UNITED NATIONS

ECONOMIC AND SOCIAL COUNCIL

Distr.
LIMITED
E/CN.14/CAS.2-ENQ/WP.2
11 December 1961
Original: ENGLISH

ECONOMIC COMMISSION FOR AFRICA
Working group of Consultants on
Household Surveys
Addis Ababa, 11-20 December 1961

HOUSEHOLD SURVEYS

(Submitted by the Food and Agricultural Organization of the United Nations.)

61-1600

I. Introduction

The organization of household sample surveys is now becoming an increasingly attractive subject of direct interest to various agencies, national and international alike. This is so for many reasons. First, the desire to raise the level of living of the people has made all countries of the world more and more conscious of planned developments and improvements. Consequently the need for accurate information on actual living conditions has become more evident than ever before. Second, the household is a proper unit for investigating various economic, social and cultural aspects as well as health and other conditions of the individuals comprising it and through it plans of development and improvement could be organized and implemented. Third, advancement in statistical theory and application of sampling techniques make it possible to obtain a number of important facts by investigating a small fraction of the population and to inter-correlate these facts for proper planning and implementation of various programs. Fourth, where no other statistics are available there are nearly always population counts obtained for administrative purposes, which provide a working frame for selecting a sample of households and conducting various types of enquiries. This is especially the case at initial stages of development in a country or in certain sectors of the population.

Different national and international agencies are interested in different components of the level of living and each is responsible for the development of certain fields and its requisite statistics. In this respect the FAO is responsible for the promotion and development of food and agricultural statistics. While household surveys are of little help and of limited use for agricultural statistics the primary interest of FAO in these surveys is in their use for collecting data on food consumption and related nutrition studies.

Household food consumption surveys are the only means of collecting comprehensive data about the actual patterns and levels of food consumption for different socio economic groups and on the factors necessary for interpreting their variations. Such surveys provide information on the average quantities and values of food consumed and the corresponding nutritive values by administrative units and geographic areas; population classes, such as those by occupation, income, etc.; seasonal changes and frequency distributions of calorie and nutrient intake in relation to requirements. This information is essential for statistical appraisal of the various nutritional problems; for identifying the segments which are in greatest need for improvement and the factors needed to bring about the change.

Such data as are available practically in all countries in the world are subject to various limitations which reduce their value for planning and implementing national and international action programs. For this reason FAO is organizing a world program for the promotion and development of food consumption surveys.

As a first step in implementing this work a draft program was prepared and includes the basic scheme of Food Consumption Surveys; the survey items, their definitions, classifications and proposed tabulations; and some discussions of the computation of nutritive values and the evaluation of nutritional adequacy. The program deals also with the broad methodological aspects of food consumption surveys. This program was recently reviewed by a technical group of European experts formed for this purpose jointly by FAO and the Conference of European Statisticians and was found to provide an excellent basis for organizing and conducting Food Consumption Surveys of the type envisaged by FAO. "Food Consumption and Family Living Studies" also was the main item on the agenda of the Fourth Conference of Asian Statisticians held in Tokyo from 27 November to 8 December 1961. Similar meetings will be organized during the next

two years in other regions and it is planned to have the meeting for Africa organized early in 1963. After such reviews, a committee of experts on Food Consumption Surveys will meet in Rome in 1963 to advise on the finalization of the program which will then be printed and distributed to countries. The organization of regional and national training centers on Food Consumption Surveys and the preparation of a comprehensive methodological manual on the subject are also included in the program of work of FAO. The Freedom From Hunger Campaign launched by FAO also includes among its action projects the organization of FCS and training on the subject.

II. Review of Food Consumption Surveys in Africa

During the past decade a number of FCS and family budget studies have been carried out in various countries. The former were often combined with nutrition and clinical studies. The latter sometimes formed a part of a multipurpose enquiry dealing with various aspects of the level of living and, in some cases, covering also certain demographic and agricultural statistics.

The main FCS were those taken on relatively large scale in Nigeria, Cameroons, Togo, Libya, Central Congo and Uganda. Only the Libyan survey was taken on a nationwide scale in which qualitative information of food consumption was obtained. In the case of Nigeria and Cameroons the surveys were conducted in localities considered to be typical of the major climatic, vegetation and crop zones of the country. In Togo, the survey covered five major ethnic groups while in Uganda seven tribal groups in six districts were investigated. The other FCS conducted in the region were of small scale, limited to small population groups mostly in certain rural areas. In most cases the selection was purposive and the sample could not be regarded as representative in a statistical sense.

In some cases attempts were made to cover seasonal variations. For example, in the Cameroons, the survey was conducted over a period of six months and the Togo surveys were repeated three times during the year. In the Central Congo one village was investigated over the whole year while the other 34 villages included in the survey were investigated only once. In Ruanda Urundi the survey was taken twice, once in the dry season and once in the rainy season whereas in Nigeria the survey was taken once in each of the four seasons. The reporting period was mostly a few days or a week. In no case however there was a proper sampling in time.

Family budget surveys were conducted in the UAR, Former French West Africa, South Africa, Southern Rhodesia and Ghana. These surveys included data on food quantities but the main emphasis was on expenditure, the principal objective being the calculation of cost of living indices and analysis of demand. Only the UAR survey conducted in 1958/59 was nationwide. The other surveys were conducted in urban areas sometimes limited to a small number of townships as in Ghana. All these surveys were taken during a period of one month except in the UAR where the survey was repeated twelve times during the whole year.

Multipurpose surveys were conducted in Morocco, Ghana, Ivory Coast and Northern Rhodesia. The Morocco survey aimed at studying various aspects of the level of living including food consumption. The surveys conducted in Ghana and Northern Rhodesia included demographic statistics in addition to family expenditure. The Ivory Coast survey included the collection of data on crop areas, yields and production, sales of commercial crops, consumption of home-produced and purchased food and the demographic characteristics of the population studies. The Morocco survey covered an area which now accounts for about 80% of the population and the survey taken

in Northern Rhodesia covered the main African areas. The surveys in Ghana were limited to three townships and the Ivory Coast survey was taken in the rural Bongouanou district. Again the reporting period and time coverage were of one to two months, except in the Ivory Coast where the survey was taken in three different periods of one to two weeks each. In most of the family budget and multipurpose surveys random sampling was used.

The above is only a very rough and incomplete review based on the reports available to FAO. These reports do not always give the necessary details for the preparation of a systematic comprehensive review which would point out all the important features of the surveys and the limitations of data obtained with a view to the various uses of such data. For this reason, FAO has prepared a guiding list which was distributed among countries in Europe and the Far East. This questionnaire will also be distributed in other regions with the aim of preparing a regional and world review of FCS and using this review as a basis for the preparation of a comprehensive methodological manual on the subject.

III. Some Aspects of the Survey Design

A rational design of a statistical survey is determined by its objectives, available resources and the existing conditions under which the survey is to be conducted. The aim would be to obtain the required information with the maximum accuracy within the available resources and the existing conditions.

If inferences are to be made and the results of the sample enquiry are to be correctly generalized, purposive selection must be avoided and probability sampling must be used. This applies to sampling of population groups, geographic and administrative segements and to sampling in time. While random sampling over population

groups is often practiced, proper sampling in time is hardly to be found. Generalizations from results of surveys conducted during a short period of time, i.e. a few days, a week or a month to longer periods are not valid, especially since seasonal variations in food consumption are known to be large. The mere repetition of the survey three of four times a year does not solve the problem properly and the sample may remain to be a purposive sample over time. If complete enumeration in time over the reference period is to be avoided, on account of the high cost and the burden on the respondent, proper stratification of time and sampling within time a strata must be properly designed. Between time strata the sample of households could be completely changed, completely maintained, or partially replaced depending on whether the main interest is in estimating overall totals or averages of food, estimating changes, or both.

If regional or national averages or totals are aimed at, the household must be broadly defined to include the non-family type or institutional households such as military camps, hospitals, boarding houses, homes for the aged, etc.. For practical purposes, however, such institutions, as well as households of one person living alone and preparing few meals at home, may be conveniently treated separately in a special design, supplementing that of the family type households.

Non-sampling aspects of food consumption surveys are sometimes even more important than sampling aspects, especially in underdeveloped countries. In addition to various types of non-sampling errors which are common to different enquiries, errors due to the respondent are known to be serious in FCS. The enquiry often suffers from lack of co-operation or from biased information supplied by the respondent on account of prestige or other psychological factors influencing him. Memory lapses are often a serious source of errors

when the respondent is asked to report on his consumption during a past period of time. For these reasons Food Consumption Surveys require full understanding of the peoples' customs, habits and traditions, especially in rural areas and certain religious sectors of the population, with the aim of developing the most appropriate way of approaching the people. Publicity, contacts with local authorities and the use of adequately trained local enumerators having the confidence of the people are often essential. Above all, the use of recording and actual measurement by the enumerators of the foods eaten might be the most appropriate procedure especially in underdeveloped areas.

The rational planning of the survey thus requires careful consideration of both its sampling and non-sampling aspects, taken jointly and not in isolation one from another, so as to obtain a proper balance of the entire design. Due regard should be paid to the economic and social background of the country concerned, its level of statistical development, available resources in men, money and material, its transport and communication facilities and the attitude of the people. All sources of errors need to be thoroughly and critically examined for developing appropriate methods and procedures for their control. Experience gained from previous surveys is very useful to this effect. In the absence of such experience, the conduct of pilot or experimental enquiries is often necessary.

The proper development of large scale FCS is a costly operation and requires considerable effort and adequate statistical organization. Nationwide FCS should therefore be considered a major statistical undertaking similar to censuses of population, agriculture, housing, etc.. Furthermore, differences between groups of the population and frequency distributions are not likely to undergo drastic changes over short periods of time, and therefore, large scale FCS may be taken only periodically every five or ten years as in the case of

censuses. Annual or biennial FCS may then be confined to investigating vulnerable groups of the population such as mothers and children, which need to be kept continuously under study.

To have an efficient design of FCS and the necessary classification of data require the adoption of a schedule where periodic FCS follow in time censuses of population. This provides an adequate frame which helps in many ways to design an efficient sample. Thus, availability of enumeration districts (EDs) prepared for the census and preliminary totals of persons or households for each ED offer the basis for stratification of EDs according to size, their location in rural or urban areas, type of farming areas, etc., and the use of variable probabilities of selection where appropriate. A knowledge of strata sizes will also be useful in the estimation procedure.

From the point of view of the uses of data FCS need to be supplemented by other enquiries and by developments in other fields. For example, nutrition studies including physical, medical and biochemical examinations and measurements may be combined with FCS on a subsample of individuals to study the diet in relation to health, or problems of food intake in relation to physiological requirements. One of the major aims would be to assess the nutritive adequacy of the diet in comparison with appropriate nutritional standards or criteria, hence setting up targets for improving nutrition and health.

Again, quantities of food obtained from FCS need to be translated into calories and nutrients. The proper procedure would be to use conversion factors based on the analysis of food items entering into the national diet. When appropriate national food analyses are not available, it might be necessary to draw representative samples of the various specifications of each food item for analysis in the laboratory and determining the average energy and nutrient values directly applicable to quantities obtained in FCS.

IV. Relation to General Household Surveys (GHS)

Food consumption is only one, though the most basic, of various aspects of the level of living. There are many other social, economic and welfare aspects of living conditions of the household, such as employment status, housing conditions, education, amusement, living expenditures, etc. The development of statistics in these fields is also made through household sample surveys. The question then arises as to whether the scope of food consumption surveys should be expanded to cover these various aspects or to have food consumption surveys conducted separately. In other words is it advisable to collect information on various aspects of living including food consumption in one single multi-purpose enquiry or through separate enquiries? This question will be dealt with here from the point of view of the requirements of the proper food consumption survey as outlined before.

There are some elements which make the combination of FCS with GHS appear to be attractive procedure. There is first the economy reason. Preparations made for the GHS may also be used for FCS as for example, the frame of households, the field organization, the supervising machinery, travel costs of the field staff, etc. Moreover, there are a number of factors such as income, composition of the household, etc., which are common to the study of all components of living and which in the case of separate enquiries, need to be included in each. Second, various components of the level of living are inter-related and improvement in one component may need to go side by side with or influencing improvement in another. For example, improvement in health requires improvement in nutrition and improvement in both require improvement in education. Collecting information on various inter-related aspects of living on the same sample of households would allow broader analysis and use of data collected on each component.

On the other hand, such a combination has a number of disadvantages. First, multi-purpose surveys are complicated and difficult to implement. The questionnaire being necessarily too long produces mental fatigue of

the respondents and the quality of the information would be poor.

Second, the problem of efficiency of the design would arise. An efficient design for estimating demographic characteristics may be very inefficient for the purpose of estimating food consumption or some other variables. The use of multi-purpose surveys does normally lead to inefficient designs.

Third, there are technical difficulties which make the combination impracticable or even not feasible. For example, the method of collecting information may have to be different. While GHS are based on interview, in FCS the use of book-keeping and actual measurement of food by the enumerators is practically indispensable especially in developing countries. For this reason the enumerators are often required to stay on the spot during the whole survey period. Furthermore, because of the sizable and often irregular variation in food consumption over time, more careful and intensive sampling in time is required and to measure these changes, number of households need to be kept in the sample for repeated investigation. Therefore respondents are, usually, more resistant to cooperate in FCS than in GHS. As a result, considerable effort is often needed to have a random sample in FCS. Special measures are necessary to develop willingness to collaborate which is not the case for other types of household surveys. This requires the appointment of high quality enumerators adequately trained and familiar with local eating habits, traditions, and with the various specifications of each food eaten; and having the confidence of the people. In this respect, the selection of enumerators from the locality under study would seem desirable.

These considerations lead to the conclusion that FCS are practically a separate operation even when combined with GHS. In this case, the real issue becomes one of determining the primary objective of the enquiry as a basis for designing the whole sampling system. Therefore, the scope of any household sample survey in a country should be carefully determined with view to priorities set up according to needs, resources available and prevailing conditions.

V. Relation of Household Sample Surveys to Agricultural Statistics

The difficulties of combining FCS with GHS lead to a general discussion of the usefulness and feasibility of multi-subject surveys. We are interested in this topic also from the point of view of agricultural statistics and to what extent they can be collected through multi-purpose surveys.

The opinion was sometimes expressed that data on most items of the agricultural statistics in developing countries would be collected through "household" surveys, particularly in Africa where villages and households or extended families are practically the only type of units available. If a sample of households is drawn, the collection of agricultural statistics could easily be made as a part of a general data collecting activity. The same approach is then carried further to its organizational consequences and the conclusion may be drawn that collecting statistics should be centralized, with all the studies and survey preparations handled from one central place, with the same field machinery used for all types of data collecting, etc..

It is obvious that general conclusions of the above nature cannot be justified. Multi-purpose surveys represent a typical field where a very flexible attitude is needed so that the under-lying conditions are fully reflected in the decisions made and solutions adopted for various statistical problems. If a country is at the initial stage of its statistical work with only few staff available, no maps, with transport and financial difficulties and no statistical information from the past, a reasonable procedure might be to select a sample of households and collect from these households the most important data from all the basic fields of statistics. In this case, a multi-purpose survey would represent the only feasible approach of collecting statistics and would be justified as a temporary procedure in the light of the country's conditions. It would yield data which may prove useful for immediate purposes of development planning.

As soon as some progress is achieved and the needs have grown and become diversified this approach may not be adequate any more. For example, the country may need more accurate data on areas and yields of basic crops than what is possible to obtain from respondents often unaware of units of measurement. This need will call for the application of actual measurements in a survey taken at the time of harvest. If this time is convenient for collecting other statistics, area and yield statistics may remain to be incorporated in a multi-subject household survey. Otherwise they are separated and make up a special area and yield survey.

As to measurements, one can argue that they can be carried out by the general purpose field staff on a subsample of fields belonging to the households selected. Such a solution, however, may introduce serious difficulties from the accuracy point of view. General purpose staff are moving from one place to another. They measure areas at the moment of their presence on the spot and do not take into account the fact that the crop may be damaged or destroyed by the time of actual harvest or that additional areas of some crops might be sown afterwards. Similarly, they cut the crop for yield determination at the same time point irrespective of how distant it might be from the harvest time. The experiments conducted recently in Sweden show that a difference of some days between the two points of time might result in a considerable bias. Consequently, the interest in unbiased data may not be met except by using locally stationed staff who can carry out their measurements at the time of actual harvest. Furthermore, the proper collection of area, yield and other agricultural statistics requires adequate knowledge of agriculture and agricultural practices. For this reason the use of agricultural offices and extension work personnel as are available locally is most appropriate. Accordingly, agricultural statistics might be more conveniently entrusted to the Ministry of Agriculture. It is thus seen that development of needs and a general country progress may call for a separation of at least a part of agricultural statistics, not only from

the multi-purpose survey, but from a central statistical agency as well.

Similar developments are found in other fields of statistics as handled at present by the FAO. For example, forestry and fisheries statistics are practically in all the countries under the responsibility of agencies dealing with forestry and fisheries problems in general. This solution is obviously adopted with the aim of avoiding great difficulties that would follow if a general purpose staff were used in a multi-purpose approach.

These brief considerations lead to the following conclusion. Although agricultural statistics may be collected within the framework of multi-purpose surveys carried out on an ad hoc basis in the initial stages of statistical work, this approach will not be adequate any more as soon as systematic building up of statistical services is embarked upon. The rationalization of the complex activity of data collecting, the accuracy and other requirements imposed on statistics lead to the separation of different types of statistical activities. This is the only way of establishing a safe system of collecting agricultural statistics that meets contemporary standards of accuracy, efficiency and administrative convenience. It might be therefore dangerous to rely upon multi-purpose surveys as a substitute for the proper development of agricultural statistics.

. . . . .