Census were stratified again by high, medium and low income zones. Rural areas were further stratified into a combination of 64 province and agro-ecological zones.

The determination of the sample size was based on available resources rather than calculations of optimal sample sizes. Sampling rates were fixed at 1 percent and 2 percent, for rural and urban areas respectively to yield an ultimate sample within the selected clusters of 31,000 households - 23,000 in the rural areas and 8,000 in the urban areas. Expansion of the sample during the five-year lifetime of NISSP was undertaken in Coast, Eastern and Rift Valley provinces.

The sample was selected on the basis of probability proportional to size within each stratum. In rural areas the administrative locations selected were further sampled yielding two clusters within each location, while in urban areas the original area selected, containing an average of 100 households, was maintained as a cluster with no second stage of sampling. The original sample contained 120 clusters in rural areas and 80 in urban areas. As a result of the expansion referred to above the number of rural clusters was raised to 176 by 1978.
III. NATIONAL INTEGRATED SAMPLE SURVEY PROGRAMME AND THE DATA ON 'LIVING STANDARDS' IT HAS DELIVERED

The list of surveys conducted during the NISSP has been listed above. As noted the Integrated Rural Surveys were the main component of the program and many of the modular surveys relating to social indicators were carried out within the NISSP program. However, additional surveys of expenditure patterns, nutritional status and labor force were also conducted in urban areas.

Data on income, consumption and expenditure were collected in the first round of the Integrated Rural Survey in 1974/75 and in urban areas in 1977. The results of these surveys have been published by the CBS in the following reports:


Many economists both in Kenya and elsewhere have requested and received further analyses of these surveys in order to address themselves to problems such as poverty and basic needs. As a result several hundred tabulations and statistical analyses have been run of the data in these surveys in addition to the tables included in the basic reports.

Data on agriculture production have been collected regularly, although these data are the most difficult to process and analyze leading to delays in publication. Nevertheless, crop forecasts have been and are being conducted twice yearly with results reported and published by the CBS within one month of the collection of data in the field. This crop forecast of basic foods has proved to be very successful and has led to the development of an early warning system for food deficit situations - situations which affect the quality of life of much of the population.
The nutritional status of children is now a regular monitoring feature of the survey program. Two surveys have been carried out and reported on by the CBS in its publications entitled:

- The Rural Kenyan Nutrition Survey - February-March 1977 (1977)
- Child Nutrition in Rural Kenya (1979)

It is considered that the nutritional status of young children is a particularly useful composite indicator for reflecting the quality of life of the population. The relationship between nutritional status and other social and economic variables have been studied and further analyses are currently under way including the relationship between nutritional status and demographic variables.

The demographic surveys were carried out in 1977 and 1978, respectively, followed by the Fertility Survey in 1978 and Population Census in 1979. Reports on fertility and mortality rates are currently appearing in various publications including the following:

- Recent Demographic Trends in Kenya and Their Implication for Economic and Social Development (University of Nairobi: Population and Research Studies Institute, 1979).
- Kenya Fertility Survey - Major Highlights (CBS, 1979)

These surveys have shown a very high fertility rate and rapidly declining mortality rate for Kenya. Both rates are affected by changes in living standards in recent years and are therefore a measure of change in these standards.

A whole range of health and social indicators has been published by the CBS in a 'popular' series of issues of Social Perspectives. Some of the
prominent issues of Social Perspectives in this context are listed below:

- Integrated Rural Survey 1974-75: Social Amenities in Rural Areas (1977)
- Non-Farm Activities in Rural Kenyan Households (1977)
- Literacy in Rural Kenya (1978)
- Handicapped Issue (1978)
- Women in Kenya (1978)
- Demographic Data Files (1977)

As can be seen from the above, some progress has been made in the dissemination of data relating to living standards in recent years with considerable success being achieved in reducing the time lag between collection and delivery of data. It is pertinent here to make reference to one further publication, namely the Kenya Development Plan, 1979-1983, which illustrates the use made of the data particularly on access and utilization of social amenities, by planners within the government. Despite the progress, problems have nevertheless been encountered and a description of some of these is perhaps appropriate. The description in this paper is brief; each one of these problems merits a substantive discussion in its own right.

First and foremost, the sample size for the surveys conducted in NISSP was such that disaggregation of the data was only possible at the provincial level. The sample size did not allow district estimates to be produced, and this proved to be a major constraint in restricting widespread use of the data. The limited sample size prevented certain types of statistical analyses from being done, e.g. cluster analysis for establishing such criteria as the poverty line or basic needs. Some detailed analyses by external users failed in their objective for those reasons, though a limited use of data despite these constraints was nevertheless made and the following two publications are examples
of such application:

- Planning for Basic Needs in Kenya (ILO, 1979)

Secondly, the use of data was also constrained by limitations in the sample design which arose from difficulties experienced in establishing the sample in the field at the level of precision intended by the designers. Consequently, for reasons that are not necessary to describe in detail here, the national sample was biased resulting in a need for ration adjustments which has further affected the ability to handle the disaggregated data for various statistical analyses.

Thirdly, while the quality of the data for many of the topics pertaining to living standards was high (e.g., the data on nutritional standards, in particular, is regarded as being of especially high quality), problems were experienced in achieving the desired quality in the economic data, particularly those relating to farm production and expenses.

Fourthly, as noted above, the coverage of the surveys to date has excluded certain areas that, although small in relative population terms, are important in terms of any examination of basic needs. The pastoral areas, in particular, are probably among the poorest in the country; however, many of the indicators that can be collected and calculated for other parts of Kenya are inappropriate for the people of these pastoral areas. To remedy this situation, further experimental work is underway to find ways and means of collecting data in these areas.

Lastly, during NISSP, the ability to collect large volumes of data was not matched by the ability to process the data in a speedy and cost-effective
manner. The inability to conduct more prompt data preparation for computer processing, the non-availability of adequate software coupled with a lack of house capability to develop the same, and inadequate hardware all proved to be major constraints in the storage and retrieval of data.

One final major feature of NISSP work worth mentioning is the start that was made in building up a capability to conduct surveys designed to evaluate specific development projects. The first of these surveys to be undertaken was the evaluation survey of the Rural Access Roads Programme. This survey commenced in western Kenya in 1978 as a part of NISSP and continues to collect data on a cyclical time table to enable the impact of this program to be assessed. This activity, however, will be featured more prominently in the National Sample Survey and Evaluation Programme which has succeeded NISSP and is considered in further detail in the next section of the paper.

IV. NATIONAL SAMPLE SURVEY AND EVALUATION PROGRAMME: 1980-84

The achievement of a continuous survey capability under NISSP has provided the opportunity for an expansion of the survey work schedule which is being developed as the National Sample Survey and Evaluation Programme (NASSEP) for the next five-year phase from 1980-1984.

The main feature of NASSEP will be the expansion of the national sample - this stage is currently underway. The government's policy is to decentralize planning to the district level. For this policy to be fully achieved there is a pressing need for data to be disaggregated at the district level, and it is hoped that NASSEP will deliver data to meet this new requirement of providing data at the desired level of accuracy for each district (or a combination of very sparsely populated districts). A quantum leap in the number of primary sample units in the national sample will be effected.
The content of the survey program also needs to be carefully planned. With a large multipurpose survey operation the timing and sequence of the surveys becomes critical. Some surveys require single-interview and large-sample coverage whereas others require repeated visits to a more restricted number of respondents.

A master sample of primary sample units will provide a suitable vehicle for a large range of household and other surveys, though some surveys of subsets of the population that are either heavily clustered (e.g., surveys of larger farms) or rare in occurrence (e.g., surveys on incidence of leprosy) will need further tailor-made sample designs. It has become apparent from experience gained in NISSP that a static sample of areas, particularly urban areas since they are subject to large population changes in a rapidly growing and mobile environment, may be inappropriate as a means of collecting a wide range of data. Another form of surveys within the scope of NASSEP that also require tailor-made sample designs are the evaluation surveys - an area of work initiated under NISSP and referred to above that is likely to become much more important for the CBS during the next five years. Many development projects that may have to be evaluated have an area of impact that does not coincide with administrative boundaries. NASSEP has been designed with these considerations in mind.

A multi-stage stratified clustered design has been adopted for the sample for NASSEP. Each district of Kenya and each major urban center will be a stratum for which results can be produced. The sample areas will be selected with probability proportional to size using the results of the 1979 Population Census, recently undertaken. Work is currently underway to identify at least 24 sample areas within each stratum to enable this level of disaggregation to be achieved. This adds up to a total of 648 clusters in rural areas in the sample design for NASSEP, over three times the 176 clusters for NISSP. It is hoped that disaggregated results will eventually also be produced for ecological zones; as of yet
these zones have not been specifically catered to in the sample design since the CBS has not received from the Ministry of Agriculture details on boundaries of zones which are currently in the process of being re-classified. The sample size is large enough to allow post stratification by zone.

Within each sample area a master list of households, businesses and enterprises will be maintained. Samples will be selected from this list for each survey in NASSEP. This master list will contain approximately 100,000 households covering a larger geographic area than the 31,000 households in NISSP.

Particular attention has also been paid to the selection and field demarcation of the national sample in order to avoid the biases experienced with the national sample for NISSP. The use of the up-to-date population frame of the 1979 Census, makes a significant difference in this respect; moreover, it is possible to secure reliable population counts at a very disaggregated and geographically precisely determined level. Indeed the exercise currently underway to identify the sample in the field is being conducted as an integral part of the Post Enumeration Survey for the Population Census conducted in August, 1979.

In NASSEP the national sample will evolve into a rotating sample whereby a proportion of the primary units are replaced each year by a new selection following the same sample design described above. The need for this is evident since otherwise the respondents in the secondary sampling units, containing only 100 households, would be overexposed to a full program of surveys such as those scheduled for NASSEP leading to the same household appearing in several surveys. The proportion and frequency of the master sample to be replaced is yet to be decided, but consideration is being given to replacement of one-quarter each year. This would entail a continual mapping demarcation and listing operation of the new primary sample units to be introduced in successive years.
The final stage of sampling will be specific to each survey in the program. For many of the surveys the final sample unit will be the household within the secondary sampling unit. To make the design robust it will be necessary to fix sampling fractions at this stage in such a way that each household in the national sample has the same probability of selection, i.e. at this stage there will be a uniform sampling fraction. This probability will be the product of the secondary stage sample probability and the probability of selection of a household within each secondary stage unit.

Use of this approach will ensure a self-weighting design and is highly recommendable. However, the master national sample is flexible enough to allow other modes of selecting the final sample units (which need not be households) if so required, the only consequence being a somewhat more cumbersome weighting procedure to turn the sample data into population estimates. This need not, however, be a major constraint if adequate computer software is available. In any case, the degree of non-response will vary from survey to survey leading to variations in the overall weights even in a self-weighting design.

It is hoped that a sample of the size and design indicated above will overcome the two deficiencies of NISSP, namely the inability to disaggregate results beyond the level of the province and the biases which further constrained the disaggregation of NISSP data. In addition, both a more precisely identified sample and a better trained cadre of staff, with five years experience in NISSP, will hopefully result in the procurement of a better quality of data. To date, however, there is no satisfactory solution to overcome the very real constraints of inadequate computer systems, design and processing priorities. Various options are being considered and decisions will be taken shortly.
The schedule of surveys in NASSEP is being designed separately for the urban and rural components of the master sample and, inevitably, for the surveys lying outside the framework of the master sample. The program is designed to produce a wide range of data on agricultural production and its disposal and demography; on economic, health and social indicators; and data aimed at evaluating certain development projects. Notwithstanding, the program has to be flexible so that it can respond to priority needs for data that may be identified during the five years that the program is designed to cover. Thus, details on survey content of NASSEP that follow will, no doubt, be subject to alteration as per the changes in priorities that may occur during the lifetime of the program.

Rural Areas Within the National Sample

The schedule of the five-year program of surveys in rural areas is shown below. The survey year will normally run from April to March of the following year since this period by and large corresponds to the agricultural year from the time of land preparation to the harvest of the second crop season. The timings shown are for the field work of the survey. Processing and report writing will experience time lags that will vary by survey from a fortnight, as is presently the case regarding the weekly bulletin on prices in rural markets, to a year regarding substantive survey reports. Detailed timetables will, of course, be prepared for each survey.

1980 Jan.-July

Selection and identification of national sample primary and secondary sample units. Listing of households in primary and secondary sample units. 1/

Post enumeration survey of 1979 Population Census. 2/

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1/ The identification of sample areas and the listing of households has been described above.

2/ The results of the post enumeration survey are to be made available to the section dealing with the analysis of the 1979 Population Census.
<table>
<thead>
<tr>
<th>Year</th>
<th>Month/Period</th>
<th>Description</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>May-Nov.</td>
<td>Literacy survey. 1/</td>
</tr>
<tr>
<td></td>
<td>July</td>
<td>Main crop season forecast survey.</td>
</tr>
<tr>
<td></td>
<td>Jan.-Dec.</td>
<td>Market price survey</td>
</tr>
<tr>
<td></td>
<td>May-Nov.</td>
<td>Update large and intermediate farm frame and plan integration of the large farm census into national sample. 2/</td>
</tr>
<tr>
<td></td>
<td>Jan.-April</td>
<td>Survey of the handicapped persons.</td>
</tr>
<tr>
<td></td>
<td>April-March(82)</td>
<td>Budget and agricultural production survey. 3/</td>
</tr>
<tr>
<td></td>
<td>July</td>
<td>Main crop season forecast survey.</td>
</tr>
</tbody>
</table>

1/ The literacy survey will include objective tests of reading and writing ability in English, Swahili and mother tongue, an improvement on the subjective measurement of literacy offered in previous NISSP survey on literacy in 1977.

2/ To the extent possible field activities for covering large and intermediate sized farms will be integrated with the fieldwork within the national sample areas. Coverage may, however, extend beyond the national sample in order to provide adequate coverage of these farms, which are limited in number, and heavily clustered location-wise, yet nevertheless important in the agricultural economy. The timing of these surveys in successive years will depend on the extent of the integration achieved.

3/ The main survey of 1981 will be a classic income, expenditure, production and consumption survey. This will involve repeated visits to each responding household and will be conducted within a sub-sample of the national sample secondary sample units.
1982
April-Dec. Survey of health, nutrition and other social indicators. 1/
July Main crop season forecast survey.

1983
April-March(84) Budget and agricultural production survey. 2/
July Main crop season forecast survey.

1984
April-March(85) Employment survey.
July Main crop season forecast survey.

1/ A series of modular single-interview surveys will be the main feature of the 1982 program. As priorities arise or change, some of these modules may be incorporated into the major surveys of other years.

2/ The main 1983 survey will be a detailed agricultural survey similar to that of 1981, but excluding non-agricultural incomes and expenditure and covering a larger sample of secondary sample units. The agricultural components of both the 1981 and 1983 surveys will have separate timetables for areas with single and double cropping seasons.
Rural Areas Outside the National Sample

NASSEP covers within the national sample certain areas excluded from NISSP. The North-Eastern Province, however, is still outside the national sample due to the inappropriate sample for a mobile population. During the NASSEP the CBS will endeavor to undertake surveys in this area; priority will be given to the conduct of (i) surveys of health and nutritional status of pastoral areas population and (ii) a complete livestock census. Pilot work on the former is scheduled to be carried out in 1981 with the main survey being undertaken in 1982. The livestock census is provisionally planned for 1983.

Urban Areas

The national sample for urban areas to be covered in NASSEP is not scheduled to be selected until the latter part of 1980 following the completion of the demarcation of the rural national sample. The sample design has been discussed briefly above; a detailed description will be issued when final design decisions have been taken. Nonetheless, it should already be noted that the sample will consist of a number of "clusters" of urban blocks in the major cities and towns.

The timetable for surveys in urban areas is not as full as the one for the rural areas due to the fact that repeated-visit surveys, such as that to measure agricultural production in rural areas, are not relevant to urban areas.

<table>
<thead>
<tr>
<th>Year</th>
<th>Period</th>
<th>Description</th>
</tr>
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<tbody>
<tr>
<td>1981</td>
<td>Jan.-March</td>
<td>Identification of urban sample and listing of households in selected sample units.</td>
</tr>
<tr>
<td>1981</td>
<td></td>
<td>Budget survey.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Literacy survey.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Handicapped survey.</td>
</tr>
<tr>
<td>1982</td>
<td></td>
<td>Survey of health, nutrition and social indicators.</td>
</tr>
<tr>
<td>1983</td>
<td></td>
<td>Demographic surveys (including fertility, mortality and migration).</td>
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<tr>
<td>1984</td>
<td></td>
<td>Employment survey.</td>
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**Evaluation Surveys**

Evaluation surveys constitute the fourth major component of NASSEP. The CBS is, as noted earlier, developing a capacity to conduct ad hoc or continuous surveys with the objective of evaluating specific development projects. Clearly, such surveys, necessitating tailor-made sample designs and concentrated in the impact area of the projects, lie outside the scope of the national sample. Nevertheless, the data collected in the national sample (at the district level) will provide the backdrop or control against which the performance of the respondents within the project area can be measured.

The evaluation survey of the Rural Access Road Programme, launched under NISSP, was the first such survey to be undertaken. Its coverage is likely to be expanded beyond the present limits of western Kenya and will continue through the NASSEP period. The Rural Access Roads Programme evaluation survey includes a baseline study of the population within the impact area of the road, followed by a continuous cycle of visits to a sample of respondents in order to monitor the economic and social changes that may occur. As a time series of these data are produced, the development within the impact area of the road can be measured against the baseline data (i.e., change over time), as well as against the rate of change in the district as a whole ("experimental" versus "control" comparisons).

The problems of attributing change to any one particular stimulus are well known and need not be discussed here. It is nonetheless, evident that there is a pressing need for this type of data for current project management purposes and ex post evaluation of a project, and the CBS does have the requisite capability to undertake this work. At the moment, this work is essentially externally induced at the behest of funding agencies which attempt to make monitoring and evaluation an obligatory component of the assistance package for some projects.
In so doing, however, such agencies are, tending to locate both the monitoring and evaluation components in those agencies of recipient countries responsible for the execution of the project, thereby overlooking the potential of an agency such as the CBS to undertake a more effective execution of the evaluation surveys. This omission is essentially due to the misconception in the minds of project planners regarding the extent of (or lack of!) complementarity between the objectives and content matter of monitoring and evaluation. Certainly, the monitoring data required for project management to affect day-to-day decision-making may be best collected within the project, whereas evaluation data is more conveniently collected from outside the project — indeed, in many cases, it must be if the desired objective is to be achieved. Unnecessary duplication of survey capability is a waste of resources which can be more profitably deployed in building up the capability of institutions such as the CBS in recipient governments.

Discussions have taken place in Kenya concerning the application of evaluation surveys similar to the one being undertaken for the Rural Access Roads Programme to the following projects:

Mumias Sugar Outgrowers' Scheme
Tana River Irrigation Scheme
Turkana Settlement Scheme
Low Cost Housing Scheme (Nairobi, Mombasa, Kisumu)
Family Health Schemes

It is unlikely that the resources of the CBS will permit continuous surveys of all these projects to be undertaken during NASSEP, but certainly some can be incorporated into this program.
V. CONCLUSIONS

In recent years Kenya has moved from a minimum program of data collection, addressing itself mainly to the business and economic life of Kenya with emphasis placed on the commercial sector, to a continuous survey program that places particular emphasis on the quality of life of the people. While the availability of such data is, to some extent, affecting analyses, planning and policymaking processes, the potential of such data insofar as its indigenously induced applications are concerned is far from being fully exploited. Indeed, there are already indications that consideration needs to be given to enhancing the capacity of the planning and policymaking infrastructure in Kenya both within and outside the government in order to better utilize the quantity and complexity of data that are available presently and will become available in the foreseeable future. This is evidence that certain technical ministries and departments do not have the capacity to both use the existing published data optimally and to call for further analyses addressing their specific problems.

It is hoped that the recent move to establish District Information Development Centres (DIDC) in each of the 41 districts of Kenya will overcome this deficiency. DIDC's will initially be heavily occupied in providing access to statistical data to both the district administrations and outside agencies operating in these districts. The effort to establish a capability in the CBS to collect relevant data at the district level of disaggregation is complementary to the creation of the DIDC's. In addition, the government will need to institute measures to secure more effective inter-ministerial and inter-departmental coordination in order to ensure that the data collected at considerable cost is properly and optimally utilized within Kenya by Kenyans. Past experience of such inter-departmental working groups has thus far confirmed the difficulty of directly impacting the senior officials responsible for policy decisions. For
the time being, therefore, it must be acknowledged that much of the present pressure for the collection of more and increasingly sophisticated data comes from external agencies.

Much further work remains to be done with this data, both within and outside Kenya, and by Kenyans and external sources. The scope of work to be undertaken by the CBS will need to be extended beyond the collection of data on baseline observations of socio-economic factors, to appraising the dynamics of social change. Another repetition of surveys on baseline observations of socio-economic trends, following ten years of data collection between 1974 and 1984, will by 1985 be a second-best alternative on the optimal use of capability that will have been acquired by CBS. Hence, a need will arise for a more effective feedback from the users of the data.

The challenge for the statistician is to attain further success in measuring the hitherto unmeasurable 'esoteric' standards; moreover, the statistician, along with other social scientists, is faced with the more fundamental challenge of growth, elevation of quality of life, eradication of poverty, ignorance and disease. We need to determine the factors that constitute dynamics of change and how they can be quantified.
EXPERIMENTAL SURVEY OF HOUSEHOLD BUDGETS AND CONSUMPTION IN SENEGAL 1973-75

I. INTRODUCTION

The Experimental Survey of Household Budgets and Consumption in Senegal was conducted between 1973 and 1975, and financed by the Centre de Recherches pour le Développement International (CRDI)-OTTAWA (Canada). Unfortunately, for a variety of reasons it has not yet been possible to complete the processing of the data; one might even say that this has hardly begun.

This paper will briefly discuss the various problems of the survey, its methodology, questionnaires, field work, data processing and finally the provisional results of the experiment.

II. PROBLEMS

Initially the aim of this inquiry was to develop the methodology for a survey which would provide good information on income distribution in Senegal. The government and various consultative bodies had, in fact, indicated their interest in a study on this subject. Though in theory it is relatively easy to obtain information about incomes in the traditional sense of the word, this is not necessarily the case, since many wage-earners are engaged in moonlighting for extra income that is hard to quantify; it is apparent that in the liberal professions and other occupations much income goes undeclared. Regarding non-wage labor (farmers, fishermen, stockraisers, artisans and other small traders) there are very few income data. It can be readily understood that a developing country should be concerned with this matter, even more so since studies by numerous international organizations confirm that growing poverty in numerous third-world countries aggravates underdevelopment, simultaneously resulting from it, and that in many of these countries there are increasing distortions in income patterns.
Thus, it is not easy to study incomes; even the definition of the term poses a problem. Should only money incomes be considered, or should agricultural production intended for self-consumption be counted? If non-money incomes are included they have to be measured for purposes of comparison, and this creates difficulties. Furthermore, income itself is only one indicator of the "standard of living", a concept posing yet more definition related problems.

The concerns of the survey organizers went beyond measuring these various indicators (itself a complex matter), and an attempt was made to shed light on the basic social and economic phenomena governing their size and evolution. Here it was necessary to take account of the fact that incomes are determined by a whole range of factors whose relative significance may vary from one context to another. These include different types of activity, production and exchange conditions, the structure of the survey unit ("the household"), seasonal fluctuations, consumption habits, etc.

Obtaining information on these factors is in itself difficult, for which reason a time-use survey is essential for determining types of activities. The main activity must then be established, requiring the adoption of precise criteria (is it the activity that occupies the most time, or the one making the greatest contribution to income?).

Information about production conditions assumes information both about factors of production (means of production, paid and/or unpaid labor, conditions of remuneration, etc.) and the quantities produced by each production unit.

Measuring exchanges also creates awkward problems; traditional flows of services as well as commercial type activities must be taken into account.
which assumes careful monitoring of exchanges of all kinds.

Though the structure of the household may not pose too many difficulties in a traditional single-purpose survey, the situation in a multipurpose survey is very different. Is it correct to give the same contours and composition to different units (production, exchanges, food consumption), if different units exist? Moreover, monitoring seasonal fluctuations implies a lengthy stay in the field (at least 12 consecutive months).

Finally, there is the language problem. In a country like Senegal, a dilemma arises as to whether French, the official language but one restricted to a privileged minority, can be used to discover the reality about social conditions. Considerations such as these led to the decision to adopt local languages for the questionnaires used in the field and, of course, to choose investigators with a good command of these languages.

We have said that the survey was principally concerned with workers not receiving wages. It should be noted, however, that these are a very heterogeneous group, not only in terms of their principal activity, but even within each subgroup having the same principal activity. For example, there are wide differences among rural workers, ranging from the extremely poor, who lack the essential minimum of means of production and are obliged to hire themselves out, to small proprietors having just enough land and means of production to meet their needs by using only the family work force, or to landowners (with varying degrees of wealth) who rent out their holdings or hire their own labor, etc.

Thus, meaningful classification criteria for the sample to be studied must be found. The individual's standard of living, which in our view consists of the totality of the physical and social relations linking him to his environment (principally, relations of production, exchanges and consumption) appears
as a multidimensional variable which it is not easy to describe.

It would seem, therefore, that an operation of such complexity should begin with an experimental survey to enable the proposed methods to be tested and to determine their limits, before any attempt is made to extend the scope of the inquiry.

After much discussion the organizers of the survey became convinced that it is the conditions of production as a whole that, in the final analysis, determine the range of factors that make up the standard of living of an individual, or rather a group of individuals (in this case, the household). Equally, it was decided that the best measure of production for purposes of a suitable comparison between different activities is the "working time" required by that production, which entails the need for on-the-spot observation of the time devoted to various productive activities.

As much as possible, we wished to exclude high-income families from the survey and to base the research on low-income households having real difficulties in meeting their basic needs; for this reason the emphasis was to be placed on the poorest rural sectors of the population.

III. METHODOLOGY

It was decided to use the method of consecutive rounds already employed in the demographic survey in 1970-71; on this occasion four successive rounds of four months each were involved, on a sample whose size was naturally limited.

To make the exercise as meaningful as possible, Senegal was divided into eco-zones; an attempt was then made to select for study, families that would best reflect the different kinds of households to be found, according to a classification made on the basis of the most meaningful criteria. The following criteria were used to establish the eco-zones: the dominant ethnic group,
the main crops grown, other kinds of activities, the existence or lack of a development corporation (société d'intervention).

In choosing the villages to be included in the sample, attention was also given to their geographical position, namely their location in relation to the principal roads of communication, insofar as these can have considerable influence on exchanges, production and consumption in the village.

In choosing the villages to be included in the sample the main criteria were the following: the means of production, the crops grown, the various principal and secondary activities of the head of household, the forms of land ownership.

This led to the selection of twenty-two communities of which three were secondary urban centers, one a semi-urban center, and 18 were villages. They were then regrouped into seven "bases" for each of which one supervisor was responsible. Each base consisted of three communities except for Casamance which contained four. There was one controller for each base and one investigator for each community surveyed. Fact-finders, supervised in principle by the investigator, were chosen in each village to prepare the "working-time" schedules on a part-time basis. The investigator filled out all the other individual questionnaires and the household questionnaire. The controller, in addition to his normal work, was responsible for carrying out price surveys and inventories of household goods. Finally, the supervisor was responsible for initiating operations and for controlling the activities of all these agents.
IV. **THE QUESTIONNAIRES**

The questionnaires consisted of several series, as shown below, so arranged for operational purposes (modifications were made during the course of the survey).

A. **A Demographic Series.** Questionnaires D1 to D6 concerning the following aspects:

- **D1** - enumeration of persons in the household
- **D2** - record of their individual characteristics
- **D3** - record of births and deaths
- **D4** - record of journeys
- **D5** - record of individual occupations (the three main productive activities were listed)
- **D6** - for secondary and remunerated activities, an essentially qualitative description of the social relations in the work.

B. **A Means of Production Series.** Questionnaires MP1 to MP6 describe:

- **MP1** - buildings in productive use
- **MP2** - medium-weight mechanical equipment
- **MP3** - "direct" manual tools
- **MP4** - inventory of land parcels and rights of use
- **MP5** - description of labor used.

C. **A Habitat Series.** This consists of one questionnaire only.

D. **A Budget Series.** Questionnaires BUD1 to BUD12 cover:

- **BUD1** - daily inventory of the budget group
- **BUD2, BUD4, BUD6, BUD8** - expenditures in cash
- **BUD3, BUD5, BUD7, BUD9** - income in cash
- **BUD10** - exchanges in kind
- **BUD11** - mixed purchases (in cash and in kind)
- **BUD12** - mixed income after sales.
For each budgetary questionnaire an identical but retrospective questionnaire was prepared to record exceptional operations taking place outside the survey period.

E. A Food Series. Questionnaires ALIM1 to ALIM6 cover:

ALIM1 - list of food consumers
ALIM2 - list of consumers and constituent elements of each meal taken in the family compound (concession)
ALIM3 - food and drink taken outside meals
ALIM4 - dishes sent out
ALIM5 - dishes received
ALIM6 - transformation of food and ingredients of dishes.

F. Time-use and Production Series. Questionnaires T1 to T5 cover:

T1 - use of time by household members
T2 - time on work received from outside by each household member
T3 - total output for each kind of product cultivated
T4 - non-agricultural production
T5 - deductions from production before marketing

V. FIELD WORK AND DATA PROCESSING

A. Field Work

The initial plans for the field work were considerably modified for various reasons: delays by CRDI in disbursements, modification of some questionnaires between phases to facilitate their completion by the investigators, and so on.

Ultimately the observation periods planned for the majority of the questionnaires (particularly budget and food) had to be shortened, as did the fourth round, which only took place thanks to an extension granted by the CRDI.
The final timetable of operations was as follows:

First round -- January 28 to April 13, 1974
Second round -- May 27 to August 2, 1974
Third round -- September 23 to December 22, 1974
Fourth round -- March 10 to June 7, 1975

During the first round it was necessary to reduce the observation time for the daily budget questionnaires from three to two weeks. During the second round this period lasted three weeks, but was again reduced to two weeks in the third round because of the amount of work involved in the weighing of production at the harvest period. In the fourth round the financing available only allowed one-third of the temporary personnel to be retained, namely 12 out of 36 investigators. Therefore only the demographic, means of production and budget/retrospective series could be completed. The full system of resident investigators could not be continued; thus eight of them became itinerant while only four remained resident.

B. Data Processing

As a result of changes in the team directing the survey, the processing of the data could not be undertaken under favorable conditions, and the small number of tables obtained does not at this time permit full evaluation of the operation. It should, nonetheless, be noted that an attempt has been made to publish some results, including the following:

1. Experimental Survey of Household Budgets and Consumption, 1973/75
   - Volume 1: Methodology -- Instructions and Questionnaires, December 1976.
   - Volume 2: Results -- 1. Demographic Series
   - 2. Means of Production and Production Series
   - 3. Budget Series (being printed)

   Table of Food Components
   Nomenclature of products.

2. Plans have been made to process and publish the data relating to the food survey which, it should be recalled, were the most carefully collected data.
Despite these efforts, however, this method of processing is by no means adequate insofar as it does not include the different variables that would have provided a better understanding of the basic economic factors determining the standard of living.

VI. PROVISIONAL RESULTS OF THE SURVEY

The first fact evident to those who organized the survey was that its hasty preparation implied that the work was not always sufficiently thorough at either the theoretical or practical level. While problems of the survey were relatively clear to its directors, it must be stated that there were many shortcomings in its execution.

A much longer preparation period (a year at least) would have been needed to prepare such a complex operation. In this case, everything had to be done in less than six months.

The operation was fraught with ambiguity in its desire to unite the advantages of the traditional statistical inquiry, using scattered sampling, with those of in-depth description (la monographie). In this respect one might say that the survey was inconclusive. The impressive mass of questionnaires was more characteristic of in-depth description, even though certain features were abandoned, such as the village card (fichier), which initially had been proposed to be used for locating the households surveyed more securely in their environment.

On the other hand, the equipment and, in general, the limited resources available for each village to be surveyed, the relatively low theoretical level of the personnel involved, and the many weaknesses in the organization of the field workers (controllers and supervisors), were all more characteristic of a traditional statistical survey.
on a first examination, the quality of the data recorded in the questionnaires merely reflects these contradictory features. Particular care was taken in completing certain more traditional questionnaires at the expense of other more difficult ones. For example, too much attention was given to weighing food and to small current budgetary transactions, to the neglect of recording certain budgetary operations of great importance for a survey that aimed to study incomes and living standards. For example, loans, exceptional expenditures and transactions were, on the whole, poorly recorded.

The questionnaire concerning stockraising was also poorly completed owing to the remoteness of the animals and the family compound, etc.

This preliminary survey encountered difficulties at all levels and few satisfactory solutions were found, so that a significantly different methodology will have to be adopted in order to carry out a larger operation.

Even at the central level it was not possible to make the multi-disciplinary team, intended to plan the survey, function effectively. The various representatives of the disciplines requested (geography, sociology, nutrition and health, family economics, linguistics) were occupied elsewhere and in the final analysis participated in very few activities of the working group.

Among the difficulties encountered, one should mention those regarding some of the characteristics of the units surveyed, particularly the dispersion (éclatement) of families that takes place in certain regions at certain times of intense agricultural activity. In general, the mobility of individuals and sub-groups poses serious problems in terms of the very choice of groups to be included in the survey and of their definition.

From the food point of view, however, it appeared that the variations were, on the whole, insignificant over a short period (5 to 7 days); the most important thing was to record seasonal variations.
The numerous cases of "no answer" recorded during the survey are undoubtedly explained by the multiplicity and complexity of the questionnaires, not to mention the reticence of those surveyed, which was particularly evident in the case of the stockraisers.

Despite these various defects, the experimental survey made it possible to record a relatively significant amount of demographic and socio-economic data, of which a more thorough treatment and analysis remains to be done. It also gave the organizers and executants a better idea of the numerous problems posed by such a broad investigation.

In the final analysis this experience confirmed that in-depth description and surveys are two very different things; though they can be complementary, it is difficult to combine them in a single operation unless one is prepared to incur very high costs (the preliminary survey cost is more than $250,000 for 144 families surveyed) and has numerous highly qualified personnel available, which is never the case in African countries.

Perhaps we could now move towards a formula whereby a national survey is combined with a limited number of questions with in-depth descriptive analyses, staggered over time as required, and covering a small number of villages where real possibilities of success would exist (personnel, equipment, etc.).

The problem of obtaining information about living standards can in no way be solved by a national survey alone, even if it is simplified to the point where it becomes a mere exercise in observing and recording on a daily basis the incomings and outgoings in cash and in kind of the units surveyed. As we have already seen, too many significant factors that influence or are part of living standards escape this kind of observation, which limits the possibilities of using the data gathered for purposes of enlarging our understanding and/or for redefining development policies.
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