

NATIONAL HOUSEHOLD SURVEY CAPABILITY PROGRAMME

**HOUSEHOLD INCOME AND EXPENDITURE SURVEYS:
A technical study**

UNITED NATIONS
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and
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P R E F A C E

This study on Household Income and Expenditure Surveys is one of a series of technical studies undertaken by the Statistical Office of the United Nations in pursuance of the National Household Survey Capability Programme (NHSCP) to assist developing countries in the organization of household surveys.

NHSCP, sponsored by the United Nations in collaboration with the specialized agencies concerned and cosponsored and/or supported by the United Nations Population Fund, the United Nations Children's Fund and the World Bank, is aimed at helping developing countries obtain, through an integrated programme of household surveys, demographic, social and socio-economic statistics required for development planning, policy formulation and programme implementation.

The United Nations Handbook of Household Surveys (Revised Edition)⁽¹⁾, which provides basic guidance on the organization and methodology of household surveys, reviews, on a general plane, problems of organization, design, operations and survey content. The handbook has been followed by a series of technical studies dealing in greater detail with Sampling Frames and Sampling Designs for Integrated Household Survey Programmes, Non-Sampling Errors in Household Surveys (Assessment and Control), Development and Design of Survey Questionnaires, Survey Data Processing, and the Role of NHSCP in providing Health Information. The latest in the series, released in 1986, is a manual on How to Weigh and Measure Children. Two other studies on Assessing the Nutritional Status of Young Children and Measuring Literacy through Household Surveys are also under publication. Other related studies recently brought out by the Statistical Office include Development of Statistical Concepts and Methods of Disability for Household Surveys⁽²⁾ and Improving Statistics and Indicators on Women using Household Surveys.⁽³⁾

The present study deals with the methodology of household income and expenditure surveys. It reviews the historical development, international standards, data requirements, concepts and definitions related to household income and expenditure surveys, discusses the survey methodology, sampling schemes and operations, and outlines the suggested content of a survey schedule and a reasonably comprehensive tabulation plan as a basis for selection of requisite tables for preparation and presentation. It is addressed essentially to the developing countries and aimed at helping them in their survey operations.

The study has been undertaken in close collaboration with the International Labour Office (ILO), the World Bank and the regional

(1) United Nations: Studies in Methods Series F No.31, 1984

(2) United Nations: Studies in Methods Series F No.38, 1988

(3) United Nations: Studies in Methods Series F No.48, 1988

economic and social commissions of the United Nations. In the preparation of this study, the Central Coordinating Unit of the National Household Survey Capability Programme was ably assisted by Mr. S.M. Vidwans, a former Director of Economics and Statistics, Government of Maharashtra (India). It also had the benefit of valuable comments from the ILO, the World Bank, the regional commissions and a number of individual experts. The draft, revised in the light of the comments, was reviewed further at a joint UN/ILO Working Group on Household Surveys held at Geneva in January/February 1989 and was revised further in the light of the discussions. The document is now issued as a preliminary version to obtain further comments and feedback from as many readers and users as possible prior to its final publication. The comments should be sent to the Director, Statistical Office, United Nations, New York, 10017, U.S.A.

HOUSEHOLD INCOME AND EXPENDITURE SURVEYS

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CHAPTER I

INTRODUCTION

A. Household Income and Expenditure Surveys

1.1 A comprehensive survey of household incomes and expenditures is a rich source of socio-economic information on the household population and is often regarded as an essential source of data for the determination of social needs and establishment of targets for development planning. It provides valuable data for an assessment of the impact of socio-economic policies on the conditions and levels of living of households. Analysis of the data facilitates assessment of the redistributive effects of taxes and subsidies and measurement of differences in the consumption patterns of different population groups and related changes over time. The survey provides useful inputs for the compilation of national accounts of the household sector as well as for statistics of the distribution of income and expenditure and is a valuable tool for studies in poverty and matters such as food consumption and housing. The data are also used for the construction of consumer price indices.

1.2 The importance of household income and expenditure surveys has been recognized by national governments and international organizations alike. Most of the countries participating in the National Household Survey Capability Programme of the United Nations (NHSCP) have included household income and expenditure surveys in their national survey programmes. International agencies have been striving for the improvement of related survey methodology and establishment of technical standards. The International Labour Organisation (ILO) and the Food and Agriculture Organization of the United Nations (FAO) have, in particular, been concerned with the methods and practices of household expenditure and food consumption surveys, respectively. The United Nations and the World Bank have also been greatly interested in income and expenditure surveys for use in national accounts and measurement of levels of living.

B. Historical Development

1.3 The history of household income and expenditure surveys can be traced back at least to 1857, when Ernst Engel propounded the law that, in a set of families in which tastes do not differ significantly and in which all of them face the same prices, the percentage expenditure on food is on the average a decreasing function of income.⁽¹⁾ His conclusion was based on a study of 153 Belgian family budgets and was later

verified by a number of other statistical inquiries into consumer behaviour. (2) It is pertinent to note that Engel's study was an example of an early attempt not only at collection of data on household income and expenditure but also at their use for formulating a law on that basis, although the importance of that law for economic theory was not recognized for a long time.

1.4 Early inquiries, undertaken by private investigators, focused their attention mainly on the family budgets of the poor and were generally known as family budget inquiries. Increasingly, they engaged the attention of public authorities as their importance was recognized not only for the information they provided about how people lived but also for the guidance they offered for the formulation and implementation of various socio-economic policies. (3) A particular group of people, whose family budgets often attracted the attention of governments was wage earners. One of the earliest family budget surveys was that ordered by the British Board of Trade in 1904 which covered 2000 families of workmen in the urban districts. (4) Since then, surveys of family budgets, covering various groups or sections of population, have occasionally been undertaken in many parts of the world. For instance, in the 1920s and '30s family budget surveys of industrial workers were conducted in several industrial centres in India to provide weights for the construction of cost-of-living index numbers. (5) The first family budget survey in Japan was conducted in 1925 covering 4785 households. (6)

1.5 The number of such surveys has increased tremendously over the last 50 years. Macro-economic considerations associated with planning for economic development, have generally led to the statistical development of measures of production, consumption and accumulation at the national level, and the compilation of national accounts, a major component of which is consumption expenditure. Household income and expenditure surveys have thus become directly relevant to the estimation of national accounts. In respect of some of the sectors of non-marketed production, which needs to be covered in national accounts, household surveys of consumption expenditure are, in many cases, a useful source of basic data. In developing countries where a substantial part of domestic production takes place in the household sector, household surveys of income which collect inter alia information on incomes from self-employment, are an important source of data for the estimation of domestic product.

1.6 Household income and expenditure surveys have also assumed an added significance as a potential source of information on the incomes and expenditures of different social and socio-economic groups of special concern for the formulation of economic policy. The reason was that economic growth (as measured generally by the growth of the national product) and the welfare of the society were often found to be out of step with each other, as the former had frequently failed to bring about changes of equal importance in human well-being and social welfare. Mass poverty, widespread unemployment and lack of economic and social participation by broad strata of the population were seen as manifestations of this phenomenon. Government policies have, therefore, increasingly been directed towards alleviating or remedying the situation in respect of the most disadvantaged groups in society. As much as the national product, its distribution has become a matter of great concern. This has resulted in a demand for systematic and reliable statistics on, among others, the conditions and levels of living of the population, and the differences thereof among different groups of population. The importance of household income and expenditure surveys has thus been increasingly recognized as a basis for policy making.

1.7 That among the basic necessities of human life, food has a pre-eminent place requires no emphasis. In any measurement of human welfare, satisfaction of food requirements is of prime importance. To assess the situation in this respect, governments need accurate estimates of food availability. Statistics are needed, in particular, on food production, imports, exports and intermediate consumption such as for feeding the livestock, use as seeds, input as raw material in manufacturing industries, changes in stocks and losses in transportation and storage. A national food balance sheet can then be prepared and the per capita food availability can be assessed. Its distribution over the different social and socio-economic groups of the population, however, still remains an area of concern as experience has shown that food adequacy, if not abundance at the national level, and its inadequacy for certain sections of the population are not incompatible. In the absence of specialized household food consumption surveys, household income and expenditure surveys can provide useful information on the distribution of the available food supplies. In particular, they can be a useful source of information on the food supply in some "developing countries where communities are entirely self-sufficient in their food supply or where a basic system of agricultural statistics has not been developed or relates to cash crops only." (7)

1.8 The concept of level of living, the improvement of which is generally an important goal of governmental plans, programmes and policies, is much wider than food consumption, and includes both material and non-material factors. Among them are life expectancy, nutrition, clothing, housing, literacy, education, employment, social security, recreation and entertainment, not all of which are easy to measure. Most of them are not generally covered in household income and expenditure surveys, although some of them are, no doubt, related to household income and expenditure.

1.9 Many of the newly independent developing countries have, over the last few decades, committed themselves to plans and programmes of economic and social development. The formulation of development plans calls for statistical information on a wide variety of topics such as national income and its disposal, balance of payments, demographic characteristics and phenomena, labour force participation, employment and unemployment, food and nutrition, shelter and other conditions of living. Improvement in the conditions and levels of living has, in fact, been considered a major objective of development efforts and, hence, the main object variable in development planning. What the incomes of the people are and how they spend them, are simple questions which continue to attract the attention of planners. Information on household incomes and expenditures has thus become one of the most important data requirements of the planners. As it is not generally available through any other data sources of the statistical system, direct data collection on the subject through household sample surveys is obviously an important statistical endeavour of high priority.

C. Objective, Scope and Organization of the Study

1. Objective

1.10 The objective of this study is to review the potential uses of a household income and expenditure survey, which are in fact many, the related concepts, definitions, classifications, methods of inquiry and analysis recommended by international agencies and the practical problems involved in the collection of data through household surveys and to suggest appropriate methodology for the guidance of developing countries. It is one of a series of studies designed, in particular, to provide

technical support to countries participating in NHSCP and is addressed in general to national statistical organizations in developing countries undertaking household survey programmes.

1.11 The study is essentially meant for the use of designers and managers of household survey programmes and potential users of the survey data. In particular, it is addressed to the survey statisticians responsible for the technical aspects of survey organization, which include sampling, designing of questionnaires or schedules, preparation of instruction manuals for enumerators, supervisors, editors and coders, formulation of a tabulation plan for the survey data and presentation of the survey results.

1.12 The number of functionaries responsible for the technical aspects of the survey depends on the size of the survey organization. A large survey organisation may have experts in sampling and designing of schedules and questionnaires, besides the survey statistician responsible for conducting the household income and expenditure survey. The potential users of the data may also be involved in determining the content of the survey, the concepts and definitions to be adopted and the tabulations to be undertaken. In that case, it will be of advantage for the survey statistician to familiarize himself with the issues involved in the substantive use of the survey data as well as in the technical aspects of survey operation. In the smaller countries, a survey organization may have just one survey statistician who would be responsible for all technical aspects of the survey. In that case, the survey statistician has necessarily to have sufficient expertise in almost all the technical aspects of the survey.

2. Scope

1.13 This study is one of a series of technical studies issued by the United Nations in the field of household surveys. The Handbook of Household Surveys (Revised Edition) (8), published in 1984, had the twin objectives of assisting countries in undertaking an analytical review of their options in survey programme development and to provide guidance to the survey organizers in the organization and administration of their survey operations as well as in the compilation, tabulation and interpretation of the data collected. It covers, in general, survey planning and operations, survey content, design and methodology and regional survey experience, and discusses the subject of household income and expenditure surveys among the specific subject-areas covered.

1.14 Under the National Household Survey Capability Programme (NHSCP), a series of technical studies has been undertaken to provide more specific guidance on survey methodology, data processing and data analysis. Studies on development and design of survey questionnaires, survey data processing, sampling frames and sample designs for integrated household survey programmes, assessment and control of non-sampling errors, and the role of NHSCP in providing health information in developing countries have been published. A manual on measurement of heights and weights has also been brought out.

1.15 Most of the studies undertaken so far cover the technical aspects of a survey programme which have a bearing on any household survey. The present study, however, deals with surveys concerning a specific subject. In relation to that subject, it covers all stages of the survey operation, from the design of the survey, through data collection, to the stage of tabulation, except data processing. As household income and expenditure surveys can be taken up for a number of purposes, it takes into account the special requirements of various purposes and enlarges, at several points, the scope of its discussion to cover these requirements. In its treatment of the subject, it uses the already published NHSCP technical studies to the extent they apply to the household income and expenditure survey.

1.16 The organization of a household income and expenditure survey calls for consideration of the data requirements of substantive fields such as national accounts, the options available in sampling, the requisites of statistical analysis, the possibilities of economic analysis and, as a by-product, nutritional analysis of food consumption. Familiarity with the basic requirements in these fields will help the survey statistician do his job more effectively. The study attempts to meet this objective by discussing the issues in national accounts, sampling, statistical, economic and nutritional analysis in a non-technical manner. It refers to the possible uses of survey data, so as to acquaint the survey statistician with what is expected of the survey and of the potentialities of the survey data. It also refers to the relevant international recommendations, considers the feasibility of adopting those recommendations and suggests practical methods that can be followed in order to conform to those recommendations as far as possible. What is desired and what is possible in practice are sometimes not the same. A compromise is, therefore, inevitable. The study is thus aimed at suggesting a practical methodology for conducting household income and expenditure surveys, which is as close to the theoretical requirements as possible.

1.17 The study takes as its conceptual and methodological base the Handbook of Household Surveys, the System of National Accounts (SNA) ⁽⁹⁾, and the Provisional Guidelines on Statistics of the Distribution of Income, Consumption and Accumulation of Households ⁽¹⁰⁾ (to be referred hereafter for brevity as Income Distribution Guidelines), issued by the U.N. Statistical Office, and the ILO recommendations concerning Household Income and Expenditure Surveys, and attempts a synthesis of these recommendations for practical implementation. At times, especially in regard to concepts and definitions, it quotes these recommendations verbatim lest a change in expression blunt the precision of the recommended concepts and definitions, and provides, wherever necessary, appropriate references to the original documents.

3. Organization

1.18 This study is divided into seven chapters including the present one. Chapter II refers to the international statistical standards, recommendations and guidelines and indicates, in particular, the essential links between household income and expenditure surveys, the System of National Accounts and income distribution statistics. It also refers to potential uses of the data emerging from household income and expenditure surveys and highlights, in particular, the uses of survey data for the compilation of national accounts and statistics of the distribution of income, consumption and accumulation, construction of consumer price indices, analysis of food consumption and nutrition, and certain indicators of levels of living. In addition, the chapter also refers to some policy-oriented studies which can be undertaken on the basis of the survey data.

1.19 Against the background of international standards and the implied requirements of survey data, Chapter III discusses the possible scope of a household income and expenditure survey and the desirability and practicability of its extension to related aspects. It also discusses the three basic concepts of household, income and expenditure in the light of international standards, recommendations and guidelines, analyzes the differences therein and suggests ways and means of meeting the different requirements from the survey data.

1.20 Chapter IV deals with the survey methodology currently adopted in household income and expenditure surveys, compares the merits of different approaches and methods of enquiry and suggests a possible approach for adoption. It also deals with the measurement of incomes and expenditures in cash and kind, and indicates how decisions could be taken in practice on the related issues of measurement.

1.21 Chapter V deals with sampling schemes and operations. It discusses the issues in sampling in so far as they relate to the household income and expenditure survey, and suggests a general design for the survey. It indicates the methods for estimation of aggregates and ratios, and estimation of sampling errors. It also discusses the issues involved in survey operations and the problems of non-response and quality control. Towards the end of the Chapter, a table showing the values of two important parameters of income distribution for several countries is given to facilitate determination of sample size for income and expenditure surveys.

1.22 Chapter VI discusses the advantages and disadvantages of different types of instruments of data collection, namely questionnaires, schedules and account books and outlines the suggested content of a survey schedule.

1.23 The last chapter deals with tabulation, classification and analysis. Against the background of the multiple uses of the survey data, it suggests a reasonably comprehensive tabulation plan as a basis for selection of requisite tables for preparation and presentation. The last section of the chapter discusses delays in the production of survey results and suggests a practical solution.

1.24 In short, Chapters II and III deal with what data can be collected, Chapters IV, V and VI with how they can be collected, and Chapter VII with how they can be processed and presented.

1.25 There are eight annexes, six of which set out the recommendations of the ILO, FAO, SNA and the Income Distribution Guidelines on the coverage, concepts, definitions and classifications to be adopted in household income and expenditure surveys. One lists the indicators for the measurement of levels of living recommended by the Interim Guide of the United Nations on International Definition and Measurement of Levels of Living, and the other outlines the World Bank's Living Standards Survey in Côte d'Ivoire as an illustration.

1.26 In dealing with household income and expenditure surveys, the present study thus covers, briefly in some places and at length in others, a wide ground: from techniques of data collection to the use of survey data and includes some mathematical details on sampling and estimation. The study, therefore, makes no claim to brevity. But it is not necessary that its chapters be read seriatim. A reader experienced in survey operations may initially read only Chapters II and III to appreciate the potential uses of the survey data and the subtleties of concepts and definitions. The reader whose immediate concern is designing a household income and expenditure survey may skip these chapters and revert to Chapter III for references on specific topics as they

arise while planning the survey and to Chapter II at the stage of preparation of the tabulation plan. Those who are not concerned with the technical aspects of survey design may well skip Chapter V which is somewhat mathematical. The annexes are for record (as some of them are not easily available) and meant to serve as reference material for defining the technical detail of the survey. The whole study would serve as training material for a newcomer to the field.

1.27 It is important to reiterate at this stage that this is basically a technical study and not a manual for conducting household income and expenditure surveys. It is meant essentially to discuss the various technical issues and suggest appropriate methods wherever possible, to help the countries determine the methodology applicable to their own situation. It does not by any means imply that the survey methodology suggested is for universal application. It examines in detail the many technical and practical aspects of the organization of household income and expenditure surveys, analyzes the relevant issues, and points out how they could be resolved in practice so that a survey statistician can take appropriate decisions on the various aspects of the survey on the basis of his own judgement. Although the study suggests certain methodology as appropriate, it is only as a basis for further consideration in the light of the local circumstances. The methodology can be modified as may be needed or considered appropriate on a balanced assessment of the pros and cons.

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CHAPTER II

INTERNATIONAL STANDARDS AND DATA REQUIREMENTS

A. Introduction

2.1 The pervasive importance of household income and expenditure surveys has been recognized by national governments and international agencies alike and the importance of maintaining satisfactory statistical standards in the measurement of income, expenditure and consumption has been appreciated and actively pursued by the concerned international agencies, especially the United Nations, the International Labour Organisation (ILO) and the Food and Agriculture Organization of the United Nations (FAO). The World Bank has also been engaged in recent years in the development of appropriate methodology for the measurement of living standards. The relevant international standards in regard to the concepts, definitions, classifications and methods to be adopted in household income and expenditure surveys are discussed in this chapter. The recommended standards, however, are not always mutually compatible. The major differences and their operational significance will be discussed in the next chapter.

2.2 For purposes of this chapter, international standards and recommendations are grouped broadly under two major heads, namely: (a) national accounts of the household sector; and (b) conditions, costs and levels of living. The data requirements for the purposes envisaged in those standards and recommendations will be discussed in some detail in the relevant sections. The data collected in household income and expenditure surveys may also have other possible uses not envisaged in those standards and recommendations. Some of the possible uses will be discussed in Section D.

2.3 The uses of a household income and expenditure survey would naturally depend upon the data collected, while the data collected depend on the objectives set for the survey. This benign circle will be broken by assuming that in these surveys, besides sufficiently detailed data on household income and expenditure, data on certain demographic, social and socio-economic characteristics of the household, as well as employment and other related particulars of its members will be collected. The potential uses of the data may, however, point to the necessity of collecting certain additional data if the uses envisaged are considered important enough. The "data" are necessarily qualified by the concepts, definitions and reference periods adopted in the survey, the methodology (sample design, method of data collection, methods of estimation) used and the nature of control of sampling and

and non-sampling errors. All these technical aspects will be assumed, at this stage, to be satisfactory and consistent with the uses envisaged.

2.4 The use of survey data is not necessarily limited by the initial objectives and technical aspects of the survey. Use, like beauty, lies in the eye of the beholder or the user. It may not be correct to presume that if a survey has been conducted to meet a certain objective, its use should be limited to that objective. That would not only lead to under-utilization of resources spent on collecting the data, but also to a mistaken impression that for answering any new question a new survey is necessary. It would unwittingly stifle ingenuity in the use of survey data and place the survey organization in an unfavourable position. One can even take the view that "the processing and analysis of data to draw out its policy implications deserve even greater emphasis than do the niceties of the conceptual frame or subtleties of imputation." (1)

2.5 The potential scope for the use of survey data could thus be wider than the specific objectives for which the survey was initially planned. There is a need for bringing together the experience of different countries in the use of survey data to make survey statisticians aware of the potentialities of their own data. With that knowledge and their own experience of using data for answering policy-oriented questions as they arise, they will be able to lend a touch of greater purposefulness to the survey programmes. Of no less importance, it would help them demonstrate the potential uses of household surveys to their governments and secure the necessary resources for the surveys. Accordingly, Section D covers not only the well-known or standard uses of survey data, but also some examples of problem-oriented analysis.

B. National Accounts of the Household Sector

1. System of National Accounts (SNA)

2.6 The System of National Accounts (2) adopted by the UN Statistical Commission in 1968, is an all-inclusive framework for the accounting of revenues, expenditures and financial data concerning all economic sectors that together constitute the national economy. One of them is the household sector, which covers all household units belonging to the national economy. Other sectors for which similar information is included in the national accounts are the enterprise sector covering all non-financial enterprises and financial institutions, the government sector, and the rest of the world covering all transactions between residents of the national economy and non-residents belonging to other national economies. Under the guidance of the UN Statistical Commission, the 1968 SNA is presently being reviewed.

2.7 The national accounts framework integrates the revenue, expenditure and financial data of the different sectors constituting the national economy. It aggregates data across all sectors, identifies the transaction flows between sectors and presents consolidated information for the national economy as a whole by eliminating selectively transactions between the different sectors of the national economy. As a result, information is obtained on the major aggregates for the national economy, such as gross domestic product (GDP), private consumption, saving and capital formation.

a. Household Sector Accounts

2.8 The household sector accounts, which form part of the national accounts serve basically two types of analysis, each supplementing the other. The first type is useful for behavioural studies of the patterns of revenues, expenditures and financial data that characterize different household groups. The other is useful for an inter-sectoral analysis for the evaluation of how the transactions of units included in the household sector or its sub-sectors result from or have implications for transaction patterns in other sectors. The inter-sectoral analysis is generally carried out separately for three distinct groups of transactions, each constituting a specialized type of analysis, namely production analysis, analysis of revenues and expenditures and financial analysis.

2.9 In order to serve the requirements of inter-sectoral analysis the accounts of the household sector are endowed with certain special characteristics. In the first place, all transactions are defined and classified in the same way as in the national accounts covering all sectors. In the second place, in order to serve the three types of specialized analysis, three separate accounts are envisaged for the household sector: viz., production account, income and outlay account, and capital account.

2.10 A framework of household sector accounts based on the present SNA is presented in Table 2.1. It rearranges the transactions of the household sector into the three types of accounts earlier mentioned. The figures given in the table are illustrative.

(i) Production account

2.11 The production account registers as revenue the value of production of small production units managed by households, and as an expenditure the related cost of production. The production value is called gross output and the cost of production includes two elements: intermediate consumption and value added. Intermediate consumption includes the cost of materials and services. Value added is a balancing item, which is the difference between gross output and intermediate consumption ($41=75-34$). Another balancing item, called operating surplus is obtained by deducting from value added the cost of wages and salaries and other employee costs, which together constitute compensation of employees ($28=41-13$).

Table 2.1 National accounts
household sector accounts

	HOUSEHOLDS	
	REVENUE	EXPENDITURE
PRODUCTION		
Gross output	75	
Intermediate consumption		34
Value added/GDP		41
Compensation of employees		13
Operating surplus, gross		28
INCOME AND OUTLAY		
Compensation of employees	150	
Entrepreneurial income	28	
Property income	20	4
Current transfers		
Taxes (direct & indirect)		24
Social security contributions/benefits	14	11
Current transfers, n.e.c.	4	
Final consumption		167
Gross saving		10
CAPITAL		
Gross saving	10	
Capital transfers	-2	
Change in net worth		8
Gross capital formation		10
Net purchases land		-1
Currency and deposits		12
Loans	9	
Other financial claims		-4

2.12 Gross output generally includes what is sold and intermediate consumption generally reflects what is purchased in terms of goods and services; and the valuations of the sales and purchases generally reflect what is paid in the market. However, there are some exceptions. Gross output includes, additionally, output that is produced but not yet sold and kept in stocks, consumer products that may not be sold because they are consumed by the household itself, and capital goods that are produced and used by the same household unit without being sold. On the other hand, gross output excludes products that are sold but not from current production, possibly from stocks of goods that were earlier produced. All cost items included in intermediate consumption and value added are, in principle, those connected with production that is included as gross output; therefore, not included are the cost of purchases of materials that are not immediately used but kept in stocks, while added are the cost of materials used from stocks that were earlier purchased. Also included are materials and services purchased in order to produce consumer goods and capital goods that are used by the household itself. In cases where no market price is obtained for an output, because the output is consumed by the same household, a market price equal to the value of similar consumer goods sold is imputed, while in the case of capital goods constructed by the same household unit, it is assumed that the value of the capital good is equal to the cost, and generally no value added components are imputed. As a result of these adjustments to gross output, intermediate consumption, value added and operating surplus do not necessarily reflect actual results of sales minus purchases or cash flows.

(ii) Income and outlay account

2.13 The income and outlay account presents current revenues and expenditures of households. The current revenues include compensation of employees, entrepreneurial income, other property income such as interest and dividends, social security benefits and other transfers which households may receive generally from the government and in some instances from other households. On the expenditure side, there are payments corresponding to property income which includes interest payments on consumer credit, social security contributions, taxes, and all consumption expenditures on goods and services used by the households.

2.14. What is included in the flows of the income and outlay account of households is generally what is paid or received by households. Some qualifications and explanatory comments, however, are needed on some of the items. Compensation of employees includes not only what is paid to members of households employed by non-household enterprises but also wages, salaries and other employment costs incurred by household production units themselves and registered as compensation of employees in the production account outlined above. Entrepreneurial income is not a cash payment, but is a balancing item, which is identical to operating surplus of household production units as presented in the production account.

Final consumption outlays generally include what households pay for goods which they purchase in the market. However, also included in this item are the imputed values of consumer products produced and used by the same households; these values are also added in the production account to the value of gross output.

2.15 The difference between the revenues and the expenditure is called "gross saving" of households. The saving concept thus defined reflects various accounting adjustments, and can therefore not be directly measured as an increase in savings by households as they show up in household saving accounts. It is a balancing item that can only be obtained as a residual in the national accounts.

2.16. Unlike the production account, which refers to household production units only, the household income and outlay account (as well as the capital account discussed below) includes revenues and expenditures of households and household production units together. This has implications for various revenue and expenditure categories included. For instance, taxes cover payments by households in their capacity as households as also in their capacity of entrepreneurs of household production units. The same applies to revenues received by the households such as interest and dividends; no distinction is made in the case of these receipts between those arising from investments of household savings and those resulting from entrepreneurial investments, because entrepreneurial and household decisions to invest are very closely interwoven and cannot be reliably separated. Some other revenues and expenditures such as receipts by households of social security benefits or the payments of social security contributions are, however, purely of a household nature. The non-separation of households and household production units implies also that no distinction is made between savings of a purely household nature and savings (or retained earnings) of household production units.

(iii) Capital account

2.17. The capital account is divided into two parts. The first part includes gross savings, and net capital transfers received, which constitute the capital revenues of the household sector that do not create any liability to other sectors. The second part of the account includes on the expenditure side, the acquisition of tangible assets - i.e. capital formation and purchases of land -, the purchase of financial assets and increases in the holdings of cash (currency) and bank deposits, and on the revenue side the receipt of loans. Gross savings plus net capital transfers received is called change in net worth of households (8=10-2). It is what households have available to invest in tangible or financial assets or - when it is negative - what needs to be financed through loans and other credits to households, i.e. financial liabilities. Change in net worth is therefore also equal to the difference between the acquisition of assets and the incurrance of liabilities (8=10-1+12-4-9).

2.18 Gross savings in the capital account is the same as what has been obtained in the income and outlay account as the difference between current revenues and expenditures. Accordingly, the capital account refers again not merely to pure household finances but also to the finances of household production units. Capital formation thus includes not only dwellings purchased by households or constructed by households for their own use, but also capital goods purchased by households in order to carry out the production processes of their production units as reflected in the production account of households. Similarly included in capital formation are changes in the stocks of these production units. As capital formation includes capital formation of household production units, consumption of fixed capital or depreciation includes not only depreciation of dwellings, but also depreciation of capital goods used by the households for the operation of their production units. The financial assets that households and household production units purchase or acquire include changes in the currency holdings of households, changes in the bank deposits, and changes in the securities and other financial assets held by households. On the other hand, the revenue side of the account includes loans and other types of credits obtained by households. All financial assets and liabilities are net of repayments of the principal made by or to the households.

b. Integrated Accounting Framework

(i) Integrated sector accounts

2.19. The household sector accounts are integrated in Table 2.2 with the accounts of other sectors, viz., enterprises, government and the rest of the world. Together with the household accounts are presented accounts for non-profit institutions serving households, such as religious organizations, charities, labour unions, political parties and recreational clubs. The transaction format of Table 2.2 is identical to the format of Table 2.1, except for the upper portion of the table which includes exports and imports, which are related to the rest of the world. The figures presented in the household sector column of Table 2.2 are the same as those included in the household account presented in Table 2.1. The data of the different sectoral accounts are integrated into the revenues and expenditures of the national economy through aggregation and consolidation.

2.20 The data for the national economy are primarily aggregations of the data in the accounts for individual domestic sectors, i.e. enterprises, government, and household sector comprising households and non-profit institutions serving households (NPI). For example, gross output of the national economy is equal to the sum of the gross outputs of enterprises, government and households including NPI's ($496=361+59+76$). The total value added to the national economy - which is called gross domestic product (GDP) - is also equal to the sum of the values added in the enterprise, government

Table 2.2 National accounts - integrated sector accounts

	NATIONAL ECONOMY		ENTERPRISES		GOVERNMENT		HOUSEHOLDS AND NPIS's				REST WORLD			
	REV.	EXP.	REV.	EXP.	REV.	EXP.	TOTAL		HOUSEHOLDS		NPI's		REV.	EXP.
EXTERNAL TRADE														
Exports	52												55	52
Imports		55												
PRODUCTION														
Gross output	496		361		59		76	75					1	
Intermediate consumption		242	181		27		34	34					1	
Value added/GDP		254	180		32		42	41					1	
Compensation of employees		152	109		29		14	13					1	
Operating surplus, gross		102	71		3		28	28					0	
INCOME AND OUTLAY														
Compensation of employees	150						150	150					3	1
Entrepreneurial income	102	71			3		28	28			0		0	
Property income	41	36	16	21	4	11	21	4	20	4	1		5	10
Current transfers														
Taxes (direct & indirect)	62	65	41		62		0	24		24			4	1
Social security contributions, benefits		25	25		11	14	14	11	14	11				
Current transfers, n.e.c.	10	11			5	11	5	0	4		1		2	1
Final consumption		210				42		168		167			1	
Gross saving		43	25			7		11		10			1	4
CAPITAL														
Gross saving	43		25		7		11	10					1	4
Capital transfers	0	0			2		-2	0	-2					
Changes in net worth		43	25			9		9		8			1	4
Gross capital formation		47	29			8		10		10				
Net purchases land	0	0	1				0	-1		-1				
Currency and deposits	14	9	11	-11	3	7	0	13		12			1	5
Loans	9	9	9				9	0	9					
Other financial claims	36	37	26	34	10	7	0	-4		-4			11	10

and household sectors ($254=180+32+42$). Similarly, the total of other property incomes received by the national economy is equal to what has been received by each of the domestic sectors, i.e. enterprises, government and households including NPI's ($41=16+4+21$); the same applies to property income paid ($36=21+11+4$). Gross capital formation of the national economy is equal to the sum of gross capital formation of enterprises, government and households, including NPI's ($47=29+8+10$). The exception to the aggregation rule are the entries for exports and imports which will be explained in the next section.

2.21. According to the consolidation rule, the net value of transactions presented in the columns for the national economy is balanced by the net value of the corresponding transactions under rest of the world. As an example, the net value of other property incomes received (41) and paid (36) by domestic sectors is balanced by the difference between what is received by residents from the rest of the world and what is received by the rest of the world from the residents ($10-5=5$). The same applies to other transactions, such as current and capital transfers, taxes, and all transactions in financial assets and liabilities.

(ii) Supply and demand framework

2.22. The aggregation rule described above also applies to the transactions in individual goods and services. The consolidation rule, however, is more complex, because it does not apply to individual transactions but to all transactions in combination that form part of the supply and demand of goods and services. The supply rows distinguish gross output and imports, while the demand rows show intermediate consumption, final consumption, gross capital formation and exports. For the national economy, as an identity, the supply is equal to demand, i.e., the sum of domestic gross output plus imports is equal to the sum of intermediate consumption, final consumption, gross capital formation and exports ($496+55=242+210+47+52$). As some of the total supply is not domestic, but imported, and a part of the total demand stands for exported goods and services, the consolidation rule for supply and demand holds between the columns of the national economy and the rest of the world: i.e. the difference between domestic supply (= gross output) minus domestic demand (= intermediate consumption plus final consumption and gross capital formation) in the national economy, is equal to external demand (= exports) minus external supply (= imports) in the rest of the world [$496-(242+210+47)=52-55$]. In order to maintain this internal consistency of the national economy data, exports minus imports, which appear in the rest of the world column, are repeated in the national economy column.

2.23. The above relations between the supply and demand of goods and services can be better understood in the detail of a supply and demand framework presented in Table 2.3. This framework is often used to check the internal consistency of national accounts aggregates. Table 2.3 includes in column (5) the national economy totals for all goods and services aggregated in Table 2.2. In conformity with the current use of supply and demand tables, a distinction is made in columns (1) to (4) between different types of goods and services, e.g. agricultural goods, mining and manufacturing products, trade and transport services, and other services. The rows of the table are divided into two parts: the top section refers to supply and the lower section covers demand. The supply side distinguishes between domestic production and imports. On the demand side a distinction is made between intermediate consumption, final consumption, gross capital formation and exports. In order to identify household production and household demand of goods and services as presented in Table 2.1, the rows of domestic production, household final consumption and gross capital formation have each been subdivided into two parts: one covering elements of the household sector of Table 2.1 and the other covering the remaining values with regard to other sectors.

2.24. The aggregates presented as row totals in column (5) of Table 2.3 correspond with the totals presented in the national economy column of Table 2.2. For instance, the total of final consumption (210=167+42+1) presented in column (5) of Table 2.3 is equal to the corresponding aggregate presented in the income and outlay account of the national economy in Table 2.2 and so do the total exports (52), imports (55), gross capital formation (47) and intermediate consumption (242). The value added or GDP presented in Table 2.2 can be derived from Table 2.3 as the difference between gross output presented in row (1) column (5) and the intermediate consumption presented in row (5) column (5) (254=496-242).

2.25. Similar relations can be observed between Table 2.3 on the one hand and Tables 2.1 and 2.2 on the other with regard to some of the individual sectors. For example, value added of household production units can be derived in Table 2.3 as the difference between gross output minus intermediate consumption of those units (41=75-34). The same amount appears as value added in the production account of households in Table 2.1 and the production account of the households in Table 2.2. Final consumption (167) and gross capital formation (10) of households are shown as totals in column (5), rows (6) and (7) of Table 2.3 and are also reflected in Table 2.1 and in the household sector column of Table 2.2. Similarly, the total of government final consumption (42) of Table 2.3 can be found in the government sector column of Table 2.2.

2.26. One of the transactions in Table 2.2 - compensation of employees - is presented twice, i. e. once as an expenditure item in the production accounts of domestic sector (enterprises, government, households, NPI's) and again as a revenue item in the income and

Table 2.3 National Accounts - Supply and Demand Frame Work

		Goods and services				
		Agricult. products	Prod. mining manufact. construct.	Trade & transport services	Other services	Total
		(1)	(2)	(3)	(4)	(5)
(1) Gross output	Household production activities	22	31	10	12	75
	Other production* activities	6	246	77	92	421
	Total	28	277	87	104	496
	(2) Imports cif.	15	30	5	5	55
(3) TOTAL SUPPLY		43	307	92	109	551
(4) TOTAL DEMAND		43	307	92	109	551
(5) Intermediate consumption	Household production activities	3	25	3	3	34
	Other production activities	22	157	18	11	208
	Total	25	182	21	14	242
	(6) Final consumption	Households	17	66	51	33
Government			3		39	42
NPI					1	1
Total		17	69	51	73	210
(7) Gross capital formation	Household production activities		10			10
	Other production activities		13	9	15	37
	Total	0	23	9	15	47
	(8) Exports		1	33	11	7

* Other production activities include enterprise, government & NPI production

and outlay account of households, in Tables 2.1 and 2.2. It also appears as revenue and expenditure items in the rest of the world account of Table 2.2 which represent factor payments to and receipts from abroad. In the national economy, compensation of employees appears as an expenditure component of GDP for factor payments, and again as a revenue aggregate in the income and outlay account. The expenditure aggregate for compensation of employees is obtained by aggregating compensation of employees paid out by enterprises, government and households ($152 = 109+29+14$) and the revenue item is equal to what is received by the household sector as compensation of employees. The difference between the two aggregated amounts of payments and receipts of compensation of employees is equal to the difference between what is paid out to non-resident employees who are temporarily employed in the country minus what is received by resident households temporarily employed abroad (152-150).

c. Use of Household Surveys in National Accounts

2.27. The integrated scheme of household sector accounts of Table 2.1 can be used to register information for all household units together, for groups of households or even for individual household units covered in household surveys. The advantage of the integrated scheme of household sector accounts based on household survey information is that, while integrating macro level household sector information into the national accounts, links are established with the micro level data on household units. Full integration of the micro level data (instead of links only) into the national accounts may not be feasible, as the adjustments in survey concepts needed to incorporate survey data into the national accounts can not generally be carried through to the micro level.

(i) Alternative uses of household survey data

2.28. The integrated framework explained above can be used fully or partially, depending on the availability of household survey information. At the one extreme, it can be used when no household survey data are available, and at the other, it can be used to integrate complete information available from household surveys into the national accounts. In the many intermediate situations, however, data are available only on household consumption, or on consumption, current outlays and revenues, exceptionally including data on production of household units.

2.29. In the least desirable, but unfortunately the most common situation, in which no household survey data are available, information is limited to data on production including small scale household production units. It implies that no data are available for Tables 2.1 and 2.2, but for Table 2.3 data are available on supply (imports and domestic production) by categories of goods and services. Household consumption classified by commodity detail is

then derived by deducting from total supply, for each category of goods and services, the demand presented in all rows of the demand section of the table except the row for household final consumption. In many cases, information on consumption is unavailable not only for households but also for private non-profit institutions so that, in the final analysis, private final consumption derived as a residual would include the final consumption not only of households, but also of NPI's.

2.30. If, however, complete or at least partial information is available for all sectors other than the household sector, which means that details covering all sectors other than households are available not only for Table 2.3, but also for Tables 2.1 and 2.2, even if no household survey information is available, it would be possible to derive indirectly data for the integrated household sector account. For instance, in Table 2.2, use is made of the accounting identity concerning revenues and expenditures of the domestic sectors and the rest of the world. Thus, compensation of employees received by households would be derived by adding together compensation of employees registered as part of value added in the production accounts of all productive sectors presented in the sector column of Table 2.2 and deducting the differences between what is paid to the rest of the world and what is received from the rest of the world [$150 = 152 - (3-1)$]. Similarly, social transfers received or paid by households generally can be derived from government data, as the government sector is the only sector which receives social contributions and pays social benefits, while the household sector is the only sector which pays contributions and receives the benefits. Other property income can be derived as a net receipt, by aggregating payments minus receipts of other property income by the sectors of government, enterprises, NPI's and the rest of the world [$20-4=(21-16)+(11-4)+(0-1)+(10-5)$]. Similar indirect derivations can be used for other current and capital transactions and a complete indirect set of accounts for the household sector can thus be derived.

2.31. In a more favourable situation, information from household surveys may be available with regard to the goods and services consumed by households. This is usually the case when household surveys are conducted to derive weights for consumer price indices. In that case, detailed information is available on the goods and services consumed by households for the estimation of final consumption expenditure in row (6) of Table 2.3. This information can also be used to check the information in other rows of that table by comparing these direct estimates of household consumption with the indirect estimates that may be derived as explained above. Depending on the reliability of the household survey data, estimates of gross output as well as of intermediate and final demand of other sectors in Table 2.3 can be adjusted so as to reconcile the household survey data with other sectoral data. Adjustments of the household survey data may also be needed when survey data on consumption expenditure are considered less reliable or when

adjustments are needed to bring the household survey concepts in line with the concepts used in the national accounts.

2.32. A further independent check would be available when in addition to household consumption data, details are available on other household expenditures and revenues. This would imply that for the sector accounts of Tables 2.1 and 2.2, independent data would be available on some of the revenue and expenditure items concerning the household sector. Such independent information could be compared for each of the available revenue and expenditure items with indirect data obtained through other sectors. If independent data and indirect estimates would not coincide, there is a need to adjust either the survey data or the data of other sectors in order to reconcile the data between sectors.

2.33. The most favourable situation would be when the household survey includes deconsolidated information on that part of the revenue - entrepreneurial income - which is derived from production in small scale household units. The information would include data on outputs and inputs including wages and salaries paid. The data on outputs and inputs of household units could be used as independent information in rows (1) and (5) of the Supply and Demand Table 2.3 as well as in the production account of households in Tables 2.1 and 2.2. The information would also serve as a check on the indirect estimates of outputs and inputs of small scale production, which is very important, because the indirect data on small scale household production units are generally unreliable as they are obtained by grossing up available data on larger units, with adjustment factors that depend on the undercoverage of units in economic censuses and surveys.

2.34. Thus availability of complete household sector information would allow checking the values of all household sector estimates indirectly obtained through other sectoral data. Moreover, household survey data available for each household unit can be better checked for internal consistency if complete household accounts are collected, covering all revenues, expenditures and financial data, in the same way as for other domestic sectors (government and enterprises).

(ii) Adjustments to household survey data

2.35. Even if complete accounting information is available through household surveys, the information cannot usually be incorporated in the national accounts without some adjustments to the basic data. There are four types of adjustments that may have to be applied to the household survey data before they can be fully integrated within the national accounts framework:

2.36. Timing and sampling adjustments. Household survey data generally refer only to a part of the year covered by the national accounts and may refer to different periods for different households. In order to utilize the information in the national accounts, it may be necessary to adjust the estimates based on the household sample so as to make them refer to the accounting year. If the sample represents only one part of the country or certain selected parts and not the whole country, the survey results may have to be adjusted to make them applicable to the whole country.

2.37. Adjustment of household survey concepts to national accounts concepts. This is the most important part of the adjustment process and calls for a clear understanding of the differences between the SNA and survey concepts in order to make the survey estimates usable for national accounts without affecting the internal consistency of the survey information.

2.38. Adjustments for imputations. One of the main goals of the national accounts is to measure household consumption and household saving. Household consumption includes not only the actual purchases carried out by households in monetary terms, but also consumption of goods and services provided free by the government or employers, household production used for own consumption and household goods obtained through barter. Some imputations are usually made in the household survey for these transactions, but not in all cases. Generally included is the primary production of households used for own consumption, but not the consumption of services such as health and education provided by the government free of charge. As some of these services are included in the national accounts concept of household consumption the corresponding value needs to be imputed and added to household consumption. Also not generally included in household survey data are contributions to social security funds which employers make for their employees. As these are included in the coverage of compensation of employees according to the SNA, they need to be imputed and added to the household data on compensation of employees, assuming that they receive them first as part of wages and salaries and then pay them together with their own contributions to the social security funds. There are many other similar differences between the survey concepts and the SNA household sector concepts, which need to be adjusted in using the household survey data.

2.39. Data reconciliation. Data reconciliation is the final step in the adjustment process. This step involves basically what was described above, when comparing household survey data with indirect estimates of SNA household sector aggregates obtained through other sectors. The data reconciliation involves adjustments to either the household survey data or to other estimates in the national accounts, so that in the end adjusted household survey data and indirect household sector information coincide.

2. Distribution of Income, Consumption and Accumulation

2.40 The SNA deals essentially with the aggregates and does not provide information on the distribution of household income, consumption and accumulation. The available statistics in this area generally suffer from several deficiencies; they usually refer to certain population groups; they are collected at irregular intervals; the definitions and classifications used vary from country to country and, even for the same country over time. The United Nations, therefore, issued in 1977 a set of Provisional Guidelines on Statistics of Distribution of Income, Consumption and Accumulation of Households (to be referred to hereafter, for simplicity, as Income Distribution Guidelines)(3). The Income Distribution Guidelines (IDG) recognized that statistics on distribution are needed for two major purposes: (1) assessing the economic welfare of the population and developing welfare-oriented policies, and (2) formulating income and fiscal policies and planning and evaluating economic development. For these purposes data are needed for each major step in the formation and disposition of income, classified according to the socio-economic characteristics of households and individuals. The flows are the same as those of national accounts and balances, but distributed over households and individuals. For practical purposes, it is convenient to modify the definitions of certain flows; the statistics should nonetheless be integrated with national accounting data so that at the national level they agree with national aggregates except for known definitional differences.

2.41 In the Income Distribution Guidelines, two major concepts of income are defined: total household income and available household income. The total household income equals the sum of primary income, property income, current transfers and other benefits received (vide Table 2.4).

Table 2.4

Basic Framework of the Income Distribution Guidelines

1. Primary income (gross of consumption of fixed capital)
 - a) Compensation of employees
 - (i) Wages and salaries
 - a. In cash
 - b. In kind
 - (ii) Employers' contributions to social security and similar schemes.
 - b) Income of members from producers' cooperatives.
 - c) Gross entrepreneurial income of unincorporated enterprises including withdrawals from quasi-corporate enterprises.
2. Property income received.
 - a) Imputed rents of owner-occupied dwellings
 - b) Interest
 - c) Dividends
 - d) Rent
3. Current transfers and other benefits received.
 - a) Social security benefits
 - b) Pensions and life insurance annuity benefits
 - c) Other current transfers
4. Total household income (= 1 + 2 + 3).
5. Direct taxed paid.
6. Social security and pension fund contributions.
 - a) Social security
 - b) Pension fund
7. Total available household income (= 4 - 5 - 6)
8. Final consumption expenditure of households.
 - a) In cash
 - b) In kind
9. Consumer debt interest paid.
10. Other current transfers paid.
11. Gross savings (= 7 - 8 - 9 - 10)

12. Capital transfers received, net.

13. Gross capital formation.

a) Owner-occupied dwellings

b) Others

14. Net lending.

NOTE: 1 to 7 : Income Account 11 to 14: Capital finance account
 7 to 11: Outlay Account 11 + 12 = 13 + 14.

The primary income is made of wages and salaries in cash and kind, employers' contribution to social security and similar schemes, income of members from producers' cooperatives and gross entrepreneurial income of unincorporated enterprises, including withdrawals from quasi-corporate enterprises. Property income consists of imputed rents of owner-occupied dwellings, interest, dividends, rents, royalties, patents, copyrights and the like. Current transfers and other benefits include receipts of social security benefits, pension and life insurance annuity benefits and other current transfers. All these components of income are before deductions of direct taxes and social security and pension fund contributions, which, when deducted from total household income, yield total available household income, which is available to households for final consumption (in cash and kind) and other non-obligatory outlays and for saving.

2.42 The Income Distribution Guidelines define total household income more or less in accordance with the households' own perception of income, which is useful for the operational purposes of household income and expenditure surveys. The simplicity of the terms used enables the survey statistician to readily recognize, accept and translate the terms into operational detail for purposes of survey methodology.

2.43 The Income Distribution Guidelines also discuss the definition of household and the classification of households for purposes of income distribution. As the classification of households is generally linked to the characteristics of the head of the household, they also discuss the definition of the head of household. The classifications suggested are meant for the purposes of (1) delineating the patterns in which the main forms of income, consumption and savings are distributed among the population; (2) identifying factors that account for the observed patterns; (3) portraying the level of welfare of various groups of the population and locating who are disadvantaged, well-off, rich etc.; and (4) identifying some of the characteristics and aspects of experience of the groups of population that account for the differences in their circumstances. The classifications suggested are those based on income, socio-economic status based on the main source of livelihood, employment status, industry, occupation, educational attainment, age and number of earners; and fractile groups

appropriately defined. Although the importance and interest in specific classifications may vary from one country to another, and from time to time for the same country, the classifications are based on characteristics of households and household members, which a survey statistician can easily incorporate into the content of a household income and expenditure survey.

2.44 The Income Distribution Guidelines provide a framework for the presentation of data on household incomes and expenditures from the viewpoint of distribution. It includes, in particular, four sets of tables. The first set deals with the formation and use of income in summary form. The second set calls for detailed information on the distribution and redistribution of income by socio-economic and other relevant groups of population, designed to identify the circumstances that account for differences in the experience of various groups. The third set deals with the use of incomes by various groups, and the fourth aims at the cross-classification of selected aggregates. The tables show the aggregates (or averages) of different variables mentioned in Table 2.4 for various socio-economic and other groups of households together with the numbers of households and household members involved in each group.

2.45 The tables may be presented in absolute figures or percentage distributions, but if the data are based on sample inquiries it may be more appropriate to use measures of central tendency and percentage distributions rather than absolute figures as it is possible to obtain from a survey better estimates of averages than of the corresponding totals. It is also easier to grasp the information in that form. Tables which relate the distributions to the national accounts will, however, have to be in aggregative form.

2.46 The fractile distributions call for ranking of households or individuals according to the size of the selected variable. The advantage of presenting distributions in fractile groups is that it facilitates obtaining summary measures of dispersion or concentration and helps effective graphic presentation of the data.

2.47 The purpose of distributive statistics is to bring out differences in the levels of income, consumption and accumulation of different groups in the population. The distributions should, therefore, be based on annual estimates devoid of seasonal variations.

3. Economic Accounts for Agriculture

2.48 The FAO has recommended preparation of separate economic accounts for agriculture to provide a systematic framework for collection of agricultural statistics as a basis for information on all important aspects of economic activities in agriculture.⁽⁴⁾ These accounts are similar to the corresponding accounts of the System of National Accounts (SNA) viz., the production, consumption and capital formation, income and outlay and capital finance accounts.

2.49 The statistical unit considered for this purpose is an agricultural holding, defined in the Programme for the 1970 World Census of Agriculture as "all the land which is used wholly or partly for agricultural production and is operated as one technical unit by one person alone or with others. -- Establishments and other units not including any agricultural land but producing livestock or livestock products are also to be considered as holdings." Although the prescribed unit is a holding, in practice the production accounts are usually compiled on the basis of commodity statistics as all agricultural statistics are generally gathered on that basis. Data on wages and salaries paid by agricultural holdings and property incomes are generally collected from farm holdings through farm management surveys. The capital finance account would also require data from farm holdings.

2.50 In the case of non-marketed agricultural commodities, household surveys constitute the main source of data on production as well as consumption. Household income and expenditure surveys could well be a source of data on this aspect if data on consumption from own-account production could also be collected. If the surveys include more detailed inquiries on production and related costs as a part of data on the household's entrepreneurial income from its agricultural activities they could provide a suitable basis for the compilation of economic accounts of agriculture.

4. Social Accounting Matrices (SAM)

2.51 The System of National Accounts (SNA) is basically structured in the matrix form, and is divided into a set of standard accounts. The Social Accounting Matrix (SAM) retains the matrix form of presentation (as opposed to an accounting form) and adopts disaggregation of the national aggregates in a manner which is relevant to issues connected with distribution of income such as "who gets what out of the national product". In the SAM approach, therefore, households are not treated as a single sector but are divided into categories which are directly relevant to policies of income distribution. It should be noted that the purpose of disaggregation is not merely to establish the economic relationships but to provide a description that would offer a basis for diagnosis and policy formulation. Classification of households by ranges of income or by income-based fractiles is not, therefore, relevant to the purposes of SAM. (5)

2.52 It is difficult to explain in detail, in a few paragraphs, how SAMs are constructed. The reader may refer to two publications quoted in References which explain the concepts and construction of SAM and describe the work done in building SAMs for Sri Lanka,

Swaziland, Botswana⁽⁶⁾, and Malaysia⁽⁷⁾. A recent ECA document⁽⁸⁾ also gives a simple and lucid exposition of the basic ideas underlying SAM and its uses. We shall broadly describe its essential elements in a simplified form in Table 2.5 omitting the "rest of the world" account.⁽⁹⁾

Table 2.5
A Simplified SAM

	1	2	3	4	5	6	7	8
1. Wants			1,3					
2. Factors							2,7	
3. Households (current)		3,2	3,3	3,4	3,5			
4. Corporations (current)		4,2		4,4	4,5			
5. Government (current)			5,3	5,4				5,8
6. Combined capital			6,3	6,4	6,5			
7. Production	7,1				7,5	7,6		
8. Indirect taxes							8,7	

The columns, which are numbered, have the same description as of the corresponding rows. The figures in the table are identifying labels for the non-zero transactions. Of the transactions, those in row 3 and column 3 are to be filled on the basis of household income and expenditure surveys. They are:

- (3,2) - wages, salaries and unincorporated business incomes,
- (3,3) - inter-household transfers,
- (3,4) - distributed profits received from corporations,
- (3,5) - government transfers to households,
- (1,3) - want acquisitions by households i.e. consumption expenditure,
- (5,3) - direct taxes paid by households,
- (6,3) - household savings.

2.53 In this example, we have treated all households as one single sector. In practice, this sector is divided into a number of classes so that the entries stand for matrices. For example, in the SAM for Malaysia, the household sector was divided into 32 classes based on location (rural/urban), race(4), and employment status(4). Similarly, the factor, labour, was divided into 48 classes based on location (2), race (4) and education (6). Data from household income and expenditure surveys need to be classified accordingly to show the classification of households and transactions between classes as well as their transactions with other accounts.

2.54 The SAM facilitates understanding the current status of the economy and, with the use appropriate econometric methods helps to work out the implications of changes in one or more of the entries (policy variables). Thus, SAM has a direct relevance to analysis of economic policies, and the data from household income and expenditure surveys have a specific place in it. The data requirements of SAM are also quite clear and can mostly be accommodated in household income and expenditure surveys.

C. Conditions, Costs and Levels of Living

1. Family Living Surveys

2.55 From its very inception the International Labour Organisation (ILO) has been concerned with policies, norms, measurements and the study of trends relating to living and working conditions. (10) The Second International Conference of Labour Statisticians (1925) approached the subject of family living studies indirectly in connection with the problems of cost-of-living index numbers. The Third (1926) Conference made a more direct approach to the subject of family living studies and adopted a series of recommendations concerning the periodicity of such studies, the selection of families, the reference period to be adopted, the details to be recorded and the presentation of results.

2.56 After the Second World War, the Seventh Conference (1949) reviewed the progress achieved during the preceding two decades and adopted new international standards for family living studies, An expert group appointed in 1955 to study the problems of undertaking family living studies in less developed countries, submitted a series of recommendations concerning sampling, survey organization and data collection with special attention to living conditions, consumption and savings. The Tenth Conference (1962) reviewed the subject again and adopted a resolution emphasizing the desirability of undertaking comprehensive family expenditure surveys taking into account differences in family size, income levels, geographical and climatic conditions, socio-economic groups and other factors which might have a bearing on expenditure patterns.

2.57 In view of the increasing importance of statistics of household income and expenditure for economic and social planning, another group of experts, was convened in 1967 to study further the existing international standards relating to enquiries into family expenditure. It made fresh recommendations on the objectives and scope of inquiries, the concepts and basic definitions, the methods of collecting data and of analysing and presenting the results. The Twelfth International Conference of Labour Statisticians (1973) considered a report prepared by the ILO, and adopted a resolution which noted that recommendations relating to household income and expenditure surveys should be consistent, so far as possible, with the standards concerning statistics of households incorporated in the System of National Accounts, the Balances of National Economy and the complementary System of Distribution of Income, Consumption and Accumulation adopted by the United Nations Statistical Commission. The resolution, reproduced as Annex I, defines the objectives of the surveys and contains recommendations on their periodicity, scope and organization, basic concepts and definitions, methodology, classifications, tabulations and presentation of results.

2.58 According to that resolution, the objectives and uses of data collection in household income and expenditure surveys should be (a) to estimate the weights for the construction of consumer price indices for comparison of price levels over time or space and for planning price collection for such indices; (b) to supply basic data for social and economic planning and for the determination of related needs and targets; (c) to assess the impact of economic and social measures on living conditions of households, particularly the structure of household consumption and expenditure; (d) to assess the redistributive effects of direct and indirect taxes and social benefits on different types of families; (e) to help measurement of changes over time and of differences between population groups in living conditions; (f) to supplement the data used in household accounts in the System of National Accounts and Balances; (g) to provide data on the distribution of household income and expenditure; and (h) to provide information on particular aspects of living conditions such as food consumption, housing and health.

2.59 It was recommended that a major sample survey of household income and expenditure be taken at least once in ten years and, in case of rapid changes in the economy, at shorter intervals. Smaller surveys may be undertaken between two large-scale surveys to estimate changes in important aggregates. If a continuing survey with a small sample size but covering the full range of investigation is undertaken, an average of survey results over a number of years may be a good substitute for a periodic major survey for certain applications.

2.60 As regards the scope of the survey, the recommendation is that data be collected on the aggregates of household income and expenditure and on the composition of household. In particular, the surveys should collect data on: aggregate and individual incomes, before deductions (taxes, social insurance) in as much detail as possible; direct taxes and fees and other charges not regarded as consumption expenditure; contributions by households to different social security schemes and payments of insurance premiums; details of household expenditure and consumption; information on household membership; and other members of the household. Additionally, so far as possible, data may be collected on housing conditions, inventory of household durable goods and other property, investment outlays, changes in savings and liabilities and other aspects of family living useful for the analysis of income and expenditure data. If there is interest in the nutritional situation of the households, a special diet and nutrition enquiry may be carried out concurrently with the household expenditure survey using possibly a sub-sample of the main survey or an independent but closely related sample.

2.61 The recommendations concerning basic concepts such as the unit of inquiry, income, consumption expenditure and household expenditure will be discussed in detail in Chapter III. Two points, however, need to be mentioned at this stage.

2.62 On the question of basic methodology, the recommendation is that the sample size should be such as to ensure adequate representation of households of different sizes and compositions, income classes and socio-economic groups, as well as of rural and urban sectors and geographic regions within the country. If there is special interest in specific groups such as pensioners, low-income groups, households in depressed areas etc., special supplementary surveys are suggested for such groups, as a general sample may not include an adequate number of such households. The surveys should normally cover a full year to take account of seasonal variations.

2.63 The measurement of consumption expenditure should be made on the basis of the total quantity and value of goods and services consumed or purchased by or delivered to the households. The valuation should be done at local retail market prices. It is, however, recognized that valuation on the basis of producers' prices may be useful for other purposes such as national accounts. It is pointed out that data on quantities consumed are particularly valuable for analysis of food consumption.

2.64 It is recommended that supplementary details concerning characteristics of households, their economic situation and living conditions should be collected at least on a sub-sample basis, taking care, however, that the collection of such data does not affect adversely the collection of data on household income and expenditure.

2.65 On the classifications to be adopted for (both collection and tabulation of) the data, it is stipulated that it should be possible to identify the components of household income as wages and salaries, incomes of members of producers' co-operatives, entrepreneurial income, property income and transfer income. The data on expenditure should distinguish consumption and non-consumption expenditures, and should be broken down in sufficient detail as to permit its grouping according to the SNA classification of household goods and services as well as in other ways to meet different purposes. Specifically, the expenditure should be classified to show expenditure on food, drink and tobacco; clothing and footwear; rent and fuel; furniture, household equipment and operations; medical care and health; transport and communication; recreation, education and other consumption expenditure.

2.66 A Recommendation Concerning Labour Statistics (No. 170) adopted by the International Labour Organisation at its 71st Session (1985) calls for the compilation of statistics of household or family expenditure and, where possible, household (or family) income, at least once every ten years to provide, inter alia, (a) detailed data on expenditure, (b) where possible, detailed data on income, by source, (c) detailed data on household composition by age, sex and other characteristics; and (d) data on expenditure and, where possible, income, classified according to their size and type, expenditure class, and where possible, income class. The Convention Concerning Labour Statistics (No.160) adopted at the same session also refers to household expenditure and income data.

2. Consumer Price Indices

2.67 Among the objectives of the household income and expenditure surveys noted by the Twelfth International Conference of Labour Statisticians, the first and foremost is "to obtain weights and other useful data for planning price collections or construction or revision of consumer price indices, indices of comparative costliness etc.". As observed earlier, traditionally most of the household income and expenditure surveys have been conducted mainly to provide weights for consumer price indices designed to measure changes in consumer prices over time. Indices of comparative costliness meant to study variations in consumer prices over space are, however, comparatively rare. The international standards and data requirements of these indices are discussed below in some detail.

2.68 The Second International Conference of Labour Statisticians (1925) adopted a resolution, the first of its nature, focussed on the measurement of changes in cost of living over time, including, among others, recommendations concerning the scope of such indices,

methods of data collection, the weights to be used and the methods of determining those weights, especially on the basis of family living studies. After the Second World War, the subject of cost-of-living statistics was considered again at the Sixth International Conference of Labour Statisticians (1947) in the light of the methodological advances made during and after the war. The resolution adopted by the Conference, in supersession of the earlier resolution of the Second Conference, referred in particular to the scope and definition of cost-of-living indices and methods of collection of retail prices.

2.69 In accordance with a desire expressed by the Ninth International Conference of Labour Statisticians (1957), certain theoretical and practical aspects of the measurement of consumer prices and computation of index numbers were reconsidered at the Tenth International Conference of Labour Statisticians (1962) and another resolution concerning special problems in the computation of Consumer Price Index Numbers was adopted.

2.70 The Sixth Conference Resolution on Cost-of-Living Statistics and the Tenth Conference Resolution on Consumer Price Index Numbers have, till recently constituted the basis for the ILO standards on this subject. They have, however, been replaced by a new resolution on Consumer Price Indices adopted by the Fourteenth International Conference of Labour Statisticians (1987)⁽¹¹⁾. It deals, in particular, with the nature, uses and scope of consumer price indices, related concepts and definitions, weighting, sampling for price collection, the price data to be used and dissemination of price indices. The latest resolution is reproduced as Annex II as it is relevant to the subject of the present study insofar as it determines the scope, concepts and methods of household expenditure surveys meant primarily for the derivation of weights for consumer price indices.

2.71 According to the Fourteenth International Conference of Labour Statisticians (1987), "The purpose of a consumer price index is to measure changes over time in the general level of prices of goods and services that a reference population use, acquire or purchase for consumption. A consumer price index is estimated as a series of summary measures of the period-to-period proportional change in the prices of a fixed set of consumer goods and services of constant quality and characteristics paid for, acquired or used by the reference population. Each summary measure is constructed as a weighted average of a large number of elementary aggregate indices. Each of the elementary aggregate indices is estimated using a sample of prices for a defined set of goods and services obtained in, or by residents of, a specific region from a given set of outlets or other sources of consumption goods and services". The term "elementary aggregate" indicates the most detailed level for which expenditure or quantity weights are held constant for a certain period of time.

2.72 The relative importance of an elementary aggregate is measured by the proportionate expenditure on that aggregate and is called the weight attached to that aggregate. The index for an elementary aggregate, is expressed as an average of the price relatives or as a relative of average prices for the sample of items priced within that elementary aggregate. The essential role of the household income and expenditure survey in this context is to provide appropriate estimates of expenditure as a basis, first, for the selection of elementary aggregates and, second, for the determination of the appropriate weight for each elementary aggregate.

2.73 The consumer price index (CPI) may be constructed for the whole country, for certain sectors of the country such as urban or rural, or for specified cities, for the entire household population, for certain income groups or for certain socio-economic groups of population such as manual workers and non-manual workers. The estimates of expenditure should in that case refer strictly to the sector, city and group to be covered by the CPI and the household survey should provide estimates of consumer expenditure in respect of each elementary aggregate for that sector, city and group. The survey design should, therefore, take into account these requirements in advance. The survey should cover a whole year so as to take into account seasonal variations in expenditure pattern either through aggregation or through averaging and be so designed as to provide valid estimates of (average) annual expenditure. The survey should preferably be undertaken in a period of stable prices so as to avoid the distortions arising from rapidly changing prices.

2.74 If the survey is meant primarily for the construction of a consumer price index, it is important to define and specify at the outset a preliminary list of goods and services for which consumption expenditure is to be estimated itemwise, and collection of price data is to be initiated. The definition of items involves difficult decisions in some cases such as wages in kind, consumption out of own production, owner-occupied housing, durable goods, gifts and second-hand purchases. The concept of consumption expenditure needs to be clarified and it should be specified whether consumption means use, acquisition or payment. Each of these concepts may serve a different purpose, and may be more suitable in some situations than in others. In practice, one may prefer to adopt different concepts for different items, item groups or sub-groups. Data on expenditure should, therefore, be collected in sufficient detail as to permit eventual adjustment to suit the needs of the consumer price index.

2.75 It is not always easy to decide what constitutes an item. While for the survey statistician it may not cause much of a problem at the stage of data collection, it may at the processing stage, especially if an open list of items is used. For purposes of the CPI, the item has to be priced, and price depends not merely on the description of the item, but also on other specifications such as

variety, unit, packaging etc. If all such specifications are to be distinguished, and each possible combination of these specifications treated as a separate item, the data collection will become extremely difficult and the data processing voluminous. Further, the sampling errors of the estimates of expenditure on items defined in such a manner would be too large and the estimates unusable for determination of weights. Therefore, the survey can only identify broadly defined items, although some information on purchases can perhaps be collected in detail so as to permit identification of the most common "varieties" at the processing stage for purposes of pricing.

2.76 For the collection of price data a representative sample of outlets is to be taken. The design of such a sample can well be determined on the basis of independent market surveys. However, if possible, information on the location and type of outlets (retail shops, department stores, specialized markets) patronized by sample households may be collected in household income and expenditure surveys to help the price statistician in the selection of markets and outlets for price collection.

2.77 In the developing countries, large sections of the population depend on their own production for consumption. If a consumer price index is to be constructed in such a situation, should the weights be based on consumption, including consumption out of own production, or on cash purchases excluding own production? The two are conceptually different and may lead to different results depending on the extent of dependence on own production. An index based on the former would be more useful for purposes of deflating the current estimates of household consumption and measuring changes in levels of living, while the latter would be more relevant to the study of the retail prices of marketed goods. To enable possible use of the survey data for the construction of different indices for different purposes, the data may have to be tabulated in appropriate detail.

2.78 The CPI measures the comparative cost at current prices of the same basket of goods and services as in the base (or reference) period in relation to its cost at base (or reference) prices. This is an inter-temporal comparison. Attempts are sometimes made to extend the concept to inter-spatial comparisons and thus measure the comparative costs of two or more different cities, regions or countries. An international comparison of the purchasing power of local currencies is undertaken under the auspices of the United Nations to enable such comparisons between countries because the official exchange rates do not facilitate realistic comparisons of per capita incomes of different countries. Even within a country, if the prices of goods and services vary substantially from region to region or from city to city, monetary values of per capita consumption may not reflect the real differences in consumption. Attempts are, therefore, sometimes made to construct index numbers of comparative costliness which may be useful for the adjustment of wages and salaries for possible variations in local prices. The

construction of such indices is, however, beset with many problems of conceptual and practical nature which are not discussed here. It would, however, suffice to note that for the construction of such indices, it may be necessary to identify items (with related specifications) of major importance within groups and subgroups and estimate related expenditures, for the cities, regions or countries under comparison, on the basis of the survey data. These requirements are similar to those of CPI.

3. Food Consumption Surveys

2.79 The Food and Agriculture Organization of the United Nations (FAO) issued in 1981 a Programme for Statistics of Food Consumption and Nutrition (12), providing guidelines for compilation of food consumption and nutrition statistics, to meet the needs of food and nutrition planning. It mentions, among others, household budget surveys, household food consumption surveys, individual diet surveys and nutrition status surveys as possible sources of data on food consumption and nutrition.

2.80 According to the FAO, before taking up specialized surveys on food consumption, it is advisable to take up a programme of household budget surveys in which data on expenditure on food can be collected. It is, however, pointed out that, for household income and expenditure surveys to be useful as sources of data on food consumption, quantitative data on food consumption should be collected and tabulated in sufficient detail in addition to data on values of purchase (or acquisition or consumption). Also, details of participation of members and non-members of the household in household meals should be clearly recorded, taking care, however, that the questionnaire is not overloaded to the detriment of response and the accuracy of data. An advantage of using data from household income and expenditure surveys for food consumption studies is that, they provide data not only on household expenditure, but also on related socio-economic characteristics of households which permit a correlated analysis of food consumption and other socio-economic variables. The survey data can also be used for forecasting demand for agricultural products and formulation of socio-economic policies in relation to food and agricultural planning.

2.81 Food consumption surveys as such are more specialized than household income and expenditure surveys and seek to collect information on quantities of food consumed (or acquired for consumption) at the household level of measurement. In their most comprehensive form, they cover all sections of the household population, all regions of the country and all seasons of the year, and record, in addition to expenditure, quantities of each type of food in sufficient detail to enable derivation of nutritional values of food intake. Sufficiently detailed information on age, sex, height, weight and occupation of individual members of the household needs to be collected to enable assessment of nutritional

requirements of the household. In addition, information on incomes and other household characteristics is to be obtained for purposes of classification and analysis of data. The surveys may be entirely self-contained or, integrated with household income and expenditure surveys - totally or partially, on a sub-sample basis.

2.82 Individual dietary surveys are more intensive investigations aimed at collecting for each individual the dietary intake in terms of the amount of each item of food actually consumed during the period of enquiry. They usually involve measuring and/or weighing the foods meant for consumption before they are actually consumed. In the case of composite foods, the relevant recipes together with the weight and/or volume of each component, is generally recorded. Nutrition status surveys, on the other hand, are aimed at an assessment of the nutritional status of individuals and depend primarily on clinical observations and anthropometric measurements such as heights and weights of individuals. These, as well as individual diet surveys are expensive undertakings and hence often confined to vulnerable groups identified on the basis of general food consumption surveys or groups of special concern such as children.

2.83 The FAO Programme indicates the items of information to be covered (see Annex III) and lists the items of food consumption to be included for data collection (Annex IV). Information is required, in particular, on sources of food (purchased, home-produced or otherwise obtained), the moisture content, preparation practices, recipes, food habits, preferences and restrictions, etc. Data are also required on the characteristics of households and household members, number of meals taken by each member during the reference period, at home and outside, the latter classified as casual or regular and free of cost, subsidized or at market prices. For nutritional status studies, height, weight, mid-arm circumference and skin-fold thickness are to be measured for each household member.

2.84 A household income and expenditure survey would obviously be able to provide much of the data required for a study of food consumption, but not all unless specially provided for. There are no conceptual differences of significance. In fact, FAO recommends the use, to the extent possible, of concepts and classifications which are common or compatible with those used in related household surveys, as that would facilitate the linkage of data on food consumption with those on other aspects of the standard of living.

2.85 Basically, the data required for an estimation and analysis of food consumption are the itemized quantities of different foods consumed classified by source as purchased, home produced or otherwise obtained. These data have to be collected in any case to arrive at the consumption expenditure of the household. The only information relevant to the food consumption studies, not generally

collected in a household income and expenditure survey, is on the factors affecting the nutritive value of food such as moisture content, preparation practices, recipes, food habits, preferences and restrictions.

2.86 The data on household characteristics required for the FAO Programme are the household size (number of persons), farm/non-farm status, land possessed, the residential sector, means of livelihood, income or other measure of financial status and social or ethnic group. Information on most of these household characteristics is generally collected in a household income and expenditure survey as they are also relevant for the purposes of economic analysis.

2.87 Among the characteristics of individuals required for food and nutritional analysis, age, sex, relation to head of household, marital status, occupation and educational attainment are also generally included in a household income and expenditure survey. The physiological status of women (pregnant or lactating), may not, however, be generally included in a household income and expenditure survey as it is not quite relevant to the main subjects of inquiry, namely income and expenditure.

2.88 Details of participation in meals taken are also generally collected in household income and expenditure surveys as they are relevant to expenditure analysis. Anthropometric measurements of the members (height, weight, etc.), however, have no justifiable place in a household income and expenditure survey. They are, no doubt, required for a scientific assessment of the nutritional status of household members and have an essential place in more rigorous food consumption, individual diet and nutritional status surveys, but not in a general household income and expenditure survey.

2.89 For the analysis of the food consumption and nutritional status, it is absolutely essential that quantitative data on food consumption are collected in sufficient detail in accordance with the FAO guidelines. It is also necessary to obtain detailed information on processed foods with full specifications: for example, whether fruits and vegetables are fresh, canned, frozen, dry, strained or chopped; and whether cereals are in the form of grain, flour, paste or prepared breakfast cereals. It may not be difficult, if so desired, to incorporate these details in a household income and expenditure survey by providing space for description of detailed specifications of the items consumed.

2.90 The quantitative data on foods collected in a household survey are eventually to be converted into the equivalent quantities of nutrients involved. The nutrients to be considered are (1) energy value (calories), (2) fat, (3) protein, (4) carbohydrate, (5) calcium, (6) iron, (7) thiamine, (8) riboflavin, (9) nicotonic

acid, (10) vitamin A (retinol), and (11) vitamin C. For determining the level of nutrients accurate data on the nutrient content of each food item are required and are generally available in respect of all locally available foods. If not, the regional food consumption tables prepared by FAO may be used.

2.91 FAO recommends the use of the concept of an "eating unit" defined as a group of persons sharing common food supply. In most cases, the eating unit is identical with the household but, if it is not, it would be necessary to collect detailed information on participation in household meals so as to facilitate determination of the eating unit as the unit of analysis.

2.92 The tabulation and analysis of data, according to FAO, would depend on the national requirements and capabilities. However, as a common minimum programme of tabulation facilities inter-country comparisons, the FAO has recommended common standards of presentation of data, and a minimum tabulation plan for the analysis of data. In addition, an expanded plan of tabulation has also been recommended for other possible purposes and uses.

2.93 Among the tables, the distribution of households by energy intake levels should be considered important as it helps the estimation of dietary energy intake distributions required for estimating the prevalence of under-nutrition within a country.

2.94 The data collected in household income and expenditure survey can, if so desired, be tabulated to yield the above tables. The processing involved, however, is voluminous as the quantitative data on foods consumed are to be converted into equivalent nutrient quantities before they are classified. The volume of processing work is directly proportional to the number of nutrients considered for tabulation and analysis.

4. Standards and Levels of Living

2.95 According to the Committee of Experts on International Definition and Measurement of Standards and Levels of Living, appointed by the United Nations in 1954 (13), the term 'level of living' is to be used with reference to actual conditions of life in contrast to standard of living which is to be used in relation to aspirations or ideas as to what they ought to be. The Committee felt that it was not its function to specify standards understood in the latter sense and, therefore, confined its attention to the definition and measurement of what it called levels of living. It concluded that there was no single index for international comparison of levels of living and advised that no monetary indicator such as the per capita national income would serve that purpose and could be recommended. It approached the subject with reference to various components of the level of living, representing internationally accepted values such as health, nutrition and

education in terms of various statistical indicators such as life expectancy, infant mortality etc. Although it considered both material and non-material factors as relevant for the analysis of levels of living, it felt that the latter could not be used for international comparisons. The indicators used for international analysis could be considerably extended and refined for the purpose of national analysis. Recognizing that international analysis in terms of the proposed components and indicators would fall short of giving a complete and balanced picture, the Committee recommended that statistics should be supplemented by descriptive material and background information in the form of social and cultural analysis and made a special reference to censuses and sample surveys as possible sources of data for constructing the indicators.

2.96 The twelve components of level of living recommended by the Committee were - (1) Health, including demographic conditions, (2) Food and nutrition, (3) Education including literacy and skills, (4) Conditions of work, (5) Employment situation, (6) Aggregate consumption and savings, (7) Transportation, (8) Housing including household facilities, (9) Clothing, (10) Recreation and entertainment, (11) Social security, and (12) Human freedom. It recommended quantitative indicators for the first eight components and suggested that the last four be covered by qualitative and descriptive material.

2.97 Taking the Committee's report as its basis, the United Nations, in consultation with the International Labour Organisation, the Food and Agriculture Organization and the World Health Organization, issued in 1961 an Interim Guide on International Definition and Measurement of Levels of Living. (14) The Guide noted that the indicators used at international level were in many cases the same as those used for formulating social programmes and for their evaluation at national level. It emphasized the need for calculation of indicators for socio-economic groups and the possible use of household surveys for that purpose.

2.98 The indicators recommended by the Interim Guide covered the components of (1) Health, (2) Consumption and nutrition, (3) Education, (4) Employment and conditions of work, and (5) Housing. It found that satisfactory indicators could not be identified for the components of social security, clothing, recreation and entertainment, and human freedom. In regard to the components of transportation, consumption and savings, the Guide observed that while the former was a means and might in some cases represent social costs, the indicators in respect of the latter reflected the level and structure of the economy as a whole. Some of the employment indicators recommended by the Committee referred to the structure of employment and were, therefore, not endorsed; the others were combined with those on conditions of work. The Guide suggested certain general indicators not specific to any particular component, and recommended some items of basic information.

2.99 Among the indicators recommended, those on consumption and nutrition are directly related to household income and expenditure surveys and food consumption surveys. Data on household members and housing characteristics are generally collected in household income and expenditure surveys for use as auxiliary information and can be used for deriving some of the recommended indicators. Some of the indicators and information on education and employment can also be derived from household income and expenditure surveys.

2.100 Since then, extensive work has been done at the international level for the development of social statistics in general and social indicators in particular. The concept of social indicators thus developed includes in its purview indicators of levels of living. The latest on the subject is a Handbook on Social Indicators (15) published by the United Nations in 1989. The stated objective of the Handbook is "to provide up-to-date guidance to all those at national, regional and international levels concerned with the selection and compilation of social indicators on levels of living and related social and economic conditions," taking into account the development of statistical methods and data collection programmes relevant to social statistics and indicators since the publication of Social Indicators: Preliminary Guidelines and Illustrative Series (16) in 1978.

2.101 In the field of income, consumption and wealth, which is the main subject of inquiry in household income and expenditure surveys, the Handbook suggests the following illustrative series and classifications:

1. Primary income per household and per capita, by sex and age group, urban and rural, type of household, number of earners, level of education, socio-economic group.
2. Total household income per household and per capita, urban and rural, by type of household, number of earners, socio-economic group.
3. Total available income per household and per capita, urban and rural, by level of education type of household, number of earners, socio-economic group.
4. Final consumption expenditure of households, total and selected categories of goods and services, per household and per capita, urban and rural, by percentile groups of households according to total household income, socio-economic group.
5. Total consumption of the population per household and per capita, total and selected categories of goods and services, urban and rural, by percentile groups of household according to total household income.

6. Percentage of households owning selected assets, urban and rural, by percentile groups of households according to total household income, socio-economic group.
7. Percentage of consumption produced on own account, urban and rural, by socio-economic group.
8. Current transfers and other benefits, urban and rural, by percentile groups of households according to total household income - payments/receipts/net - per household, per capita.
9. Ratio of available household income to total household income, urban and rural, by percentile groups according to total household income.
10. Ratio of household final consumption expenditure to total consumption of the population per household and per capita.

It also includes Lorenz curves based on total household income as well as total available income and/or final consumption expenditure of households, separately for urban and rural areas. The above series is based essentially on the Income Distribution Guidelines.

2.102 The World Bank has been engaged in recent years in a research programme entitled the Living Standards Measurement Study (LSMS). It was established in 1980 "to explore ways of improving the type and quality of household data collected by Third World statistical offices. Its goal is to foster increased use of household data as a basis for policy decision-making. Specifically, the LSMS is aimed at developing new methods to monitor progress in raising levels of living, to identify the consequences for households of past and proposed government policies and to improve communications between survey statisticians, analysts and policy-makers".⁽¹⁷⁾ The LSMS programme has so far been undertaken in Côte d'Ivoire, Peru, Ghana and Mauritania. The subject coverage of the LSMS in Côte d'Ivoire is shown in Annex V.⁽¹⁸⁾

2.103 LSMS differs from the usual survey programmes of national statistical offices in so far as household income and expenditure, which constitute the core of the subject matter, are covered along with other related subjects in a broad framework and data on several components of level of living are simultaneously collected for the same sample of households. The components of level of living covered are: housing, education, health, economic activities, migration, fertility and nutrition status. Data are also collected on access of the community to economic infrastructure and basic social services. This approach obviously permits study of inter-relationships among several variables some of which have a direct policy relevance. LSMS is thus distinguished from other multi-subject surveys, in which more than one subject is studied but not necessarily on the same sampling units in so far as it takes the same unit of observation, namely the household, for all subjects of study, and studies it from different policy-oriented angles, both as a unit of production as well as of consumption. A multi-variate study of the household rather than a multi-subject study of the population is the distinguishing mark of the LSMS programme.

2.104 LSMS lays greater stress on measurement of changes taking place over time, as its primary objective is "to know which groups in society are benefiting from development efforts and by how much".⁽¹⁹⁾ The changes of interest are those which are amenable to policy influences. The changes in the levels of living of individual groups (which are perhaps the policy targets) over time and the variations between the groups at a point of time are, therefore, the concern of LSMS. In the choice of variables to be studied LSMS attaches importance to those affected by (or potentially affecting) the national policies.

2.105 The list of topics which has engaged the attention of LSMS for analytical study includes: poverty and inequality; employment and earnings; income distribution; national accounts; demand analysis; economic influences on demography; and access to public services.⁽²⁰⁾ For the last-named study, in addition to data at the level of household, data on social and economic infrastructure available to the communities of households are also collected.

2.106 LSMS takes into account the entire operational sequence of a household survey, from design to data-use, adopting what can be described as a holistic view of the survey technology. It attempts to cover both the methodology of survey organization and policy-oriented data analysis. Although chronologically the latter succeeds the former, LSMS endeavours to make the latter the raison d'être of the former and seeks to demonstrate that the survey can be made directly relevant to the identified data needs of policy formulation. The surveys are, however, usually undertaken on small samples and the feasibility of the intended analysis is, therefore, sometimes questioned.

D. Other Potential Uses

1. Poverty Studies

2.107 The potential for studies of inter-relationship between the variables usually covered in a household income and expenditure survey has already been mentioned. One of the more important study areas of relevance to developing countries is the phenomenon of poverty. A brief description of two such studies is given below to illustrate, without any implied endorsement of the techniques used or of the conclusions drawn, how data from household income and expenditure surveys are, and can be, used for such studies.

a. Incidence of Poverty

2.108 In one of the studies⁽²¹⁾, the poverty line has been defined as the level of income at which a household, prudently managing its budget, cannot even meet its nutritional requirements. Households whose income falls below the poverty line, so determined, are

considered poor, and their number, or the population accounted by them, expressed as a percentage of the total number of households or of the total household population as appropriate, is taken as an estimate of the incidence of poverty. The nutrient considered for this analysis is the energy value of the food consumed.

2.109 The exercise involves, to start with, conversion of the household food consumption data into its energy equivalent. Households are classified according to their per capita income or, if data on income are not available, according to the per capita consumption expenditure. For every income or expenditure class of households, the number of households, the household population, the total household and average income, the average expenditure on different item groups of consumption, and the average per capita energy value (kilo calories) of food consumed are tabulated. The average per capita energy value of food consumed would normally increase with rising income. The mid-point of the income class for which the average per capita energy value first exceeds the per capita requirements of energy is taken as the poverty line, and half the population of that income class plus the total population of all income classes below that class is taken as an estimate of the poverty group. This procedure can be refined by statistical techniques, for example by fitting a line of regression of average per capita energy value on per capita income (class average), and estimating the latter for specified per capita energy value requirement.

2.110 An alternative method based on classification of households (and population) according to per capita energy value of food consumed could provide a direct estimate of the under-nourished population, below the specified per capita energy value requirement. It does not, however, provide an estimate of the poor for the following reasons:

(1) The per capita calories intake may not be a precise indicator of poverty, because even a better-off household, if for certain reasons, actually consumes less calories than required, would be classified as undernourished. Conversely a poor household may spend its entire budget on food and manage not to be classified as under-nourished by that criterion. The distribution of households according to per capita calorie intake may, therefore, provide an estimate of the under-nourished but not of the poor.

(2) The definition of poverty implicit in the analysis is that, with given resources, if a household manages prudently, and still finds that it cannot afford the necessary calorie intake, it is to be considered as a poor. Therefore, in addition to food, other items of consumption of a household are also to be taken into account. It is difficult, in practice, to ascertain whether the household is managing its

resource prudently; the group behaviour, which can be observed, is, therefore, treated as an indication of the pattern resulting from prudent management, the assumption being that a whole group would not be imprudent. Households are, therefore, classified not by their per capita calorie intake but by their per capita income or consumer expenditure. The behaviour of the households falling in each income class is observed and it is assumed that the consumption pattern of each group reflects the result of a prudent management of the average income of that group. If, even with such a management, the average calorie intake of that group is found to be lower than the minimum required, then the entire group is classified as poor, that is, households which as a group are not able to satisfy their minimum standards of food intake. The border-line group, namely that for which the average calorie intake just exceeds the minimum requirement, is divided into two halves, and the lower half is classified as poor. The distinction between the distribution of households according to per capita income and the distribution of households according to the per capita calorie intake is crucial as the purpose of the study is to estimate the incidence of poverty, an economic phenomenon, and not under-nourishment, a nutritional status.

The minimum requirement of energy intake to be taken as a standard for the study of poverty has been a subject of considerable debate, but whatever be the basis on which the minimum requirement is determined, ultimately the incidence of poverty has to be based on the income distribution of households.

b. Poverty and other Household Characteristics

2.111 The information generated by a household income and expenditure survey could shed much light on the levels of living of different population groups and explain the differentials. What determines poverty and what, in turn, is determined by poverty are matters of great concern to policy-makers and an in-depth tabulation and analysis of the data from the household income and expenditure survey can provide glimpses of, if not a deeper insight into, the phenomenon of poverty.

2.112 A study on poverty and living standards in Asia that was carried out along these lines⁽²²⁾ is described below to illustrate the way in which the data from household income and expenditure surveys can be cross-classified for understanding various issues connected with poverty. The issues sought to be examined were:

- 1) The extent to which the target groups identified according to the criterion of per capita income or expenditure would be different from those identified

according to the criterion of aggregate household income or expenditure. The exercise was carried out by classifying the same household on the basis of the two criteria and finding out the number of households which belong to the same fractile (decile or quintile). This would have an operational significance for identifying households for purposes of programmes directed towards amelioration of poverty.

- 2) The extent to which the living standards of households or the level of per capita expenditure observed could be associated with the different stages of the life cycle of the head of the household. The analysis was aimed at finding out whether there was any association between the level of income and the age of the head of the household.
- 3) A number of other studies have been carried out in a similar manner by investigating the association of relevant characteristics with the income status of the household. These are:
 - Proportion of unemployable persons, that is the very young and the old, among the poor which would determine the extent to which poverty can be ameliorated only through policy of transfers or social assistance rather than through the creation of more employment or measures to raise the productivity of jobs.
 - The extent to which women are over-represented among the poor.
 - The extent to which children in poor families are able to avail of schooling facilities.
 - Differences in the proportion of persons of working ages actually participating in economic activity.
 - Differences in the educational attainments and skills of persons in the working age group.
 - The extent of association between open unemployment and poverty or living standards and the extent to which incomes of the poor can be augmented through the creation of work opportunities in the public works programmes.
 - The extent to which the inequality in living standards is explained by the difference in the quality or characteristics of employment as reflected in the occupation, industry and status of workers.

- Housing conditions of different income or expenditure groups.
- Consumption pattern of different income or expenditure groups.
- The extent to which the ownership of assets (e.g. land holdings) rather than different earnings contributes to inequality.

2.113 The range of issues addressed to the survey data would be found to support the observation made earlier that the concept of use of survey data should not be considered as pre-determined. There is considerable scope for an intelligent use of the data for problem-oriented analysis. It is not suggested that an analysis of survey data by such cross-classifications could always identify causes and effects, or that, if causes are identified by subject specialists, they could lead to practical solutions. Also, the nature of sampling methods adopted in the surveys often places limitations on the type of conclusions that can be drawn. All the same, with due care and caution, a survey statistician can tabulate data to meet the demands of problem-oriented analysis, if not to draw firm conclusions, at least to suggest plausible hypotheses to be tested further.

2. Policy Uses in General

2.114 Households in developing countries, especially in the rural areas, are not only consumers, but also producers of goods and services. With appropriate economic models constructed to reflect this situation, attempts have been made to address several policy questions with the help of income and expenditure data of farm households. Among the policy questions studied are: output price policies, nutrition policy, income distribution policy, rural-urban migration, family planning, and technical efficiency and innovation. Data from household income and expenditure surveys can also be used for system-wide planning by developing general equilibrium models which are useful for policies relating to income distribution and basic needs, and for the design of development strategies and structural adjustment strategies relating to production, imports and exports. The reader may refer to the ECA document ⁽²³⁾ on the Policy Uses of Household Budget Surveys for further detail. Some of the more common policy uses to which the data can be put are indicated in what follows.

a. Demand Analysis

2.115 One of the common uses of the household income and expenditure data is the computation of income elasticities for

different items of consumption. If the data are classified according to income groups of households, or in the absence of income data by groups of household expenditure, the tabulation will yield estimates of average consumption (quantity or expenditure) of each item of consumption for each income group, along with the average income or expenditure for that group. Treating the average income or expenditure as an independent variable and the average consumption of the item under consideration as a dependent variable, it is possible to estimate by regression analysis the percentage change in the latter for a rise of one per cent in the former, that is, the income or expenditure elasticity of demand for the given item of consumption. The exercises are useful for predicting the changes in the demand for products of final consumption reflected in the household expenditure corresponding to changes in household incomes or expenditures expected to take place in future, and are essential for the preparation of development plans. The FAO has estimated the income elasticities of demand for agricultural products on the basis of household consumption and budget surveys for several countries. (24)

b. Tax Incidence

2.116 A considerable part of government revenue is collected from indirect or commodity taxes which are levied at the stage of production and/or at the stage of their sales. If in a household income and expenditure survey, it is possible to gather information and make corresponding estimates of the total value of household purchases of such taxable commodities, it should be possible to estimate the incidence of commodity taxation on different groups of households. A point is, however, to be noted: that it is not merely households which pay commodity taxes; even productive establishments do. The household income and expenditure survey would only provide the relative incidence of the commodity taxes on different groups of households, which is nonetheless useful to the government for the assessment of the effect of these commodity taxes especially on the poor and the disadvantaged groups of population.

c. Savings Potential

2.117 Data on annual income and consumption, if accurate, provide an indication of the savings potential of each household. If additional data are collected on actual savings on the one hand and withdrawal from past savings on the other, it would be possible to estimate the net savings of the households during the accounting period. Since saving is one of the important variables in any economic model for national development, and household savings form a substantial part to the national savings, the pattern of savings among different income groups and socio-economic groups of the population would be of considerable interest to the planners and policy-makers. Further, the form in which households save money (productive or non-productive) is of importance from the point of view of mobilizing resources for development planning.

E. Conclusion

2.118 When a household income and expenditure survey is carried out to meet a specific objective, such as estimation of weights for a CPI, the use of survey data is clearly predetermined. But when such surveys are carried out for general purposes, with objectives often described in general terms such as compilation of national accounts, measurement of levels of living, and use in planning and policy-making, there is some vagueness concerning the nature of their use. With the publication of a set of tables based on the survey data, the purposes of the survey are generally supposed to have been served. It is especially so if the tables have been prepared according to a tabulation plan drawn up in consultation with the main users of data. The purpose of outlining the potential uses of survey data in this Chapter were two-fold. The first was to indicate the types of standard uses, such as the estimation of components of national accounts, compilation of statistics on income distribution and the nutritional assessment of food consumption as recommended by international agencies so as to enable the survey statistician to take them into account in drawing up the tabulation plan. The second purpose was to show that the potential use of the survey data goes far beyond the confines of the preconceived tabulation plan however well-conceived it may be. Given a question of policy or a specific call for information, the survey statistician should be able to answer the question or provide the necessary information. It is difficult to foresee and enumerate all such uses; only examples can be given to demonstrate the potential. The examples given above and the references indicated would help the survey statistician appreciate the point. It may not always be possible, because of the technical constraints of the survey, to produce all that is needed. The important point is that the survey statistician should keep in view, while planning the survey, the possible demands for data not initially conceived, and plan ahead for meeting such demands.

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CHAPTER III

SCOPE, CONCEPTS AND DEFINITIONS

A. Scope and Coverage

3.1 From the preceding chapter it would be seen that the objectives and uses of household income and expenditure surveys are many and the related data requirements of the possible uses very extensive. The scope of the data to be collected in a survey would depend upon the major objective set for the survey and other possible uses envisaged. Some of the major objectives usually mentioned for such surveys are: derivation of weights for consumer price indices, assessment of the income distribution, inequalities and extent of poverty, estimation of savings, incidence of taxation and elasticity of demand for goods and services, and the nutritional analysis of food consumption. Often, however, one of them may be selected as the primary objective and the others as secondary or of lower priority, indicating the possible uses rather than the essential requirements. In such cases, the scope of the survey is to be determined basically in terms of the requirements of the primary objective, subject to marginal extensions to meet the secondary objectives, given the necessary resources. Sometimes, however, the major objectives are mentioned in wider, more general and all-encompassing terms such as collection of data for national accounts, socio-economic planning or formulation of socio-economic policies and/or programmes for the improvement of the conditions and/or levels of living. In such cases, the requirements of the various objectives have to be balanced in determining the scope and design of the survey proposed. In discussing the scope of household income and expenditure surveys, it may, therefore, be appropriate to start with surveys aimed at meeting the most common objectives and extend the scope of the discussion to other related topics which may have to be covered to meet the more general objectives or secondary objectives of lower priority.

3.2 The core of the household income and expenditure survey would obviously consist of data on household incomes and expenditures. The three crucial terms involved in this description of scope are "household", "income" and "expenditure". The conceptual connotation of these terms and the definitions to be adopted will be discussed later in this chapter. It would perhaps suffice to note, at this stage, that the core of the survey would include, to start with, some data on the household, its size, structure and composition, and the activity particulars of its members as background material for the collection and analysis of data relating to their incomes and expenditures. Household income would normally include the

individual incomes of all household members as well as the joint or composite incomes of the household, both in cash and in kind. They would include, in particular, incomes from paid employment, incomes from self-employment (i.e., entrepreneurial incomes), incomes from property and incomes from other sources (i.e., current transfers and benefits). Household expenditures would likewise include the personal expenditures of all individual members as well as the common expenditures of the household for consumption as well as other purposes. Consumption would include not only consumption of purchased goods and services but also the consumption of own production, own business stocks or own housing.

1. Household Income

3.3 The concept of "total household income" adopted in the Income Distribution Guidelines was indicated earlier in Chapter II (vide Table 2.4). It differs slightly from the concept of income adopted in SNA from the viewpoint of economic accounts at the macro level. In fact SNA does not use the concept of household income but refers to revenues or receipts of the household sector in the accounting period.

3.4 An operational definition of household income devised from the view point of household surveys is, however, available from the ILO recommendations based on the Twelfth International Conference of Labour Statisticians. According to the recommendations, for purposes of a household income and expenditure survey, "household income is the sum of money income and income in kind and consists of receipts which, as a rule, are of a recurring nature and accrue to the household or its members regularly at annual or more frequent intervals". It has been clarified, however, that the notions of recurrence and regularity are meant essentially to help define the concept of income in terms of its characteristic features, especially from the viewpoint of the household, and are not to be treated as essential criteria.

3.5 The ILO recommends, further, that additional data on receipts other than income e.g., from sale of possessions, withdrawals from savings, lottery prizes, loans obtained, loan repayments received, windfall gains, lump-sum inheritance, maturity payment on life insurance policies, lump sum compensation for injuries, legal damages received, etc. be collected for the use of SNA and other purposes. The ILO recommendations thus spell out in detail the scope of income data to be collected in a household income and expenditure survey, for various purposes including SNA and statistics of income distribution.

2. Household Expenditure

3.6 Neither the Income Distribution Guidelines nor SNA provide a definition of household expenditure. Both of them, however, define "final consumption expenditure". Other disbursements, such as taxes, social security and pension fund contributions and life insurance premium are treated as transfers. The ILO, however, provides an operational definition of household expenditure from the viewpoint of household surveys.

3.7 According to the Twelfth International Conference of Labour Statisticians, "household consumption expenditure refers to all money expenditure by the household and individual members on goods intended for consumption and expenditure on services plus the value of goods and services received as income in kind and consumed by the household or individual members of the households". Thus the value of goods and services produced by the household and utilized for its own consumption, the net rental value of owner-occupied housing and the gross rental value of free housing occupied by the household, are covered within the scope of household consumption expenditure. It also includes sales taxes on goods and services supplied to the household and payments in connection with the use or consumption of goods and services such as for education, health and legal services. For certain purposes, driving permit fees, motor car registration fees and similar charges are also included within the scope of household consumption expenditure. It excludes from its connotation, direct taxes, superannuation and other social security contributions, savings, bank deposits, contributions to saving clubs or building societies, life insurance premiums, cash transfers to and disbursements on behalf of persons outside the household, and repayment of loans. Disbursements in the nature of investment, gambling losses, cash grants and donations (except small recurring contributions to churches and charitable institutions) are also excluded.

3.8 The ILO's concept of household expenditure is, however, wider than that of household consumption expenditure and includes, as non-consumption expenditure, income taxes and other direct taxes, pension and other social security contributions, assimilated insurance premiums, remittances, gifts and similar transfers made by the household or its members. Additions to savings, amounts invested or loaned, repayments of loans, and outlays for other financial transactions are, however, excluded. Nonetheless, the ILO recommends that the scope of the survey be enlarged to cover these items if the objective is to use the data for the estimation of national accounts or for other special purposes.

3.9 The ILO thus distinguishes between consumption expenditure and non-consumption expenditure. The Income Distribution Guidelines cover some elements of non-consumption expenditure, namely direct taxes, pension and other social security contributions, as deductions from the total household income to arrive at the "total available income." Some other elements of consumption expenditure, such as driving permit fees, are treated by the Income Distribution Guidelines as well as by SNA as transfers but not as consumption expenditure.

3. Savings, Borrowings and Indebtedness; Assets and Liabilities

3.10 Closely related to household incomes and expenditures are savings, borrowings, assets and liabilities, which square up the picture of household economics and determine the economic status of the household. Collection of data on assets and liabilities, however, is an extremely difficult proposition and generally impossible to attempt in a household survey. Data on savings and borrowings are comparatively easy to handle and provide some information on the current flows towards the process of accumulation. If collected, along with the data on incomes and expenditures, they help to balance the household budgets, if nothing else.

3.11 In regard to savings, the Income Distribution Guidelines observe: "Data on the way in which various groups of the population divide up their available incomes into current outlays and savings also contribute to the analysis of inflation and the adequacy of demand and are important in planning and promoting economic growth". Household savings constitute a substantial component of national savings in developing countries. The forms in which households save and invest, whether in purchase of precious metals and jewellery, accumulation of bank deposits or in forms indirectly connected with productive investment (such as shares and stocks) are important from the point of view of mobilizing resources for productive purposes. It will, therefore, be useful to collect some information on savings as well as its contra-entity borrowings, along with data on household incomes and expenditures.

3.12 While it is no doubt impossible to collect comprehensive data on assets and liabilities of households, it has often been possible to collect fairly reliable data on the state of indebtedness, especially in respect of the poorer sections of the population, through household surveys. The data may include debts incurred for purposes of consumption as well as debts incurred for productive or business purposes. In fact, in most cases, it may be difficult to distinguish between the two types of debt. An inquiry into the state of indebtedness would, however, help checking the veracity of reported borrowings.

4. Housing and Household Possessions

3.13 Among the important assets usually held by households are agricultural land and residential buildings. Some data on land owned and/or possessed may be relevant to the inquiries on household income, especially agricultural income. Some data on the residential buildings owned and/or occupied may also be relevant to the collection of data on rental incomes. But data on such assets are not always collected because of the sensitive nature of the information.

3.14 Data on the housing conditions of households are, however, often collected in household income and expenditure surveys as supplementary information on the conditions and levels of living. They are collected not only for owner-occupied houses but also for rented houses. Although, in the latter case, the rent paid can be taken as the value of the housing accommodation occupied by the household, that by itself may not throw adequate light on the quality of housing enjoyed which depends on the type of construction, materials used for construction, number of rooms available for living purposes, cooking, bathing and toilet facilities, electricity and water supply, etc. in relation to the size and composition of the household. The indicators of housing based on such information would supplement the data on house rent in providing a fuller picture of the level of living of the household in this respect.

3.15 Data on household possessions, especially of a durable character, are also often collected in household income and expenditure surveys. While the expenditure on durable goods does influence the household's level of living, it may be argued that the current purchases of durable goods does not fully reflect the nature and variety of consumer durables currently enjoyed by a household. Given the limitations of sample size (both in terms of number of households and the length of reference period used), a better indicator relating to the level of living of households can be obtained on the basis of the possession of durable goods than on the purchases of durable goods. If the use of durable goods is an indicator of level of living, one needs to take into account the full range, variety and quality of durable goods in the possession and use of the household. Many countries have, therefore, extended the scope of their household income and expenditure surveys to include data on possession of durable goods such as automobiles, refrigerators, washing machines, sewing machines, knitting machines, air-conditioners and audio-visual equipment. However, combining the data on possession of different durable goods into a single indicator for the classification of households according to the level of living indicated by such possession poses technical problems. The tabulation plan usually adopted in such cases provides for the proportion of households possessing each category of durable goods for different classes of households.

5. Household Economic Activities

3.16 In most developing countries, especially in the rural areas, many households, and members of households, are engaged in self-employment (as employers, own account workers, or members of producer co-operatives) in economic activities of the primary, secondary and tertiary sectors, sometimes referred to as unincorporated enterprises. In a household income and expenditure survey, data on incomes from self-employment have necessarily to be collected in detail in respect of all such activities. Unlike incomes from paid employment, incomes from self-employment can only be derived from detailed data on outputs, inputs and related transactions over an appropriate reference period.

3.17 Household economic activities, as they may be called, to be distinguished from the economic activities of corporations, quasi-corporate enterprises, government and other institutions, contribute substantially to the domestic product of developing countries and account for a large proportion of their employment. Although some data on the number of persons engaged in such activities would be available from population censuses or labour force surveys, statistics concerning the incomes generated in such activities, are not generally available unless collected through sample surveys or estimated indirectly. As the data are required not only for the estimation of national income but also for policy formulation in regard to the exploitation of traditional skills and promotion of self-employment, an enlargement of the scope of household income and expenditure surveys to generate not only summary data on incomes from self-employment but also some more detailed data on inputs and outputs would appear prima facie to be a proposition worthy of careful examination.

3.18 If statistics on household economic activities are to be collected through household surveys, the household sector needs to be defined in an unambiguous manner to be distinguished from the corporate, quasi-corporate, government and institutional sectors. It should be recognized further that, as the household sector includes conceptually small-scale establishments owned and/or operated by households, they have to be covered in a household income and expenditure survey for purposes of data on income derived from such activities. However, for purposes of collecting statistics on the economic and operational aspects of these establishments, the household survey mechanism may not perhaps be the best, and one may have to adopt the establishment survey approach to cover such establishments. For purposes of data-collection, it may be more appropriate to sub-divide the household sector as follows: (1)

- i) Establishment sub-sector to comprise all economic activities carried out by unincorporated household enterprises with the regular assistance of one or more paid employees.
- ii) Own-account sub-sector to comprise all economic activities carried out by households or household members on an own-account basis with the possible assistance of unpaid family labour, but without the regular assistance of paid employees.

3.19 For a proper study of household economic activities, information may have to be collected in detail on the participation of and time spent by household members in various economic activities, the cost of hired labour employed, if any, material inputs and operational costs, outputs, sales and household consumption, fixed assets in use, fixed capital formation and loans taken for business purposes. Household economic activities may be classified by nature of activity broadly as agriculture (seasonal and perennial), livestock and poultry farming, fishing and fish-breeding, forestry and hunting, mining and quarrying, manufacture, construction, trade, transportation, guest houses and restaurants, and services.

3.20 Household income and expenditure surveys do not usually go into that much of detail in regard to household economic activities. For purposes of income derived from such activities, questions are usually asked in a summary form, although it is generally recognized that it would be difficult to get reliable data through such summary questions. Extension of the scope of inquiry to cover further details of household economic activities is bound to improve the quality of data on incomes from self-employment derived from household income and expenditure surveys. Whether it would serve the purpose of generating reliable data on household economic activities per se for policy formulation and activity promotion will, however, depend upon the design of the survey.

3.21 If the survey is so designed as to provide valid estimates of annual values of income and expenditure, it would also provide valid estimates of aggregates for items such as output, inputs and the like for household economic activities taken as a whole. That should meet the purpose of national accounts. But, for the formulation of policies and promotion of activities with specific reference to each type of activity, the design should ensure that valid estimates of tolerable precision are available for each major activity. This requirement may not be easy to fulfil because household economic activities of different types are usually concentrated in specific areas depending on local demand, availability of raw material or concentration of traditional skills. Sample designs usually adopted for household income and expenditure surveys do not generally provide for adequate representation of household economic activities of different types and may not, therefore, be good enough for purposes of a survey of household economic activities. If, on the other hand, the sampling design provides for adequate representation of each major activity, with activity-specific sampling intensity, the resulting sample may not be the best for the household income and expenditure survey.

3.22 Moreover, some of the household economic activities, including agriculture and agriculture-based industries are of a seasonal character. Agricultural households are generally engaged in non-agricultural activities in the agricultural off-season. The economic variables to be studied for household economic activities

may, therefore, be subject to seasonal variation. To be useful for policy purposes, the survey of household economic activities has to be so designed as to reflect these characteristics adequately and provide meaningful data. It would thus appear that extension of the scope of household income and expenditure surveys to collect data on household economic activities required for policy formulation and activity promotion may not be an easy proposition.

6. Determination of Scope

3.23 In determining the scope of a household income and expenditure survey, in terms of additional topics to be included, one has to consider the potential uses of the data for socio-economic planning and policy formulation on the one hand and the problems involved in the data collection on the other. Questions on assets and liabilities may generally appear as unwarranted probes into the financial status of the household, which is often a sensitive matter for statistical inquiries. They also involve complex conceptual and methodological problems. As the information has necessarily to be collected from all sample households, it is bound to increase the burden of field work immensely, if reliable data are to be obtained. Moreover, the sensitive nature of questions may generate reluctance and attract outright refusal to participate not only in this part of the inquiry but in the whole of it, exposing the entire survey to the risk of failure due to non-response alone. Survey organisations may, therefore, have to carefully weigh the utility of information on these questions against the possible risks before they opt for their inclusion.

3.24 Data on savings and borrowings may be useful not only for policy purposes but also for operational purposes. Biases in reporting data on income and expenditure are well-known. Attempts are, therefore, generally made in the field to compare the incomes and expenditures of the sample household and balance the two. Data on savings and borrowings would be useful in balancing incomes and expenditures at the stage of data collection and should, therefore, preferably be collected.

3.25 Housing is a major subject by itself. If included in a household income and expenditure survey, it would definitely enhance the utility of the survey and supplement the quantitative data on consumption by a qualitative picture of the conditions of living. It would also help imputation of the rental value of owner-occupied housing and provide a basis for subsequent rental surveys. It may therefore be included, if possible.

3.26 Information on the possession of durable goods has a great potential for developing analytical techniques based on alternative data sets for assessing differentials in the levels of living of various population groups.⁽²⁾ As the information is easy to collect, does not consume much time and is not generally resisted by households, on the balance, it would appear useful to include these items within the scope of a household income and expenditure

survey. The ILO has, in fact, recommended that data on inventory of selected household durable goods and other property should also be collected as far as possible. (See Annexure I).

3.27 Household economic activities are necessarily to be covered in a household income and expenditure survey for the derivation of income from such activities. For that purpose, it is important to collect the requisite information on inputs and outputs in adequate detail. A further extension of scope to cover more detailed information on the economic and operational aspects of these activities is, however, beset with difficult problems of design and data collection. It would, therefore, be ideal to undertake independent surveys of household economic activities for policy formulation and activity promotion purposes. If, however, that is not envisaged and some information on such activities is required for policy purposes, the inquiry may be integrated with a household income and expenditure survey by marginally extending its scope and appropriately modifying its design.

7. Geographic Coverage

3.28 In determining the geographic coverage of a household income and expenditure survey, it is again essential to look into the objectives, purposes and potential uses of the survey. If the objectives are general and include such purposes as estimation of national accounts and use in socio-economic planning and policy-formulation, it is obvious that the coverage of the survey has to be national. However, practical considerations may sometimes necessitate limiting the geographical coverage by excluding very thinly populated rural or tribal areas where distances between households are great, location of households difficult and data collection prohibitively expensive. On considerations of optimization of the use of resources, some areas may thus be excluded from the survey coverage. To that extent, usability of the survey results would be limited. The validity of the survey results can be corrected to some extent by taking a small sample from such areas at least to indicate what is missed, both quantitatively and qualitatively.

3.29 If the objectives are less general and more specific such as construction of a consumer price index for urban areas, study of poverty in rural areas or the assessment of the nutritional status of people in drought-stricken areas, the coverage of the survey would accordingly be limited to those areas. In some countries, as consumer price indices are constructed in respect of specific cities, the household surveys aimed at providing weighting pattern for those indices are accordingly restricted to those cities. In all such cases, it should be remembered that the resulting data cannot be used for wider purposes. On the other hand, in a survey covering the whole of the urban sector, it should be possible to provide adequate representation for cities specifically designated

for the construction of consumer price indices and thus meet the specific needs of the urban sector as a whole. Similarly, in a survey covering both urban and rural areas, it should be possible to provide adequate representation separately for the urban and rural sectors, for specified cities within the urban sector and for specified areas such as plantation areas or tribal areas within the rural sector, and thus meet the specific as well as general requirements. It should also be possible to provide for adequate representation for major regions within the country.

8. Population Coverage

3.30 Household surveys are, by definition, confined to households. Institutional populations living in hospitals, correctional or penal institutions, military barracks, religious and similar institutions are not usually covered. Correctional and penal institutions and military barracks, as government institutions, where the consumption expenditure of the inmates is financed by the government, should, of course, be excluded from household surveys. Persons living in hotels, hostels, boarding and lodging houses and similar institutions should, however, be covered in household income and expenditure surveys, if they are to be used for estimating aggregate private consumption expenditure. In some countries (e.g. India, Indonesia) persons living in hotels, hostels and the like are treated individually as single member households.

3.31 Sometimes the coverage of household income and expenditure surveys is restricted to special groups of the population, depending on the purpose of the survey which may be concerned with specific groups. For instance, if the purpose of the survey is to provide weights for consumer price indices designed to cater to the needs of special population groups such as agricultural labour, industrial labour, commercial employees or government employees, the coverage of the survey may well be restricted to those groups. Similarly, if the purpose of the survey is to study the impact of certain policy measures on farmers, the survey may be confined to farm households. And if the purpose is to study the conditions and levels of living of refugees, it may be confined to refugee households.

3.32 Estimates for specific groups can well be provided from the results of a national survey, provided that they are adequately represented in the sample. If necessary, the sample size of the national survey can be augmented for the specific groups to obtain more reliable estimates. It may involve reshaping the sample design and some additional costs, but the latter may be marginal. If no national survey is envisaged, a special survey confined to the specific groups can be contemplated. However, if the groups under consideration are, either individually or in combination, large enough to include the bulk of the population, it may be advantageous to think of a national survey with an appropriate sampling design, that would provide reliable estimates for the specified groups as well as for the population as a whole.

9. To Sum Up

3.33 In view of the many uses of household income and expenditure surveys there may be an advantage in widening the scope of the survey to cover some of the closely related topics. However, survey organisations would have to carefully consider the constraints of survey design, the feasibility of data collection, and the utility of the additional data before they decide on expanding the scope of the survey. On a balance of considerations, it appears that the scope of the survey should not normally be extended beyond savings and borrowings unless there is a specific interest in data such as on indebtedness. While some data on household economic activities have necessarily to be collected for the derivation of household income, further extension of the scope of data on household economic activities to meet policy requirements with regard to the development of household economic activities or promotion of self-employment should not generally be taken up as a part of the household income and expenditure survey. Data on housing and household possessions are, however, relevant to the purposes of a general household income and expenditure survey and can be usefully included in its scope, especially if separate surveys on housing are not undertaken.

3.34 Household income and expenditure surveys should normally have national coverage and should cover all types of households. However, surveys designed to meet special purposes may, depending on the needs, be confined to the areas or population groups of concern.

B. Household

1. Unit of Inquiry

3.35 As in the case of other household surveys, the household, or an equivalent statistical unit, is generally employed as the unit of inquiry in household income and expenditure surveys. However, information relating to individuals is also collected in respect of certain kinds of receipts such as wages and salaries and other forms of compensation of employees, and certain types of property income and transfers. In societies where income producing activities of different household members are clearly separable, it should be possible to use the individual as the unit of inquiry for all receipts of income. The individual is also a preferred unit for investigating the factors influencing the earnings of employees and entrepreneurs and for compiling data for purposes of establishing income policies. But difficulties may arise in using the individual as the unit for ascertaining entrepreneurial income because, in the case of developing countries, unincorporated enterprises are often owned and/or operated jointly by several family members. A similar problem may arise in the case of property income also when the property is owned in common.

3.36 In the case of consumption and other expenditure, an individual's identity is almost lost, as the entire household (or its equivalent) operates as a unit, and, except for certain items of personal expenditure, it is difficult to record individual expenditures. Moreover, as the household expenditure largely

reflects the collective decision of the household rather than of individual members, the household is obviously the appropriate unit for collection of data on household expenditures. However, the individual may be used as a supplementary unit for ascertaining certain expenditures such as on education, recreation, health and medical care.

3.37 The concept of "household" used for population and housing censuses⁽³⁾ is based on the arrangements made by persons individually or in groups for providing themselves with food or other essentials of living. A household may be either (a) a one-person household, that is, a person who makes provision for his or her own food or other essentials for living without combining with any other person to form part of a multi-person household, or (b) a multi-person household, that is, a group of two or more persons living together who make common provision for food or other essentials for living. The persons in the group may pool their incomes and have a common budget to a greater or lesser extent; they may be related or unrelated persons or a combination of both. The "family" that is sometimes used as a unit of enumeration in place of the household consists of related persons living together and having a common budget.

3.38 Households usually occupy the whole, part of or more than one housing unit; but they may also be found living in camps, boarding houses or hotels, or as administrative personnel in institutions; or they may be homeless. Households consisting of extended families that make common provision for food, or of potentially separate households with a common head, resulting from polygamous unions, or household with vacation or other second homes, may occupy more than one housing unit.

2. ILO Recommendations

3.39 According to the ILO recommendations⁽⁴⁾ for household income and expenditure surveys, the "statistical units for collection of data on income and expenditure of households or families are defined as follows:

Household: The concept of household for income and expenditure surveys should be the same as the one adopted in the World Programme of 1970 Censuses of Population. A household may be either:

- a) a one-person household, i.e. a person who makes provision for his own food and other essentials of living without combining with any other person; or
- b) multi-person household, i.e. a group of two or more persons who make some common provision for food and other essentials of living. The persons in the group may pool their incomes and have a common budget to a greater or lesser extent; they may be related or unrelated persons or a combination of both. The general criterion to be used in identifying the members of a multi-person household relates to the existence of common housekeeping arrangements.

Family: A family is defined for purposes of income and expenditure surveys as a type of household consisting of two or more persons related by blood, marriage or adoption who also satisfy the conditions of sharing the same housing unit and making common provisions for food and other essentials of living."

The above definitions have since been superseded by those mentioned in paragraph 3.37.

3.40 The "household", as defined above, has also been adopted generally as the statistical unit for household surveys in general. The "family", as defined above, is construed as a sub-unit of the household, confined to members who are related by blood, marriage or adoption. The definition of household, generally adopted for household surveys, however, excludes institutional population living in military installations, correctional and penal institutions, religious institutions, dormitories, hostels, hospitals and the like. Persons living in hotels, boarding houses and camps are not, however, regarded as institutional population.

3. FAO Recommendations

3.41 The FAO recommendations⁽⁵⁾ also adopt the same concept of household for purposes of food consumption surveys. However, they distinguish a "budget unit" as "a group of persons who have some joint provision for basic housekeeping such as sharing a common food supply. As a rule they also live in the same dwelling. More specifically the budget unit can be defined as a group of persons sharing their income and expenses". The "budget unit" is also described alternatively as a "spending unit" or a "consumption unit". The main distinction between the household as defined by the housekeeping concept and the "budget unit" is that the latter envisages, in addition, pooling of incomes and sharing of expenses.

3.42 The unit which FAO prefers as reporting unit for purposes of its programme on statistics of food consumption and nutrition is, however, the eating unit defined as a group of persons sharing a common food supply. Because of the dependence of food consumption on economic status, FAO would like the consumption unit to be ideally also an economic unit.

4. SNA Recommendations

3.43 The SNA⁽⁶⁾ envisages units of observation and classification which encompass the individuals who live together and who pool and dispose of their income and saving more or less collectively. It thus emphasizes the criteria of living together and pooling of incomes and savings rather than common provision for food and other essentials of living. Nonetheless, it accepts the housekeeping

concept of the household, used in censuses and household surveys, as suitable for its purposes, and defines a multi-person household as a group of two or more persons "who occupy the whole or part of one housing unit and make common provision for food and other essentials of living".

3.44 SNA describes the non-household population as "inmates of institutions such as homes for the aged, poor or orphans, asylums, prisons, that is groups of persons living together who usually share their meals, are bound by a common objective, and are generally ruled by an authority outside the group". The recommended statistical unit in respect of these persons is the single individual or the conjugal family (for example husband and wife) living together in an institution. The staff of these institutions is not included in this category.

5. Income Distribution Guidelines

3.45 The Income Distribution Guidelines attempts to clarify the distinction between income sharing and housekeeping concepts.⁽⁷⁾ It observes that in economically developed countries the individuals governed by the 'housekeeping' concept are likely to be pooling their income to only a minor extent and, therefore, suggests that in such cases the use of the family concept of the household may be preferable. It assumes further that in developing countries, the persons governed by the housekeeping concept are more likely to be earning and pooling their incomes together and, therefore, suggests using the housekeeping concept in such cases. It thus places greater emphasis on the income sharing concept than on the housekeeping concept and suggests solutions which are supposed to conform to that concept.

3.46 In regard to the institutional population, the Income Distribution Guidelines follows the SNA. But the examples given to clarify the concept of institutional population include soldiers living in barracks and children living in boarding schools. No reference is made, however, to persons living in hotels, boarding houses and the like.

6. Integration of Different Concepts

3.47 Five different criteria have thus been used in defining the concept of household and its variants. They are: (a) common provision for food, (b) common provision for other essentials of living, (c) living together, occupying the whole or part of a housing unit, (d) pooling income and sharing expenditure, (e) relationship by blood, marriage or adoption.

3.48 The census concept of "household" which has been adopted by the ILO as well as FAO and accepted as suitable for SNA as well as IDG, is essentially based on (a) and (b) irrespective of (d) and (e), and no particular reference has been made to (c). The census concept of "family" which has also been generally accepted, superimposes (e) on (a) and (b). Criterion (c) which has been mentioned, in particular, by SNA and IDG may be taken as subsumed under (b) which refers to essentials of living, although it does not necessarily mean living in a single housing unit or a part thereof. In the context of household surveys, for which the housing unit is often adopted as the sampling unit, and households are approached through housing units for sampling, it may be desirable to make criterion (c) explicit in combination with (a) and (b).

3.49 Criterion (d) which is particularly relevant to SNA and IDG as also to the ILO and FAO for purposes of economic analysis, cannot, however, be taken as subsumed under (a) or (b) as common provision for food and other essentials of living does not necessarily mean pooling of incomes or sharing of expenditures. It may, therefore, be desirable to define, for accounting as well as analytical purposes, an economic unit defined by superimposing criterion (d) on the basic criteria adopted for defining the household. Thus, the following statistical units emerge:

Household: (a) x (b) x (c)
Family unit: (a) x (b) x (c) x (e)
Economic unit: (a) x (b) x (c) x (d)

For survey operations as well as for most of the analytical purposes the "household" as defined above would be the statistical unit. Essentially, it would be the unit of inquiry. If, however, for certain purposes data are required to be tabulated and/or analysed by family units or economic units, the latter can be adopted as analytical units.

3.50 In the case of persons living in boarding houses, and the like, if they are to be surveyed, every person living in the institution should be considered as a separate household except when a family lives in an institution, in which case, the whole family should be treated as a household.

3.51 In connection with the housekeeping concept of the household a few cases of marginal relevance need to be considered: the boarder who takes food with the household, with or without payment; the lodger who lives with the household, with or without payment; and the domestic servant who lives and/or takes food with the household in accordance with the terms of his or her service. The Income Distribution Guidelines recommends that the boarder should be considered as a member of the household but not the lodger. It also recommends that domestic servants living in be included as members of the household. Taken with the earlier stipulation that the persons should be living together, it follows that boarders living

with the household and participating in the common food arrangements must be considered members of the household. Lodgers living on the same premises but not participating in the common food arrangements are not to be counted as household members. Domestic servants living with the household and taking food with the household should also be regarded as household members.

3.52 It needs to be recognized, however, that not all the persons eligible to be included as members of household on the basis of the above definition and clarification are economically involved in the housekeeping arrangements of the household insofar as they do not pool their incomes and share the household expenditures. In particular, boarders who pay for their boarding and lodging facilities and domestic servants who are paid for their services are independent economic entities with their own incomes and expenditures unrelated to the housekeeping arrangements of the sample household. While for purposes of data collection they have no doubt to be included as members of the household, for purposes of meaningful data analysis they may have to be treated as separate analytical units. To facilitate identification and appropriate analysis, boarders who pay for their boarding and lodging facilities may be distinguished from those who do not pay and described as paying guests. Those who do not pay may be treated as unrelated members of the household.

3.53 Adoption of the above clarifications in regard to household membership would imply (a) that persons who, though living with the household, are not to be counted as members of the household because of their non-participation in the common food arrangements of the household, have to be treated and listed as separate households, and (b) that persons living with and participating in the common food arrangements of the household and, hence, counted as members of the household should not be counted as members of any other household, even if they have family relationships with others elsewhere.

3.54 Suppose that a sample household consists of:

- (1) members of a family,
- (2) other unrelated persons who live with the family and participate in the housekeeping arrangements,
- (3) a domestic servant living with the family and given free food, with or without other forms of remuneration in cash or kind,
- (4) a paying guest boarding and lodging with the household and paying for these facilities, but spending his income for other purposes independent of the household.

The first two groups constitute the core of the household and may be referred to as the main household. Table 3.1 presents symbolically the expenditures (x) and incomes (y) of the various groups, the members involved in which are represented by (n):

Table 3.1

Type of members	Number of persons	Expenditure			Total	Income
		Food	Housing	Other		
1 Family members	n_1	x_{11}	x_{12}	x_{13}	x_1	y_1
2 Unrelated persons sharing income	n_2	x_{21}	x_{22}	x_{23}	x_2	y_2
Main household (1) + (2)	n	x_1	x_2	x_3	x	y
3 Domestic servant	n_3	x_{31}	x_{32}	x_{33}	x_3	y_3
4 Paying guest	n_4	x_{41}	x_{42}	x_{43}	x_4	y_4
Total	N	$\underline{X_1}$	$\underline{X_2}$	X_3	X	Y

3.54 Each entry in the table signifies, the existence of the relevant value; but the value may not be directly ascertainable from the household in all cases. To distinguish between what is ascertainable from what is not, the former is underlined in the tabular presentation. In particular:

- (1) The total expenditure ($\underline{X_1}$) on food which can be directly ascertained, concerns all members of the household; but its individual and group shares are not directly ascertainable. Similarly, in the case of housing, the total ($\underline{X_2}$) concerns all members of the household. The shares of individual members or of groups thereof are not directly ascertainable.
- (2) The other expenditures of the main household can be ascertained from the household. The shares of the family members and other unrelated members of the main household are, however, not directly ascertainable. The other expenditures of the domestic servant and of the paying guest cannot be ascertained from the main household but can be ascertained from those individuals through supplementary inquiries.
- (3) The total expenditure and total income of the main household can be estimated on the basis of details ascertained from the household but the total expenditures and total incomes of the other members and hence of the household as a whole cannot be directly ascertained without supplementary inquiries concerning the other members.

3.55 The household includes three economic units: the main household, the domestic servant and the paying guest. As some of the components are not directly ascertainable, incomes and expenditures of the various economic units cannot be directly measured. They can only be estimated by analytical methods. For instance: to estimate the food and housing expenditures of the main household, one may have to adjust the total expenditures on food and housing to eliminate the food and housing expenditures assignable to the paying guest. Whether the expenditure incurred on providing food and shelter for the domestic servant should be presented as part of the food and housing expenditures of the main household or should be appropriately valued and transferred to another group to be shown as expenditure on domestic services depends on the purpose of the analysis. The estimated expenditures on food and housing together with the directly ascertained expenditure on other items would provide an estimate of the total expenditure of the main household. An estimate of the total income of the main household should include besides the directly ascertained income, an additional element representing the net return from the boarding and lodging services provided to the paying guest.

3.56 For an assessment of the incomes and expenditures of domestic servants and paying guests, supplementary inquiries concerning their total incomes and expenditures are called for. As they are treated as members of the sample household, inquiries concerning their incomes and expenditures are in fact inescapable. It should be noted, however, that a simple summation of the incomes and expenditures of the various economic units which constitute the household may prima facie appear to be duplication, but can be explained as additional services, such as the domestic services provided by the servant to the main household and the boarding services provided by the main household to the guest, which have imputable values, are in fact involved.

7. De jure and De facto Approaches

3.57 In applying the criterion of living together for defining membership of the household, two approaches are possible. The de facto approach covers all members present in the household at the time of the survey. The de jure approach on the other hand, covers those who are normally resident. As the survey itself is usually spread over a period of time and seeks information concerning a specified reference period, the general practice in household income and expenditure surveys is to adopt the de jure approach. Normal residence is generally interpreted in this context as residence for a major part of the reference period used for the main items of data. That would avoid double counting and associate the person with the household with which he or she has spent a major part of his or her time.

3.58 It is, however, difficult to decide on a suitable working rule if different reference periods are used for different purposes. Whichever reference period is used for the working rule, it is not

possible to ensure an exact correspondence between the membership of the household and the income and expenditure of the household. A practical course would be to enumerate those considered by the household as normal residents as household members excluding those who were absent for more than six months continuously up to the date of the survey. An alternative approach of current relevance would be to apply a similar rule with reference to the last month in terms of the last fortnight.

8. Survey Practices and Special Situations(8)

3.59 The definition of household and the clarifications given above provide general guidelines for the definitional criteria to be adopted in household income and expenditure surveys. In exceptional circumstances the definition may have to be modified or further qualified to suit local circumstances. At some stage an arbitrary criterion may have to be adopted to differentiate a member from a non-member. An account of survey practices and guidelines actually adopted in some countries is given below.

3.60 It has been stipulated that a boarder, living with the household and participating in its food arrangements should be considered a member of the household. But if a household has several such boarders, when does it cease to be a household and become a boarding house? The UN Principles and Recommendations for Population and Housing Censuses prescribes a cut-off point of 5; if there are more than 5 boarders, they are to be regarded as resident members of a boarding house and not as members of the household operating that facility. In Sri Lanka (1973) the cut-off point was taken as 3 and in Tanzania (1976-77) as 5 and in both cases the household was excluded from the survey if the number of boarders exceeded the limit. In Thailand (1975-76), unrelated, financially independent boarders were treated as separate households.

3.61 The spending unit was taken as the statistical unit in some countries e.g. Argentina, Colombia and Sri Lanka. Domestic servants and paying guests were excluded from the household defined as a spending or consumption unit. In the working class and middle class family living surveys in India, the household was the unit of inquiry but family defined as an economic unit is the unit for analysis. Expenditure on each sub-group of items (including domestic services) was adjusted pro rata by a factor $f/(f+e)$ where f is the number of family members and e the number of extra members of the household, who participated in that expenditure during the reference period. If the household includes paying guests the corresponding share of expenditure was used to estimate the net income of the family from paying guests. Detailed instructions were given to the field workers in regard to the application of the adjustment factor $f/(f+e)$.

3.62 Practical difficulties may arise in applying the standard definition of the household where polygamous or nomadic households are commonly found.⁽⁹⁾ If the wives of a polygamous husband live separately and the husband keeps moving continuously from one homestead to another, each wife and her children would have to be treated as a separate household and the husband counted as a member of that household with which he spends most of his time or of the household of the seniormost wife as considered appropriate.

3.63 It is possible that a household defined by the housekeeping criterion may be in occupation of more than one housing unit adjacent, neighbouring or even far removed from each other.⁽¹⁰⁾ Unless the housing units are structurally bound by a common facility such as a compound wall or fence which separates those units from other units in the neighbourhood and helps redefining the housing unit, it may be desirable to treat the occupants of each housing unit as a separate household.

3.64 In the case of nomadic tribes, the definition, identification, location, listing, sampling and survey of households present more difficult problems, which are best left to the country to be solved and decided as may be considered appropriate in the local circumstances. The Income Distribution Guidelines, however, recommends that they should, as far as possible, be followed, irrespective of geographic location.⁽¹¹⁾

3.65 In Botswana (1971), the concept of living together was extended to cover a hut in the village, a hut on the land where crops are grown and a hut at the cattle post. A person not living with the household was counted as a member of the household, if he provided financial support to the household and stayed with the household for a minimum period.

3.66 In Sudan (1967-68), even if the husband and wife/wives lived separately and had independent means of income, they were treated as members of a single household if they lived in the same sheikdom; otherwise they were treated as separate household. Children living at boarding houses were treated as members of the household, but other members living permanently away from the household were not treated as members. Other relatives and servants sharing at least one meal (per day) were regarded as members of the household.

3.67 In Swaziland (1972) a homestead was defined as a group of persons living together in one or more huts clustered together under the authority of the head of the household. All persons living in the homestead at the time of the survey were included in the household except visitors. But persons visiting for a total period of one week (in a month) and persons who visited the homestead regularly and slept at least one night each week, such as sons working in the towns were included in the household. There is a possibility of double counting in this case but because of its restriction to rural areas, the possibility was perhaps considered minimal.

3.68 In the Household Budget Survey (1976-77) of Tanzania, even if the husband and wife or wives had separate houses and had their meals separately, they were counted as members of the same household if they pooled their income and lived in the same ward. A wife living with her children in a different ward was counted as a separate household. If the number of boarders or lodgers exceeded five, the household was treated as a boarding or lodging house and the boarders or lodgers were not included as members of the household. In polygamous marriages, the husband was treated as a member of a household if he spent two-thirds of his time with that household. What would happen if he spent his time equally between two households was not clear.

3.69 There may be situations in which the criterion of common arrangements for food may not be appropriate⁽¹²⁾ as, for instance, in areas governed by communal feeding arrangements.

3.70 It would thus be seen that the standard concept of household may have sometimes to be adapted or elaborated to suit special situations and special criteria may have to be adopted to suit the socio-economic structure of each society. Special arrangements may also have to be made to cover institutional and nomadic populations to meet the requirements of national accounts and statistics of income distribution.

C. Household Income

1. Definition of Household Income

3.71 The ILO recommendations define income as consisting of receipts (in money or in kind) which as a rule are received regularly and are of recurring nature. The rationale for the definition is the assumption that the behaviour of households as consumers is determined by what they perceive as regular income comprising receipts expected to be received regularly with known periodicity or frequency, at least once a year. Thus, what distinguishes household income from other receipts is its regularity and recurring character. However, as stated earlier, regularity and recurrence are not stipulated as rigid constraints.

3.72 The SNA and the Income Distribution Guidelines do not explicitly refer to regularity as a qualifying characteristics of income. They emphasize rather the character of the receipts accruing to the households during the accounting period. The Income Distribution Guidelines do not include all receipts as household income; they include only receipts classified as primary income, property income and current transfers, a classification which closely corresponds to that of the ILO recommendations. Some of the periodic receipts such as alimony, pensions, annuities and social security benefits, which are in the nature of transfers and treated as income according to the ILO recommendations, are also

treated as income in the Income Distribution Guidelines. The two, however, treat some transfers differently, and these differences will be examined later. With this definition of the income as the basis, we shall now consider the components of income. As the ILO recommendations and the Income Distribution Guidelines have much in common, it would be advantageous to follow the conceptual breakdown of income as given in the Income Distribution Guidelines.

2. Components of Household Income

3.73 The main components of the total household income, according to Table II.1 of the Income Distribution Guidelines are:

- a) Compensation of employees, which includes:
 - i) wages and salaries in cash and/or kind, and
 - ii) employers' contributions to social security and similar schemes;
- b) Income of members from producers' co-operatives;
- c) Gross entrepreneurial income of unincorporated enterprises, including withdrawals from quasi-corporate enterprises;
- d) Property income; and
- e) Current transfers and other benefits received.

The sources of income listed in the ILO recommendations are all covered by these components, which follow mostly the corresponding concepts of the SNA. We shall, therefore, discuss the SNA concepts and the differences, if any, between those and the ILO recommendations, and indicate how we should deal with them in household income and expenditure surveys.

a. Compensation of Employees

3.74 According to the SNA, compensation of employees comprises all payments by producers to their employees of wages and salaries, in kind as well as in cash, and all contributions in respect of their employees to social security and to private pension, casualty insurance, life insurance and similar schemes. The compensation of civilian employees is accordingly broken down into its sub-components as (i) wages and salaries in cash and kind, (ii) employers' contributions to social security schemes on account of their employees, and (iii) employers' contributions to private pension, family pension, health and other casualty insurance, life insurance and similar schemes in respect of their employees. This concept and its relationship to other related concepts such as earnings, employee income and labour cost have been discussed in detail in an ILO manual on wage statistics⁽¹³⁾.

(i) Wages and salaries

3.75 Wages and salaries cover all payments which employees receive in respect of their work, whether in cash or kind, and before deductions for their contributions to social security, withholding taxes and the like. They should be taken net of purchases of compulsory equipment which employees have to make out of contractual obligations. Reimbursement of employees for travel, entertainment, etc. for the business of the employer is not included as wages and salaries. But included are payments of commissions, tips and bonuses, cost of living and dearness allowances, payments in respect of vacation, holidays and other relatively short absences from work, when made directly by the employer. Fees to ministers of religion and members of boards of directors are to be treated as wages and salaries. The cost to the employer on food, lodging and ordinary clothing provided free of charge or at reduced costs to the employees is to be considered as wages and salaries in kind, and, hence, as household income as well as consumption expenditure for the employee's household.

3.76 Payments in kind of wages and salaries should cover the cost to the employer of goods and services provided to the employees free of charge or at markedly reduced costs which are clearly and primarily of benefit to the employees as consumers. When such outlays are of benefit to the employers as well as to the employees, they will be treated as intermediate consumption and not as compensation of employees. Examples are, expenditure by employers on amenities at places of work, medical examinations and recreational facilities.

3.77 Free issues of food, beverages, tobacco and clothing, including uniforms, to members of the armed forces are considered as part of their wages, but uniforms and other work clothing supplied free to civilian employees is not considered as part of their wages.

3.78 The imputed gross rent of dwellings provided free to the employees is to be included in wages and salaries. So also the family dwellings, but not the barracks, provided to military personnel.

3.79 The Income Distribution Guidelines specify that no attempt should be made to impute wages and salaries of unpaid family workers whose income is included in the entrepreneurial income of the household enterprises for which they work. Normally, transactions between members of the household should not be recorded except for domestic servants who are treated members of the household and workers of household enterprises who may be living with the household and, hence, treated as members of the household.

3.80 The commodities that employers provide free of charge or at reduced prices to their employees should in principle be valued at cost to the employer. The commodities produced by the enterprises themselves should, therefore, be valued at producers' values and the commodities purchased wholesale should be valued at wholesale prices. However, as the Income Distribution Guidelines note, in many household surveys the supplies are valued at retail prices in order to reflect the value of the benefits actually received by the employees. The ILO recommends the same.

3.81 An important part of wage and salary income received by employees in kind in developing countries consists of free meals and housing. The Income Distribution Guidelines recommend that free meals be valued in terms of the cost of the per capita consumption of food for the household that provides the meals and the value of free lodging should be valued at the rent usually paid for similar quarters.

3.82 The SNA definition of wages and salaries is not used in MPS but, according to the Income Distribution Guidelines, the differences are not considered statistically significant. MPS includes in wages and salaries reimbursement for food and other out-of-pocket travel costs. Payments to authors are also classified as wages and salaries.

(ii) Employers' contributions to social security and similar schemes

3.83 Contributions made by employers on account of their employees to social security schemes or to private pension funds, reserves etc. are treated by SNA as compensation of employees. If, in the absence of special funds or reserves, employers make direct payments of this type to their employees, imputed contributions in respect of these obligations are also to be included as employers' contributions to the private schemes.

3.84 The Income Distribution Guidelines follow the basic concept but exclude the element of employer's contributions to private pension funds, etc. because the employers do not always make contributions to such pension funds or reserves but pay pensions, family allowances or unemployment, illness or accident benefits directly to their employees. In the SNA, on the basis of data on the payments actually made, imputations are made and included as compensation of employees. It would not, however, be possible to obtain this information from the household through a household survey. The Income Distribution Guidelines, therefore, exclude such imputations from the scope of compensation of employees. They, however, retain the employers' contributions to social security as an element of compensation to employees although it may be difficult to ascertain even that from the household in a household income and expenditure survey. Further, as the concept of total household

income in the Income Distribution Guidelines includes social security benefits actually received by households, it has been argued (12) that inclusion of employers' contributions to social security schemes as compensation of employees would amount to duplication. It is, therefore, preferable to include as income social security benefits actually received during the period which are known to the household, and exclude employers' contributions which are not generally ascertainable from the household. It is the former which is regarded as income by the household and determines its behaviour as a consumer, and not the latter.

b. Income of Members of Producers' Co-operatives

3.85 According to the Income Distribution Guidelines, this component of income includes incomes in cash and in kind of the members of the co-operative who participate in its operation and management and in the distribution of its profits (entrepreneurial income). The incomes of persons who work temporarily for the co-operatives would be treated as wages and salaries. This component of income is explicitly distinguished in the MPS but shown in the SNA as part of the entrepreneurial income of non-financial corporate and quasi-corporate enterprises. However, it may be useful to distinguish, wherever relevant, incomes received from such co-operatives, in whatever form they are received.

c. Gross Entrepreneurial Income

3.86 The gross entrepreneurial income of households consists of (a) profits (operating surplus before deduction for the consumption of fixed capital) of the unincorporated enterprises included in the household sector, and (b) withdrawals of income from quasi-corporate enterprises by the owners. The latter consist of the actual payments made to the owners out of the current receipts of quasi-corporations. The profits of unincorporated enterprises would include (i) actual rents received for structures rented out less current expenses but gross of consumption of fixed capital, and (ii) gross operating surplus of other kinds of unincorporated enterprises.

3.87 The imputed rent of owner-occupied dwellings is treated by the SNA as entrepreneurial income but the Income Distribution Guidelines treat it as property income because the income from the owner-occupancy of dwelling is more like income from property than income from entrepreneurship. Household surveys should preferably follow the IDG approach which is also adopted in the ILO recommendations.

3.88 For evaluating entrepreneurial income it would be necessary to collect data on the working of the household enterprises. The data on gross value of output, material inputs, compensation of employees, rents, interests and taxes paid and subsidies received will have to be collected.

3.89 The gross output is defined to cover goods and services that are produced (a) for the market, (b) for provision to employees free of charge or at reduced prices, and (c) on own account, that is for own use. The production on own account will include production of all goods and services used for capital formation and final consumption. Production on own account for final consumption covers - (a) all products of agriculture, forestry, fishing, hunting, mining and quarrying, and the processing of primary commodities by the producers in order to make such goods as butter, cheese, flour, wine, oil, cloth or furniture for own use, and (b) output of any other commodities for own consumption that are also produced for the market.

3.90 SNA recommends that production on own account should be valued in terms of the cash alternative foregone which would mean that for the producer the value of income in kind should be considered equal to the cash income that would be realised by the sale of these items at the production premises. In the non-availability of producers' prices, the prices prevailing in the local markets, where locally produced goods are sold by the producers, may have to be used. This approach to valuation results in underestimation of household consumption of goods and services produced on own account in comparison to valuation at retail or consumers prices which may, for certain purposes, such as the measurement of levels of living, be more appropriate. The ILO recommendations, in fact, favour the latter on this consideration and because consumer prices are more readily available than producers' prices, own account production is valued in many surveys of income and expenditure at retail prices. The retail prices, however, would include the value of transport, distributive and other services not embodied in the value of commodities originating from own account production. Therefore, wherever producers' prices are not available, it may be more appropriate to use local wholesale market prices, rather than retail prices, for valuation of own account production because the elements of distributive costs included in wholesale prices would be less. If wholesale prices are not available local retail market prices may be used as the next best.

d. Property Income

3.91 Property income consists of imputed rents of owner-occupied dwellings and the actual payments received by the household from others for the use of its financial assets, buildings, land and intangible assets such as copyrights and patents. Imputed rents of owner-occupied dwellings should be calculated as the gross imputed rental value of the dwelling less the sum of expenditures on current maintenance and upkeep and mortgage interest paid. The gross imputed rental value should be based on rents actually paid for similar dwellings. Make-shift dwellings in both rural and urban areas should be excluded.

3.92 The other types of property income included in household income are interests and dividends, net rents and royalties received for the use of buildings, lands, copyrights and patents. Interest comprises actual receipts of interest on financial claims such as savings, deposits, bonds and loans, and interest received for consumers' credit given by the household enterprises. Receipts of rents should be net of taxes, current maintenance expenditure and mortgage interest.

3.93 The SNA includes in property income an imputation for interest on the equity of households in life insurance or pension funds. The Income Distribution Guidelines, however, do not include these imputations as it is impracticable to gather information on such elements from the households.

3.94 According to the Income Distribution Guidelines, property income is to be broken down further as (a) imputed rents of owner-occupied dwellings, (b) interest, (c) dividends, and (d) rent, including royalties and the like.

3.95 In countries using MPS, households do not receive dividends or rents, and royalties received by authors and inventors are classified as wages or salaries. No imputation is made for rents of owner-occupied dwellings. Data on the interest received on bank deposits and bonds are, however, included.

e. Current Transfers and Other Benefits

3.96 This group of items consists of (a) social security benefits, (b) pension and life insurance annuity benefits and (c) other current transfers received. Social security and life insurance annuity benefits are contractual transfers and so are pensions received from contributory pension funds or to which the recipients have acquired a contractual right. The incomes to be included under the first two categories thus refer to contractual transfers of public authorities to individual households. All other current transfers, which are non-contractual, are included in the third category.

3.97 Receipt by households of funded pensions and life insurance annuities can be considered, as SNA does, as drawing down on savings. The Income Distribution Guidelines, however, treat all such receipts as current transfers and benefits and hence, as income. As a corollary, payments of contributions to pension funds and life annuity premiums have to be recorded as outlays (i.e. as non-consumption expenditure). The ILO recommendations are also the same.

3.98 Households may receive current non-contractual transfers from Government agencies, private non-profit institutions, enterprises, and resident or non-resident households. They may include social assistance grants (i.e. payments that are not part of social insurance schemes), unfunded employee welfare benefits and unrequited current transfers from enterprises and households. Some of these transfers may be regular and recurrent and some ad hoc, dependent on certain contingencies. Not all of them would, therefore, satisfy the ILO's criterion of regularity and recurrence.

3.99 According to the SNA, non-contractual current transfers received by the household should in principle include an imputed amount equal to the cost to the Government or private non-profit body of goods and services supplied to persons directly and individually by businesses or other producers and paid for entirely or in part by the Government or private non-profit units, if individuals receiving the goods and services are free to select producers that provide them and the terms on which they are supplied, e.g. when a Government health service fixes the maximum payment it will make for medical treatment but leaves the individuals covered under the scheme free to choose practitioners from whom to receive care and the terms on which the treatment is to be provided. But, in many cases, it would be impracticable to gather from households data on either the cost to the Government or the retail value of the goods and services in question. In such cases, this element of the current transfers received from the Government or private non-profit bodies will have to be omitted. The corollary of this is that in such cases only cash transfers should be recorded as such in the household income and expenditure survey, and the corresponding amount paid shown as consumption expenditure.

3.100 There are a few differences between the SNA and the Income Distribution Guidelines in the scope and definitions of current transfers and other benefits received. For instance, casualty insurance claims are shown in the SNA as a separate entry on the receipts side of the income and outlay account, while the Income Distribution Guidelines show them as capital transfers in the capital finance account. The difference in the treatment of funded pensions and life insurance benefits, and of supply of goods and services to individuals by businesses and producers, which is partly or fully paid by government or private non-profit bodies, has already been mentioned. Other transfers included in the SNA definition but excluded from that of the Income Distribution Guidelines are write-offs of household debt by lenders and transfers of goods at the time of immigration. On the other hand, gifts exchanged between resident households are covered by the Income Distribution Guidelines but not by SNA.

3.101 In the context of the institutional arrangements prevalent in the countries that use MPS some of the transactions included in current transfers may not be quite relevant. Examples are, transactions of (a) private pension funds, (b) household purchases of services and goods from private business or non-profit services that are financed in whole or in part by government or non-profit bodies, and (c) transfers between households. Some of the current transfers classified separately in the Income Distribution Guidelines are grouped together with other transactions in the balances and tables of MPS.

3. Suggested Approach for the Survey

3.102 In regard to wages and salaries, incomes of members from producers' co-operatives, gross entrepreneurial income and property income, the concepts adopted in the Income Distribution Guidelines and those of the ILO recommendations are broadly similar and there is no major problem in collecting such data through household surveys. It may not, however, be possible to collect data from households on employers' contributions to social security schemes. Moreover, they involve an element of conceptual duplication. Hence, this component may be excluded from the scope of household surveys. As regards current transfers, receipts from social security benefits, pensions and life insurance annuity benefits, considered as income by the Income Distribution Guidelines, as well as by the ILO recommendations, the requisite data can well be collected through household surveys. Some of the other current transfers included in the Income Distribution Guidelines may not strictly satisfy the ILO criterion of regularity and recurrence. Even so, data should be collected on all such transfers. In view of the differences between the SNA and the Income Distribution Guidelines and between the latter and the ILO recommendations, it would be necessary to identify, record and tabulate data on all types of transfers individually itemized so that they could be classified appropriately for purposes of SNA and the Income Distribution Guidelines. If for certain purposes such as those envisaged by the ILO, some of the items need to be excluded, they may be excluded at the stage of tabulation and analysis.

3.103 In addition, all other receipts of loans, loan (principal) repayments, credit, lottery prizes, windfall gains, lump-sum inheritances, insurance maturity payments (other than annuities), casualty insurance benefits, receipts from claims of legal damages, from sale of possessions and withdrawals from savings, should be separately recorded and tabulated but not considered as part of household's income.

D. Household Expenditure

1. Consumption Expenditure

3.104 The final consumption expenditure of households is defined in the SNA as the sum of all outlays on new durable and non-durable goods and services reduced by net sales of second-hand goods, scraps and wastes. SNA distinguishes between final consumption expenditure of resident and non-resident households in the domestic market, and the final consumption expenditure of resident households in the domestic market as well as in the rest of the world. It is, however, the latter which is used by most countries in household income and expenditure surveys.

3.105 The outlays on household goods and services should in general be recorded at the time when purchases are made irrespective of delays (or advances) in delivery of goods. Except for hire purchase arrangements, purchases take place at the time when the households acquire legal title to goods or are rendered services. In the case of hire purchase arrangements, the purchase is considered to occur at the time when the contract in respect of the arrangement is signed, or if there is no formal agreement, at the time when goods are delivered. Similarly, in the case of second-hand goods household sales are to be recorded at the time when ownership passes.

3.106 Acquisitions of new goods and services are to be valued at purchasers' values including transport, installation and similar charges but not interest for delayed payments. The value of net sales of second-hand goods is defined as the excess of the proceeds of households from these sales over the purchasers' values of their acquisitions of second-hand goods reduced by the included dealers margins and other transfer costs. The dealers' margins and other transfer costs as well as any service charges which households may pay in respect of the same are classified as purchases of commodities. This definition is difficult to follow, and is meant essentially for the national accounts statisticians. The Income Distribution Guidelines, however, simply state that the value of sales by households of second-hand goods (and of deferred rebates and discounts) should be treated as negative final consumption expenditure.

3.107 The direct purchases which resident households of a given country make abroad are part of the non-commodity imports of the country and of the outlays of the households on other goods and services. These include the outlays in foreign countries of tourists, diplomatic and military personnel, seasonal workers or border workers who are residents of the country in question. The expenditure of a business traveller on lodging, foods etc. abroad for which he is reimbursed by the employers are not, however, to be included as direct purchases of resident households; they are part of the intermediate consumption of the resident employer of the

business traveller and the commodity imports of the country in question. Final consumption expenditure of resident households would be equal to their expenditure in the domestic market plus the direct purchases which they make abroad.

3.108 As described in the discussion of the concept of income, the gross output of household enterprises used for own household consumption is to be included in household consumption expenditure.

3.109 Questions may sometimes arise as to whether certain types of expenditure should be classified as final consumption expenditure of the household or as intermediate consumption of household enterprises, if the goods or services are used for both. For example, in the case of professional practitioners and individual proprietors of business, the cost of acquiring an automobile and its running expenses may be treated either as household expenditure or as business expenditure depending on how it is used. It would be desirable in such cases to sub-divide the outlays on the basis of the relative extent to which such facilities are utilized for household use and for business use.

3.110 Purchases from Government have to be carefully considered before they are classified as household expenditure. When there is a clear link between payment and acquisition of goods or services and the decision to make the payment is voluntary, such payments should be treated as household expenditure. Examples are the charges for entry to museums and public recreational facilities, for publications, postal stationery and art reproductions from museums, for goods produced in vocational schools as an incidental part of the education, or for radio and television licenses where the Government provides substantive broadcasting services. Fees, nominal or otherwise, which are charged in respect of public hospitals or schools are also classified as purchases of services.

3.111 Payments such as fees paid for passports, driving permits, licenses, airport duties and court fees are, however, to be treated as current transfers. In general, payments in respect of services, the primary purpose of which is to serve as an instrument of Government policy, which are compulsory but unavoidable in the only circumstances in which they are useful, are to be classified as current transfers.

3.112 Payments such as income tax, wealth tax, social security taxes etc. are classified as direct taxes. In general, any such payments in respect of charges which do not involve the provision of an identifiable service to the payer and which are mainly designed to raise revenue are to be classified as direct taxes, when paid by the household as a consumer. However, when they are paid on business account, they would be treated as indirect taxes.

3.113 Payments by households to private non-profit bodies are classified as purchases of goods and services where there is a clear and direct link between the payment and acquisition of goods and services, that is, the amount of the payment is proportional to the quantity and quality of goods and/or services received. For example, fees charged by private non-profit schools or hospitals are to be classified as payments for purchase of service. On the other hand, membership dues to trade unions, political associations, fraternal organizations or social clubs, and donations to religious and welfare organizations are to be treated as current transfers.

3.114 SNA recommends that the outlays on goods and services which households make in the domestic market should be classified according to the major object (purpose) for which the goods and services are acquired. This classification is shown in Annex IV. The classification is needed for studies of consumer demand and welfare. It is designed to separate goods from services and to draw distinctions between durable, semi-durable and non-durable goods. Semi-durable goods differ from durable goods in that their expected life, though generally one year or more as in the case of durable goods, is often significantly shorter, and their purchase value is substantially less. The classification of goods according to the degree of durability is valuable for such purposes as assessing household stocks of goods and cyclical variations in consumer demand. SNA also requires that household consumption expenditure be classified by commodities according to the kind of economic activity where the commodities are characteristically produced (i.e. industrial classification of activities). The classification of net sale of second-hand goods, scraps and wastes is to be similarly based on the characteristic industrial classification.

3.115 The concept of consumption expenditure adopted in the Income Distribution Guidelines is not much different from that in the SNA. There are, however, minor differences. According to the SNA, service charges in respect of casualty insurance, pension funds and life insurance would have to be included in final consumption expenditure. In practice, it is impossible to estimate these service charges on a household or individual basis; they are, therefore, not to be separated from the insurance premiums and pension contributions according to the Income Distribution Guidelines. It is also usually not possible to estimate on household or individual basis the full cost of the consumer goods and services acquired from private units that are financed entirely or partially by Government or private non-profit institutions (see paragraph 3.99). These flows are, therefore, to be excluded from the concept of final consumption expenditure.

3.116 Payments to domestic servants should be included in the final consumption expenditure of households whether or not the domestic servants are treated as members of the households of their employers. The value of sales by households of second-hand goods and all deferred rebates and discounts should be treated as negative final consumption expenditure.

3.117 The concept of final consumption expenditure of households adopted in the Income Distribution Guidelines is thus narrower than in the SNA. The concept of "personal consumption of material goods" of MPS does not cover household consumption of services that are embodied in goods. When the purchase of these services by the population is added to personal consumption, the result approaches the concept of final consumption expenditure proposed in the Income Distribution Guidelines. The housing component of personal consumption in respect of rented dwellings is valued in MPS at cost (depreciation and other material inputs) and not in terms of rent actually paid. Further, MPS includes reimbursed business travel in personal consumption but neither the SNA nor the Income Distribution Guidelines do so.

3.118 The ILO concept of consumption expenditure, based on the resolution of the Twelfth International Conference of Labour Statisticians, is simple and includes all monetary expenditure on goods and services intended for consumption and the value of goods and services received as income in kind and consumed by the household. The value of items produced by the household and utilized for its own consumption, net rental value of owner occupied housing and gross rental value of free housing occupied by the household are also included. All payments made by the household in connection with the supply of goods and services, including taxes and in connection with the use of goods and services, such as radio and television license fees, are included. For certain purposes, fees paid for motor car registration, driving permits etc., could also be included.

2. Total Household Expenditure

3.119 The term household expenditure does not appear in the Income Distribution Guidelines. It is, however, used in the ILO recommendations to include, besides household consumption expenditure, certain other outlays of the household and its members. The non-consumption expenditure of the household includes income tax and other direct taxes, pension and social security contributions and related insurance premiums, remittances, gifts and other transfers. Excluded from it are additions to savings, amounts invested or loaned, repayments of loans and outlays for other financial transactions. The use-value of collective public and other social services received by the household is also excluded. Of the items of non-consumption expenditure as defined in the ILO recommendations, direct taxes and social security contributions are

distinguished from the others and deducted from total household income to obtain what the Income Distribution Guidelines call available household income. Most of the other items are treated as disbursements from the total available household income.

a. Direct Taxes, Social Security and Pension Fund Contributions

3.120 Contributions to social security would conceptually include contributions made by employers on behalf of their employees if the concept of compensation of employees is used in deriving total household income. But, as we have seen, it would not be possible to follow that concept in a household survey. According to the Income Distribution Guidelines, if only wages and salaries are included in income, contributions to social security should include only the payments made by employees for this purpose out of their wages and salaries. Pension fund contributions are current contractual transfers from households to pension funds. Here too only the contributions made by employees, if any, out of their wages and salaries would be included.

3.121 Pension fund contributions, as defined in the SNA, are net of imputed service charges which are allocated to final consumption expenditure. As it is not possible for the respondents of a household survey to estimate these service charges, the Income Distribution Guidelines define pension fund contributions to include service charges. Whereas pension fund contributions, net of imputed service charges, are treated in the SNA as an increase in the financial assets, pension fund contributions, gross of service charges, are included as disbursements in the Income Distribution Guidelines.

3.122 Direct taxes and social security contributions are defined in MPS in more or less the same way as in SNA and in the Income Distribution Guidelines. Pension fund contributions are not applicable in countries using MPS.

b. Consumer Debt Interest

3.123 This item, which appears in the Income Distribution Guidelines as a disbursement from total available household income, should cover interest on debts incurred by households in their capacities as consumers. It should not, therefore, include interest on loans used to finance household enterprises. The item is not applicable in countries using MPS.

c. Other Current Transfers

3.124 This item in the Income Distribution Guidelines covers a heterogeneous group of current transfers which households make out of their total available income. Premiums for casualty and life insurance are included here. And so are compulsory current transfers to Government such as passport or court fees, fines and penalties paid. Current transfers from households to private non-profit institutions as dues or donations and to other resident and non-resident households in the form of gifts in cash or kind are also covered by this item.

3.125 Like pension fund contributions, casualty and life insurance premiums, which are defined in the SNA net of imputed service charges, are defined in the Income Distribution Guidelines as gross of imputed service charges, for the reasons mentioned earlier. SNA treats the net premiums for casualty insurance as a separate item on the income and outlay account. It also shows as a separate category in that account compulsory fees, fines and penalties which are included under the Income Distribution Guidelines as other current transfers.

3.126 MPS requires data from employees and members of co-operatives on insurance premiums and contributions to social and co-operative enterprises and institutions. The other items included under other current transfers mentioned in the Income Distribution Guidelines are not applicable to MPS.

d. Gross Capital Formation

3.127 Gross capital formation includes gross fixed capital formation and increase in stocks of household enterprises and net purchases of land, building, and intangible assets that do not represent financial claims on other economic agents. It would be difficult to obtain reliable information from households on transactions in intangible assets. If intangible assets are excluded, the gross capital formation would consist of outlays on reproducible durable goods added to fixed assets of household enterprises, reduced by sale of similar second-hand or scrapped goods, increase in stocks of household enterprises valued at the average prices over the period, and of purchases less sales by households of land and dwellings for own occupation. The reproducible durable goods should have a useful lifetime of a year or more. They may be purchased or produced on own account. Included in the outlays on reproducible durable goods are (a) expenditure on capital repairs and improvements which significantly extend expected lifetime of the durable good or its productivity, (b) expenditure on the reclamation and improvement on land, and development and extension of timber tracts, mines, plantations, orchards and vine yards, and (c) acquisitions of breeding stock, draught animals, dairy cattle and the like. This definition of gross fixed capital formation, given in the Income Distribution Guidelines, is identical with that of SNA and essentially the same as that of MPS.

3.128 In many developing countries, rural households construct dwellings for their occupation mostly from gathered materials using their own labour. Other structures such as farm buildings, irrigation canals, etc. are also often constructed by the households themselves. In principle the value of this own account construction should be equal to the cost of purchase of materials and value of labour involved, the latter being imputed on the basis of the estimated time involved multiplied by the prevailing wage rate in the region. It may be possible to obtain relatively accurate figures for purchases (less sales) of transport and other equipment, land, draught animals and dairy cattle. Increases in stock in small household enterprises would not generally be ascertainable as the enterprises do not generally keep accounts; but stock changes may not be very significant.

3. Suggested Approach for the Survey

3.129 From the concepts and definitions of consumption expenditure and household expenditure given above, it would be seen that the differences between the SNA, the Income Distribution Guidelines and the ILO recommendations concern mainly the classification of certain transactions. While the concept of consumption expenditure is more or less common, with marginal differences, the concept of non-consumption expenditure does not exist either in the SNA or in the Income Distribution Guidelines. The SNA clubs all transactions other than consumption expenditure as disbursements, whereas in the Income Distribution Guidelines, some of those disbursements are distinguished and deducted from total household income to obtain the available household income.

3.130 According to the ILO recommendations, payments for driving permit, motor car registration and other similar charges are to be included in consumption expenditure. The SNA and the Income Distribution Guidelines, however, classify them differently. Radio and television licence fees are treated as consumption expenditure, when government provides substantial broadcasting services. Driving permits, licence fees, passport fees etc. are treated as transfers, and motor vehicle duties as direct taxes. The ILO suggests that contributions and membership fees to trade unions, political associations, fraternal organisations etc. should be treated as consumption expenditure; but the SNA treats them as current transfers.

3.131 In order to meet the needs of various users, it would be desirable to itemize, record and tabulate all such transactions separately so that the estimates of their aggregates can be grouped suitably for different purposes. The differences affect only the calculation of available income but would not affect the calculation of total household expenditure and distribution of households based on total household expenditure.

3.132 The only potential tabulations that may be affected by the definition of consumption expenditure are the distributions of households based on consumption expenditure (per household or per

capita). The Income Distribution Guidelines do not, however, recommend such tabulations and no such distributions are needed for the SNA. It is, therefore, suggested that, for the sake of convenience, only items commonly accepted as consumption expenditures be treated as such and the rest treated as non-consumption expenditures.

3.133 Apart from the differences in classification, problems arise because SNA makes finer distinctions in some cases and treats a part of a transaction as of one kind and another part as of another. For example, it divides the life insurance premium into service charge, to be classified as consumption expenditure, and the rest as saving. As the Income Distribution Guidelines point out, it is not possible to collect data in this manner through a household survey. In any case, an estimate of the national aggregate of life insurance premiums is seldom required from the survey, as it is available from insurance companies. As the survey data are mainly useful for the study of the distributive aspects, such expenditures may well be recorded as incurred.

E. Table of Transactions

3.134 Table 3.2 which follows will help survey statisticians understand the conceptual treatment of certain transactions in the concepts adopted in the SNA, the Income Distribution Guidelines and the ILO recommendations. It also indicates the way in which the transactions should be treated in household income and expenditure surveys. In most cases it suggests that the transactions should be separately recorded and tabulated. In addition, it indicates the specific component of income or expenditure, or receipt or disbursement in which each transaction should be included for the purposes of classifying households on the basis of income or consumption expenditure or household expenditure.

TABLE 3.2

Conceptual Treatment of Certain Transactions

Transaction	Conceptual treatment in SNA, IDG and ILO	Suggested treatment in household survey
(1)	(2)	(3)
1. Commissions, tips and bonuses cost of living and dearness allowances; payments in respect of vacation, holidays, sick leave and other relatively short absences from work, paid directly by employers.	<u>SNA</u> , <u>IDG</u> and <u>ILO</u> : treated as wages and salaries.	Record as wages and salaries.
2. Fees to ministers of religion.	- ditto -	- ditto -
3. Fees to members of Boards of Directors.	- ditto -	- ditto -
4. Expenditure on food, lodging ordinary clothing etc. which employers provide free of charge or at reduced costs to their employees.	<u>SNA</u> , <u>IDG</u> and <u>ILO</u> : treated as part of wages or salaries in kind.	Record value of concessions as part of wages and salaries in kind, and full value as CX for employee's household.
5. Cost of goods and services provided to employees free or at reduced rates.	<u>SNA</u> , <u>IDG</u> and <u>ILO</u> : treated as part of wages and salaries in kind.	Treat as part of wages and salaries in kind and as CX for employee's household.

Notation: CX - Consumption expenditure; DX - Non-consumption expenditure; HX- Household expenditure; NX - Household disbursements other than expenditure; HY - Household income; NY - Household receipts other than income.

(1)	(2)	(3)
6. Contributions made by employers on account of their employees to social security schemes, private funds, reserves or other special schemes in respect of family allowances, lay-off and severance pay, casualty and maternity leave, pensions.	<u>SNA</u> and <u>IDG</u> : treated as part of compensation of employees. <u>ILO</u> : not treated as part of income.	Difficult to collect data; may be omitted.
7. Direct payment by employers for the purposes given in 6 in the absence of special schemes or reserves.	<u>SNA</u> : imputed value included in compensation of employees. <u>IDG</u> : excluded from compensation of employees but treated as other benefits received in the case of actual receipts. <u>ILO</u> : treated as pension, social security and related benefits when actually received.	Treat actual benefits received as HY or NY depending upon the character (regularity and recurrence) but show separately under pension, social security and related benefits.
8. Outlays by employers which benefit both employers and employees: e.g., amenities at places of work, medical expenses, sports and other recreational facilities, reimbursement of expenses of travel, entertainment and work clothing, tools and equipment incurred by employees.	<u>SNA</u> , <u>IDG</u> and <u>ILO</u> : not treated as part of wages and salaries in kind but as intermediate consumption for employers.	Data not to be recorded in employees' household; for employer, treat as expenditure on enterprise.

(1)	(2)	(3)
9. Free issues of food, beverages tobacco and clothing including uniforms to members of armed forces and the police.	<u>SNA</u> and <u>IDG</u> : treated as wages in kind. <u>ILO</u> : no specific recommendation.	Treat as part of wages in kind and CX.
10. Uniform or work clothing to other civilian employees.	<u>SNA</u> , <u>IDG</u> and <u>ILO</u> : treated not as part of wages in kind but as intermediate consumption for the employer.	Not to be treated as part of wages or salaries in kind, and not as CX.
11. Imputed gross rent of dwellings provided free to employees.	<u>SNA</u> , <u>IDG</u> and <u>ILO</u> : treated as part of wages in kind.	Treat as part of wages or salaries in kind, and as CX.
12. Imputed gross rent of free family dwellings of military personnel.	- ditto -	- ditto -
13. Imputed rent of barracks of military personnel.	<u>SNA</u> and <u>IDG</u> : not treated as part of wages in kind. <u>ILO</u> : no specific recommendation.	Not to be treated as a part of wages or salaries in kind or of CX.
14. Subsistence production of primary products, that is the characteristic products of agriculture, fishing, forestry and logging and mining and quarrying - for own account consumption or barter or sale.	<u>SNA</u> , <u>IDG</u> and <u>ILO</u> : treated as gross output for calculation of gross entrepreneurial income, to be evaluated at producer's prices.	To be treated as in SNA; if producers' prices are not available use the nearest local wholesale market prices. Value of own production consumed is also to be treated as CX.

(1)	(2)	(3)
15. Output by producers of other commodities (goods or services) which are consumed in the households if they are also produced for the market.	As in 14 above.	As in 14 above.
16. Processing of primary commodities by the producers of these items in order to make such goods as butter, cheese, flour, wine, oil, cloth or furniture, for their own use though they may not sell any of these manufactures.	<u>SNA</u> and <u>IDG</u> : treated as gross output for calculation of gross entrepreneurial income to be valued at producers's prices. <u>ILO</u> : no specific recommendation.	As in 14 above. If local producer's prices not available retail prices may have to be used. The consumption of these items should be recorded separately as CX.
17. Imputed net rent of owner-occupied dwellings.	<u>SNA</u> : treated as entrepreneurial income. <u>IDG</u> : as property income. <u>ILO</u> : as income in kind.	Approximate valuation only possible. Give full details of house; record and tabulate data separately as HY from property.
18. Own-account fixed capital formation (buildings, land improvement, irrigation canals, natural increase in livestock).	<u>SNA</u> , <u>IDG</u> : treated as gross fixed capital formation. <u>ILO</u> : Data not needed.	Data may be collected in the context of household economic activities; to be valued at cost of materials plus own labour at market wage rates.

(1)	(2)	(3)
19. Payments in kind of wages and salaries made by the household enterprise in terms of the product of the enterprise.	<u>SNA</u> , <u>IDG</u> : treated as part of gross output of household enterprises to be valued at cost of production. <u>ILO</u> : Data not needed.	Data may be collected in the context of household economic activities; to be included in value of output and shown as wages and salaries paid by the household.
20. Domestic services.	<u>SNA</u> and <u>IDG</u> : treated as producers of services.	Record and tabulate expenditure on domestic services separately as CX. If domestic servant is a member of the household, show it in HY also.
21. Expenditure by households on durable goods and houses used by them for household as well as for household enterprises.	<u>SNA</u> , <u>IDG</u> and <u>ILO</u> : treated partly as consumption expenditure and partly as current or capital expenditure of household enterprise.	Record total expenditure for each item, and split it up according to extent of use for domestic and enterprise purposes. First part to be treated as CX.
22. Expenditure on museum fees, public recreational facilities, publications, post cards and art reproductions from museums, goods produced in vocational schools as incidental part of education or radio and television licenses where the Government provides substantial broadcasting service.	<u>SNA</u> , <u>IDG</u> and <u>ILO</u> : treated as CX.	To be treated as CX.

(1)	(2)	(3)
23. Fees, nominal or otherwise, in respect of public hospitals or schools.	<u>SNA</u> , <u>IDG</u> and <u>ILO</u> : treated as CX.	To be treated as CX.
24. Payments of fees for passports, driving permits, licenses, airport duties.	<u>SNA</u> and <u>IDG</u> : treated as transfers. <u>ILO</u> : treated as CX.	Record and tabulate separately; as DX.
25. Motor vehicle duties.	<u>SNA</u> , <u>IDG</u> : treated as direct tax. <u>ILO</u> : treated as CX.	- ditto -
26. Fees charged by private non-profit schools or hospitals.	<u>SNA</u> , <u>IDG</u> and <u>ILO</u> : treated as CX.	To be treated as CX.
27. Membership dues to trade unions, political associations, fraternal organizations, social clubs and donations to religious and welfare organizations.	<u>SNA</u> and <u>IDG</u> : treated as current transfers. <u>ILO</u> : treated as CX	Record and tabulate separately; treat as DX.

(1)	(2)	(3)
28. Direct taxes levied by public authorities at regular intervals on income from employment, property, entrepreneurship, capital gains, pensions and other sources of income, including real estate and land taxes if they are essentially in the nature of income tax, notwithstanding the administrative procedure for tax collection.	<u>SNA</u> and <u>IDG</u> : treated as direct taxes. <u>ILO</u> : treated as DX.	To be treated as DX; record and tabulate separately.
29. Levies by public authorities at regular intervals on the financial assets of the net and total worth of enterprises and on the possession or use of goods by individuals and households.	<u>SNA</u> and <u>IDG</u> : treated as direct taxes. <u>ILO</u> : treated as DX when levied on households as consumers; otherwise not needed.	To be treated as DX where applicable; in other cases data needed for the account of household enterprises; record and tabulate separately.
30. Compulsory fees, fines and penalties.	As in 24.	As in 24.
31. Social security contributions made by employees.	<u>SNA</u> and <u>IDG</u> : treated as current transfers. <u>ILO</u> : treated as DX.	To be treated as DX; record and tabulate separately.
32. Social security benefits (received by household).	<u>SNA</u> and <u>IDG</u> : treated as current transfers. <u>ILO</u> : treated as HY.	To be treated as HY; record and tabulate separately.

(1)	(2)	(3)
33. Social assistance grants.	As in 32	As in 32
34. Unfunded employee welfare benefits such as pensions, family allowances, casualty, lay-off and severance compensation paid by employers to their employees without establishing special funds or reserves or participating in private funds or insurance schemes.	<u>SNA</u> and <u>IDG</u> : treated as current transfers. <u>ILO</u> : treated as HY.	To be treated as HY; record and tabulate separately.
35. Pension (funded) and life insurance annuities and social security benefits received.	<u>SNA</u> : treated as reduction in savings. <u>IDG</u> : Current transfers and benefits (part of income). <u>ILO</u> : treated as HY.	To be treated as HY; record and tabulate separately.
36. Pension (unfunded) and unfunded employee welfare benefits received from government and enterprises.	<u>SNA</u> : treated as current transfers. <u>IDG</u> and <u>ILO</u> : same as in 35 above.	To be treated as HY or NY depending upon regularity; tabulate separately.
37. Fellowships, scholarships and other cash grants received from private non-profit institutions.	<u>SNA</u> and <u>IDG</u> : treated as current transfers. <u>ILO</u> : HY or NY depending on regularity.	- ditto -

(1)	(2)	(3)
38. Remittances received from resident and non-resident households.	As in 37	As in 37
39. Gifts in cash and kind received.	<u>SNA</u> : does not account <u>IDG</u> : treated as current transfers, part of total household income. <u>ILO</u> : treated as NY.	To be treated as NY; record and tabulate separately.
40. Free or subsidized goods and services provided by private enterprises and non-profit institutions, when public authorities pay for their supply.	<u>SNA</u> : treated as current transfer. <u>IDG</u> : cash receipt treated as NY and cash expenditure as DX. <u>ILO</u> : same as IDG.	To be treated as in IDG and ILO; record and tabulate separately.
41. Insurance benefits received in lump sum (endowment policies).	<u>SNA</u> : treated as depletion of financial assets. <u>IDG</u> : treated as capital transfers. <u>ILO</u> : data not needed.	To be treated as NY; record and tabulate data separately.
42. Casualty insurance benefits received.	<u>SNA</u> : treated as current receipts. <u>IDG</u> : treated as capital transfers. <u>ILO</u> : data not needed.	To be treated as NY; record and tabulate data separately.

(1)	(2)	(3)
43. Receipts of grants for damages incurred during calamities.	As in 42	As in 42
44. Inheritance, legacies and capital transfers received	- ditto -	- ditto -
45. Investment grants for household enterprise received.	<u>SNA</u> and <u>IDG</u> : treated as capital transfer. <u>ILO</u> : data not needed.	Data to be collected only if a detailed inquiry of household enterprises is to be made.
46. Payment of inheritance taxes, legacies and capital donations to non-profit bodies.	<u>SNA</u> and <u>IDG</u> : treated as capital transfer. <u>ILO</u> : Data not needed.	To be treated at NX; record and tabulate separately.
47. Pension fund contributions.	<u>SNA</u> : service charges allocated to CX. <u>IDG</u> : treated in whole as current transfer. <u>ILO</u> : treated as DX.	To be treated as DX; record and tabulate data separately.
48. Casualty and life insurance premiums.	<u>SNA</u> : service charges allocated to CX. <u>IDG</u> : treated in whole as current transfer. <u>ILO</u> : treated as DX.	To be treated as DX; record and tabulate data separately.

(1)	(2)	(3)
49. Consumer debt interest.	<u>SNA</u> : treated as property income paid <u>IDG</u> : - ditto - <u>ILO</u> : not specified.	- ditto -
50. Current transfers from resident to non-resident households and vice versa.	<u>SNA</u> and <u>IDG</u> : treated as current transfers. <u>ILO</u> : transfers to non-residents treated as NX; receipts from non-residents treated as HY or NY depending on the nature of the transfer (see 38 above).	To be treated as in ILO

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CHAPTER IV

SURVEY METHODOLOGY AND RELATED PROBLEMS

A. Introduction

4.1 Having discussed in detail the scope, coverage, concepts and definitions of household income and expenditure surveys, we shall now turn to the survey methodology and related problems. We shall discuss in this chapter the methodological issues involved in the ascertainment and measurement of incomes and expenditures and the problems encountered in practice in obtaining measures conforming to the concepts laid down in the preceding chapter. This chapter divides the methodological issues into two main groups -- the first relates to the methods of data collection, and the second to problems of measurement -- and discusses the relevant issues in the sections that follow. The last section summarises the main conclusions.

4.2 The choice of appropriate methodology depends on a number of factors. The principal objectives to be met by the household income and expenditure survey, the timing and duration of the survey, the population to be covered, the population parameters to be estimated, that is, in particular, whether the main interest lies in estimation of aggregates, averages or distributions, the precision expected in the survey results, and, more importantly, the resources available for the survey, all of which have a bearing on the methodology. The survey environment obtaining in a given country would also be a deciding factor in the choice. For example, the extent of literacy in the population, transport and communication facilities, and availability of the necessary technical manpower, are some of the important factors which may limit the survey statistician's choice of methodology. Moreover, the methodological choices available in regard to different aspects of the survey operation are interrelated and not independent of each other.

4.3 As the survey environment varies from country to country, and as the survey methods depend on the objectives of the survey envisaged, it is not intended to provide model guidelines that can be applied in all circumstances. The attempt here is to analyse the different aspects of the methodology available in relation to the situations generally faced in developing countries so as to help a survey statistician to decide the methodology appropriate for his survey. There is, in fact, no clear guidance available on many of the issues and, therefore, country-specific methodological research is called for in regard to different techniques of data collection in order to evolve the most suitable method for the collection of data on incomes and expenditures through household surveys.

B. Methods of Data Collection

1. Basic Approach

4.4 The primary objectives of a household income and expenditure survey include estimation of national aggregates, averages and distributions of income and expenditure, sources of income, patterns of expenditure and related indicators. To meet these objectives, data will have to be collected on the characteristics of the households and household members, their incomes and expenditures, and as a basis for the latter, data on all household receipts and disbursements, in general.

4.5 The incomes and expenditures of a household are in the nature of flows related to a specific period of time unlike personal or household characteristics which refer to a point of time although some of those characteristics may also be determined on the basis of what happened over a specific reference period. Data on income and expenditure have, therefore, to reflect the relevant flows in the specified period of time. For example, for use in national accounts, the data have to reflect the household incomes and expenditures during the year to which the accounts refer. For the construction of the weighting pattern for a consumer price index, data on consumption expenditure have to refer to the year which is taken as the base for the index. Leaving aside certain special situations, the aim of a household income and expenditure survey is, therefore, to collect data on the relevant flows in such a manner as to enable the estimation of the total flows for the reference year for all households or predetermined segments of the household population sought to be thus covered. The coverage of the household income and expenditure survey has thus two dimensions: (1) lateral coverage, in terms of geographical boundaries (country, region, residential sector) and/or socio-economic groups which are sought to be covered and (2) temporal coverage i.e. the time period for which estimates are required. Given the specifications, the household income and expenditure survey has somehow to cover the two dimensions in an appropriate and effective manner.

4.6 One possibility, of course, is to take a census of all households of the specified lateral domain and record in respect of each such household all flows of income and expenditure for the whole of the reference year. That, however, is too expensive and unmanageable. A sample survey of households would sample the households laterally, and thus reduce the burden partially. The burden of temporal coverage would, however, still remain. One would still have to collect complete information on incomes and expenditures for the whole reference year in respect of every household in the sample. In fact, to meet the total objectives of the survey, one would have

to take a complete account of all receipts and disbursements of each sample household for the whole of the reference year.

4.7 The accounting approach implicit in the above stipulation is in fact followed in special surveys. In a farm management survey, for example, a cost accounting approach is followed in some countries where farmers, who cannot keep accounts because of illiteracy, are contacted every day of the accounting period to obtain a record of the costs incurred by them on their farms. But in general, household income and expenditure surveys, the accounting approach is rarely followed. One reason is that to collect data from every household selected for the sample by contacting it every day or even every week for a whole year would be a tremendously expensive operation. Secondly, experience shows that households often fail to respond after a certain period and that could lead to a total failure of the data collection operation. Thirdly, and this is not often realized when the surveys are planned, the processing of such huge amount of information contained in the daily records would be extremely expensive and time-consuming.

4.8 A variant of the above approach is to make the sample households to maintain daily accounts of all receipts and disbursements for the whole of the reference year. It is no doubt conceivable in countries where the household population is generally literate and willing to maintain the accounts, but depends very much on the willing co-operation of the households to maintain such accounts for a long period such as a year. In some countries, the sample households do maintain such accounts continuously for long periods, but in many others they do not. In most countries, such co-operation can be expected at best for a short period such as a week, a fortnight or a month, and not for a whole year. Some countries, therefore, expect sample households to provide summary information on incomes and expenditures for the whole year without enforcing proper maintenance of accounts or even organizing periodic data collection. The data collected through such methods may not, however, be objective.

4.9 A feasible alternative to the above-mentioned accounting approach is to extend the scope of sampling to temporal coverage whereby a short reference period or a set of short reference period out of the reference year is randomly selected for each sample household and the relevant flows are estimated on that basis. This is generally done in practice not by allocating a random reference period to each sample household, but by dividing the reference year into a number of short reference periods of equal duration, dividing the sample correspondingly into the same number of interpenetrating sub-samples of equal size and assigning each sub-sample at random to each reference period or to a set of reference periods. Thus, each sub-sample would provide a valid estimate

for the short reference period it covers and a combined estimate based on all sub-samples would provide a valid estimate for the reference year in respect of each flow. This approach can be followed for the estimation of most of the flows sought to be measured in a household income and expenditure survey. The data on stocks and characteristics measured in this manner would represent the average situation over the reference year and not to any specific period of time. The essential requirement of this approach is that for any short reference period so devised, the sub-sample of households surveyed should constitute a representative sub-sample of the total sample.

4.10 Sampling, whether lateral or temporal, inevitably introduces sampling errors. In a household survey adopting an accounting approach for data collection, the sampling error arises only from the sampling of households. In a survey adopting the estimational approach outlined above, a new dimension is added to the sampling error, that is error arising from sampling over time. Nevertheless, the estimational approach is preferred as the accounting approach is too expensive and unmanageable.

2. Methods of Inquiry

4.11 Different techniques and procedures may be considered for the purpose of collecting data on incomes and expenditures. Interviewing household members, ascertaining particulars by direct observation, collection of data through mailed questionnaires and asking households to keep daily accounts are some of the collection methods which can be considered. They have their advantages and disadvantages and their suitability depends upon the situation obtaining in a given country. They need not, however, be treated as mutually exclusive alternatives. They can often be used in judicious combinations.

a. Interview

4.12 The method of interview, that is meeting the respondent, explaining the purpose of the inquiry, getting answers to a set of questions and obtaining the requisite data on the items of inquiry, is one of the most common methods followed in household income and expenditure surveys in developing countries. The method is especially suitable in countries where large sections of population are illiterate. It is found to attract high co-operation and low non-response. If the interviewers are intelligent and well-trained for the job of data collection, the method can ensure satisfactory data on incomes and expenditures. It, however, requires trainable manpower and is generally a costly method of data collection in

comparison to mailed questionnaires or maintenance of accounts. If data on past experiences, events or flows are required as in an income and expenditure survey, unless the period to which the data relates is short enough and fairly recent, the data may be affected by memory lapses depending on the nature of the information sought. Further, if the interviews are too long or too frequent, the method may provoke non-co-operation and non-response.

b. Observation

4.13 The method of direct observation of events, behaviours, practices and phenomena as they take place could be considered, theoretically, the best method of collecting data. However, for obvious reasons, it is not possible to observe the household income as it accrues or the expenditure as it takes place. The method of observation is, therefore, restricted mainly to collecting data on food consumption if such data are required, and consists of measuring the quantities of food that enter the meals taken by the household. The households are contacted at the time of preparation of each principal meal each day and detailed observations regarding the constituents of food, the method of cooking, etc. are made and the quantities of food measured. This is an expensive method of data collection and can be used only for ascertaining observable events etc. It can be adopted only if the period of observation is not too long.

c. Mailed Questionnaire

4.14 The method of collecting data by mailed questionnaire is an inexpensive method that can be employed for any statistical inquiry. This method expects the responding unit to complete the mailed survey questionnaire and return it by mail again to the data collecting agency. To encourage and facilitate return, the respondent is sometimes provided with a postage-paid envelope addressed to the data collecting agency. The method can work out satisfactorily if the questionnaires are not very long, the nature of questions is not complex, and the terms used are unambiguously clear to the respondent. It presupposes on the part of respondents adequate literacy, numeracy, ability to understand questions and willingness to provide the required data. In most cases it would require a follow-up by the field staff even if the general level of literacy, numeracy, ability and willingness among the respondents is very high. At the subsequent stages of editing and data processing the method would also lead to a very much larger amount of work than in the case of other methods because the data are not generally entered in a uniform manner.

d. Account Keeping

4.15 In this method a household is provided at the outset with an account book or a diary in which it is expected to keep daily accounts. The period for which accounts are to be kept is generally not long and the form of the account book is simple enough for the household to follow. In most cases the account is confined to expenditures and other disbursements. In some others it is extended to incomes and other receipts also. In order to ensure complete recording, a separate account book is given to each individual above a certain age. At the end of the accounting period, the account books are collected by field agents who check them for consistency, especially of quantities and values reported, and for filling the missing entries. In some cases, field agents make daily or periodic visits to the households and assist them in maintaining the accounts.

4.16 This method has the merit of eliminating memory lapses to a large extent. The method is practical, effective and inexpensive, especially in countries where literacy rates are high, and households are able and willing to keep the accounts on their own. Where the literacy rate is low, the households may have to be helped by field agents, and in that case the field costs would naturally increase and the method could no longer be considered inexpensive. Willingness to maintain accounts cannot be taken for granted. In West European countries where this method is generally followed the response rate is usually about 70 per cent.(1) In Israel (1975-76) where the accounting period was one month, nearly 1300 out of the 4000 sampled households did not co-operate in the survey.(2) In many of the socialist countries, however, the selected households do keep accounts for long periods out of a sense of national responsibility. Incentives are sometimes provided to ensure better response.

4.17 It may not always be possible to make the accounting period too short because of the possible variations, especially in expenditure, even during a short period such as a month, as a reduction of the period would lead to larger sampling errors. In Bangladesh it was found that 37% of the total monthly expenditure was incurred during the first week of the month, 16% during the 2nd week, 18% during the 3rd and 29% during the 4th week.(3) The choice of the accounting period has to take into consideration these variations, especially in the case of certain classes of households.

4.18 When selected households drop out of the accounting process, it becomes very difficult to maintain the representative character of the sample selected. It is also often feared that involuntary account keeping may affect the spending habits of the households, depending on the length of the accounting period.

4.19 Considering the complexity of the subject matter, the necessity of obtaining complete and consistent data, and the advantages, disadvantages and limitations of the various methods of inquiry, most developing countries use the interview method or a combination of the interview and account-keeping methods for household income and expenditure surveys. It has to be noted in this connection that the choice of the method of inquiry depends to some extent on the reference period for which the information is to be collected. For a short reference period, data can be collected either by interview or by account-keeping, whichever is considered more appropriate and more effective in the given circumstances. Data related to a long reference period can also be collected by interview but may be subject to recall errors. Account-keeping cannot, however be enforced for long periods in most countries. The general tendency is, therefore, to use the account method for items of information for which the appropriate reference periods are short, and use an interview method for those items for which reference periods have to be longer. In turn, therefore, this decides the type of items on which information would be collected by the interview method or by account-keeping method.

3. Field Operations

a. Survey Period

4.20 Survey period is the period of time during which the field-work involved in data collection for the survey is carried out. If the inquiry is carried out essentially by mailed questionnaire the question of a survey period is not important. If, however, the inquiry is carried out by the method of interview, observation or account-keeping the period over which these operations are carried out have a bearing on the validity and representative character of the data and the time period to which they refer. The survey period is different from the reference period which is the period for which data are sought on each item.

4.21 For instance, the field-work for an income and expenditure survey may be carried out in one month, say January, and information may be sought from each household surveyed on its income and expenditure during the preceding calendar year. In this case while the reference period is one year the survey period is one month. In another survey, for example, information may be sought from each household in respect of the preceding month, but the survey operation may be staggered over a year through an appropriate design. In this case, the reference period is one month but the survey period one year.

4.22 It has been mentioned earlier that for most purposes income and expenditure data collected through household surveys are required to provide estimates which refer to a year or are representative of a year, devoid of seasonal aberrations. If such data can be collected in respect of all households for a whole year through a mailed questionnaire or through a single interview the choice of this survey period is immaterial. If, however, the data are to be collected through periodic interviews, from samples which are staggered over a period of time, or by keeping continuous accounts for a period of time, it is important that the survey operations are spread uniformly over a period of one year through an appropriate sampling and operational design. The survey period, in such a case, will have to be a year, but not necessarily a calendar year.

4.23 If a combination of the interview and account-keeping methods is adopted as suggested above, it would be necessary to visit each sample household several times, successively, for an initial interview and introduction of the account book for assisting whenever necessary in account-keeping, for the collection of account books and for a final interview, summation and reconciliation of the accounts. The frequency of the visits would depend on the ability of the household to keep the account properly.

4.24 Even if the account-keeping method is not adopted and data are to be collected by interview, it may be desirable sometimes to organize repeat visits to each sample household in order to ensure more accurate information for the reference period the length of which may vary from a week to a year for different items of information. The interviewer would then ask the household information about the transactions which took place during the period intervening between his previous visit and the present visit or in respect of a well-defined period preceding each successive visit.

4.25 Even if the reference period is short as is usual for ascertaining frequent expenditures, there is some experimental evidence (4) which seems to indicate that anything less frequent than daily interviewing can lead to a considerable degree of underreporting. However, in most cases, daily interviewing for a period longer than a week is considered impractical and undesirable and so interviews are generally held twice or thrice a week or at weekly intervals over a month.

4.26 On matters for which information is required for a long period such as a year, either because of seasonal variations or because of infrequent transactions, repeat visits could be organized at intervals of one, two, three, four or six months as may be considered appropriate. At every visit, data are collected for an appropriate reference period generally by

interview. The reference period could be the period bounded by the previous visit and the present visit or a well-defined period preceding the present visit. In a survey conducted in Kenya(5), for example, a household was visited 13 times in a year and every time data for one week were asked for certain items and for one month for others. This facilitated efficient supervision and reduced recall bias and respondent fatigue. A possible advantage of repeat visits, assuming that the interviewer does not leave his job during the course of the survey, could be that he becomes well known to the respondent, gains his confidence and collects good information. It is also possible, however, that in some circumstances repeat visits may be considered a nuisance, generate resistance and lead to non-co-operation. In any case, a major disadvantage of the method is the relatively large cost of collecting data in respect of each household. The advantages of repeat visits over a long period have, therefore, to be balanced against the increase in costs of such a survey operation.

4.27 Repeat visits also attract a different kind of problem, apart from respondent resistance and reduction of sampling efficiency in the estimation of totals. The household as a group of persons is not a stable statistical unit because its composition may change over time. If, during repeated visits, it is found that the composition of the household has changed, it may be difficult to make a meaningful analysis of the data collected through repeat visits and relate it to the changing household membership. This, however, is a problem relevant to all social surveys of a longitudinal nature and can be tackled by treating the household as a continuing entity irrespective of possible changes in its composition.

4.28 On a balance of considerations, most of the developing countries seem to be in favour of one-shot surveys with one or more interviews confined to a short period or a combination of the interview and account-keeping methods. A paper on household income and expenditure surveys published in the Statistical Information Bulletin for Africa (No. 16) (6) finds that in 12 out of 20 countries for which it could get data, the sample household was interviewed only once during the survey year. In the case of 5 it was interviewed 2 to 6 times during the survey year, and in the case of 3 it was interviewed every month.

b. Reference Period

4.29 As mentioned above, the method of inquiry as well as the frequency of visits to sample households depends to some extent on the reference period chosen for data collection. Conversely, the choice of the reference period would also be

influenced by the method of inquiry and the frequency of visits envisaged. The account book method cannot be adopted over a long period in most countries. Even with the interview method, one cannot possibly obtain accurate information for a long reference period except in regard to infrequent occurrences or major transactions. If repeat visits are envisaged, information can be collected in respect of a short reference period preceding each such visit. But, if only a single visit is envisaged, the choice of the reference period would depend essentially on the requirements of accuracy.

4.30 Assuming that household incomes and expenditures are subject to short-term fluctuations over the reference year, that is variable from week to week or month to month, the larger the amount of information gathered in respect of each sample household, the less would be the sampling variability and the greater the accuracy of estimation. Therefore, the longer the reference period for data collection, the better it would be for accuracy in estimation. But the longer the reference period, the greater would be the chances of recall lapse, difficulties in account-keeping and maintenance of continuity in household composition. Thus, while the sampling error is controlled, the non-sampling errors may get out of control. On the other hand, a short reference period may enable better recall, facilitate maintenance of accurate accounts and provide information relatable to the current household composition, but the estimates based on such information may be subject to greater sampling errors. Moreover, the "end effects" arising from the misplacement of events or transactions would be comparatively higher in the case of a short reference period than in the case of a long reference period. (For a further discussion on this point, please refer to Non-Sampling Errors in Household Surveys: Sources, Assessment and Control, pp. 122-132.)⁽⁷⁾ Therefore, generally speaking, the reference period should be short enough to enable accurate recall of the events and transactions and preclude omissions due to recall lapses. It should, however, be long enough to capture an adequate number of events and transactions so as to facilitate control of sampling variability and minimize "end effects" arising from the possible misplacement of events and transactions. In other words, the reference period should be short enough but consistent with the requirements of accuracy.

4.31 There is empirical evidence to show that the shorter the reference period, the higher the estimates of expenditure generated on that basis, and the longer the reference period, the lower the estimates, especially when the inquiry is based on interview. This tendency may be partly due to both recall with a short reference period, partly to possible inclusion of transactions that might have taken place before or after the reference period as having taken place during the period, and possibly due to a deliberate inclusion of transactions which did

not take place during the period as having taken place during the period for the sake of social prestige. The higher estimates generated on the basis of the shorter reference period do not, therefore, necessarily mean that they are more accurate than those based on the longer reference period.

4.32 A World Bank Study⁽⁸⁾ has brought out the effects of the length of reference period on respondent participation in account-keeping. It showed that there were no significant differences between the results for households who kept diaries (accounts) for 2 weeks and 4 weeks. But there was a greater refusal to co-operate when the reference period was 4 weeks. However, once the households agreed to keep the account books, there was no significant difference in the drop-out rate of those who agreed to keep accounts for 2 weeks and 4 weeks respectively.

4.33 The requirements of accuracy indicate the desirability of an inverse link-up of the length of the reference period with the expected frequency of transactions so that an adequate number of transactions are captured in respect of each sample household. Accordingly, countries have adopted different reference periods for different types of transactions. For data on wage and salary incomes, the reference period used is usually a week or a month, while for income from self-employment, rental incomes, interest, dividends, etc. a longer reference period usually a year, has been used. In the case of expenditure on food, drinks, tobacco and other daily expenses, a week or a fortnight has often been chosen as the reference period. For expenditure on durables and items of infrequent purchase, the reference period of a year has generally been used, while for semi-durables and moderately frequent purchases, the reference period is usually taken as 2, 3, 4 or 6 months. The use of reference periods of different duration, however, necessitates larger processing work for conversion of the data to a period of standard length (month or year). Also, it is not easy to check data for varying reference periods for consistency. Therefore, in some countries, such as India, the reference period for all items of consumer expenditure has been uniformly kept at 30 days preceding the date of survey which, in practice, must have meant a vaguely understood period of a month.

4. Choice of Methodology

4.34 The choice of basic approach, method of inquiry, frequency of visits and reference period are thus, interdependent. It is possible to collect data in a single interview on all items but with varying reference periods as may be considered appropriate to minimize recall lapse. Multiple interviews suitably placed with short reference

periods can be arranged with advantage to reduce recall lapse. Both the single interview method and the multiple interview method can be accompanied by the method of account keeping for a short period for items of daily expenditure which are numerous, each, however, accounting for a small proportion of total expenditure. The method of direct observation appears to have a limited role confined to data on food consumption. The method of account keeping, provided that the period involved is not too long, would work for certain items as mentioned above but would have little role to play for other items of data which may be few in number but each of which accounts for a large proportion of total expenditure. A suitable combination of the basic approach, method of inquiry, field operation and reference period has to be worked out separately for different items of investigation taking into consideration the local practices of earning and spending, the literacy levels of the population and the feasible methods of data collection which depend on the type of manpower available.

4.35 In the final analysis, the decision is tied up with the ultimate aims of the survey in terms of its expected output. Statistically expressed, the objectives of a household income and expenditure survey could be:

- a) the estimation of national aggregates or averages of household income and expenditure, for purposes of national accounts or of weights for a consumer price index, for the country as a whole, for its regions or specified cities, and for specific socio-economic groups;
- b) the distribution of households by income and/or expenditure and the study of interrelationships between income and expenditure.

4.36 To meet the former objective it would be sufficient to attempt valid estimates of aggregate or average income and expenditure of households at the macro-level for the reference year. It would be possible to provide such estimates by collecting in respect of each household all data on receipts and disbursements for a short reference period during the year, taking different reference periods at random for different subsamples of households thus covering the whole year through a moving sample approach. The data can be collected either by the interview method through one or two interviews for each household, or by the account-keeping method or by a combination of the two. Sometimes, seasonal estimates of expenditure may be needed for the derivation of seasonal weights for seasonally variable items of food such as vegetables and fruits. They can be derived from seasonal estimates based on different sub-samples and it is not essential to study the same households in different seasons.

4.37 To meet the second objective, however, it would be necessary to collect for every sample household data on income and expenditure in such a manner as would generate at the micro-level valid estimates of annual income and expenditure for each household. If the data are required for a specific year, it would be necessary to collect the relevant data for the whole year through repeated visits. The number of visits would depend on the expected seasonal pattern of accrual or incidence in the household's income, other receipts, expenditure and other disbursements. For example, in the rural areas, the number of visits would have to be at least equal to the number of agricultural seasons in a year so that at each visit, organized at the end of each season, data on receipts and disbursements for that season could be collected with reasonable accuracy. If that is not considered satisfactory, more frequent visits may have to be organized to each sample households, at quarterly or monthly intervals as may be considered appropriate, depending on the accuracy needed.

4.38 For most purposes, however, it may not be necessary to estimate household incomes and expenditures at the micro-level for a specific year. For purposes of the distribution of households by income or expenditure or for the study of the interrelationships between income and expenditure, it may be sufficient to estimate "usual incomes" and "usual expenditures" of households as distinct from the "actual incomes" and "actual expenditures" for a specified year or the "current incomes" and "current expenditures" related to short reference periods within the year. The "usual" incomes and expenditures of households can be estimated more accurately than through "current" incomes and expenditures related to a short reference period, by supplementing the data on current receipts and disbursements in respect of frequent transactions, by data for longer reference periods (such as a quarter or a year) in respect of less frequent transactions. With a moving sample, the estimates of income and expenditure thus obtained cannot perhaps be related to a specific year but can be described (for want of a more suitable term) as "usual income" and "usual expenditure" obtaining over a period of two years including the survey year.

4.39 Before launching a household income and expenditure survey, one would have to carefully decide at the outset the major objectives of the survey and determine the appropriate combination of methods for achieving these objectives. Data collection for the estimation of actual incomes and expenditures for a specific year is a very expensive proposition. Unless such data are considered absolutely essential, it would be cost-effective to concentrate on the estimation of current and/or usual incomes and expenditures as may be preferred depending on the major objective.

4.40 Against the background of the above analysis of the various issues, it would appear that a cost-effective survey methodology, efficient for the estimation of both current and usual incomes and expenditures would be as follows:

- (i) The household sample will be divided into twelve interpenetrating sub-samples of equal size, each to be surveyed in a different month to which it is randomly assigned.
- (ii) Each sample household will be surveyed during the course of the month to which it is assigned, in one or more visits as may be necessary depending on the method of data collection.
- (iii) The standard reference period for current incomes and expenditure will be one month for all items. In addition, a reference period of one year may be adopted for infrequent expenditures such as on durables, income from self-employment in agriculture, property incomes, etc.
- (iv) Whenever appropriate, an additional reference period of one quarter may be adopted for expenditures on semi-durables and periodic payments of intermediate frequencies. The supplementary data for the reference period of one year (and one quarter wherever adopted) may be collected by the method of interview.
- (v) The ideal method of data collection for the standard reference period of one month would be account-keeping. If the literacy level is low it would not be possible to adopt this method, especially in the rural areas, and even in the urban areas of some developing countries. Even if the households have the ability to keep accounts, their willingness to do so for one month may be uncertain. In that case, the accounting period may be reduced to a fortnight, the monthly sub-sample divided into two random groups and one group surveyed each fortnight. If necessary and possible, assistance may be provided to the households in keeping the accounts.
- (vi) An alternative to the above is to collect the requisite data through weekly interviews, the last interview covering the fourth week as well as the remainder of the month. If that is not possible, the monthly sub-sample may be divided into two random groups and one group surveyed each fortnight through weekly interviews the second interview covering the second week as well as the remainder of the fortnight.

- (vii) If neither of the above procedures is possible, as the last resort, the data for the whole month may be collected by the method of interview in a single visit at the end of the month.
- (viii) Data collection in respect of a single week in respect of each household either by account-keeping or by interview is not recommended as the errors involved may be too high.
- (ix) If, however, quantitative data on food consumption are required for nutritional analysis or for the preparation of food balance sheets, the investigation may be restricted to one random week during the reference month in respect of each sample household or each household of an adequate sub-sample and the data obtained by the method of observation through daily visits.

C. Measurement of Income and Expenditure

1. Monetary Income

4.41 Conceptually, the components of monetary income are wages and salaries in cash, employers' contributions to social security and similar schemes, gross entrepreneurial income of unincorporated enterprises (including withdrawals from quasi-corporate enterprises), interest, dividends and rents. Employers' contributions to social security and similar schemes are not generally known to the employees and hence cannot be ascertained from the employee's household. They should, therefore, be excluded from the scope of the inquiry on household income. However, actual receipts of social security benefits, pensions, life insurance annuities and current transfers should be recorded.

4.42 If income data are to be collected from a household for a short and specific reference period, it would be necessary to clarify the implications of this scheme of data collection in regard to the nature of data collected on income, especially of wages and salaries and income from self-employment. During the reference period, an individual may have worked but may not have received any income from that work. On the other hand, during the reference period he may have received some income from work done in a past period. The approach to be adopted for the measurement of income could be either to take the amount of income receivable for work done during the reference period or the amount of income actually received. To the extent that a person is regularly employed, the former approach would give data which would not differ very much from period to period, and as a result the estimate based on the data

collected for the reference period would have low sampling error. On the other hand, if receipts of income accrue only at certain points of time and if an adequately long reference period is not used, in some cases even if the person has worked during the reference period, he would not report receipt of income because it was not received during the reference period, or would report receipts of income which cover past periods including or excluding the reference period. Even in the case of persons regularly employed and paid according to a time rate, the income received would be disproportionate to the reference period. This results in a large sampling error in the estimates of aggregates based on data on income actually received during the reference period. In most surveys this distinction does not seem to have been made perhaps because the reference periods used have been considered adequate or in conformity with the periodicity of different types of income, even of income from wages and salaries.

4.43 Even income from self-employment does not always accrue throughout the year, and there could be considerable seasonality in the nature of self-employment activities and income derived from such activities. In fact, in the case of crop cultivation, there may be only inputs but no outputs in some periods and only outputs but no inputs in some others. Sampling over time in such cases could lead to estimates subject to larger sampling errors unless the reference period used covers the whole year.

4.44 The use of a standard reference period of one month as proposed above, would obviate this problem to a large extent so far as wages and earnings are concerned, and even in the case of incomes from self-employment in small-scale non-agricultural activities. In the case of agriculture supplementary data are in any case to be collected in respect of a longer reference period such as a year for the derivation of more acceptable micro-level estimates. Therefore, for the sake of simplicity, objectivity and consistency in accounting receipts and disbursement, the data on incomes should be recorded as receipts rather than as accruals.

a. Wages and Salaries

4.45 The component of wages and salaries includes wages, salaries, cost of living or dearness allowances, house rent and transport allowances, overtime payments, commissions, gratuities, bonuses and other similar elements including payments received for leave periods, prior to deductions made at the source, if any, as taxes, social security contributions, insurance premiums, subscriptions etc. Wages are payments to labour which are generally paid by time rates or piece rates related to time actually worked or work actually done.

Salaries on the other hand are usually related to a longer period such as a month or a year and are not strictly related to the time actually worked or work actually done.

4.46 The reference period used for collection of data on wages and salaries has generally been a week for wages and a month for salaries, and data are collected by personal interview. In order to obviate the problem mentioned in paragraph 4.42 data are sometimes collected on the last payment made and the period covered by that payment in order to arrive at some sort of normal income from wages and salaries. This need not be done if the standard reference period of one month is adopted unless the payment actually received during the month is found to cover more than a month. The data should be preferably collected for each individual member of the household along with other employment details so that data on wages and salaries can be related to employment.

4.47 Data on wages and salaries are perhaps the easiest to collect, and only a few simple questions are needed to elicit information. However, depending upon the circumstances obtaining in a country, more detailed probing may be necessary. In a survey conducted in the United Kingdom (1976) the income questionnaire contained 74 questions mostly on wages and salaries (though not all on cash).

b. Income from Self-employment

4.48 If the members of the household are self-employed in productive activities as employers or own account workers, it is necessary to collect data on income from their self-employment activities in order to arrive at the total income of the household. The phenomenon of self-employment is very widespread in developing countries, especially in the rural areas, mainly in agriculture and other primary activities. Self-employment activities of the household sometimes described as household economic activities or household enterprises may include:

(1) Seasonal agricultural activities, (2) Perennial agricultural activities, (3) Livestock and poultry farming, (4) Fishing and fish-breeding, (5) Forestry and hunting, (6) Mining and quarrying, (7) Manufacture and repairs, (8) Construction, (9) Trade, (10) Transportation and storage, (11) Guest houses and restaurants, (12) Legal Services, (13) Engineering, architectural and technical services, (14) Medical, dental, health and veterinary services, (15) Educational, recreational and cultural services, (16) Laundry, cleaning and related services, (17) Barber and beauty services, (18) Photographic services, (19) Other services, excluding domestic services.

4.49 Although income from self-employment is an important element of the household income in developing countries, it is one of the weakest spots in data collection. The main reasons for the weakness are that data on income from these activities are not directly available and households are unable to report the relevant details in a summary form because in most cases they do not keep accounts. Moreover, a short reference period usually adopted for income investigations does not fully capture the operational details and the related data in respect of many of these household activities. Therefore, comprehensive surveys of household economic activities are required for the estimation of household incomes generated by such activities.⁽⁹⁾

4.50 It is not, however, generally possible to undertake a comprehensive survey of household economic activities as a component of a survey of household incomes and expenditures. In many of the surveys, therefore, the data are usually collected by a single question or a few simple questions on income from self-employment during the reference period. If the reference period is short no meaningful data on income from such activities as agriculture can be obtained. If the reference period is sufficiently long, satisfactory data cannot be expected without detailed inquiries. To obtain reasonably accurate data on income from self-employment, the following methodology is suggested.

4.51 For the estimation of income from self-employment information needs to be collected separately on the inputs (including labour inputs) and outputs of each such activity. While the outputs of each activity can be identified and ascertained separately, the inputs, some of which may be common to several activities, cannot possibly be identified, isolated and ascertained separately for each activity. For purposes of the estimation of income from self-employment activities, the household may, therefore, be taken as a single economic unit. All inputs into the household's economic activities will have to be listed and their values ascertained. The inputs may include:

- (a) agricultural seeds and seedlings
- (b) animal, poultry and fish feed
- (c) primary products used for further processing
- (d) semi-manufactured goods used for further processing
- (e) explosives, chemicals and chemical products
- (f) water, electricity, fuel and lubricants
- (g) other manufactured goods used as inputs
- (h) building materials used for construction
- (i) transportation, storage and communication
- (j) repairs and servicing
- (k) rent, interest, brokerage, commissions and fees
- (l) hired labour
- (m) other miscellaneous costs.

4.52 The outputs may include agricultural, livestock, forestry and fishery products, mining and manufacturing products, the outputs of construction, transportation and communication activities, lodging, boarding and restaurant services, community, social and personal services etc. In the case of trade, the output may have to be ascertained as the excess of sales over purchases, for which purpose data will be required on the value of all goods purchased for resale and the value of the sales.

4.53 Data on all inputs and outputs may be obtained in respect of each household engaged in such activities for the standard reference period of one month. Care will have to be taken, however, to distinguish inputs of economic activities from goods and services acquired for domestic consumption. This would indeed be difficult in some cases such as electricity which may be used for domestic as well as economic purposes, in which case the best possible allocation will have to be made. In addition, separate data on inputs and outputs will have to be obtained for agriculture, especially seasonal agriculture, in respect of a whole year for purposes of micro-level estimation of household income. This will again be an extremely difficult task which may, however, be made a little easier by asking for information in respect of each agricultural season for each crop.

4.54 Apart from data on output, it would be useful to obtain data on the disposal of the output through sales, transfers, own consumption etc. as a check against the reported data on output especially in the case of agriculture. Data on sales would also help in the valuation of the output. This would, however, be meaningful only in relation to the total output for the year and need not be done for the reference month.

c. Property Incomes

4.55 The other sources of monetary income for the household are rents, royalties, interests and dividends. Rents and royalties received for the use of buildings, land, copyrights and patents should be ascertained separately and classified as such. Receipt of rent may refer to various kinds of property such as land, buildings or equipment rented out by the household. For collecting data on interest, details should be asked about the interest accruing to the household from such sources as savings, deposits, bonds and loans given to other households and enterprises. Dividends received by members of the households could be reported as such. Information on expenditure incurred in connection with income from property such as current maintenance, mortgage interest and property taxes should be recorded for each item separately.

4.56 Generally, these items would not pose much difficulty for data collection except perhaps in the case of interest received on loans given (especially when money lending is an economic activity of the household). As these incomes are of an infrequent nature the relevant data should be collected in respect of the last year, in addition to the data for the last month. Memory bias is not expected to be a significant factor in these cases.

d. Income from Current Transfers

4.57 These receipts include current transfers received by the household such as social security benefits, pensions, life insurance annuities, etc. Social security benefits would include current transfers from the public authority to the households, unemployment insurance benefits, accident, injury and sickness benefits, old age, disability and survivors' benefits, family allowances etc.

4.58 Receipts of pensions to be recorded under pensions and life insurance annuity benefits are those which are not part of a social security scheme. They may either be paid out of an independently organized pension fund relating to specific groups of employees or paid by an employer under an unfunded pension scheme. Life insurance annuity benefits refer to survivors' current receipts from life insurance. Lump sum life insurance maturity payments and insurance benefits such as casualty insurance schemes are not to be recorded here as they are considered capital transfers and should be recorded under other receipts.

4.59 Apart from these, a household may receive social assistance payments from government agencies, fellowships or scholarships from non-profit institutions, and employee welfare benefits from enterprises. Further, in the light of the discussion in the preceding chapter, periodic payments received regularly from inheritance and trust funds, alimony, cash gifts, remittances, and any other assistance regularly received in cash are also to be classified as income from transfers.

4.60 As the periodicity of these receipts may vary, the relevant data should be collected in respect of the last year, in addition to the data for the last month for the estimation of usual incomes. By the very nature of these receipts, regularity and recurrence, households should be able to report these data through an interview, and as in the case of interest, dividends etc. the data are not expected to be affected by memory lapse.

e. Receipts other than Income

4.61 All other receipts which are occasional, i.e. not regular and recurrent, are treated as receipts other than income. Included here are large-scale transfers of funds as gifts, from other households, receipts from sale of possessions (including livestock), withdrawals from savings, lottery prizes, loans obtained, loan repayments (principal) received, capital gains, lump-sum inheritances, maturity payments (other than annuities) on life insurance policies, lump-sum compensation for injury, legal damages and other casualty claims received. In view of the infrequent occurrence of these receipts, the data may be collected in respect of the last year, in addition to the data for the last month, although they may not be required for the estimation of the usual income. The household is not likely to forget such transactions and will be able to report them in the interview.

2. Monetary Expenditure

4.62 Data on household expenditure are collected in household surveys in far greater detail than those on income. They are also generally of a better quality and have, therefore, been used for an indirect estimation of incomes and income distributions, in the absence of income data of good quality.

a. Consumption Expenditure

4.63 According to the resolution concerning Consumer Price Indices adopted by the Fourteenth International Conference of Labour Statisticians, 1987 (10) consumption expenditure can be measured in terms of "acquisition", "use" or "payment". "Acquisition" implies the total value of all goods and services delivered during the reference period, whether the full payment for the goods and services was made during that period or not, and whether they were used during that period or not. "Use" implies the total value of all goods and services actually consumed during the reference period irrespective of whether they were acquired during that period or not and whether the full payment therefor was made during that period or not. "Payment" implies the total payments made for goods and services during the reference period irrespective of whether the goods and services paid for were fully delivered during that period or not, and whether they were used during that period or not. The resolution recommends that the concept of acquisition or of payment be chosen if the index is defined in terms of money flows, and that the concept of use be adopted if the index is related to consumer demand.

4.64 The SNA (11) definition of final consumption expenditure adopts the "acquisition" approach, so far as purchases are concerned. It includes, however, the gross output of industries for use in the household of the owner such as, for example, agricultural products, gross rent of owner occupied dwellings, and payments in kind received as wages and salaries. In these cases, what is counted as consumption expenditure is based on the "use", that is the total value of goods actually consumed during the reference period.

4.65 In developing countries, the rural population depends largely on its own production of food for consumption. However, agriculture being what it is, the food produced is not always consumed as and when it is produced but stocked for long periods and withdrawn from the stocks for consumption as and when needed. Acquisition and use or consumption are, therefore, vastly different phenomena in such cases. The urban populations, however, usually purchase their food requirements and even though food articles are sometimes bought in bulk and stored for a while, over the long run, and even over a reasonably long and not too short reference period, acquisitions tend to approximate use or consumption and one can safely depend on acquisitions.

4.66 In the case of semi-durable and durable goods acquisitions are mostly by purchase and the payments approach can be adopted in most cases. But in countries where credit purchase systems are prevalent, the two cannot be equated. One has, therefore, to adopt strictly the acquisition approach and record the total value of the acquisition as expenditure and the credit availed of as a receipt other than income. Also in countries where advance payments are made for acquisition of goods in short supply, e.g. motor vehicles, the payments made should be recorded as disbursements other than expenditure, pending receipt of the goods. When the goods are actually acquired, their value is entered as consumption expenditure and a corresponding entry made on receipts side as receipts other than income.

4.67 If durable goods are acquired on a hire-purchase basis during the reference period, the record of expenditure on purchases of such goods has to show details of cash price, the amount of down-payment made during the period, the number of instalments specified in the hire-purchase agreement and the amount payable in instalments, the cash price should be shown as the expenditure and the difference between the cash price and the downpayment as a receipt other than income. If during the reference period an instalment payment has been made, it should be shown as a disbursement other than expenditure if it is a part of the price, and as interest paid if it is paid as such.

4.68 In the case of transport and communication, medical and health services, educational recreational and entertainment services, personal services etc. which are enjoyed from time to time, acquisition, use and payment usually coincide and the payment approach can well be adopted.

4.69 In the case of housing, current supplies such as water and electricity are continuously acquired and used, but payments are made periodically. If the periodicity of the payment is monthly or less, the payment approach can well be adopted. If not an alternative approach is called for. If the quantities of supplies consumed during the reference period are known, they can be valued at the current price and related overhead charges can be added. If the quantities are not known, the expenditure involved in the last payment and the period it covered may be ascertained as a basis for estimating the corresponding expenditure for the standard reference period.

4.70 The last payment approach can also be adopted for certain expenditures such as school fees which may be incurred at intervals longer than the standard reference period although the services are acquired continuously.

b. Subsidized Goods and Services

4.71 When the government subsidizes the sale of certain goods and services, the question would arise as to how the expenditure of the household should be recorded. According to SNA, when a government service arranges for and specifies in detail the terms and standards of providing services or goods and the person receiving it is left with little opportunity to make decisions in respect of these matters, the government service is considered to be the purchaser of the service or the good even if the receiving person makes some payment. If on the other hand the person is free to select the private unit which is to provide the service or good and the terms of supply, he should be considered to be the purchaser.

4.72 For example, in a national health scheme, the government makes contracts with medical and dental practitioners which specify the terms and conditions of services to be rendered and sets an annual retainer fee to be paid to each practitioner based on the number of persons registered for his care as well as for the forms of treatment he actually gives. In such a scheme, though individuals are permitted to change the practitioners with whom they register, in practice, such shifts are inconvenient and infrequent. The government health service pays almost the entire cost of the medical and dental care and the individual makes only a nominal payment. The government health service thus organizes and controls the provision of the private medical and dental services provided to the individuals

In this case, the payment made by the individuals should not be treated as consumption expenditure. Presumably, it is to be treated as non-consumption expenditure (transfer).

4.73 In another type of national health scheme, the government health service sets the maximum payments which it will make and the general standard in respect of the various forms of medical and dental treatment. The individuals covered under the scheme are left free to choose the practitioner from whom the health care and the terms on which the treatment is to be provided. The government health service finances, within the limit of maximum payment it has set, most of the cost of actual treatment received. The government service may pay the medical or dental practitioners directly or reimburse the individuals for making these payments. The individuals in question thus make essential decisions and arrangements in respect of the medical or dental services they receive and should be considered to be the purchasers of these services. In this case, the expenditure is considered as consumption expenditure of the household.

4.74 The Income Distribution Guidelines (IDG), however, concede ⁽¹²⁾ that it will be difficult to collect from households data on either the cost to the government or the retail value of the goods and services in question. The element of current transfers received from government or private non-profit bodies will have, therefore, to be omitted. The distinction drawn between the two types of services is of little consequence so far as the household is concerned. The survey should, therefore, record the actual expenditure of the household, net of reimbursement from government, as consumption expenditure under the appropriate item group.

4.75 When food, clothing, medical and health care, welfare and educational services are provided free of charge or at reduced rates by employers to their employees, the concessions so given should be considered as a part of compensation of the employees and the market value of the goods and services received should form part of the final consumption expenditure of the household. (For further discussion on market values, see discussion on incomes and expenditures in kind.)

4.76 In some countries, in the case of essential commodities of consumption, the government operates a system of fair price shops where commodities are made available to the consumer at prices considerably lower than the market prices. It is difficult to obtain, in a household survey, data on the extent of subsidy that results in this arrangement as it can only be estimated on the basis of the accounts of the department of the government which runs this scheme. It would, however, be useful

to show the data on the purchase of the commodities concerned according to the outlets from which they have been bought, that is whether fair price shops or open market. If the data are tabulated separately, it would show the extent to which the subsidized supply of commodities is enjoyed by the different sections of the population.

c. Subscriptions, Duties and Fees

4.77 Certain transactions which the ILO treats as consumption expenditure are treated by SNA and IDG as current transfers or direct taxes. Examples are subscriptions or membership dues to trade unions, political associations, fraternal organizations and social clubs, motor vehicle duties and fees for obtaining passports, driving permits, radio and television licenses etc. The identity of these transactions should be kept separate at the stage of data collection and tabulation under non-consumption expenditure, so that they can be added to the consumption expenditure, if need be, for certain purposes. They are specific items of expenditure and a household should be able to recollect the expenditure it incurred on such items during the past year which should be the reference period for these items.

d. Non-consumption Expenditure

4.78 SNA and IDG do not use the concept of non-consumption expenditure, but the ILO does. The items of expenditure which ILO classifies as non-consumption expenditure are: income tax and other direct taxes, pension and social security contributions, assimilated insurance premiums, remittances, gifts and similar transfers made by the household. Although the ILO recommendations do not say how consumer debt interest should be treated, it appears that it should also be included in non-consumption expenditure. Care should be taken, however, to separate it from interest on debt connected with household enterprise. It should not be difficult to collect data on these items separately in a single visit through interview using a reference period of a year.

e. Disbursements other than Expenditure

4.79 All other disbursements by the household are to be shown separately and individually and tabulated in that manner. These will include large-scale transfers of funds as gifts to other households, amounts invested or loaned, repayments of loans, payments made on credit purchases, instalment payments or hire-purchases (covering the principal but not the interest), outlays for other financial transactions, and

additions to savings. They should be recorded if the household has made them during the reference period of one year. Capital formation through household enterprise is not to be shown in this category.

3. Transactions in Kind

4.80 Transactions in kind involving the receipt and disposal of goods and services constitute an important element of the household budgets in developing countries and need to be entered appropriately on the receipts side as well as on the disbursements side of the household budget for balancing purposes. These transactions include:

- (a) goods and services received as income;
- (b) consumption of home production;
- (c) consumption from business stocks;
- (d) owner-occupied housing;
- (e) exchange of gifts.

Goods and services received in kind are to be recorded not only as incomes but also as consumption to the extent they are consumed. Items other than food are treated as consumed as soon as they are received and hence entered as consumption expenditure. In the case of food items, however, if the receipts happen to be large and not totally consumed within the reference period, there may be a case for showing the remainder as additions to stock (or savings) under disbursements. To the extent home production is consumed within the reference period, it is to be treated as consumption expenditure, and the corresponding value entered as income. Consumption from business stocks is to be treated as consumption expenditure and the corresponding value entered on the receipts side as withdrawal from stocks (savings). The rental value of owner-occupied housing appears both as income and consumption expenditure. Exchange of gifts in kind is in principle, to be treated in the same way as gifts in cash -- as transfers -- incomes for the recipient and as non-consumption expenditure for the giver. Insofar they are in the nature of consumer goods meant for consumption they are also added to the consumption expenditure of the recipient household.

a. Goods and Services received as Income

4.81 A household may receive as its income goods and services (1) in payment for wages and salaries, rent, interest or dividend (share of profit); (2) in exchange of goods and services of household enterprise (barter) or (3) as the outcome of free collection activities. According to SNA, which looks at the transaction from the viewpoint of the employer, wages

and salaries received in kind are to be valued at the producer's prices. But in a household survey these receipts are often considered from the viewpoint of the recipient household, which is not generally aware of the producer's prices of the goods and services received. The SNA guidelines would not, therefore, be operationally useful for collecting data on these payments. For example, when the sample household receives a certain quantity of grain as payment of wages (a common practice in many developing countries), in most cases, it would not be able to report the value of the grain at the producer's price. Even the interviewer would not be able to contact the producer who made the payment and ascertain the value. The best that can be done in the circumstances is to use the nearest local retail price. That would in fact amount to valuing the receipt from the viewpoint of the recipient household.

4.82 Greater difficulties would be faced in the case of barter transactions when the household exchanges products of its own output against those of the output of another household. Generally, such transactions are noticed in the rural areas of developing countries not only between producers of farm products but also between a producer of farm products and a producer of manufactured goods (carpenter or blacksmith). A relevant question in that case would be whether the barter is to be valued at producer's price of the farm product or at the producer's price of the manufactured goods. Theoretically the two are considered equal. But in practice the two need not be equal. A practical course would be to value the goods and services received by the recipient household, which is the respondent household, at the retail price of the goods it has received in conformity with the procedure adopted for goods and services otherwise received.

4.83 Free collection of goods by households poses a different kind of a problem. It may be the business of the household to collect goods freely (like firewood from forest) and sell them. The other possibility is that the household collects such goods freely for its own consumption. In the case of the former, if the household collects such goods and uses part of its collection for its own consumption, the value of the goods can be imputed in terms of the price which the household would have charged had it sold those goods. However, if it is not the business of the household to sell freely collected goods, the imputation would have to be made at the retail price of that good prevailing in the local market. In practice, the two should be the same, if the sale foregone is also retail.

b. Consumption of Home Production

4.84 SNA takes into account different types of household production for the valuation of the gross output. They are: (1) subsistence production of primary products, that is characteristic products of agriculture, fishing, forestry, mining and quarrying; the production of all primary products is thus included in gross output whether it is for own consumption, barter or sale; (2) the output of other commodities produced for the market but consumed by the household; and (3) processing of primary commodities by the producers of these items in order to make such goods as butter, cheese, flour, oil, wine etc. for their own consumption. All production under the above three categories, to the extent it is consumed by the household, has to be valued at producers' prices, and if these cannot be ascertained, at the prices prevailing in the local market (preferably wholesale) have to be used. It follows that in certain cases such as flowers for which there may be no market value, or which are available for free collection, no such valuation need be attempted. The above-mentioned concept of home production is under review and may be further extended in due course.

4.85 The form in which the household consumes may not be the same as the form in which the item has been produced. For example, the household farm produces paddy (unhusked rice) but the household does not consume it in that form and has to dehusk paddy, convert it into rice before it consumes rice. Similarly, wheat has to be ground into flour before it is consumed. When these items are purchased, they may or may not be in the form in which the items are originally produced. Rice is generally purchased as rice and not in the form of paddy; wheat may be purchased either in the form of wheat or in the form of flour. Therefore, the forms of purchase and consumption may often be different from the forms of production. However, in conformity with the approach suggested for consumption expenditure on food consumed from own production, the items of consumption may be recorded in the form in which they are generally used for consumption (i.e. the form in which they enter the cooking process or are consumed without cooking).

4.86 In determining the value of consumption at producer's price, the form in which the product is consumed is again critical. The household which usually sells its product in its primary form and not in its processed form, would not be able to report the producer's price for the processed form. The valuation would, therefore, have to be done at the local market price of the processed form if at all it is sold in the local market in that form, or else fall back on its producer's price in its primary form.

4.87 There could be problems in showing even the quantity of consumption in processed form as in the case of milk for instance. In some countries, milk is processed within the household to prepare milk products such as curd, yoghurt, butter and buttermilk to be distinguished from products of which milk forms a constituent. The household may be able to report the quantity of milk produced and the quantity used up for further processing but not the quantities of the milk products thus produced and consumed. If market prices are available for each of the milk products, it would be desirable to record the quantities of each milk product consumed and value them at the corresponding market prices. If not the entire consumption may be recorded as milk and valued as such, thus ignoring the value added in processing. It is to be remembered in this connection that SNA requires the valuation of the processing done by a household only if the primary products processed are produced by the household itself. Thus in the above example, processing of milk is required to be valued only if milk is produced by the same household. If the milk is purchased and processed, the value added by processing is not to be taken into account.

c. Consumption from Business Stocks

4.88 In addition to consumption out of home-grown stock, account is also taken of the value of goods purchased for resale but consumed by the household as it happens usually in the case of households engaged in trade. The valuation in this case is done at the prices at which the goods have been purchased for resale plus the transport and other charges involved. In practice, however, it would be difficult to obtain the transport and other charge for the amount of goods which the household has consumed. A practical course, therefore, appears to be to use the purchase prices as such at the prices which the trader would have charged for the sale of the goods.

d. Owner-occupied Housing

4.89 According to SNA and the Income Distribution Guidelines (IDG), the gross rent of owner-occupied dwellings is to be valued at the market rent of similar facilities. If the market rent is not known, it may be necessary to approximate the market rent by an estimate which should cover items such as operating, maintenance and repair costs, water charges, insurance service charges, taxes, depreciation and mortgage interest, in addition to interest on the owner's investment in the dwelling and other elements of net return. This method of approximation of market rent does not always take into account

the appreciation of capital values. Therefore, the gross rent will have to be estimated on the basis of the market rents of similar dwellings in the neighbourhood or locality and the costs of owner-occupation deducted in order to arrive at the net rent. If renting of dwellings is a common practice as in urban areas, it should be possible to approximate the market rent. But even in urban areas in some countries very few houses are found to be rented. For example, in Argentina (1980, Urban) only 25% of houses were found to be rented (13). In rural areas the renting of houses may not be a common practice at all, and it would be difficult to approximate the rent of the owner-occupied dwelling on the basis of other similar rented dwellings.

4.90 Different countries have adopted different rules or procedures for the estimation involved. In HongKong (1984-85), professional valuers of the rating and the valuation department were asked to make these estimates taking into account the date of occupancy and rent control history rather than the rateable value. In the Malaysian survey (1980), if data on market rent could not be collected, the enumerators were asked to determine the current market rent by taking 10 per cent of the current value of the house as annual rental value in rural areas and 10 per cent of the current value of both land and building in urban areas. If the current value of the house could not be determined, 10 per cent of the cost of construction in the rural area and of house and land in the case of urban areas were taken as the imputed rent. The same rule was applied for free housing provided by the employers. The rate of 10 per cent must have had relationship with long-term rate of interest on comparable securities as well as rate of depreciation. In an urban survey in Israel 1975-76, the imputed house rent was valued at the opportunity cost of capital investment in the dwelling plus the value of depreciation. (14) However, if only interest and depreciation were to be taken into account, it would give an estimate of net rent and not market rent (i.e. gross rent). If the imputation is done on the basis of prevailing rent in the locality for similar dwellings, it would give an estimate of gross rent from which expenditure on current maintenance and repairs, mortgage interest and other charges and taxes will have to be subtracted to arrive at net rent which is treated as income as well as consumption expenditure of the household.

4.91 In view of the importance of the item and the difficulties in collection of relevant data, the following methods may be considered for adoption. Preferably, one should take the rent of a similar dwelling in the neighbourhood as the value of gross rent of the owner-occupied dwelling and deduct the elements of maintenance and repair costs, etc. to arrive at the net rent. It should be possible to adopt this method in the

urban areas. Where renting of dwellings is not a common practice as in rural areas, the rental value of the owner-occupied dwelling may be approximated by taking into account the original cost of construction, adjusted for the observed changes in the value of the currency since the date of construction, applying to it the rates of interest and depreciation, and taking the sum of the amount of interest on investment and permissible depreciation thus obtained as equal to the rental value. Thus, if C is the cost of construction, p the price index of building materials expressed as a ratio in relation to the corresponding index for the year of construction, r the annual rate of interest and d the annual rate of depreciation, the rental value may be taken as $Cp(r+d)$.

e. Exchange of Gifts

4.92 Gifts exchanged in kind are easy to value from the giver's angle as in most cases the giver must have purchased the gift. Its purchase value should be recorded as non-consumption expenditure for the giver household. For the recipient household, however, its value may not always be known. Its current retail value can, however, be ascertained from the local market and entered as income from current transfers as well as consumption expenditure for the recipient household. Capital transfers in kind such as of land or building are not to be included under this head. They should be recorded as disbursements other than expenditure for the giver and as receipts other than income for the recipient.

4. Treatment of Boarders, Lodgers and Domestic Servants

4.93 In the preceding Chapter, the question of how to treat the boarders, lodgers and domestic servants who live with the household has been discussed and it was suggested that all of them except lodgers should be treated as members of the household. As the household is taken as a unit of inquiry and the boarders and domestic servants living in are treated as members of the household, data on their income and expenditure will have to be collected to arrive at proper macro level estimates of household income and expenditure. However, the inclusion of extraneous members such as boarders and domestic servants who have their own independent incomes and expenditures and have economic relationships with the household with which they live, is bound to distort the micro level estimates of household income and expenditure and give rise to erroneous distributions. It is, therefore, important that, even though for purposes of sampling and data collection the household is adopted as a convenient unit, the data should be analyzed in terms of a socio-economic unit, comprising essentially those members who usually pool their incomes and share their incomes, by and large. Attention is invited in this connection to the suggestions made in the preceding chapter.

4.94 In particular, it is essential to identify the members of the household who pool their incomes and share their expenditures, by and large, as the main household and each of the other members such as paying guests i.e., boarders paying for their boarding and lodging and domestic servants, included in the household as additional analytical units. For each of the additional members, information should be collected separately on their incomes and expenditures in detail. In the case of paying guests, the expenditure data should indicate the amounts paid to the main household in return for the accommodation, food, other facilities and services received. These amounts should also appear as incomes for the main household. In the case of domestic servants, the wages or salaries paid by the main household should appear as consumption expenditure for the main household and as income for the domestic servants. For each of the additional members, whose dependants may be living elsewhere, expenditures incurred in their support may be shown as remittances without itemization in detail. For suggestions concerning the analysis of the data attention is invited to the chapter on Tabulation, Classification and Analysis.

4.95 Non-paying guests i.e. boarders not paying for their boarding and lodging, stand on a different footing. Entertaining guests at home and being entertained as guests in other homes is a normal pattern of social life. The expenditure on guests should, therefore, form part of the household consumption expenditure without the guests being counted as members of the household. However, for purposes of analysis of food consumption, it may be necessary to take into account the number of guests entertained, their length of stay in the household and the number of meals they took along with the household.

5. Balance of Income and Expenditure

4.96 In order to assess the quality of data reported by the household on various items of income and expenditure, it is important to set for every household an account of receipts on one side and disbursements on the other, to see whether they agree as they should. The general experience has been that the expenditures are often overstated and the incomes are understated especially at the lower levels of income and expenditure, and as a result a negative balance emerges from such a comparison. There are, however, exceptions. Expenditure on alcohol, tobacco, games of chance and socially tabooed forms of entertainment, are often underreported. Illegal gratuities, black market transactions etc. may not be reported by either side. It is sometimes difficult to get a full account of expenditure from pocket money given to children. At certain levels, incomes could be overstated out of a sense of prestige. At others, incomes from self-employment, property incomes etc. are understated. Tips received by

servers, bearers and porters are often ignored. It is, therefore, difficult to make a realistic comparison between household incomes and expenditures or to strike a balance between receipts and disbursements. It is more so if survey uses different reference periods for different components of income and expenditure. Nevertheless, it is essential that such comparisons are made and the differences reconciled as far as possible.

4.97 If large differences are found between receipts and disbursements for a standard reference period of one month, which is short enough to enable recollection, one should reasonably expect the household to clarify the position and provide the missing information if any. The onus for reconciliation will be mainly on the household. One could, however, tolerate differences of, say, upto 10 per cent. It is often suggested that data on incomes being more sensitive than data on expenditures, should be sought after the requisite data on expenditures have been collected. While there is much to be said in favour of such an approach, it is to be noted that collection of data on expenditures takes more time and calls for a greater effort, depending on the method of inquiry adopted, than collection of data on incomes. If at the end of this effort, it is found that the reported expenditures exceed the reported incomes it is very difficult to retrace the steps and correct the expenditure data even if it is found that expenditures have been exaggerated. It is, therefore, important that before the data collection on expenditures is initiated the interviewer should have in his possession some indication of the income level, even if it is approximate, as a possible control on the expenditure data. Given an approximate indication of the household income, one could keep a critical watch on the expenditure as it is reported and collected, to ensure that it is not far out of tune with the income. Therefore, while data on receipts other than incomes and disbursements other than expenditures can be collected towards the end of the inquiry, it may be advantageous to collect the data on income before initiating the inquiry into expenditures. If, however, for other reasons, data collection on incomes is relegated towards the end, a preliminary estimate of the household income, or at least an indication of the income level in terms of income groups, should be obtained before proceeding with the inquiry into expenditures.

4.98 A comparison between usual incomes and expenditures based on different reference periods would, however, be more difficult, and it would be unreasonable to expect the household to explain the difference observed if any. As the approach adopted in this case is estimational, one can only expect broad conformity between the estimates of income and expenditure. No rigid limits can be set at the household level. In cases where the income exceeds expenditure, no questions need be asked as

there is nothing illogical in it. Where expenditures exceed income, however, there is a cause for further probing in regard to the means adopted for financing the apparent excess with particular reference to the unusually large expenditures reported if any. If data on savings and borrowings are also collected for the last year, some explanation would be available for the apparent differences.

4.99 To sum up, the suggested methodology for a household income and expenditure survey is as follows:

- (i) Let the sample be divided into twelve sub-samples, one to be surveyed each month over a period of twelve months.
- (ii) A standard reference period of one month may be adopted for each household for data collection in respect of each sample household.
- (iii) Data should be collected on all receipts and disbursements which took place during the reference month.
- (iv) Data collection should be organized, preferably by requesting each sample household to maintain a complete account of all receipts and disbursements for the month; if that is not possible, divide the sub-sample into two random groups and request each group to maintain the account for one fortnight - one group for the first fortnight and the other for the second.
- (v) As an alternative, the requisite data may be collected through repeated weekly interviews; if that is not possible, divide the sub-sample into two random groups and survey each sub-group for one fortnight through repeated weekly interviews - one group for the first fortnight and the other for the second.
- (vi) If neither of the above methods is possible, the data for the whole of the reference month may be collected by interview at the end of the month, as the last resort.
- (vii) Supplementary data may be collected for the last year in respect of infrequent expenditures such as on durables, income from self-employment in agriculture, property incomes etc.
- (viii) Wherever considered appropriate, supplementary data may be collected for the last quarter in respect of expenditures on semi-durables and periodic payments of intermediate frequency;

- (ix) If quantitative data on food consumption are needed for nutritional analysis or for the preparation of food balance sheets, the investigation may be restricted to one random week during the reference month in respect of each sample household or for each household of an adequate sub-sample and the data obtained by the method of observation through daily visits.
- (x) Data on cash incomes should include wages and salaries (prior to deductions at source), income from self-employment, property incomes and income from current transfers, actually received during the reference period; the information should be supplemented by data on receipts other than income.
- (xi) Data on cash expenditures should be categorized as consumption expenditure and non-consumption expenditure and supplemented by data on disbursements other than expenditures;
- (xii) Data on consumption expenditure may be collected by different approaches depending on the nature of goods and services consumed:
 - acquisition and/or use, that is consumption approach for food, and other non-durables, especially in rural areas;
 - acquisition approach for semi-durables and durables;
 - payments approach for housing, transport and communication, medical and health services, educational, recreational and entertainment services, personal services etc.; in specific cases such as water and electricity charges and school fees, in which payments are made at intervals longer than a month, expenditure estimates may be derived from data on last payments and the periods covered.
- (xiii) Transactions in kind e.g. goods and services received as income, consumption of home production and business stocks, owner-occupied housing and gifts exchanged in kind, should be valued at appropriate prices and entered appropriately as both receipts and disbursements.
- (xiv) Incomes and expenditures of paying guests, other boarders, and domestic servants need to be recorded separately and analyzed appropriately.
- (xv) An attempt should be made to balance the current receipts and disbursements and ensure that the difference if any is within tolerable limits. The usual income and expenditure levels should also be compared and unreasonable excesses of expenditures over incomes should be probed with reference to savings and borrowings.

References

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CHAPTER V

SAMPLING SCHEMES AND OPERATIONS

A. Introduction

5.1 The preceding chapter discussed the methods of data collection and problems of measurement of income and expenditure at the household level. As the purpose of the survey is to estimate household income and expenditure in the form of aggregates or averages for the whole of the population covered and to study the distribution of income and expenditure among the households within the population covered, two important questions which need to be discussed next are: how and how many households we select for data collection, and how we obtain the relevant estimates for the population on the basis of the data collected. The present chapter seeks to discuss those and other related issues.

5.2 The question concerning the selection of households for data collection presumes that the data are not to be collected for all households but confined to a sample of households. A census is rarely taken for data on income, although in some population censuses data on income are also collected. Data on household expenditure are generally collected on the basis of probability samples. The method of probability sampling has the advantage that it permits control of both sampling and non-sampling errors, the latter often presenting more serious problems which are difficult to tackle in a census operation. The point is particularly relevant to complex subjects such as income and expenditure. An additional advantage of using probability sampling is that it permits estimation from the sample itself of not merely the parameters but also of their likely variability due to sampling. It is important, therefore, that household income and expenditure surveys are based on probability sampling. (1)

5.3 The practical application of sampling principles is a highly technical matter which requires theoretical knowledge not only of sampling but also of the way in which the theory can be applied in practice. Many technical manuals and textbooks are available on the subject. The United Nations published some years ago a Short Manual of Sampling (Revised, 1972) (2), and recently a Handbook of Household Surveys (Revised, 1984) (3). Under the NHSCP, the United Nations has also issued technical studies on Non-Sampling Errors in Household Surveys: Sources, Assessment and Control (1982) (4), and on Sampling Frames and Sample Designs for Integrated Household Survey Programmes (1986) (5). This Chapter does

not, therefore, discuss the subject in great detail but only refers to the major issues, the choices which have to be made, and the manner in which decisions can be reached in practice in the case of household income and expenditure surveys. It assumes some knowledge of technical terms on the part of the reader.

B. General Considerations

1. Single Round vs. Continuous Surveys

5.4. Household income and expenditure surveys are mostly undertaken as single round surveys repeated periodically at intervals of five or ten years. The objective of these surveys is usually to provide information, in considerable detail, in respect of a given period of time, usually for purposes of planning and policy formulation or as basic data for projected price indices. The information provided for such purposes should reflect the overall situation during the period under reference, unaffected by extraneous factors. It should indicate stable structural relationships as a sound basis for policy decisions, planning and programme formulation, and provide a firm foundation for the construction of current indicators and derivation of structural coefficients useful for planning. These surveys are, therefore, conducted on the basis of large samples and usually refer to a period of one year.

5.5 Income and expenditure surveys are also conducted in some countries in a continuous programme of monthly, quarterly or annual rounds for a continuous study of changes in the levels and patterns of income and expenditure. In these surveys, precision in the measurement of current changes takes precedence over accuracy of detail, and as a continuous time series is envisaged, normalcy in the time dimension is not a factor for consideration. For operational convenience, surveys are usually taken on small samples, usually fixed to enable precise measurement of changes.

5.6 Most of the discussion in this chapter is mainly oriented towards single round surveys which envisage no continuity. The observations are, however, equally relevant to continuous surveys, although the precision requirements of the latter may be somewhat less stringent. Certain problems specific to continuous surveys will, however, be discussed briefly in passing.

2. Seasonal Variation in Single Round Surveys

5.7 For households with irregular incomes, current incomes as well as expenditures may vary substantially over a period of a year. For example, the wages of an agricultural labourer would depend considerably upon the timing and duration of agricultural operations. Some activities dependent on agriculture are also of a seasonal nature and incomes accruing from these activities have a seasonal pattern, as do agricultural incomes. Household expenditures and consumption patterns also vary over the year because of various reasons, including seasonal variations in the availability of goods, lack of regularity in certain expenditures such as on clothing, health and travel, festival and ceremonial expenses, purchase of durable and semi-durable goods, etc. Moreover, expenditures are affected by price changes, both seasonal and temporal.

5.8 In view of these factors, it is important to design household surveys in such a way that the estimates of income and expenditure arising therefrom are unaffected by seasonal variation. The surveys should also provide valid estimates of income and expenditure for different seasons as may often be required for various purposes. That would necessitate adoption of one of three possible alternatives in a household survey viz. (i) adoption of a reference period of one year for all items of income and expenditure, (ii) collection of information relating to the year in respect of each household through periodic repeat visits spread over the year, or (iii) adoption of a scheme of sampling over time. We have noted in the preceding chapter the disadvantages of a long reference period such as a year and concluded that it would be appropriate only in the case of certain items of infrequent incidence or occurrence. We have also discussed the feasibility of repeat visits to sample households and seen that repeat visits constitute an expensive operation which can not be adopted in most surveys. A reasonable solution suggested, therefore, is sampling over time coupled with a short reference period and selective use of long reference periods for the collection of data on infrequent receipts and disbursements. This procedure would, no doubt, preclude the possibility of unbiased estimation of the distribution of households by annual income or expenditure but is regarded as the best feasible.

5.9 A simple method of sampling over time is to distribute the sample equally and uniformly over the entire survey period of a year. The operational procedure commonly used is to divide the year into suitable sub-periods of equal duration such as a month or a quarter, divide the sample into as many interpenetrating sub-samples of equal size as the number of sub-periods in such a way that each sub-sample can be treated as a valid sample from the entire population selected by the same sampling scheme as of the original sample, and allocate

the sub-sample randomly to each sub-period into which the year has been divided. This method has to be applied at the level of each basic stratum which is usually geographic. The survey operation during each sub-period is called a sub-round. Depending on the number of sub-rounds envisaged (2, 3, 4, 6, 12, 24 or 52 as may be possible) it would be convenient to determine the sample size for each stratum as a multiple of the number of sub-rounds. If the division of the total sample into such sub-samples is done at the level of the ultimate stage of sampling, it would inevitably increase the travel cost of the survey operations. Generally, therefore, the sample is divided into sub-samples at the penultimate stage of sampling.

3. Rotation of Sample for Continuous Surveys

5.10 In continuous surveys aimed at measuring current changes fixed samples of households are usually surveyed month after month, or quarter after quarter, as fixity of sample facilitates an accurate measurement of changes and ensures some amount of stability in the current estimates. Fixity of samples, however, has two countervailing disadvantages: the sample may lose its representative character with passage of time; and the respondents may become non-co-operative after a few repeated surveys. To obviate these disadvantages the fixed sample approach is modified to some extent with the adoption of a scheme of sample rotation or partial replacement. It involves continuing survey of the sample of households for a certain period of time, after which some of the sample households are replaced by some other households, ensuring, however, that the sample at any time is representative of the whole population under survey. The process is repeated periodically so that over a predetermined period the entire sample is replaced.

5.11 Continuous surveys primarily aimed at measuring current changes are also often used for making annual estimates based on current data, while single-round surveys conducted by sampling overtime, though primarily aimed at estimating annual aggregates or averages, are also used for measuring seasonal changes. Whereas, in the case of the former, partial replacement of samples would enhance the precision of the annual estimates, in the case of the latter, some amount of overlap in the sample surveys in various sub-rounds may enhance the comparability of seasonal estimates and help measure seasonal changes.

5.12 From a purely technical angle, there are three distinct situations depending on whether the primary aim is to estimate (a) current changes, (b) aggregates or averages for the year on the basis of current data, or (c) comparable aggregates or averages for each sub-period. The best method for (a) is not

to rotate the sample at all. The best method for (b) on the other hand is to take a new sample for each sub-period, i.e. total replacement. In the case of (c), however, comparability of current estimates is enhanced by overlapping samples. The proportion to be replaced and the method of estimation for the second and sub-sequent periods depend essentially upon the correlation co-efficient between the data for two successive sub-periods. (6)

5.13 In practice, the decision on the proportion to be rotated is generally guided by practical considerations, and as the formula for the most efficient method of estimation is too complicated for routine adoption in data processing for a large-scale survey, in most cases it is not used. The rotation technique is, however, pursued mainly to avoid the prospect of surveying the same households over extended periods and thus incurring the risk of non-response after a time. Another factor in favour of such a system is that it achieves a certain amount of stability in the periodic estimates because of the overlaps in the samples for any two successive periods.

4. Sub-sampling for Error Control

5.14 Apart from the possible use of inter-penetrating sub-samples for the control of seasonal variation through sampling over time as outlined earlier, a system of inter-penetrating sub-samples can also be used for error control and a rough estimation of sampling errors. In such a system, the sample is designed in the form of two or more sub-samples each of which is a separate probability sample of the population to be surveyed and can, therefore, be used to produce separate estimates of aggregates, averages, etc. The scheme of sub-sampling can be extended to all stages of sampling within each basic stratum. At the ultimate stage, different sub-samples are assigned at random to different interviewers or teams of interviewers and the differences in the quality of work assessed on the basis of the differences observed in the results of the different sub-samples.

5.15 Estimates based on the survey are worked out at the stratum level and at the aggregate level separately for each sub-sample and the variance observed in these estimates is taken as a combined measure of both sampling variation as well as the variation due to differential interviewer team performance. The latter, however, is not expected to be significant, because although two interviewers may exhibit different effects, two heterogeneous teams of enumerators, each of which surveys a sub-sample is not expected to show marked differences in their work although, if each team has a different supervisor, the interviewer contribution may still be significant.

5.16 The scheme of interpenetrating sub-samples has also some other practical uses. A detailed tabulation of the data by sub-samples helps to identify erratic results and facilitates their rectification. If the sample at the ultimate stage is divided randomly into sub-samples and assigned randomly to two or more interviewers, it enables one to make comparisons of measures of enumerator performance such as completion rates (as a measure of non-response), and error rates based on reviews of completed questionnaires.⁽⁷⁾ It would, of course, be useful to review the completion and error rates even if the interviewer assignments were not randomized.

5.17 The chief concern of survey statisticians is for the reliability of the survey estimates, and they are often questioned on this point by the main users who may not be statisticians. They may not always understand the significance of sampling errors and confidence intervals. In fact these are not always calculated as the computations involved are cumbersome, the number of estimates involved is very large, and the necessary processing resources may not be available. Even if they are worked out, these statistical measures only help one to make probability statements based on the hypothetical phenomenon of repeated sampling. It is difficult to communicate their meaning and much more difficult to establish their relevance, when the point at issue is the particular estimate and whether it is reliable enough for use, and not what would happen in repeated sampling which appears to be merely a hypothetical situation since, in fact, the survey may not be repeated for several years and even at the same time in the same conditions. Even so, it is important to compute and present the sampling errors in all cases irrespective of the design. An advantage of sub-sampling is that it enables the survey statistician to make a quick assessment of the statistical reliability of most of the estimates and demonstrate their reliability in a meaningful manner. For example, if the sample is made of two inter-penetrating sub-samples, surveyed independently by two separate teams of enumerators, the estimates provided by the two sub-samples would indicate the variability of the sample estimates.

5.18 Because of the potential value of this scheme, the option to use some form of inter-penetrating sub-samples should be seriously considered in the development of the sample design.⁽⁸⁾ It is to be noted, however, that the adoption of this scheme of sampling may increase the travel costs to some extent and may even reduce the sampling efficiency of the survey design. Nonetheless, it is useful and worthy of consideration.

C. Sampling Techniques

1. Sampling Frame⁽⁹⁾

5.19 The theory of probability sampling on which sample survey

techniques are based assumes the existence of a list of units from which the samples can be drawn. If the ultimate sampling unit is a household, a list of households would be required as a basis for sampling households. If a complete list of households is not available, lists of villages, towns or well-defined parts thereof must be available for the development of an effective sampling design. Without the existence of such sampling frames, which are complete and accurate, the sampling operation would be unworkable.

5.20 The sampling frame is a list of units or groups of units of the population to be sampled, organized and arranged in such a manner that every unit occurs only once in the list and no unit is excluded from it. A list of housing units or households prepared in a population or housing census is an example of such a frame. If a survey follows such a census immediately, the frames available from the census can be used for the survey. It is, however, rare that a survey immediately follows a population or housing census, and so it is often found necessary to update the frame for drawing a valid sample.

5.21 For a frame to be usable, it is not essential that it should be a list of ultimate sampling units. The frame may be available in the form of a list of area units or administrative units with or without an indication of the number of ultimate sampling units in each such unit. It may even be a list of larger area units or superior administrative units for each of which a list of lower level area or administrative units may be available. What is required, therefore, is not necessarily a single list of ultimate sampling units but lists of well-defined area or administrative units of different levels covering all the units at that level and for every unit so covered, a list which covers all the units at the lower level and so on. The sampling frame can thus be envisaged as made up of a list of first stage units, a list of second stage units for every first stage unit, a list of third-stage units for every second stage unit, and so on going down to the ultimate unit of sampling so that at no stage any of the units of the next level is either missed or has been repeated.

5.22 A list of administrative units, covering the whole country, including information about the area it covers and possibly some indication of its size in terms of its population is a commonly available type of frame which is often used for sample surveys. For example, there may be a list of all political or administrative divisions and for each administrative division a list of sub-divisions, and for each sub-division a list of local administrative units, and so on. Information on size of population, number of households and other relevant characteristics is often available from a previous census or other sources of information for each

administrative division, sub-division and local administrative unit. In countries where population and/or housing censuses are regularly conducted, the smallest area unit for which such information is available is usually an enumeration district or area generally defined as an area unit assigned to a census enumerator. Frames of census enumeration areas are very useful for sampling because, generally, apart from information concerning their size and characteristics, maps are also available for their identification on the ground.

5.23 In some countries, census enumeration areas identified as "blocks" in urban areas and villages in rural areas, are used as sampling units. Due to migration and natural growth, the size characteristics of these units are subject to rapid change and the frame prepared on the basis of a census is out of date very soon thereafter and needs to be updated from time to time during the inter-censal period. In countries with active electoral systems, electoral units are sometimes adopted as a sampling frame, but it is not appropriate for sampling as it is based on population eligible for voting and may often be defective. The population and housing censuses provide by far the best frames that could be readily obtained. Some amount of resources should, however, be assigned to updating the census frames so that they could be confidently used during the inter-censal periods for the household survey programmes.

5.24 Construction of a usable frame for urban areas, especially the cities, is a much more difficult task. Lists of census enumeration areas may not always be useful unless they have been demarcated by permanent boundaries (roads, etc.) An area defined in terms of buildings, structures or housing units may not be usable because of the possibilities of new construction and demolition. Special urban frame surveys have had to be conducted in India for dividing the cities into areas defined by permanent geographical boundaries so that the units are easily identifiable on the ground. General information concerning these areas has also been collected for use in sampling.

5.25 In view of the rapid changes that usually take place between the census years, the census frame can normally be used only for sample selection down to the penultimate stage of sampling. Within each of the selected penultimate units, an up-to-date list of households or housing units has to be prepared on the spot for sample selection at the ultimate stage. However, a sample design based on probabilities, using the census data on the size of the sampling unit at different stages of selection, may lose its planned efficiency with the passage of time, as the size distribution of the units may have changed over the years.

2. Ultimate Sampling Unit (USU)

5.26 The ultimate sampling unit (USU) may be defined as the sampling unit selected at the ultimate stage of sampling. In a household survey, it is generally a household although in some cases housing units are used as the USUs and all households occupying the unit are surveyed. Although from the viewpoint of a household survey, the household is the most logical unit of enquiry and so the most appropriate sampling unit, it would be seen from the definition of household considered earlier, that as a sampling unit it has an operational disadvantage. As a group of persons, whose composition may vary, it is not identifiable as a permanent entity and, even as a temporary entity, it is subject to change even within the limited duration of the period of a survey. It needs to be demarcated on the spot in terms of the definition adopted.

5.27 A more permanent unit sometimes suggested as the USU, especially for continuous surveys, is the housing unit which, according to the United Nations Principles and Recommendations for Population and Housing Censuses (10), is a separate and independent place of abode, intended for habitation by one household or one not intended for habitation but occupied as living quarters by a household at the time of the census. If the housing unit is taken as a USU, all households as defined by the definition used in the survey, which are found living in the living quarters, are to be covered in the survey as units of enquiry.

5.28 The definition of housing unit, if it is to be taken as USU, may have to be modified in the field according to the circumstances obtaining in the country. There are cases where an extended family lives in a number of housing units within the same compound and it may be necessary in such cases to consider a group of such units within one compound as a USU. If persons living in collective living quarters such as hotels and institutions are also to be covered, each such person will have to be treated as a USU.

5.29 The unit of observation (or the elementary unit as it is sometimes called) is the statistical unit in respect of which information is collected. In a household income and expenditure survey, data on demographic and activity particulars and income are collected in respect of each individual member while data on housing and household expenditure are collected in respect of the household as a unit. Where the elementary units are different from the unit of enquiry which is the household, information has to be collected in respect of all the elementary units within the unit of enquiry.

3. Multi-stage Sampling

5.30 If a complete list of USUs is available for the entire population to be covered by the survey, sampling can be done directly from such a list for the selection of USUs. However, up-to-date lists of USUs are not generally available for the country as a whole in a convenient form and sampling has, therefore, to be done in a number of convenient stages. Even if such a list were available, multi-stage sampling is to be preferred, because a sample survey based on direct selection of USUs from a list of such units would involve very heavy travel costs. Multi-stage sampling has, therefore, been a common practice in household income and expenditure surveys.

5.31 In a multi-stage sampling scheme, sampling is done in two or more stages depending on the nature of the sampling frames available. The first stage sampling unit, also called the primary sampling unit (PSU), is generally a compact geographical area, preferably corresponding to an established administrative unit at the lowest possible level, at which some data concerning the size and characteristics of the unit are readily available for each of the basic geographic strata, and the number of units is large enough to permit selection of a sample of an adequate size for each stratum. The second stage unit (SSU) may, in that case, be a local unit such as a village in rural areas and, in urban areas, a block of contiguous housing units with identifiable boundaries or alternatively, an enumeration area, if such areas have been demarcated. If the next stage of sampling envisages the selection of households or housing units as the ultimate sampling units (USU), the second stage units may also be described as the penultimate sampling units (PUSU). A list of USUs within a PUSU may or may not be readily available. Even if it is available, it generally gets outdated fast. An up-to-date list of USUs within the selected PUSU is, therefore, to be prepared before a sample of USUs can be drawn.

5.32 In countries where lists of enumeration areas are readily available with appropriate details of size and other relevant characteristics, they can very well be taken as the primary sampling units and the selection of administrative units at the first stage be dispensed with.

5.33 In fact, the fewer the stages of selection, the better and more efficient the sample would be. Multi-stage sampling proceeds successively by selection of PSUs, within each selected PSU a selection of SSUs, and so on down to the stage of selection of PUSUs. In each of the selected PUSUs, an up-to-date list of USUs is prepared at the beginning of the survey and an appropriate sample of USUs is selected. The efficiency of sampling could be improved if some information were available at the ultimate stage of sampling on the characteristics of the household related to its income or expenditure, such as information on its economic activity.

5.34 Sampling at each stage, down to the penultimate stage, can be done by a variety of procedures e.g. simple random sampling, sampling with probability proportional to size (pps), systematic sampling, and systematic sampling with probability proportional to size. At the ultimate stage, USUs within selected PUSU can also be selected by different methods; one can select a simple random sample or a stratified random sample of USUs, or one can divide the PUSU into clusters of households and select a number of clusters. Generally, PSUs, SSUs and other intermediate stage units down to PUSUs are selected with probability proportional to size and USUs are selected by simple random sampling or systematic sampling with equal probability. In some countries, however, the USUs are sampled in the form of clusters of contiguous units. In some others the USUs are stratified on the basis of related data such as size, economic activity or income group and selected with equal or unequal probabilities, although some experts feel that such stratification at the ultimate stage may not be cost-effective.

4. Cluster Sampling

5.35 The advantage of cluster sampling is that it reduces travel time and costs of contacting the USUs. This is, however, to be set off against the loss of sampling efficiency which results from using a cluster sample instead of a random sample of USUs. Generally, households who live in a contiguous group of housing units, that is those who are each other's neighbours, have common characteristics. They are more likely to have similar occupations and levels of income and expenditure. It is useful to remember the old saying: birds of the same feather flock together. As a corollary, birds which have flocked together are very likely to be those of the same feather. The similarity between neighbouring USUs is measured by intra-class correlation which is generally positive and even a small value of this coefficient, coupled with a large size of the cluster in terms of USUs, results in a serious impairment of sampling efficiency. The clusters, if at all they are to be used, have, therefore, to be small in size. But the use of small clusters rather than large clusters would increase travel costs because in that case, more clusters will have to be taken to give the required sample size. A proper balance would, therefore, have to be worked out considering these two opposing factors. One way of improving the efficiency with the use of cluster sampling is to reduce the number of stages of sampling. A reasonable method would be to take a two-stage sample, with PSUs large enough to reduce travel costs and small enough to reduce the cost of listing and sample selection within the PSUs. As a two-stage sample has itself an implicit clustering effect, the USUs within the PSU should preferably be selected without any further clustering but by an appropriate method of direct sampling. This should be accompanied with advantage by a stratification of PSUs before they are selected in order to offset to some extent the loss of efficiency resulting from cluster sampling.

5. Stratified Sampling

5.36 The technique of stratification involves dividing the universe into homogeneous strata, ensuring greater similarity within the strata than between the strata, and selecting samples separately from each stratum. It serves two purposes: to reduce sampling errors and to identify domains for which separate estimates are required. The characteristics of similarity on the basis of which strata are formed should have some relationship with the subject of inquiry. In the case of a household income and expenditure survey, information on type of household, type of housing, type of activity etc. would be relevant for the formation of strata. At the stage of sampling, the sample size is allocated in an appropriate manner to the different strata and independent samples are taken from each stratum, so that the degree of variability observed in the population is appropriately reflected in the sample. As a result, estimates based on stratified sampling are subject to smaller sampling errors than those based on simple random sampling.

5.37 The stratification technique can be used in a multi-stage sampling scheme at all stages of sampling if some related information is available in respect of the sampling units at different stages. A judicious use of information available at different stages for formation of strata can reduce the sampling errors considerably. At the ultimate stage of sampling, in particular, the requisite information can be collected on the spot in respect of each USU while listing the USUs and can be used for the stratification and selection of USUs, provided that the cost involved is not unduly large.

5.38 Major criteria generally used for stratification of the PSUs or the SSUs are the geographical location, urban or rural, size, density of population, climatic factors, agricultural and economic characteristics. At the ultimate stage, the characteristics relevant would be the size of the household, its economic activity, income group, social or socio-economic group etc.

5.39 Generally, the more the strata, the greater the sampling efficiency, but beyond a point the gains due to stratification may be marginal. On the other hand, operational considerations may require that the strata be sufficiently large in size, so as to permit the selection of an adequate number of subsamples of requisite size for sub-round survey operations and error control. As a rule, stratification should permit selection of at least two units from each stratum, so that variance within the stratum could be estimated on the basis of the sample.

5.40 Allocation of sample size to the different strata is usually based on certain criteria related to the aims of

stratification. If stratification is aimed essentially at reflecting the population distribution better than in a simple random sample, the allocation of the sample need be just proportionate to the distribution of the stratified units. If on the other hand, the aim of stratification is to enable estimation of the desired characteristics separately for each stratum more or less with equal precision, the allocation would be based on the variability of the population within each stratum irrespective of the size of the stratum. If the objective is to maximize overall precision, the principle of optimum allocation, which takes into account the size of the stratum as well as the variability within the stratum is usually followed. If on the other hand, one has to balance the requirements of overall precision on the one side and stratum level precision on the other, a variety of compromise solutions are possible.

5.41 In the context of multi-stage sampling involving, say, two stages of sampling, stratification of PSU's is generally based on geographic, political, administrative, climatic and economic considerations, while stratification of USU's is based on household characteristics such as type, size, activity, income, social class and socio-economic group.

5.42 At the primary stage the allocation of the sample is usually based on the population, number of households or number of housing units in each stratum rather than on the number of PSU's in the stratum. The ultimate sample size allocated to each primary stratum is thus generally proportional to the number of USU's or to the population represented by those USU's as the latter is closer to optimum allocation. In some cases, the primary stratification is organized in such a way that the strata are more or less of equal size so that the ultimate sample size allocated to each stratum could be equalized, as that would facilitate equal allocation of the field manpower resources to the different strata while ensuring optimum results.

5.43 At the ultimate stage, the allocation of the sample to the different strata is usually proportional to the number of USU's in each stratum as that would facilitate tabulation. However, if greater accuracy is needed in the estimates for less frequent groups such as of non-agricultural households in rural areas or of the higher income groups in urban areas, the sample sizes allocated to such groups may have to be increased.

5.44 Coupled with stratification, sample selection can again be done either by simple random sampling, sampling with probability proportional to size, systematic sampling or systematic sampling with probability proportional to size, especially at the primary and other stages down to the penultimate stage. At the ultimate stage, sample selection can

be done either by simple random sampling or systematic sampling with equal probability. Irrespective of the method of sampling, sample selection can be made with replacement or without replacement. The latter is generally more efficient than the former, but more difficult to compute sampling errors. (11)

6. Self-weighting Sample

5.45 A self-weighting sample has a distinct advantage when data are collected on a large number of quantitative items as in a household income and expenditure survey. If an estimate of the aggregate for the country is required, it can then be obtained simply as a total of the sample observations multiplied by a single multiplier, which is the reciprocal of the overall sampling fraction. If an estimate of a ratio or a proportion is required, even the multiplication by a common multiplier is not necessary, and the ratio or the proportion of the corresponding totals of the sample observations gives a valid estimate of the ratio or the proportion. In fact, in certain situations a self-weighting sample turns out to be the optimum method of sampling. (12)

5.46 A sample becomes self-weighting if all the USU's are selected with equal probability. In a simple random sample selected with equal probability all sample units carry an equal weight and hence the sample is self-weighting. A stratified random sample becomes self-weighting if the sample is allocated proportionately to the different strata and selected with equal probability within each stratum. In a multi-stage sampling design, the probability of selection of the ultimate sampling unit depends on the selection probabilities of the sampling units at each of the higher stages to which they belong. Thus the overall selection probability of USU k selected from SSU j of PSU i is $P_i \cdot P_{ij} \cdot P_{ijk}$ where P_i is the selection probability of PSU i, P_{ij} the selection probability of SSU j IN PSU i, and P_{ijk} the selection probability of USU k in SSU j in PSU i. For the sample to be self-weighting, this overall probability must be equal for all USU's selected for the sample. Depending on P_i and P_{ij} which may vary, P_{ijk} can be determined in such a way

that $P_i \cdot P_{ij} \cdot P_{ijk} = P$, a constant. Thus if $P_i = \frac{N_i}{N}$ and $P_{ij} = \frac{N_{ij}}{N_i}$

are probabilities proportional to size (N_{ij} being the size of

SSU j in PSU i, N_i the size of PSU i, and N the total size of all PSU's) the above product becomes

$$\frac{N_i}{N} \cdot \frac{N_{ij}}{N_i} \cdot P_{ijk} = P,$$

so that $N_{ij}P_{ij}$ which is the number of USU's to be selected from SSU ij becomes NP , a constant, provided that the measures of size used for the selection of PSU's and SSU's remain unchanged. In stratified multi-stage sampling, the sampling probabilities are to be considered separately for each basic stratum. The design may be made self-weighting for each stratum, or if considered desirable, over all strata by ensuring that the overall selection probability P is the same for all strata.

5.47 In a two-stage sample, if the PSUs are selected with probability proportional to size, the number of USUs to be selected from each PSU to make the sample self-weighting would be a constant and that would mean a uniform workload in each PSU, which is a practical advantage. Its efficacy would, however, depend on the accuracy of the information on size used for the sample allocation to strata and selection of the sampling units. If the information is outdated, the actual sampling procedure used results in probabilities different from the equal probability envisaged for the self-weighting sample. The estimation procedure then requires the use of multipliers which may be different for different PSUs and the estimation procedure becomes quite cumbersome. A possible solution to this problem is suggested later in this chapter. (13)

7. List Sampling

5.48 One of the reasons for adoption of multi-stage sampling is the non-availability of lists of the USUs from which samples can be drawn. Sometimes, however, partial lists are available and they can be combined usefully with the methods of sampling described above, provided that the part of the universe not covered by the lists is covered through the type of area sampling described above. For example, in the Botswana rural survey (1971), two types of households were distinguished. One type was what were called office households, that is households whose income records were available with Government offices. The office households were divided into a number of strata from which further sample selection was done. The rest of the households which were not covered by these lists, were then sampled through a multi-stage stratified area sampling scheme.

5.49 In the working class family living surveys conducted in India where the scope of the survey is usually confined to selected industrial centres and within those centres to the employees of selected industrial units such as factories, mines and plantations, the method of what was called payroll sampling was adopted in certain centres where it was considered more convenient. However, where the working class families were found to be living in close proximity of each other in what

were described as "labour areas", as in the case of several mining and plantations centres, area sampling was adopted. In the payroll sampling scheme, the PSU was a cluster of "registered" factories selected after appropriate stratification. The clusters were so formed that each cluster was as heterogeneous as possible. The payrolls of the factories in the cluster, which were lists of workers in the factories, were then used for the ultimate stage of sampling. The families of the selected workers were then surveyed for a study of their incomes and expenditures. In such a scheme, the probability of selecting a family depends upon the number of its members who work in "registered" factories. A suitable adjustment is, therefore, to be made in working out the multipliers to be used for estimation based on the sample survey.

5.50 In the USSR and other socialist countries where almost every income earner can be categorized as an employee, a pensioner, or a collective farmer, lists of income earners are generally available from enterprises, collective farms, institutions and other state organizations and lists of all such enterprises, farms, institutions and organizations are available region-wise and within each region sub-region-wise and locality-wise. In such cases, it is found more convenient to organize the entire sampling scheme on the basis of the lists thus available through a process of stratified multi-stage sampling, subject to certain controls to ensure the representative character of the samples thus selected. A similar sampling scheme is adopted in China too.

5.51 List sampling is also used in Ethiopia, where the primary sampling units for its Rural Integrated Household Survey Programme conducted during 1980-83 were Farmers' Associations, a complete list of which was prepared in 1980, with details concerning its location and membership. Samples of farm households were selected for survey from each of a sample of 500 Farm Associations and data were collected on a variety of aspects including income, expenditure and consumption.

8. Systematic Sampling

5.52 Systematic sampling involves selecting one unit from a list of units at random, and including in the sample all units appearing thereafter at a pre-determined interval. Thus if a unit randomly selected happens to be numbered R , and the predetermined interval is I , the sample will consist of units numbered $R, R+I, R+2I, R+3I$, etc. Usually a unit among the first I units of the list is selected at random and the process of systematic sampling continued from that point. If out of a list of N units, a sample of n units is to be selected systematically, the integral part of N/n is taken as the

interval I . In a variant of the method, called circular systematic sampling, R can be selected entirely at random from among the N units, and the selection process continued beyond N by renumbering units numbered 1, 2, 3 etc. as $N+1$, $N+2$, $N+3$ etc. up to $N+R-1$.

5.53 If a list of units is available together with particulars concerning their location, size, etc. a systematic sample can be drawn with advantage after re-arranging the list suitably in order to increase the efficiency of sampling. The advantage would in fact be substantial if the list could be rearranged on the basis of characteristics which are closely related to the subject of inquiry. Information on a few items of that nature can be collected if not readily available, and the units rearranged by placing together, in succession, units which are similar among themselves. If, for example, a characteristic such as means of livelihood is considered and households classified into three categories on that basis, all households of the first category are serially numbered, followed by households of the second category and then by households of the third category. In this process, all categories of livelihood are likely to be represented in the sample in proportion to the corresponding numbers in the list frame. The scheme is akin to stratification and proportional allocation, but does not call for a prior allocation of the sample size to different strata. More than one characteristic can be used in combination with one another to obtain a fair representation within the sample of the different types of units thus characterized.

5.54 A systematic sample does not call for any change in the estimation formula on that account and can be treated in the same way as a simple random sample. Systematic sampling can be adopted at any stage in multi-stage sampling. However, a disadvantage of systematic sampling is that it is not possible to estimate the sampling variance on that basis. Therefore, its use is generally restricted to the ultimate stage of sampling, because the sampling variance can be estimated approximately even if no estimate of variance at the ultimate stage (or for that matter at any stage after the first) can be obtained from the survey data. In the 38th round of the Indian National Sample Survey (1983), at the stage of listing households within selected villages, the households were classified according to means of livelihood as: (1) self-employed in non-agricultural activities, (2) rural labour, and (3) others, and the last category, which was largely made of self-employed in agriculture, was sub-divided according to the area of land possessed, into 5 groups. The households were renumbered starting with households self-employed in non-agricultural activities, followed by rural labour households, and then by other households in the ascending order of land possessed. Wherever possible, if relevant information can be collected on the USUs, it is of considerable advantage to adopt systematic sampling at that stage.

9. Multi-phase Sampling

5.55 Multi-phase sampling involves the collection of data on related aspects in two or more different phases, using a large sample in the first phase followed by smaller and still smaller sub-samples in the second and other successive phases. The usual pattern for multi-phase sample surveys is to survey in the first phase (a) simple characteristics that can conveniently be studied on a large-scale, (b) infrequent characteristics which call for large samples, or (c) summary characteristics for a preliminary study to be followed by more intensive studies on a smaller scale. In the second phase, a sub-sample of the first phase sample is usually surveyed for a study of (a) more complex characteristics related to those surveyed in the first phase, (b) details of the infrequent characteristics identified in the first phase, or (c) details of the summary characteristics studied in the first phase.

5.57 The information collected in the first phase, can be used with advantage for the stratification of the sampling units and selection of appropriate sub-samples. The information can also be used for the identification of target groups to be studied in the second phase.

5.58 Estimates based on the second phase can be improved by using the corresponding data collected, if any, on the larger sample in the first phase. Estimates based on the basis of the first phase can also be improved qualitatively on the basis of the details of information collected in the second phase. The correlation observed between related characteristics studied in the two phases on common sampling units can be used with advantage for making regression estimates.

5.59 Multi-phase sampling has not, however, been much in use in household income and expenditure surveys although it is conceivable, for instance, that income can be studied on a large sample in the first phase, and expenditure on a smaller sample in the second phase. Multi-phase sampling will also be useful and economical for the study of food consumption as an integral part of an income and expenditure survey (see Chapter II). The information can be collected for a sub-sample of households surveyed for household expenditure and for a shorter reference period than that used for the expenditure on food. The relationship of food consumed with expenditure on food and other socio-economic variables can be analyzed on the basis of data from the sub-sample, and the main sample information on the latter can be used to improve the estimates of food consumption studied in the sub-sample.

10. Desirable Features of a Sample Design

5.60 Having considered some of the techniques available for

sampling, we shall now attempt to delineate the desirable features of a sample design that could be adopted with advantage for a household income and expenditure survey. The idea is not to recommend for universal application a model sample design but to indicate the desirable features which a sample design should possess, recognizing, of course, that modifications may have to be made to suit local circumstances in any given case.

(a) Coverage: A national household income and expenditure survey should have national coverage. It is expected that in most countries there will be at least two domains of study: rural and urban. Besides, there may be other domains of study corresponding to the political, administrative or other established divisions of the country.

(b) Stratification: Within each domain geographic stratification could be effected primarily to ensure uniform spread of the sample over all the regions and sub-regions. It would be operationally advantageous if the number of strata thus formed were such as would make the sample thus allocated to each stratum approximately equal and of a size that could conveniently be entrusted to a team of two or more enumerators.

(c) Two-stage sampling: Within each stratum, the requisite sample may be selected by two-stage sampling, with "blocks" in urban areas and villages in rural areas or "census enumeration areas" in general (if they are well demarcated) as primary sampling units (PSUs) and households or housing units as ultimate sampling units (USUs). The number of PSUs to be selected from each stratum and the number of USUs to be selected from each PSU should be so determined as to maximize precision, given the available manpower and operational resources, and equalize the overall probability of selection for each USU within the stratum.

(d) Selection of PSUs: At least two PSUs should be selected for each stratum preferably with probability proportional to size. If more than two are to be selected, they may be selected in the form of two or more sub-samples of equal size.

(e) Selection of USUs: (i) For sampling households in the selected PSU, a list of households should be prepared on the spot before the initiation of the survey. Information on a few characteristics of the household (e.g. its size, economic activity and income group) should be collected at this stage. On the basis of this information, the households should be grouped and the list rearranged in accordance with the grouping. A systematic sample of the predetermined size may then be selected. (ii) If it is considered more convenient to sample housing units as USUs rather than households, it may be done, but in that case all households living in the selected

USUs are to be surveyed. It is conceivable that in each selected housing unit with more than one household, a household may be selected at random for survey, but that would mean introducing one more stage of sampling and the sample will no longer be self-weighting unless the housing units are selected with probability proportional to the number of households occupying the housing unit. Moreover, the procedure suggested above for the selection of households namely grouping and rearranging households on the basis of certain characteristics, will not be workable for housing units. There is, therefore, an operational and technical advantage in listing and sampling households as USUs. (iii) One of the reasons why housing units are sometimes preferred as USUs is that in some countries the sampling operation, even of USUs, is done in the central office, and some time necessarily elapses between listing, sampling and data collection. In such a situation a permanent unit such as the housing unit is no doubt preferable. Sampling in a central office is preferred because "sampling in field offices or at interviewing sites leaves many opportunities for bias, intentional or otherwise. Selection procedures carried out centrally can be immediately checked and any errors corrected." (14) But this takes time and increases cost. Sample selection by enumerators or supervisors in the field saves time and cost and facilitates the adoption of more efficient sampling schemes based on the characteristics of the households. This would, no doubt, require adequate training of enumerators and supervisors, based on a very detailed set of instructions concerning the sampling scheme and procedures.

D. Determination of Sample Size

1. Overall Sample Size

5.59 The determination of sample size is generally based on (a) the available financial and manpower resources and (b) the required level of reliability in the estimates expected from the sample. Generally, it would be preferable to start with the second consideration, and if the budget is a constraint, to assess the precision that can be achieved under that constraint in order to decide whether the achievable precision would be acceptable, and, if not, whether the budget should be increased.

5.60 A survey of incomes and expenditures covers a number of items of interest, and the sampling error associated with a given sample size varies from item to item. For major items of frequent occurrence such as expenditure on food, generally the sampling error is less than for minor items of infrequent occurrence such as expenditure on durable goods. Similarly for

items which have greater variability, such as property incomes, the sampling error would be larger than for the less variable wage and salary incomes. To decide on the sample size for the survey, it would be necessary to calculate the sample size required for estimating with the requisite precision a few major items of interest and take the largest of the indicated size requirements as the sample size for the survey.

5.61 Estimates from a household income and expenditure survey are often required not only at the national level but also for the main regions of a country and for certain domains of study such as rural and urban sectors and specified socio-economic groups such as industrial or agricultural labour. Generally, the sample size required for a given precision at the national level would not give estimates for the regions and groups with the same precision. As the precision depends on the absolute sample size, the general rule is that for a given level of precision, other things being equal, the sample size required for each domain would be about the same as at the national level. Enlargement of the national sample size on that basis would not, however, improve the overall precision at the national level in a commensurate manner. Compromise solutions involving decisions on the levels at which estimates are needed and on the precision required at each level would, therefore, have to be taken at the outset for estimating the expected cost of the survey.

5.62 If a pilot survey is undertaken for testing questionnaires and survey procedures before the main survey is launched, it may be possible to estimate roughly the parameters (population mean and standard deviation) required for the determination of sample size, for various items of interest. However, that may not always be possible, unless the pilot survey is taken well in advance, because estimates of the financial resources required for the survey are to be made at the very outset to enable the government to make requisite budget provisions and to work out the nature and extent of assistance required by the government from different sources. As the cost of the survey would, in the main, depend upon the sample size, the determination of the sample size may have to be done well in advance of the pilot survey.

5.63 In such cases, the survey statistician has to make use of the information that is readily available. He may often have to depend on results of similar surveys conducted in the past, preferably in the same country or else in the neighbouring countries. Published results of household surveys in general, however, provide very little information on the different components of variance which is necessary for the estimation of sample size. In such a situation, the best that the statistician can do is to make reasonable guesses of the different parameters which enter the formula for the determination of the sample size and hope for the best.

5.64 If a multi-stage sampling design is used, which is usually the case, the problems are further compounded because information is required not merely on the population mean and its standard deviation but also on the components of its variance between and within the PSUs adopted for the sampling design. Information on these aspects is rarely published or documented. What one can do in the circumstances is to proceed in stages by working out the sample size required for a simple random sample and to make adjustments to the sample size to take into account the effects of multi-stage sampling and possible stratification as illustrated in the following paragraphs.

5.65 Generally the level of precision desired for the survey estimate of the population parameter is expressed as a percentage of the estimate itself or, strictly speaking, of the population parameter. But the subtle difference is usually ignored. Let us consider the estimate of average household income \bar{Y} , denoting by Y the variable household income. In the case of simple random sampling with replacement, let y stand for the sample observation of household income, and \bar{y} the sample average based on the n households in the sample. Then \bar{y} is an estimate of Y and the requirement of the sampling precision is prescribed as a percentage of \bar{y} ; e.g., that the sampling precision of \bar{y} should be E per cent of \bar{y} , meaning thereby that the population average income should lie between $\bar{y} \pm E\bar{y}/100$. Taking the 95% confidence interval, which is generally used, this means that the relative sampling error of y should be $E/2$ per cent. Thus, if the sampling precision is set at 5%, the relative sampling error should be 2.5%. Then n , the sample size, is given by the formula -

$$n = 40,000 \quad C_y^2 / E^2$$

where C_y is the coefficient of variation of household income in the population which equals the ratio of the population standard deviation to population mean (generally expressed as a percentage). For example,

$$\text{if } E = 5\%, \quad n = 1600 C_y^2$$

$$\text{if } E = 10\%, \quad n = 400 C_y^2$$

5.66 To determine the sample size, we require the value of C_y , which can be estimated on the basis of a previous survey of income or of a closely related character, or on the basis of the survey results of a neighbouring or similarly placed country. If the necessary information is not available, C_y can still be approximated on the basis of some related information. For example, the average household income can be taken to be equal to per capita national income multiplied by average household size, and one-sixth of the known range of household income can be taken as an approximation of the standard deviation on the assumption of a normal distribution.

5.67 A better assumption, however, would be that of a log-normal distribution. A two-parameter log-normal distribution has the following properties.

$$\text{Mean} = \text{Exp. } (a + b^2 / 2)$$

$$\text{Variance} = \text{Exp. } (2a + b^2) \cdot (\text{Exp. } (b^2) - 1)$$

$$C^2y = \text{Exp. } (b^2) - 1$$

$$\text{Median} = \text{Exp. } (a)$$

$$\text{Mode} = \text{Exp. } (a - b^2)$$

where a stands for the mean and b for the standard deviation of $\log_e y$, where y is income and $\text{Exp } (t)$ means e^t , e being the base of Napierian (Natural) Logarithms. It will be seen that the coefficient of variation C_y , depends only on b . The ratio

$$\text{Mean/Median} = \text{Exp } (b^2 / 2), \text{ and}$$

$$\text{Mean/Mode} = \text{Exp. } (3b^2 / 2).$$

Thus, if the mean is approximated in the manner indicated in paragraph 5.66, and the median or mode is roughly guessed, it is possible to calculate the value of b and thus approximate the C^2y . From the formula, it is also seen that an error in the estimate of mode affects the estimate of b less than the same relative error in the estimate of median. Also, it may be perhaps less difficult to make a good guess of the mode, that is the most common value of income, than of the median.

5.68 Another property of a log-normal distribution is that the proportion of population (households in our case) with values less than or equal to the mean is given by $P(b/2)$, where $P(t)$ is the area to the left of t of a standard normal probability density function. Thus, if we guess the proportion of households whose income is less than or equal to the average, it is possible to obtain the value of b , by referring to the corresponding proportion in the standard normal distribution tables, and thus arrive at an estimate of C_y .

5.69 While it is not proposed to recommend any particular method, it is considered worthwhile to mention a simple method that does not depend upon the estimation of either the population mean or the standard deviation, but assumes log-normal distribution. It is based on the somewhat common observation that nearly two-thirds of the population, in the case of distributions of income or similar economic variables,

lie below the average value. This, coupled with the assumption of a log-normal distribution and its property mentioned in paragraph 5.68, gives the value of

$$C_y = 1.0492,$$

which may roughly be taken as equal to unity. If the proportion of population below the average is close to 2/3, the C_y will be close to unity. It is not claimed here that the observation mentioned above is universal. If the proportion below the average is different, C_y will be different from unity (on the continued assumption of log-normality) as the following table will show.

<u>Proportion of population below average</u>	<u>C_y</u>
0.55	0.2554
0.60	0.5409
0.65	0.9005
0.70	1.4157
0.75	2.2739
0.80	4.0000

5.70 It would be seen that as the proportion of population below the average changes, the value of C_y changes very fast. Therefore, rather than working with the assumed proportion of two-thirds, one may prefer to err on the safer side, take the proportion as 70% and use the value of $C_y = 1.42$ or $C^2 y = 2$. This may not be an underestimate in most cases. A table given at the end of this chapter, uses data published by the ILO in 'Household Income and Expenditure Statistics No. 3, 1968-1976' for several countries, and gives the values of C_y and the proportion of households below the average. In very few cases, C_y exceeds 1.42. The assumption of $C^2 y = 2$ is not thus unrealistic and would be safe to use. If a still larger proportion of the population lies below the average, one will have to use appropriate stratification. Stratification can also be used with advantage even if the proportion below the average is less.

Using $C^2 y = 2$, as an upper limit,

we get $n = 3200$.

If $C^2 y$ is around unity, as it happens in most cases, $n = 1600$, which would be the minimum size required of a simple random sample selected with replacement. If N is the total number of households, the sample size \dot{n} for a simple random sample without replacement is given by

$$\dot{n} = n / (1 + n/N)$$

If n/N is one per cent or less, the finite population correction can be ignored and \dot{n} can be taken to equal n .

5.71 In a multi-stage design, households are not selected at random but essentially in groups or clusters, at each stage of selection upto the selection of PUSUs. In a two-stage design, PSUs are blocks in urban areas and villages in rural areas or census enumeration areas in general. Households within the same PSU are more likely to exhibit some degree of similarity than those in different PSUs. A two-stage design is generally, therefore, less efficient than a simple random sample of the same ultimate size, and to achieve the same level of precision as in a simple random sample a larger number of households has to be surveyed. This is called the design effect and the extent of the upward adjustment to the sample size depends upon the degree of similarity of households within a PSU which is measured by the intra-class correlation coefficient. Even a small value of this coefficient gives rise to a large upward adjustment. Using the value of 2 for the design effect as in the illustration given in the Handbook of Household Surveys, (15) we arrive at a sample size of 6400 households if $C^2 y = 2$, and 3200 households if $C^2 y = 1$, as our requirement for achieving a relative sampling precision of 5%. Here again, the sample size required will be less if appropriate stratification is used at various stages.

5.72 It is generally to be expected that the coefficient of variation for household consumption expenditure would be smaller than that for income, and so expenditure can be estimated, with greater precision than income. Also the estimates of per capita income or expenditure can be estimated with greater precision than those on a per household basis. The main purpose of a household income and expenditure survey may not be the estimation of aggregates but of ratios between the aggregates of two variables (e.g. per capita income or expenditure). If Y and X are two related variables, and the purpose is to estimate the ratio -

$$\frac{\text{Total of } Y \text{ for all households}}{\text{Total of } X \text{ for all households}}$$

then for estimating R with E per cent precision, the formula for n becomes

$$n = 40,000 (C^2 y + C^2 x - 2C_y \cdot C_x \cdot r) / E^2$$

where C_y and C_x are the coefficients of variation of Y and X respectively and r is the correlation coefficient between Y and X . If r is sufficiently large, which, in the case of many characteristics, it would be, the sampling precision of R , for the same sample size, would be much greater than that of either of Y or X . Conversely, the sample size required to estimate R with E per cent precision would be smaller than that required for estimating Y or X with the same precision. This point is particularly relevant to surveys the purpose of which is to estimate the weights for a consumer price index or when auxiliary information is available for the estimation of an aggregate by using a ratio estimate.

5.73 In a household income and expenditure survey, if reference periods shorter than the accounting year are used, as usually done, an additional element of variation is introduced i.e., variation between reference periods. Generally, therefore, larger sample sizes are required if short reference periods are to be used. One way of economizing on the sample size would, therefore, be to use longer reference periods. But that does not bring about a proportionate increase in sampling precision because, a reference period is always continuous, and serial correlation between experience of any two successive short sub-periods of a long reference period would be quite large in most cases of repetitive expenditure. In other words, for many of the items, a three-month reference period may not be three-times as efficient as a reference period of one month. However, in the case of infrequent expenditures such as on durable goods, the serial correlation is bound to be negative and, hence, a longer reference period would be advantageous.

2. Sample Size for Domains

5.74 The calculations made above give the sample size at the national level. But these are not sufficient because estimates are required not only at the national level but also for certain domains of study such as rural and urban areas, geographical regions, etc. One has then to work out the sample size for each domain and add them up to arrive at the national sample size. We shall study the implications of the requirement of domain-wise estimates with the same precision of 5% that we used for working out the national sample size. For simplicity, we shall take only two domains of study: the rural and the urban sectors.

5.75 Let us assume that 80 per cent of the households are rural and 20 per cent urban. Suppose further that the urban average household income is twice the national average. With the 80:20 ratio of households, it means that the rural average

household income is 75% of the national average. Let the coefficients of variation of the rural and urban household incomes be C_r and C_u respectively. With $C_y^2 = 2$ as before, the usual analysis of variance gives us the relation -

$$0.45 C_r^2 + 0.8 C_u^2 = 1.75$$

We now obtain the following results -

(a) If $C_r^2 = C_u^2$, we obtain from this equation that each is equal to 1.4.

(b) In this case to obtain the same relative precision of 5% (i.e. a relative error of 2.5%), the sample size for each sector should be -

$$1.4 \times 1600 \times 2 \text{ (design effect)} = 4480 \text{ households}$$

and the national sample size will be 8960.

(c) Thus the national sample size increases from 6400 to 8960 i.e. by 40%. If we have the resources, we can achieve the precision of 5% in both rural and urban areas. If we do not have the resources, we may divide the national sample size of 6400 equally between the rural and urban sectors (3200 each) as their coefficients of variations are equal. The effect of not assigning 4480 households but only 3200 households does not have a proportionate effect on precision. Instead of 5%, we shall have 5.9% precision (2.95% relative sampling error) in each of the two sectors. Alternatively, we may maintain the desired precision for one of the sectors at the expense of the other, or accept different degrees of loss in precision for the two sectors.

(d) It is to be noted that since each domain is treated as a separate stratum for purposes of sampling, the overall precision of the national estimate will be higher, at 3.61%, than what is expected from a simple random sample of 6400 households or of even 8900 households, the precision associated with which would be 4.23%.

(e) In the above we have assumed that the coefficients of variation are equal for both the sectors. It is, however, likely that it may be higher in the urban sector than in the rural sector. The table below indicates the relationship between rural and urban coefficients on the assumption that they satisfy the equation given above, and gives the sample sizes required in each case.

C^2_r	C^2_u	Sample size (households)		
		Rural	Urban	Total
1.0	1.62500	3200	5200	8400
1.1	1.56875	3520	5020	8540
1.2	1.51250	3840	4840	8680
1.3	1.45625	4150	4660	8820
1.4	1.40000	4480	4480	8960
1.5	1.34375	4800	4300	9100

For any other value of C^2_r all other values can be determined by linear interpolation as all relationships are linear. The table shows that when C^2_u is greater than C^2_r , which is most likely, the increase in the total sample size is less than when the two are equal. When C^2_u is less than C^2_r , the increase is higher. The gain in precision at the national level, due to stratification for any given national size distributed over the domains in proportion to the values of C^2_u and C^2_r , as compared with a non-stratified sample of the same size, will be the same.

- (f) The general conclusion is that if estimates are required for a number of domains with a fixed precision, the resulting national sample size would be larger than that worked out for national estimates with the same precision. The increase will not be proportional to the number of domains but could be considerably larger depending upon the coefficients of variation in and variation between the averages for the domains. If resources cannot be increased to meet the requirement of domain-wise estimates with the prescribed precision, some compromise solution would have to be worked out. Since the domains are treated as strata, the precision of the national estimates would in any case improve significantly with the same national sample size.
- (g) The results given above are based on the assumption that $C^2_y = 2$. If it is less, around unity, as in most cases, the sample sizes required will be correspondingly less.
- (h) Finally, it is important to note that appropriate stratification within the domains is bound to reduce the sample size requirements further and improve the efficiency of the design.

E. Estimation

1. Estimation of Population Values

5.76 Let us consider the commonly adopted stratified two-stage sampling design in which the first stage units are selected with probability proportional to size (pps) with replacement and the second stage units, i.e. households are selected by simple random sampling without replacement (or by systematic sampling).

- Let: H = number of strata
- M_h = number of PSUs in the h -th stratum,
 $h = 1, 2, 3 \dots H$
- m_h = number of PSUs selected in the sample
in the h -th stratum
- Φ_i = probability of selection of the i -th PSU
in h -th stratum, $i = 1, 2, 3, \dots m_h$
for the sample and $= 1, 2, \dots M_h$
for population
- N_{hi} = total number of households in the i -th PSU
in the h -th stratum, $i = 1, 2, \dots m_h$ for
the sample and $= 1, 2, \dots M_h$ for the
population,
- n_{hi} = number of households selected from the i -th
PSU in the h -th stratum, $i = 1, 2, \dots m_h$
- y_{hij} = the value of the observation on
characteristic y for the j -th household
selected in the i -th PSU selected in the
 h -th stratum, $j = 1, 2, \dots n_{hi}$

Then,
$$n = \sum_{h=1}^H n_h = \sum_{h=1}^H \sum_{i=1}^{m_h} n_{hi} = \text{total number}$$
 of households in the sample.

$$N = \sum_{h=1}^H N_h = \sum_{h=1}^H \sum_{i=1}^{M_h} N_{hi} = \text{total number}$$
 of households in the population.

Then the unbiased estimate of the total of the characteristic y for the population is given by

$$Y^* = \sum_{h=1}^H \sum_{i=1}^{m_h} \sum_{j=1}^{n_{hi}} W_{hij} \cdot y_{hij}$$

where, W_{hij} , the multiplier for the j -th selected household in the i -th selected PSU in the h -th stratum,

$$= \frac{1}{m_h} \cdot \frac{1}{\Phi_i} \cdot \frac{N_{hi}}{n_{hi}}$$

Thus, the estimate Y^* is a weighted sum of the sample observations.

5.77 Now, if the PSUs are selected with probability proportional to the number of households,

$$\Phi_i = N_{hi} / \sum_{i=1}^{M_h} N_{hi} = \frac{N_{hi}}{N_h}$$

Further, if a fixed number of k households is selected from every one of the selected PSUs in every stratum (i.e. $n_{hi} = k$ for all h and i) and if the number of sample households n_h allocated to the h -th stratum is proportional to the number of households N_h in the stratum, we have

$$n = k \cdot \sum_{h=1}^H m_h$$

$$n_h = k \cdot m_h = \frac{N_h}{N} \cdot n$$

$$\text{and } m_h = \frac{N_h}{N} \cdot \frac{n}{k}$$

Substituting the value of k for n_{hi} , $\frac{N_{hi}}{N_h}$ for Φ_i , and

$\frac{N_h}{N} \cdot \frac{n}{k}$ for m_h in the formula for W_{hij} , we see that

$$W_{hij} = \frac{N \cdot k}{N_h \cdot n} \cdot \frac{N_h}{N_{hi}} \cdot \frac{N_{hi}}{k} = \frac{N}{n}$$

The multiplier W is thus constant for all sample observations and equals the reciprocal of the overall sampling fraction. The above-mentioned scheme thus constitutes a self-weighting design, for which the estimation formula is simply

$$Y^* = W \cdot (\text{total of } y \text{ over all sample households}).$$

When a ratio Y/X is to be estimated, it is not even necessary to multiply the sample observations by the common multiplier W . The simple ratio of sample totals of y and x will provide the needed estimate.

2. Adjustment for Non-reponse

5.78 The above procedure would always require some adjustment for non-response in which case for some PSUs in the sample n_{hi} is not equal to k . (This is to be distinguished from cases where the value of the variable for a particular household is zero). In such cases two alternative procedures can be followed:

(a) corresponding to every non-responding household, the multiplier for a randomly selected or a similar household from among the households surveyed in the PSU may be doubled or (b) the multipliers for all surveyed households within the PSU may be increased proportionately (i.e. if the number of responding households is n_{hi} , the multiplier for each responding household is to be adjusted upwards by k/n_{hi}). In either case, the self-weighting quality is affected although the change of multiplier takes place for only one household in the case of (a) as against for several households in the case of (b). As a variant of (a), the entire record for a randomly selected or similar household may be duplicated and inserted as missing data for the household which could not be surveyed. This would then retain the self-weighting character of the estimation procedure.

3. Adjustment due to Difference in PSU Sizes

5.79 In the self-weighting design suggested above, the actual number of households N_{hi} in the selected PSU may often be found to be different from the assumed N_{hi} , because the frame used for sample selection is usually outdated. The sample then ceases to be self-weighting and the appropriate multiplier would no longer be W_{hij} , but

$$\frac{1}{m_h} \cdot \frac{1}{\Phi_{hi}} \cdot \frac{N_{hi}'}{k} = W_{hij} \cdot \frac{N_{hi}'}{N_{hi}}$$

It will be constant for the households within the same PSU but will be different for different PSUs.

5.80 It is not generally possible to ascertain up-to-date data on the size distribution of the PSUs beforehand to facilitate use of the correct data for sampling purposes. However, it is possible to maintain the self-weighting character of the design at the stratum level by taking instead of a fixed sample of k

households, an adjusted sample of $k \frac{N_{hi}'}{N_{hi}}$ in which case the

multiplier will still be W_{hij} , but the resulting sample size for the stratum will be higher or lower than the originally expected size by about $\frac{N_{h'}}{N_h}$, where $N_{h'}$ is the actual size of

the stratum, which is not generally known. If however, an approximate indication of $N_{h'}$ is available from other sources, the sample size k may well be adjusted as $k \cdot \frac{N_{hi}'}{N_{hi}} \cdot \frac{N_h}{N_{h'}}$ in

order to keep the adjusted sample size at about the same level as the original expectation.

5.81 If a cluster of households is selected at the ultimate stage, the PSU is divided into the same number of clusters originally decided upon, even though the number of households N_{hi} at the time of the survey differs from the number N_{hi} used at the time of selection. This retains the self-weighting character of the sample - but the size of the resulting cluster in terms of the number of households within the cluster will be higher or lower by $\frac{N_{hi}'}{N_{hi}}$, proportionately.

4. Estimation of Sampling Errors

5.82 Given a particular sample design, estimates of the sampling variance of the estimates of the different population characteristics (means, proportions) can be obtained from the sample data using the standard formulae available to statisticians. However, in practice, as the number of variables studied in the survey is large, it may not always be possible to compute the sampling errors using the standard formulae because of considerations of time and cost. There are some simple methods, using which the sampling variance can be estimated for any number of variables provided the sample design satisfies certain criteria. It is important that the possibility of using these simple methods should be kept in view in designing the sample.

5.83 If the sample design provides for G sub-samples, each selected independently by the same sampling process, the variance of the estimate of population total Y can be easily estimated as follows. Let the estimate of Y worked out on the

basis of sub-sample g (1, 2, ...G) be designated as Y_g^* ; then an overall estimate of Y based on the total sample is given by -

$$Y^* = \left(\sum_{g=1}^G Y_g^* \right) / G$$

The sampling variance of Y^* is estimated by

$$S_y^2 = \frac{1}{G(G-1)} \sum_{g=1}^G (Y_g^* - Y^*)^2$$

If the sample size is large enough, the minimum and the maximum values of Y_g^* offer a confidence interval with a confidence coefficient equal to

$$1 - \frac{1}{2(G-1)}$$

Thus, if we have four sub-samples, the confidence coefficient is equal to

$$1 - \frac{1}{8} \text{ or } 87.5 \text{ per cent.}$$

If there are only two sub-samples, the formula for sampling variance further simplifies to

$$S_y^2 = \frac{(Y_1^* - Y_2^*)^2}{4} \text{ i.e., } S_y = \frac{|Y_1^* - Y_2^*|}{2}$$

If there are G sub-samples, the estimate S_y^2 is based on (G-1) degrees of freedom. It can be improved further by making the calculations for each stratum, working with estimates of totals for the stratum, and adding the stratum level estimates of variance. This estimate will be more reliable, based, as it is, on H(G-1) degrees of freedom, where H is the number of strata.

For example, if G = 2

$$S_y^2 = \sum_{h=1}^H \frac{(Y_{h1}^* - Y_{h2}^*)^2}{4}$$

where Y_{h1}^* and Y_{h2}^* are the two estimates of the stratum total Y_h for the h -th stratum.

5.84 For computational purposes, it is easier to work with weighted totals, because constructing sub-sample-wise estimates would require the multiplication of the multipliers already entered into the record by a factor G . If, therefore, \dot{Y}_g is the weighted total of sample observations (using the multipliers calculated for the estimation from the whole sample),

$$\dot{Y}_g = \frac{1}{G} Y_g^* \quad \text{or} \quad Y_g^* = G \dot{Y}_g$$

and substitution in the above formula gives

$$S_y^2 = G \sum_{g=1}^G (\dot{Y}_g - \dot{\bar{Y}})^2 / (G-1)$$

where $\dot{\bar{Y}}$ is the ordinary average (mean) of the \dot{Y}_g values.

When $G = 2$

$$S_y^2 = \sum_{h=1}^H (\dot{Y}_{h1} - \dot{Y}_{h2})^2$$

5.85 When a ratio of a total of y i.e. Y to that of x i.e. X , that is $R = Y/X$, is to be estimated from the sample survey, the formulae for sampling variance given above can be used by replacing the variable y by the variable $(y - Rx)/X$.

From the G sub-samples estimates of S_y^2 and S_x^2 are obtained by the above formulae. An estimate of S_{xy} (the covariance) is

obtained by replacing $(Y_g - \bar{Y})^2$ by $(Y_g - \bar{Y})(X_g - \bar{X})$, or when weighted totals are used, by replacing $(\dot{Y}_g - \dot{\bar{Y}})^2$ by $(\dot{Y}_g - \dot{\bar{Y}})(\dot{X}_g - \dot{\bar{X}})$. Thus,

$$\begin{aligned} S_{yx} &= \frac{1}{G(G-1)} \sum_{g=1}^G (Y_g^* - \bar{Y})(X_g^* - \bar{X}) \\ &= \frac{G}{(G-1)} \sum_{g=1}^G (\dot{Y}_g - \dot{\bar{Y}})(\dot{X}_g - \dot{\bar{X}}) \end{aligned}$$

If $G = 2$

$$S_{yx} = \frac{\sum (Y_g - \bar{Y})(X_g - \bar{X})}{4}$$

$$= (\bar{Y}_g - \bar{Y})(\bar{X}_g - \bar{X})$$

The estimate of sampling variance of the estimate of R i.e. of $R = Y/X$ is given by -

$$S_r^2 = (S_y^2 + R^2 \cdot S_x^2 - 2R S_{yx}) / X^2$$

5.86 Although the sampling variances of most of the characteristics can be estimated by the above simplified procedures, it is important that the rigorous formulae for the estimation of variance should be used at least for some of the main characteristics, and the relevant components of the variance worked out. The results should form part of the technical report on the survey as they would be useful for the evaluation and improvement of the sample design. They should also be published so that they can be fruitfully used by similarly placed countries.

F. Survey Operations and Quality Control

5.87 Certain issues regarding survey operations, relating to the basic approach, method of inquiry and field operations have been considered in Chapter IV. Questions concerning the use of schedules or questionnaires will be considered in the next Chapter. Other issues relating to survey operations will be discussed in this Chapter.

1. Pre-test and Pilot Survey

5.88 Before the schedules, questionnaires and survey procedures are finalized, it is necessary to test them in the field first, in a preliminary testing operation and later, in a comprehensive pilot survey. The pre-test, as the preliminary testing operation is often called, may be confined to a small selection of respondents representing various social situations and socio-economic patterns likely to be met in a household income and expenditure survey. The primary purpose of the pre-test being refinement of the schedules and questionnaires, especially on incomes and expenditures, the respondents should

preferably include urban as well as rural households, and households with income from diverse sources such as wages and salaries, remittances and transfers, those engaged in subsistence production as well as those with apparently no incomes. The pre-test should be aimed at ascertaining whether the schedules, questionnaires and instructions as drafted are suitable and meet adequately the different situations faced in the field, whether the questions are properly and unambiguously worded, whether the reference periods used are appropriate, whether the code structures designed are suitable to accommodate all possible responses, how the respondents react to the various questions, how long it takes to complete the interviews and how long one can expect to ensure respondent co-operation. It would, in fact, be advantageous to test the schedules and questionnaires at the very outset on staff members within the central statistical office so that the survey designers, managers and operators are themselves put in the unenviable position of the respondents and see what their reactions would be.

5.89 The pilot survey should aim at a more comprehensive testing not only of the schedules and questionnaires but also of the sampling and survey procedures. It may even be expected to provide some preliminary estimates of population values and related variances. It has to be conducted much in advance of the main survey so that the experience thus gained on different facets of the survey operations could be fruitfully utilized in the main survey. As many of the technical aspects as possible, on which decisions have to be finalized, should be tested in the pilot survey and in the light of the experience thus gained, necessary modifications should be made so that at least the foreseeable difficulties could be effectively met. In practice, however, as the time-table for the survey operation is generally very tight, it will be difficult to bring about major modifications in the procedures already determined. A practical way out would be to make the necessary modifications on the basis of the pilot survey as it proceeds and not wait for its results.

5.90 A small purposive sample, representing different types of households and different situations likely to be faced in a household income and expenditure survey would be good enough for the pilot survey. A probability sample would, however, have certain advantages. For instance, alternative questions, methods and procedures under consideration may, in that case, be tried on random sub-samples of the pilot sample. The Handbook of Household Surveys recommends that every alternative should be tried out on 30 to 50 cases.⁽¹⁶⁾ It would be beneficial if planning personnel and supervisors participate in the pilot survey so that they could get to know first-hand of the different issues that may have to be examined in regard to the suitability of the questionnaires, clarity of definitions, adequacy of the instructions and efficacy of the survey procedures. A pilot survey organized on the basis of a

probability sample can also give an idea of the sampling variance and its components which are necessary for the determination of the sample size, estimation of interview and travel costs, and assessing the feasibility of survey itself.

2. Instructions and Training Manuals

5.91 Training of enumerators and supervisors in all aspects of the field operation including listing and sampling of households, collection of information, field level coding and processing of the data is essential for the successful operation of a household survey and is regarded as a form of preventive quality control. Training manuals for enumerators and supervisors should, therefore, be prepared for their use not only during their training but also as a reference book during the course of the survey. The manual for enumerators should contain detailed instructions on every item on which information is to be collected in the survey and nothing should be left unexplained as self-explanatory. Even if it is self-explanatory, the obvious explanation of an item should be clearly available in writing to the enumerators. The definitions used in the survey should be clearly spelt out and explained with the help of examples likely to arise in practice. The facsimile of a filled-in questionnaire containing data in an illustrative situation should form part of the training manual to enable the enumerators understand the different instructions with reference to examples rather than to generalized situations. However clear and precise the instructions framed are, there are always practical situations which challenge and test the clarity and logical consistency of the instructions. A record of all such cases should be compiled during the course of the pilot survey, and supplemented by a listing of other similar cases which can possibly arise in practice. A section of the Manual of Instructions should clarify how the data should be collected in such cases. In household income and expenditure surveys, difficulties in data collection may arise, in particular, in respect of incomes and expenditures in kind, differentiation of income from other receipts, and consumption expenditures from other expenditures and disbursements, estimation of incomes from self-employment, barter transactions, etc. The Manual of Instructions should devote special attention to these items. The manual should also contain information on the general background and purpose of the survey, the scope of the information, the responsibilities of the enumerators, interviewing rules and procedures, proprieties in regard to dress, behaviour, identification, courtesy to respondents, and the need to minimize non-response. If the enumerators are expected to undertake listing and sampling of households at the ultimate stage of sampling, the instruction manual should provide very detailed instructions on the procedures to be followed.

5.92 In addition to the manual for enumerators, a manual for supervisors should also be prepared. It should contain instructions on the responsibilities of the supervisors in guiding the interviewers, procedures for organizing and controlling flow of material to and from the field, means of monitoring field-work, importance of adhering to time-tables, methods of field review of completed questionnaire and application of quality control procedures and steps to be taken when serious errors are discovered or difficult situations such as refusal are faced in the field.

3. Quality Control

5.93 To ensure that survey operations are carried out satisfactorily, it is necessary to exercise supervisory control over the quality of data collection. The main steps to be taken by supervisors in the quality control include review of schedules and questionnaires filled in by enumerators, observation of interviews conducted by the enumerators, and reinterview of a sub-sample of the respondents. The norms of work for the supervisors should be clearly laid down and followed during the course of the survey. The intensity of supervision would have to be considerably higher in the initial stages of the field-work, especially if the enumerators are new to the survey undertaken. Difficulties faced by the enumerators will be more frequent during the initial phases of the survey, and the enumerators will need much more guidance and clarification during that phase. Weaker enumerators should be identified during the initial phase, so that they could be given greater supervisory attention during the course of the survey. Samples to be checked and taken up for reinterview by supervisors should preferably be selected at random for two reasons: firstly, a feed-back from supervisors from such a sample would help assessment of the average quality of data collected through the survey, and secondly, random selection would help control the general tendency to supervise survey work in "convenient" units and ignore inconvenient units.

5.94 Preliminary editing of the data collected should be done by the supervisors in the field. They should check the schedules and questionnaires for inconsistencies, omissions and incomplete entries in the presence of the enumerators so that these deficiencies can be rectified wherever possible in consultation with the enumerators. If, in any case, they could not be so corrected, the sample household should be revisited as early as possible. There is very little that can be done if deficiencies are noticed at a late stage in the survey operation. The work of field editing should, therefore, be considered a very important element in the quality control of the data. Separate field editing manuals should be prepared for this purpose. Supervisors may also be asked to undertake simple processing of the data in the field itself so as to

ensure that the data emerging from the questionnaire are realistic and satisfactory in regard to mutual consistency. The procedure has the merit that it rings advance warning bells about the accuracy of the data and the possibility of serious deficiencies so that corrective action could be taken in time. The supervisors should check in particular the consistency of data on income and expenditure reported by the household, and ensure that explanatory information is collected to clarify apparent inconsistencies. Also, wide differences between the data reported by enumerators operating in the same area (e.g. on wage rates, prices or rents) should be checked through on-the-spot investigations to detect defects in data collection. It is important, however, that the types of checks to be conducted by the supervisor should be kept confidential, and not indicated to the enumerators in advance for obvious reasons.

4. Control of Non-response

5.95 Even if one starts by selecting a sample by the most sophisticated probability sampling techniques, its representative character is often disturbed in practice due to the phenomenon of non-response. The measures taken to correct the effects of non-response either in the field or at the stage of data processing cannot fully rectify the bias introduced due to non-response. Strong emphasis should, therefore, be laid in the survey operation on minimizing non-response by carefully instructing the enumerators on the importance of completing their assignments and the ways of doing so. Further, adequate time and resources should be provided in the survey plan to minimize non-response.

5.96 Non-response should be distinguished from cases in which households do not report information either because it is not applicable to the household, or because it has not occurred during the reference period. For example, wage income may not be reported because none of the household members was engaged as an employee or expenditure on a certain item may not be reported because it did not occur during the reference period. Similarly, where a housing unit is the ultimate unit of sampling, if the dwelling was found unoccupied at the time of the survey, it should not be treated as a case of non-response.

5.97 Non-response arises mainly because households are not found at home or refuse to give information. The first is the most frequent reason for non-response. The problem is generally greater in the urban areas, especially in the case of single member households or where both the husband and wife work and are, hence, not found at home. It may happen even in rural areas if the entire family is at work on its farm. The timing of the interview has, therefore, to be suitably adjusted in such cases and it may be necessary to revisit the household at a more appropriate time. In some surveys it may be possible to get information from the neighbours, but it is hardly likely

that in an income and expenditure survey the neighbours would be able to provide any information on the subject. At the best, some information can be collected on the classificatory characteristics of the household. Survey procedures and costs should include the possibility of more than one visit to the sample households at least in a certain proportion of cases.

5.98 Refusal to participate in the survey is indeed a difficult problem to deal with. The enumerator should make all efforts to solicit co-operation from the household and if his efforts fail, visits by supervisors or other superior officers of the survey organization should be arranged to persuade the household to participate in the survey. In the developing countries, the refusal rates are generally low especially in the rural areas; even so no effort should be spared to minimize the incidence of non-response, because refusal is often related to the characteristics studied in the survey and households that refuse to give information cannot in general be assumed to be representative of the total population.

5.99 If all efforts fail to persuade the non-responding household, a substitute household is often surveyed in its place. The procedure for substitution involves either a random selection of another household within the same penultimate sampling unit or a random selection from among households similar to the non-responding household within the same penultimate unit. If the ultimate sampling units have been selected by stratification or by systematic sampling, it is considered desirable to substitute the non-responding household by another household of the same stratum. It has to be recognized, however, that substitution only increases the sample size but does not rectify the bias arising from non-response. Substitutions are, therefore, not generally recommended. Therefore, if the information required for the survey cannot be obtained in respect of the non-responding households, related information on the characteristics of those households should be collected and reported for a technical evaluation of the data. (17)

Table 5
Measures of Income Distribution

Country/year/ geographical coverage/ household group	Sample no. of house- holds	Cy	P(Y ≤ \bar{Y})
(1)	(2)	(3)	(4)
ALGERIA, 1967-68 Algeria (excluding Grand Alger)	10360	1.4411	0.6948
ETHIOPIA, 1968 Addis Ababa	249	1.0086	0.7333
GAMBIA, 1968-69 Banjul area	618	1.0460	0.7027
GHANA, 1967-68, Eastern Region Urban	223	0.7835	0.7018
Rural	257	0.6129	0.5858
KENYA, 1970-71 Nyanza Province	859	0.7365	0.6484
LESOTHO, 1972-73 Six towns (incl. Maseru)	9353	0.8923	0.6723
Maseru	5373	0.8224	0.6448
LIBYAN ARAB JAMAHIRIYA, Oct. 1968- July 1969 Tripoli	716	0.9123	0.6707
Benghazi	553	0.9142	0.6711
MADAGASCAR, 1968-69 Tananarive City	480	1.2403	0.6977
Maroantsetra	120	0.5941	0.6205
MALAWI, 1968 Zomba	436	1.3236	0.7546
25 small urban areas	1096	1.1763	0.7232
25 agricultural estates	1037	0.8066	0.7360

	(1)	(2)	(3)	(4)
SENEGAL, 1975				
(City of Dakar, African households)		544	0.9085	0.6584
SIERRA LEONE, 1968-70				
Northern Province, 1968-69		158	1.3138	0.7490
Southern Province, 1968-69,				
Urban		208	1.1560	0.6968
Rural areas of provinces,				
1969-70		1768	1.5359	0.7294
Eastern Province		N.A.	1.5051	0.7445
Northern Province		N.A.	1.4873	0.7260
Southern Province		N.A.	1.2380	0.7239
SUDAN, 1967-68				
Six Northern provinces		7080	0.9639	0.7150
Urban		3300	1.2314	0.6939
Semi-urban		780	0.9598	0.6660
Rural		3000	0.8293	0.6364
TANZANIA, 1969				
Mainland		3068	1.6467	0.8335
Urban		872	1.2703	0.6355
Rural		2196	1.0830	0.8061
ZAMBIA, 1966-68				
Nine urban centres		2576	0.8792	0.6404
Lusaka		528	1.0298	0.6519
BAHAMAS, 1973				
Bahamas		N.A.	0.9173	0.6218
BELIZE, 1969				
Urban, City of Belize		211	0.8153	0.6876
BRAZIL, 1968				
Urban, Federal District		722	1.2429	0.7445
CANADA, 1974				
Whole country		12521	0.8012	0.6018
Atlantic provinces		2589	0.7900	0.5900
Quebec		2384	0.8090	0.5913
Ontario		3636	0.7662	0.5899
Prairies provinces		2575	0.8475	0.6132
British Columbia		1337	0.7915	0.6070

	(1)	(2)	(3)	(4)
CHILE, 1968				
Whole country		10430	1.0986	0.6952
Urban		6437	1.0488	0.7088
Gran Santiago		3003	1.0627	0.7043
Salaried employees		2501	0.9045	0.6855
Wage earners		3541	0.5508	0.6032
COLOMBIA, 1971				
Whole country		N.A.	1.4940	0.7339
Urban		N.A.	1.3234	0.7142
Rural		N.A.	1.4866	0.7386
DOMINICAN REPUBLIC, 1969				
City of Sto. Domingo		552	1.1740	0.7169
Employers and own-account workers		215	1.3414	0.7620
Salaried employees and wage earners		262	1.0750	0.6855
HONDURAS, 1967-68				
Central district		343	1.1754	0.7207
Urban		278	1.2611	0.7087
St. Pedro Sula		225	1.1059	0.6981
MEXICO, 1968				
Whole country		5853	1.2160	0.6663
Non-agricultural sector		N.A.	1.0820	0.7033
Agricultural sector		N.A.	1.3119	0.7004
PANAMA, 1972				
Panama City		1066	0.9988	0.6705
Colon City		280	0.8541	0.6394
TRINIDAD AND TOBAGO, 1975-76				
Whole country		2493	1.0267	0.6480
USA, 1973				
Whole country		N.A.	0.8306	0.6145
VENEZUELA, 1967-68				
Maracaibo		N.A.	1.1970	0.7165

	(1)	(2)	(3)	(4)
AUSTRALIA, 1974-1975				
All capital cities		9095	0.6848	0.6255
Canberra		543	0.5546	0.6706
Adelaide		983	0.6890	0.6224
Brisbane		1119	0.7092	0.6330
Own-account workers		921	0.6992	0.6529
Professional, technical and related workers		1537	0.5232	0.6900
Clerical and sales workers		1224	0.5878	0.6317
Tradesmen, production process workers and labourers		2540	0.5787	0.6476
Other employees		1030	0.5958	0.6210
BANGLADESH, 1973-74				
Whole country		12144	0.9324	0.6731
FIJI, 1973				
6 Urban centres		641	0.3543	0.5412
HONGKONG, 1973-74				
(All land districts of Island, Kowloon, New Kowloon, TsuenWan)		2864	0.6394	0.6476
INDONESIA, 1968-69				
Jakarta		2598	1.0006	0.6969
Bandung		807	0.8412	0.6653
KOREA, REPUBLIC OF, 1975				
Wage earners and salaried employees		972	0.6902	0.6781
KUWAIT, 1972-73				
Non-Kuwaiti households		N.A.	0.6842	0.6254
JAPAN, 1974				
Whole country		48805	0.6632	0.6591
All cities		40399	0.6641	0.6616
Towns and villages		8406	0.6384	0.6307
Workers' households:				
whole country		33900	0.5835	0.6420
All cities		28335	0.5901	0.6472
Towns and villages		5565	0.5436	0.6094

	(1)	(2)	(3)	(4)
NEPAL, 1973-75				
Kathmandu town area		660	0.8722	0.6679
Dhankuta		300	0.7711	0.6672
Pkhara		362	0.7578	0.6643
NEW CALEDONIA, 1968-69				
Urban: Europeans and assimilated		240	0.6518	0.6708
Melanesians		88	0.6210	0.6159
Other ethnic groups		82	0.6260	0.5866
PAKISTAN, 1971-72				
West Pakistan		7294	1.0187	0.6829
Urban		4524	1.0603	0.7033
Rural		2770	0.8934	0.6561
PAPUA NEW GUINEA, 1975-76				
Madang		84	0.6920	0.6430
PHILIPPINES, 1971				
Whole country		6347	1.2410	0.6945
All urban areas		1913	1.0400	0.6719
Manila and suburbs		525	0.9635	0.6736
Other urban areas		1388	1.0595	0.6730
All rural areas		4434	1.2113	0.6765
SAMOA, 1971-72				
Urban		168	0.6781	0.7348
Rural		165	0.3675	0.4794
SINGAPORE, 1972-73				
Main Island		3528	0.9213	0.6864
Urban		1158	0.8532	0.6590
Sub-urban		1346	0.9401	0.7049
Rural		1024	0.9324	0.6950
SRI LANKA, 1973				
Whole country		5088	0.8167	0.6268
Urban		931	0.7758	0.6312
Rural		3627	0.7420	0.6031
Zone - 1		1641	0.8290	0.6216
- 2		725	0.7166	0.5935
- 3		531	0.7213	0.6025

	(1)	(2)	(3)	(4)
THAILAND, 1971-73				
Municipal areas:				
North Eastern region, 1971		900	0.9739	0.6876
Bangkok-Thonburi, 1972		1980	0.8443	0.6815
Northern region, 1972		900	0.9757	0.6710
Central region, 1973		900	0.8867	0.6720
Southern region, 1973		900	0.9196	0.6731
BULGARIA, 1974				
Whole country		2510	0.5113	0.6939
Wage earners		1318	0.5189	0.6879
Salaried employees		612	0.4718	0.7212
Co-operative farmers		562	0.5263	0.6905
CYPRUS, 1971				
Urban			2765	0.7047
0.6649				
Rural			1194	0.7316
0.6733				
DENMARK, 1971				
Wage earners		464	0.4196	0.5651
Salaried employees and				
			civil servants	488
0.5857			0.6315	
GERMAN DEMOCRATIC REPUBLIC, 1976				
(Whole country)				
Wage earners and salaried				
			employees 30000	0.5096
0.6061				
IRELAND, 1973				
Salaried employees, intermediate				
			non-manual workers	1030
0.6281			0.6187	
Other non-manual workers		718	0.6396	0.6381
Skilled manual workers		1143	0.6227	0.6268
Semi-skilled and unskilled				
			manual workers	1026
0.6680			0.6652	
Urban: Salaried employees,				
			intermediate non-manual	
			workers	903
0.6331			0.6184	
			Other non-manual workers	
572			0.6273	0.6268
			Skilled manual workers	
895			0.6171	0.6224
			Semi-skilled and unskilled	
			manual workers	
709			0.6712	0.6656

(1)	(2)	(3)	(4)
<u>Rural</u> : Higher/lower			
0.6092	professionals, employers, managers		127
Salaried employees, intermediate	0.6450		
0.6644	non-manual workers		127
Other non-manual workers	0.6294		
Skilled manual workers	146	0.6834	0.6842
Semi-skilled and unskilled	248	0.6329	0.6503
0.6422	manual workers		317
	0.6370		
NETHERLANDS, 1974-75			
Whole country	1707	0.5263	0.6598
POLAND, 1975			
Wage earners and salaried			
0.6329	employees	5398	0.5530
Pensioners	1436	0.4470	0.5938
SPAIN, 1973-74			
Administrative and managerial	709	0.6263	0.6429
Employers with employees			
0.7210	(non-agr.), liberal professions		773
Armed forces personnel	0.6668		
Foremen, production-supervisors	343	0.6202	0.6063
Employees, sales, clerical workers	196	0.4889	0.5469
Working proprietors (non-agr.)	3106	0.6064	0.5838
1925	and own account workers		
Production workers, labourers	0.6756	0.6228	
7957	and services workers		
Working proprietors (agr.)	0.5398	0.6375	
Farm managers	1964	0.7009	0.6405
Other agricultural workers	413	0.5835	0.6727
	1418	0.5810	0.6259
SWITZERLAND, 1976			
Whole country	514	0.6013	0.5938
UNITED KINGDOM, 1975			
Whole country	7203	0.6580	0.6019
YUGOSLAVIA, 1976			
(whole country)			
Farmers		3166	0.6563
0.6437			

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- (2) United Nations: A Short Manual of Sampling, Vol. I, Elements of Sample Survey Theory, Studies in Methods, Series F, No. 9 Rev. 1, 1972
- (3) United Nations: Handbook of Household Surveys (Revised Edition), Studies in Methods, Series F No. 31, 1984.
- (4) United Nations: Non-Sampling Errors in Household Surveys: Sources, Assessment and Control, NHSCP, 1982.
- (5) Same as (1) above.
- (6) Des Raj: Sampling Theory, Tata McGraw Hill Publishing Co., 1968.
- (7) Same as (4) above.
- (8) Same as (4) above.
- (9) For a further discussion of this topic see (1) above.
- (10) United Nations: Principles and Recommendations for Population and Housing Censuses, Statistical Papers Series M No. 67, 1980.
- (11) Same as (2) above.
- (12) Same as (6) above
- (13) For a discussion on the advantages and disadvantages of self-weighting designs, see (1) above.
- (14) Same as (4) above.
- (15) Same as (3) above.
- (16) Same as (3) above.
- (17) For fuller discussion of this topic, see (4) above.

CHAPTER VI

QUESTIONNAIRES, SCHEDULES AND ACCOUNT BOOKS

A. Introduction

6.1 Chapters IV and V dealt with questions of what data to collect and from whom. This chapter considers the next question, how to collect the data. It discusses, in particular, the advantages and disadvantages of different types of instruments of data collection such as questionnaires, schedules and account books. It analyzes the issues involved in the choice between questionnaires and schedules and the role of account books. The rest of the chapter outlines the desirable content of the schedule, indicates the nature of data to be collected on each topic, and suggests an indicative lay-out for the schedule.

6.2 The quality of information collected in a survey depends on how the data are collected and what questions are asked. Even though logical concepts and consistent definitions are formulated for a survey, the manner in which they are translated into specific items and related questions determines whether the data are collected in accordance with those concepts and definitions. Complex concepts and definitions are not easy to convert into operationally feasible questions for the purpose of the survey. Unless one is careful at this stage, there is always a likelihood that what should have been collected is missed in the process, and worse still, what has been collected is different from what was sought to be collected. The instruments of data collection have, therefore, to be designed carefully and appropriately.

6.3 The main issues concerning the design of questionnaires and schedules have been covered in the UN Handbook of Household Surveys.⁽¹⁾ Further, under the NHSCP programme of technical studies, a more detailed study on Development and Design of Survey Questionnaires⁽²⁾ has been carried out and issued in preliminary form. In what follows, the main points made in these two documents on the subject of questionnaire design will be first briefly restated and in the light of those recommendations appropriate lines of development of questionnaires for household income and expenditure surveys will be broadly indicated.

B. Questionnaire vs. Schedule

1. Choice of Format

6.4 The design of a questionnaire is considered more of an art than a science, and there could always be considerable disagreement on its details. The wide variety of questionnaires and schedules used in practice is a testimony to this disagreement and even if there were to be a model questionnaire or schedule, the different situations obtaining in different countries do often call for modifications in the model to suit the situations. Examples of questionnaires used by other countries and indications of their experience would at best provide some useful guidance for the development of an appropriate questionnaire and not, in any case, a blueprint for its lay-out.

6.5 Three types of questions are distinguished: (i) direct questions, such as the age of an individual, which are addressed to obtain directly the information needed, (ii) probing questions, such as on the activity pattern of an individual, which, in succession, lead to the main point of information to be collected, gathering on the way some supplementary information of detail; and (iii) checking questions meant essentially to cross-check the accuracy or consistency of the respondent's answers such as on age and date of birth.

6.6 Generally speaking, the questionnaire should be as brief as possible. However, when information is collected by interview, the questionnaire could be longer and detailed enough to minimize the chance of missing requisite information, as it is less expensive to add items to the questionnaire than to revisit the household for collecting supplementary information. It should not, however, be so long as to tax the patience of the respondent. If repeat visits are envisaged, the questionnaire should better be brief.

6.7 There is considerable disagreement regarding the framing of questions in a questionnaire. It centres around the issue whether the questionnaire should spell out verbatim the actual question which the enumerator should ask the informant or should merely indicate the information sought, leaving the enumerator free to phrase the questions in an appropriate manner. The advantage of verbatim questionnaires is that they achieve consistency and present ideas in an orderly fashion, which is important because experience indicates that even moderate changes in wording can influence replies. When questionnaires are used, it is possible to use skip patterns that may reduce interviewing time considerably.

6.8 However, verbatim questionnaires may sometimes be difficult to administer, sometimes lead to awkward situations and embarrassment, and may become monotonous when repeatedly asked of several members of the same household at the same

interview. In multilingual countries where it is necessary to collect data in the language of the respondent, it may often be difficult to maintain the precision of the original question. In such a situation, the verbatim questionnaire loses some of its advantages. There is also a mundane argument that verbatim questions require more space, and, therefore, more paper to print, leading to greater paper cost and bulky questionnaires which may be difficult to handle in the field conditions.

6.9 The schedule which usually presents a series of detailed items on which information is to be collected, allows freedom to the enumerator to ask appropriate questions to elicit the requisite information and has the advantage that the enumerator, having understood the objective of the question, can size up the situation and ask questions in a form that is more understandable to the respondent and more appropriate to the situation. With the flexibility thus allowed, the enumerator would adopt a conversational approach for the interview which is especially needed in the rural areas of developing countries. The flexibility also permits translation of the questions into the respondent's language in a multilingual context. When the survey involves recording quantitative data on a large number of items as in an income and expenditure survey or a survey of household economic activities, the schedule is by far the more convenient instrument of investigation.

6.10 The disadvantage of the schedule approach, however, is that different enumerators may interpret a given question differently, each in his own way, and may thus obtain inconsistent information. They may put leading questions or loaded questions or ask questions in such a manner that some replies are more probably given than others. It is possible, however, that even a verbatim question may contain biased wording in which case it will affect all respondents.

6.11 What is needed, therefore, is a judicious combination of the two approaches. Neither approach needs to be used exclusively. When experience indicates that there is little difference between the two, the more general schedule approach could be followed. In critical cases where precise wording seems important, verbatim questions can be specified. In that case, the questions should be clear and precise and should avoid ambiguity. Complex questions involving more than one thought should be avoided. Whatever approach is used to obtain the data, careful pre-testing is important. Indeed such pre-tests can help in deciding whether a questionnaire approach, a schedule approach or some mixture should be used.

6.12 The choice between the schedule and the questionnaire approach would depend upon the nature of information to be collected in the survey and the circumstances under which the survey would take place. According to the NHSCP study on Development and Design of Survey Questionnaires, the schedule approach is preferable in circumstances where -

- a) the complexity and variability of the interviewing conditions require flexibility in the manner in which the information is obtained;
- b) the complexity of the subject matter and the respondents' limited ability to provide the information requires frequent recourse to in-depth probing and asking questions in alternative forms to extract the required information;
- c) the type of information sought is largely quantitative and not sensitive to the exact words and phrases used;
- d) no complicated "skip patterns" are involved and the questions can be fitted into a concise form for convenient data editing, coding and entry;
- e) it is important to keep the physical size of the survey instrument small; and
- f) above all, the available interviewing staff is experienced and well-trained and can be relied upon to word questions as appropriate in each situation encountered.

2. Design of the Questionnaire/Schedule

6.13 Designing the questionnaire or schedule should be a joint responsibility of the subject matter specialist, field officers, operational managers, data processing experts and questionnaire designers. For the preparation of an appropriate questionnaire or schedule, every concept, formulated for the survey, is to be operationalized by identifying the relevant elements of detail. A detailed list and description of survey variables should then be prepared and broken down into lists of items for data collection.

6.14 The basic content and outline of the tabulation plan should also be available as early as possible along with the identification of survey variables so that the focus of the questionnaire is always maintained on the final results the survey is expected to produce. The title of the table, the variables to be tabulated, and the background variables to be used as classificatory characteristics should be detailed for every table in the outline of the tabulation plan.

6.15 A distinction should be made between information to be used for tabulation and details to be collected in the survey. A wrong notion sometimes prevails that information which is not to be tabulated is not to be collected. Such a view usually arises from an anxiety not to overload the questionnaire and overburden the enumerator. But in order to obtain correct information on any aspect, it is necessary to obtain the requisite details even though the details may not be

individually tabulated. A balance should, therefore, be struck between the amount of detail needed for improving the quality of the information and the amount needed for tabulation and analysis.

3. Sequence of Questions

6.16 The sequence of questions included in the questionnaire or schedule is also important and the general rule would be that it should be so organized as to retain the interest of the respondent. Questions on household particulars, household membership and household composition should precede questions on the subject matter. Questions which apply to all members should be asked first before proceeding to those which apply to particular categories. Questions on each topic, activity or event should be grouped together so that the respondent is not made to go up and down the memory lane in reporting information. Questions of a general nature should precede those on specific issues. More sensitive questions may, as a rule, be relegated to the end of the questionnaire unless they constitute the core of the questionnaire or are closely related to issues covered earlier in the questionnaire. There may be a case for keeping such questions at around the middle of the questionnaire because the interest of the respondent would be more at that stage than towards the end. In repeat visits, repeated items should be taken up first before proceeding to new items.

6.17 When the sequence of questions depends on the answers given earlier, it is essential to provide clear instructions about how to proceed. These instructions should appear in a form which distinguishes them from the question itself. Judicious use of arrows pointing in the direction of the next question to be asked, in addition to skip instructions, would be helpful.

4. Recording Data

6.18 Recording answers is generally done by putting a check mark or a cross mark in the space provided, encircling a code, underlining one of the alternatives provided, entering a pre-assigned code or an appropriate number. In exceptional cases, the replies may be recorded in a condensed form. The most efficient method is obviously to record the information in codes (unless the reply involves numerical information sought in that form) as this requires less space and reduces the amount of coding at the processing stage. To facilitate an efficient use of this method, it is advisable to make the code list a part of the questionnaire, put it alongside the question or, if that is not possible, in a conveniently accessible position. Where entries are to be written down in words, space for coding should be provided nearby.

5. Topic Coverage

6.19 In the light of the above general guidelines, we shall now try to consider the content and form for an appropriate instrument of data collection for use in household income and expenditure surveys. As suggested in Chapter III, a household income and expenditure survey would normally cover the following topics:

- a) Identification and operational particulars.
- b) Household characteristics: necessary to classify the household by social, socio-economic and other characteristics.
- c) Household membership and composition.
- d) Activity particulars of household members.
- e) Income from (i) paid employment, (ii) self-employment, (iii) other sources; and (iv) receipts other than income.
- f) Consumption expenditure, non-consumption consumption expenditure and disbursements other than expenditure.
- g) Savings and indebtedness: optional topics that may be of interest to explain the income-expenditure imbalance, if any.
- h) Housing particulars.
- i) Household possessions.

6.20 These topics seem to satisfy five of the six conditions mentioned in paragraph 6.12 above under which the schedule approach is considered preferable. The sixth condition may not, however, be satisfied in many of the developing countries, especially those participating in NHSCP. However, if a permanent field organization is created and a continuing household survey programme initiated, the experience gained through the surveys may, over the period of a few years, help establish a band of well-trained and experienced workers, who would satisfy the sixth condition as well. On an overview, it appears that, in general, the schedule approach should be preferred for a household income and expenditure survey, with provision for verbatim questions for some of the topics, if a detailed investigation of such topics is envisaged.

C. Content and Form

6.21 We shall now discuss the desirable content of the schedule for a household income and expenditure survey and suggest the items of data to be collected in various sections. For clarity of terminology, we shall use the terms 'subject', 'topic', 'item' and 'variable' with specific connotations. The term 'subject' is larger in scope (e.g. household expenditure) than 'topic' (e.g. consumption expenditure) and may contain several sub-topics (e.g. food) pertaining to it. The 'item' is a specific element (e.g. bread) and the 'variable' a piece of information relating to the item (e.g. quantity or value of purchase).

6.22 The subject coverage has been broadly indicated in paragraph 6.19 consistent with the scope of survey suggested in Chapter III. The survey schedule may be divided into a number of homogeneous sections according to the subject of inquiry and the sections divided into sub-sections wherever necessary according to the nature of topics covered. We shall keep in view the data requirements indicated in Chapter II, and the concepts and definitions discussed in Chapter III in determining the data to be collected in each section and sub-section.

6.23 The form and related details suggested for the different sections and sub-sections are only illustrative. The classifications will have to be determined in the context of the national requirements and the necessary code structures will have to be evolved on that basis. Appropriate provision has to be made in the schedule for indicating the relevant codes. This will have to be done by the survey statistician in consultation with the data processing division.

1. Identification and Operational Particulars

6.24 Details of location, identification in terms of the sampling scheme adopted, and other particulars of the survey operation are to be recorded in this section. The section may be divided into the following sub-sections:

- 1.1 Geographical details, giving the description of the administrative division, sub-division (e.g. province, district, sub-district, city, town, village) in which the sample household is located, and the corresponding codes.
- 1.2 Sampling details, giving the stratum number, the PSU number, and the serial number of the household within the PSU. Space should be provided for recording the appropriate multiplier for the household.

- 1.3 Operational particulars such as the names of the respondent, enumerator and supervisor, dates of data collection, dates of supervisory checks, dates of dispatch from the field and receipt at the survey headquarters, etc.
- 1.4 Processing particulars such as the dates of editing, data entry, verification and any other information of data processing interest.

This section of the schedule should provide for the serial number of the item, description of the item, the information and the corresponding code.

2. Household Characteristics

6.25 The information to be recorded in this section concerns the social, socio-economic and other characteristics of the household useful for the analysis of the survey data. It could include, for instance, summary information on the type and size of the household, social group based on ethnic, racial or tribal origin relevant to the country, socio-economic group, household income group, household expenditure group, and any other classification considered appropriate for the study of incomes and expenditures. In determining these characteristics, the classifications recommended by the UN-SNA, the UN-Income Distribution Guidelines, the ILO and FAO may be followed. Additional guidance will be found in the UN Principles and Recommendations for Population and Housing Censuses⁽³⁾, and the UN Handbook of Social Indicators⁽⁴⁾.

6.26 Most of the information in this section can be derived from the schedule when it is filled. Items not covered in the schedule, e.g. social group, can be ascertained by direct questions to the household. Prima facie, it may appear unnecessary to provide in this section for the summary information based on details available in the schedule, as the classificatory household characteristics can well be obtained directly from the schedule and used for tabulation, especially when the data are tabulated by the computer. Nonetheless, it would be useful to provide some of the main classificatory characteristics in this section as that would help quick manual tabulation for provisional results.

6.27 This section of the schedule should provide for each item space for serial number of the item, description of the item, the relevant information and the corresponding code.

3. Household Membership and Composition

6.28 Information on household membership and composition is needed for a proper analysis of the data on household incomes and expenditures. Data are needed, at the outset, to determine who the usual members of the household are in terms of the definition adopted. The three key elements in determining the membership of the household are (i) common arrangements for food and other essentials of living, (ii) common budget, i.e.

pooling of incomes and sharing of expenditures, (iii) mutual relationship by blood, marriage or adoption. The first is the most important criterion for defining the household and is generally referred to as the housekeeping arrangement. It involves two essential sub-elements, namely (a) common arrangements for food, and (b) common arrangements for living, and both must be satisfied for a person to be counted as a member of the household. The other two elements may or may not be satisfied in all cases, although in most cases they are. These elements are important nonetheless for the identification of analytical units within the household. Pooling of incomes and sharing of expenditures is a criterion that can be used for defining and identifying economic units within the household. Relationship by blood, marriage or adoption is a criterion that can be used for defining family units within the household.

6.29 Another point to be verified for the determination of household membership is whether the person under consideration is a usual member of the household or not. This question needs necessarily to be related to a period of reference, which, to be meaningful, should be at least a month. A longer reference period such as a year would no doubt be more meaningful, but in the context of a survey of household incomes and expenditures related to a standard reference period of one month, it would be more logical to determine the usual membership also in relation to the same reference month. Persons living with the household and participating in the common food arrangement for a major part of the month may, therefore, be counted as usual members.

6.30 Once the membership of the household is determined, its composition needs to be ascertained in terms of age, sex and relationship of the members to the head of the household. According to the United Nations Principles and Recommendations for Population and Housing Censuses,⁽³⁾ published in 1980, the head of the household is defined as that person in the household who is acknowledged as such by the other members. The limitations of this concept and the alternatives adopted in some countries e.g. a reference person so designated for purposes of enumeration, have been detailed in the above-mentioned publication. The question has been discussed further in the recent United Nations study on Improving Statistics and Indicators on Women Using Household Surveys⁽⁵⁾ published in 1988. The data to be collected to determine household membership and its composition are:

- (i) Name of person
- (ii) Age
- (iii) Sex
- (iv) Relationship to the head of the household/
reference person
- (v) Whether living in the same housing unit

- (vi) Whether participating in common food arrangements
- (vii) Whether participating in common budgetary arrangements
- (viii) If not participating in common budget, economic relationship to the household (domestic servant/paying guest/other to be specified), and
- (ix) Membership status (usual member present/usual member absent/non-member).

The enumerator should list all persons present in the household on the date of the survey and collect the above particulars in respect of each of them. In addition, he should ascertain whether any usual members are temporarily absent, list them and collect the data in respect of them also.

4. Activity Particulars of Household Members

6.31 Activities of household members may be classified broadly as economic and non-economic. Economic activities are essentially related to the production and distribution of goods and services and thereby earning incomes. Non-economic activities include learning, housekeeping, raising children, care of the old, voluntary community services, social, religious or political activities, etc. which do not normally involve any income - monetary or non-monetary. For the study of household incomes and expenditures, we are, therefore, interested primarily in the economic activities of household members. However, as determinants of economic status, marital status, literacy, education and learning activities are also of interest, and should be covered in income and expenditure surveys.

6.32 The United Nations Principles and Recommendations for Population and Housing Censuses defined "economically active population" as comprising all persons who furnish supply of labour for the production of economic goods and services during the reference period chosen for the investigation. The 13th International Conference of Labour Statisticians (ICLS) (1982) also adopted the term 'economically active population' as a generic term defined broadly as persons of either sex who furnish the supply of labour for the production of economic goods and services during a specified reference period. It was linked with the United Nations System of National Accounts and Balances according, to which the production of economic goods and services includes all production and processing of primary products, whether for the market, for barter or for home consumption, the production of all other goods and services for the market, and in the case of households which produce such goods and services for the market, the corresponding production for own consumption.

6.33 The ICLS resolution, subsequently adopted by the ILO, permits measurement of the economically active population in different ways. It identifies, in particular, two useful measures without excluding other possibilities: the 'usually active population' measured in relation to a long reference period such as a year; and the 'currently active population' measured in relation to a short reference period such as one week or one day. The latter is conceptually equated to the "labour force" as defined by the 8th ICLS.

6.34 For the determination of the current activity status, (a) persons who, during the reference period, performed some work for wage or salary, in cash or kind, and (b) persons who, having already worked in their present job, were temporarily not at work during the reference period, but had formal attachment to their jobs, are considered to be in paid employment and include all employees including paid apprentices. Similarly, (a) persons who, during the reference period, performed some work for profit or family gain, in cash or kind, and (b) persons with an enterprise, which may be a business enterprise, a farm, or a service undertaking, who were temporarily not at work during the reference period for any specific reason, are considered to be in self-employment and include employers, own-account workers, members of producer cooperatives and unpaid family workers. Persons in paid employment and persons in self-employment are together classified as employed.

6.35 Persons (a) without work, i.e. not in paid employment or self-employment as defined above, (b) currently available for work i.e. available for paid-employment or self-employment during the reference period, and (c) seeking work as indicated by steps taken in search of paid-employment or self-employment are regarded as unemployed. The "seeking work" criterion can, however, be relaxed in developing countries where it is of limited relevance, and in some cases totally suppressed if the situation so warrants. The employed and the unemployed, as defined above, together constitute the currently active population.

6.36 The determination of the current activity status of women who not only function as home-makers but also participate in economic activities, has often presented problems, especially in population censuses. The ICLS resolution, however, goes a long way towards clarifying the issues involved in so far as what constitutes economic activity has been clearly and firmly defined (vide paragraph 6.3.2 above). It has also been clarified that all unpaid family workers working at least one hour in a week (the same criterion as for paid workers), are to be included as employed, and hence economically active. Further, in the developing countries, where the "seeking work" criterion can be totally suppressed if the situation so warrants, all persons available for work, though not actively seeking work, may be regarded as unemployed and hence economically active. The strict application of these principles is bound to help the correct determination of the activity status of women as well as men. A further discussion of the special problems encountered in measuring the activity status of women may be found in Improving Statistics and Indicators on Women Using Household Surveys⁽⁵⁾.

6.37 The usually active population is conceived as a summary measure based on the variable status of the individual with reference to the weeks or days that together constitute the reference year. Thus, if the current activity status is determined with reference to a week, the usual activity status is determined as that status which prevailed over most of the weeks during the reference year. If the current activity status is determined with reference to a day, the usual activity status is determined as that status which prevailed over most of the days during the reference year. The usual status based on a count of the weeks could be substantially different from that based on a count of days, especially in the less developed countries where a week in employment does not necessarily mean a week of employment. In such situations, determination of the usual status based on days would be more realistic than that based on weeks.

6.38 It is not one of the main purposes of a household income and expenditure survey to collect data on employment and unemployment in detail. That is usually done in labour force surveys. Employment data are nonetheless needed as related material for a proper study of household incomes and expenditures. Data on employment would also help classification of households by industrial, occupational and status groups or by composite socio-economic groups. For this purpose, it would appear more appropriate to adopt the concept of usual activity as household expenditures and consumption behaviour are governed more by usual income which in turn depends on usual activity rather than current activity or inactivity. The usual activity status is, therefore, of greater relevance to the purposes of classification.

6.39 Employment data are also of interest for a study of the relationship between income and employment. Such a study would, however, call for a more detailed investigation than what is generally possible in a survey of household incomes and expenditures where the focus is more on income-expenditure relationship. Studies on income-employment relationship cannot be easily accommodated in an income and expenditure survey except in respect of employees and that can also be done in a labour force survey. However, some data on the quantum of employment may be collected in relation to income from paid employment to facilitate a meaningful analysis of the latter. So far as self-employment is concerned employment-income relationships can perhaps be better studied through surveys of household economic activities. (6)

6.40 For a proper determination of the usual activity status of a person, information should be collected on the number of days for which (i) the person was employed, (ii) was not employed but was available for employment, and (iii) was not

available for employment during the preceding year. On the basis of this information, the person can be classified as economically active or inactive and, if active, as employed or unemployed. In the case of the employed, information on industry, occupation and status should be ascertained in respect of that activity on which he spent most of the days. The usually inactive may be classified as students, homemakers, income recipients and others. Income recipients, in this context, would include persons not economically active but receiving incomes from other sources such as pensions, properties, investments, social security and remittances. The data to be collected on activity particulars of household members would thus include:

- (a) Marital status
- (b) Literacy
- (c) Educational attainment
- (d) Number of days last year
 - (i) employed
 - (ii) available for employment
 - (iii) not available for employment
- (e) Usual activity
 - Economically active: employed/unemployed
 - Economically inactive: student/homemaker/income recipient/other
- (f) If employed, for the main job or enterprise,
 - (i) industry
 - (ii) occupation
 - (iii) status in employment

5. Income from Paid Employment

6.41 Information on income from paid-employment can and should be collected in some detail in respect of the last month. It should cover every member of the household who has done any work for a wage or salary during the last month and every job he or she has done during the month. The data should include for each job done by each person, separately:

- (a) Nature of job:
 - (i) industry
 - (ii) occupation
- (b) Number of days worked on the job (last month)
- (c) Amount received in cash (last month)
 - (i) basic wage/salary
 - (ii) other allowances, commissions and gratuities
 - (iii) total, before deductions at source
- (d) Deductions at source

- (e) Value of benefits received in kind (last month)
 - (i) food
 - (ii) housing
 - (iii) clothing
 - (iv) other benefits
 - (v) total

- (f) Bonuses received (in cash or kind) last year.

6.42 In the case of salaried jobs collecting information in respect of the last month should be quite easy. In the case of wage-paid jobs, for which the wage-period may be a week or two, and casual jobs for which payments may be made the same day, it may be difficult to obtain the data in respect of the last month. If possible, data may be obtained separately for each of the four completed weeks separately on a working sheet, added up and entered in the schedule. If not, the data may be obtained for the last week, multiplied appropriately to arrive at the requisite estimates for the month and the results entered in the schedule. Wages and salaries should be recorded before deductions, if any, for taxes, pension and social security contributions, insurance premiums, subscriptions etc. The deductions should be shown separately to facilitate derivation of actual receipts.

6. Income from Self-employment

6.43 Collection of data on income from self-employment is one of the most difficult parts of the survey on income and expenditure. Some of the household enterprises including agriculture and processing of agricultural commodities are generally seasonal. The production cycle of crop cultivation extends over several months. In most cases, households do not keep the necessary accounts, and there is usually a tendency to under-report production and overstate the costs. Some of the costs are inseparable from household expenditures. All these factors combine to make it difficult to assess the income derived from self-employment, whether the reference period is short such as a month or long such as a year.

6.44 Household income and expenditure surveys, with their focus more on expenditure than on income, have generally tended to call for summary information on self-employment through one or two simple questions, especially when the survey happens to be an urban survey. Even in rural surveys, data collected on income derived from agriculture and livestock farming, are generally based on summary data on production and costs, without the necessary detail. Surveys of household economic activities carried out in some countries with their focus more on the economics of household enterprise have, however, attempted to collect the requisite information in considerable detail. For an accurate estimation of incomes derived from self-employment, a detailed investigation of inputs and outputs, covering an appropriate reference period is essential.

6.45 Self-employment activities include activities undertaken by the household with or without the assistance of hired labour, either on the household premises or outside, stationary or mobile. They may be classified broadly as agricultural and non-agricultural. Agricultural activities include besides crop cultivation, vegetable or fruit gardening and plantations, allied activities such as livestock farming, fishing, hunting and forestry. Non-agricultural activities include mining and quarrying, manufacture and repairs, construction, trade, transport and a wide range of services such as money lending, legal and accountancy services, sanitary, health, medical and dental services, tutorial services, personal services and household services.

6.46 By and large, agricultural activities are of a seasonal nature in the sense that the production cycle covers a whole season. For a proper assessment of incomes derived from such activities, one has to study the inputs, outputs and their disposal over the whole season. The type of agricultural activities undertaken may differ from season to season and the income generated may vary substantially over the seasons. Data on income from seasonal agriculture may, therefore, have to be collected in respect of a whole year - preferably a set of two or three completed seasons which together make up a year. If it is possible to visit each agricultural household two or three times during the course of the year, it may be advantageous to visit the household at the end of each agricultural season and collect the data in respect of each season. If that is not possible, the data for each agricultural season may be collected separately, in retrospect, at the same time, added up and entered in the schedule. The data will naturally be subject to a considerable margin of recall errors.

6.47 Some agricultural activities such as coconut farming livestock farming, fishing, hunting and gathering forest products may, however, be of a perennial nature in the sense that the production cycle is either too short and continuous or too long to be considered seasonal or even annual. In such cases, there is perhaps no great advantage in collecting the data in respect of the whole year. The data may well be collected with reference to a short reference period such as the last month, separately in respect of each such activity. The data will no doubt be subject to a considerable margin of sampling variability but have the advantage of comparatively low recall errors.

6.48 Non-agricultural activities undertaken by households are generally small-scale operations with low capital investment and quick turnover. In the absence of formal bookkeeping and accounting, the incomes generated through such activities can well be estimated on the basis of data collected with reference to a short reference period such as the last month. Sampling errors associated with these estimates are more likely to be

influenced by the diversity of non-agricultural activities undertaken by households than by the reference period.

6.49 In all cases, information will have to be collected on all outputs and inputs. So far as outputs are concerned, the outputs of each activity being distinct, there should be no problem in obtaining the requisite data in quantitative terms. Their valuation may, however, present problems if the products are not all meant for the market. Household economic activities are, in many cases, meant, to a large extent, for own consumption and, even if they are meant mainly for the market, it is possible that a part of the output is consumed by the household. In some cases, parts of the output may be transferred to the landlord, parts transferred to others as gifts or loans, and parts exchanged for other goods and services on a barter basis. For an accurate assessment of the income generated in both cash and kind, it is important that details be obtained of the disposal of the product in quantitative terms. For the part that has been sold, if any, data should also be obtained on the sale value. The unit price based on the sale value can then be used for estimating the value of the total output and of the parts transferred or bartered in kind.

6.50 In principle, data on inputs should also be collected separately in respect of each activity. However, in practice, it may be difficult to obtain the data separately in respect of each activity as some of the items may be common to more than one activity and cannot be isolated. A feasible alternative is to collect data on inputs for all economic activities together, but classified in such a way as would permit isolation of the inputs meant for each major activity to a large extent, leaving aside inputs which cannot be so separated. A classification of the inputs on the lines suggested in Chapter IV (paragraph 4.51) would permit such isolation and allocation to a large extent. However, it may be desirable to ask the household, in reporting the data, to separate out the inputs for agricultural and non-agricultural activities, to the extent possible so that at least the agricultural and non-agricultural incomes could be estimated separately.

6.52 Data on output and its disposal should be collected under the following item heads in respect of each of the under-mentioned activities:

Item heads:

Total output (in quantity)
Disposal of output:
 Transferred to landlord as rent (in quantity)
 Transferred to labour as wages (in quantity)
 Transferred to others as loans, gifts
 or in exchange of goods and services
 (in quantity)
 Consumed by the household (in quantity)
 Used for further processing (in quantity)
 Sold (in quantity and value)
Value of total output (to be estimated at the unit
value derived from the sales)

Activities:

1. Agriculture (last year)
 Crop A
 Crop B
 Crop C
2. Agriculture (last month)
 Crop A
 Crop B
 Crop C
3. Livestock production (last month)
4. Fishing and fish-breeding (last month)
5. Hunting and forestry (last month)
6. Mining and quarrying (last month)
7. Manufacturing and repairs (last month)
 Product P
 Product Q
 Product R
8. Construction (last month)
9. Guesthouses and restaurants (last month)
10. Trade (last month)
11. Transport (last month)
12. Services (last month)
13. Miscellaneous (last month)

6.53 All the item heads may not be relevant to all activities. Thus, for instance, the quantities "transferred to landlord as rent" and "transferred to labour as wages" may be applicable only to agricultural activities. The quantity "transferred to others ..." is relevant only to activities 1 to 9, which involve some material production. The quantity "consumed by the household" is also confined to activities 1 to 9. The quantity "used for further processing" is relevant only to activities 1 to 7. For activities 9 to 13, there can be no quantitative figures. The only item to be recorded for these activities is, therefore, the "value of total output", which is the same as value sold. In the case of trade, the value to be recorded is the excess of sales over purchases, for the derivation of which data on sales and purchases may be obtained separately and recorded in the attached worksheet (see paragraph 6.109). In the case of transport and services the value to be recorded is the gross receipts.

6.54 Data on inputs should be collected in value terms under the following heads, viz.

- Agriculture (last year)
- Agriculture (last month)
- Other agricultural activities (last month)
- Non-agricultural activities (last month)

and classified on the lines suggested in Chapter IV (paragraph 4.51). The inputs would include not only the material inputs but also transportation, storage and communication costs, repairs and servicing, rent, interest, brokerage, commissions and fees, hired labour and other miscellaneous costs.

7. Property and other Incomes

6.55 According to the ILO (7) income from sources other than employment includes:

- (a) Rents on real estate:
 - (i) Net rental value of owner-occupied housing
 - (ii) Net rents received for other buildings
 - (iii) Net rents received for land
- (b) Royalties
- (c) Interest received
- (d) Dividends
- (e) Pensions and annuities
- (f) Family allowances

- (g) Other social security benefits
- (h) Remittances and assistance received from others
- (i) Other income (from inheritance or trust funds, alimony, scholarships etc.)

6.56 One of the basic criteria adopted by the ILO for the consideration of receipts as income is the regularity of receipt. Accordingly, ILO classifies rents, interest and dividends, pensions, social security and related benefits, as well as remittances and assistance regularly received from others as income. However, as stated earlier, regularity is not a rigid constraint. The Income Distribution Guidelines do not insist on regularity and consider all remittances and gifts as income. As the difference is marginal and the criterion of regularity not always practicable, we shall follow the IDG and not insist on regularity.

6.57 The concept of net rent implies deducting from the gross rent received - whether it is on land or building - the costs of maintenance, running costs such as on electricity, gas and water if paid by the owner, costs of collection, property taxes and mortgage interest paid if any. The net rental value of owner-occupied housing is a little more complicated and appears on the expenditure side also. The income recorded against this item should be identical with the corresponding entry on the expenditure side.

6.58 As in the case of income from employment, data on income from sources other than employment, should also be collected for the standard reference month for accounting current receipts. However, as some of the incomes such as land rents, interests, dividends and annuities are often received at intervals longer than a month, it is necessary to collect the corresponding data for the last year also.

6.59 Data in this section may be collected under two sub-sections - the first dealing with rents on real estate and the second dealing with other incomes. The sub-section on real estate should obtain data on -

- gross rent received
- maintenance, running and collection costs
- property taxes paid, if any
- mortgage interest paid, if any

in respect of each of the buildings and land areas rented by the household. The sub-section on other incomes should ascertain the amounts received in -

- royalties
- interest
- dividends
- pensions
- annuities
- family allowances
- other social security benefits
- remittances and assistance
- other incomes (from inheritance, trust funds, alimony, scholarships etc.)

Data should be collected in both sub-sections for the last month as well as for the last year.

8. Other Receipts

6.60 All other receipts, which are not in the nature of incomes, should be recorded as other receipts. These include ad hoc receipts such as lump sum receipts from insurance, inheritance, lotteries and other games of chance, sale proceeds of household durables and properties, loans obtained, loan repayments received, withdrawals from savings etc. In view of their infrequent occurrence, it would be advisable to collect the data in respect of the last year in addition to data relating to the standard reference month. The data needed are simple and can be collected through an itemized block, with two columns, one for the last month and one for the last year.

9. Consumption Expenditure

a. Classification of Goods and Services

6.61 The 12th International Conference of Labour Statisticians, in its resolution on Household Income and Expenditure Surveys, recommended that household expenditures should be reported in sufficient detail to permit their classification, so far as possible, according to the Classification of Household Goods and Services contained in the United Nations System of National Accounts (SNA, revised 1968) and to permit their classification in other ways to meet different purposes. The classification of household goods and services recommended in the SNA is presented as Annex VI. It is based on the following criteria:

- (i) The object of, or purpose to be served by, the outlay on the goods and services.
- (ii) Alignment between household sector classification and the purpose classification for general government and private non-profit institutions.
- (iii) Durability of the items.

If the data are to be used for the construction of weighting patterns for consumer price indices, an additional criterion to be kept in view is the homogeneity in price movements.

6.62 The SNA classification consists of 8 major groups and 33 minor groups, some of the latter split up further into sub-groups. The number of ultimate groups for which separate data are thus needed is 61, including 42 sub-groups and 19 minor groups which have not been split up. If the data are to be used for the construction of weighting patterns for consumer price indices, estimates would often be needed at the item level, at any rate for most of the major items.

6.63 Among the major groups, Food, Beverages and Tobacco, which accounts for a major part of the household expenditure in developing countries, is divided into four minor groups and one of them is to include the entire food expenditure, split up, however, into ten sub-groups. The classification thus seems to be somewhat unbalanced, including, as it does, a large part of the household expenditure in a single minor group. From the viewpoint of tabulation as well as presentation, it would appear desirable to reorganize this major group and raise some of the sub-groups or suitable combinations thereof to the minor group level.

6.64 The major group on Gross Rent, Fuel and Power includes basically house rents, water charges, electricity, gas and other fuels used for household operation but not for the operation of transport equipment. As the term "rent" without any qualification may cover other rents also, it may be desirable to describe the sub-group "Gross Rents" as "House Rent". Further, as the sub-group "Gross Rents" seems to include payments for garbage and sewage disposal and expenditure on indoor repair and upkeep, even if they are not part of the rent, it is advisable to show such payments separately if they are not paid as part of the rent. The major group may better be described as "Housing, Fuel and Power".

6.65 The major group on Furniture, Furnishings, Household Equipment and Operation includes under "household services" service charges for insurance of household property against fire, theft and other accidents. It is obviously not possible for the household to report the service charge content of the insurance premium it pays. It may, therefore, be excluded from this group and the entire insurance premium included under Non-Consumption Expenditure. This major group also includes domestic services, i.e. remuneration in cash and kind paid to domestic servants, cleaners, cooks, baby-sitters, chauffeurs, gardeners, governesses, tutors etc. It should be noted in this connection that domestic servants living with the household and taking food with the household are classified as household members. The remuneration paid to such servants and shown as expenditure under this major group should also appear on the income side as income of the domestic servant. Although this group includes tutors as domestic servants, considering the purpose for which tutors are engaged, it would appear more appropriate to show payments made to tutors under "Education" rather than under domestic service. Similarly, chauffeurs would perhaps fit in better under "Transport and Communication" rather than under domestic service.

6.66 The major group Medical Care and Health includes among others service charges on accident and health insurance. As in the case of insurance of household property, it is not obviously possible for the household to report the service charge content of the insurance premium. The entire insurance premium may, as a matter of convenience, be included under non-consumption expenditure.

6.67 The major group Transport and Communication also includes service charges on insurance of personal transport equipment and service charges for baggage and special transport accident insurance. As in the case of household property insurance, here again, it is not possible for the household to report the service charge component alone. The insurance premia, in their entirety, may, therefore, be included under non-consumption expenditure. Motor vehicle taxes, driving license fees etc. should also be included elsewhere as non-consumption expenditure. This major group should, however, include the remuneration of chauffeurs and drivers engaged for personal transport.

6.68 The major group Recreation, Entertainment, Education and Cultural Services includes education as a minor group and covers under that head school, college and university fees, to the exclusion of payments made for boarding and lodging if feasible. However, since the latter have not been included elsewhere, they may be included under education as a separate sub-group for possible reclassification if necessary. This major group should also include the fees paid to private tutors.

6.69 The major group Miscellaneous Goods and Services includes personal care and effects, expenditure in restaurants, cafes and hotels, packaged tours, financial and other services and goods not elsewhere classified. The latter include writing and drawing equipment and supplies, which can well be transferred to the major group on Recreation etc. It is advisable that the expenses on food, beverages and tobacco in restaurants, cafes and hotels be recorded separately if possible. It is also desirable that expenses on package tours be likewise split up to show separately the expenses on transport, lodging, food and other items.

6.70 On the whole, the SNA Classification of Household Goods and Services seems to be suitable for adoption in household income and expenditure surveys. However, keeping in view the requirements of consumer price indices and other possible uses, a few minor modifications appear desirable. Accordingly, a classification of Consumption Expenditure, which follows basically the SNA Classification but with some minor modifications, is suggested below for adoption in household income and expenditure surveys. The classification can be realigned, if so desired, to meet SNA requirements.

Classification of Consumption Expenditure

1. Food, beverages and tobacco
 - 1.0 Cereals and cereal products
 - 1.01 Cereals
 - 1.02 Bread and other cereal products
 - 1.1 Meat, fish and eggs
 - 1.11 Meat
 - 1.12 Fish
 - 1.13 Eggs
 - 1.2 Milk and milk products
 - 1.21 Milk
 - 1.22 Butter
 - 1.23 Cheese and other milk products
 - 1.3 Oils and fats
 - 1.31 Oils
 - 1.32 Fats other than butter
 - 1.4 Fruits, vegetables and tubers
 - 1.41 Fruits
 - 1.42 Vegetables
 - 1.43 Potatoes and other tubers

- 1.5 Sugar, salt and spices
 - 1.51 Sugar
 - 1.52 Salt and spices
- 1.6 Coffee, tea and cocoa
- 1.7 Other foods, including prepared foods, preserves and confectionery
- 1.8 Beverages
 - 1.81 Alcoholic
 - 1.82 Non-alcoholic
- 1.9 Tobacco and tobacco products
- 2. Clothing and footwear
 - 2.1 Clothing
 - 2.11 Clothing materials
 - 2.12 Made-up clothing
 - 2.13 Tailoring
 - 2.14 Repairs to clothing
 - 2.2 Footwear
 - 2.21 Footwear
 - 2.22 Repairs to footwear
- 3. Housing, fuel and power
 - 3.1 Housing
 - 3.11 House rent
 - 3.12 Rental value of rent-free housing
 - 3.13 Rental value of owner-occupied housing
 - 3.14 Repair and maintenance
 - 3.15 Water charges
 - 3.16 Garbage and sewage disposal
 - 3.2 Fuel and power
 - 3.21 Electricity
 - 3.22 Gas
 - 3.23 Liquid fuels
 - 3.24 Other fuels

4. Furniture, furnishings, equipment and operation
 - 4.1 Furniture, fixtures and floor coverings+
 - 4.2 Household textiles and other furnishings+
 - 4.3 Heating and cooking appliances, refrigerators, washing machines, airconditioners etc.+
 - 4.4 Glassware, tableware and utensils+
 - 4.5 Non-durable household goods
 - 4.6 Household services
 - 4.61 Domestic services
 - 4.62 Other household services

(+ including repairs, to be shown separately)
5. Transport and communication
 - 5.1 Personal transport equipment
 - 5.2 Operation of personal transport equipment
 - 5.21 Tires, tubes, parts, accessories and repairs
 - 5.22 Gasoline, oils and greases
 - 5.23 Chauffeur and driver services
 - 5.24 Other expenditure
 - 5.3 Transport services
 - 5.31 Road, rail and inland water transport
 - 5.32 Air and ocean transport
 - 5.4 Communication services
 - 5.41 Post and telegraph
 - 5.42 Telephone
6. Medical care and health services
 - 6.1 Medical and pharmaceutical products
 - 6.2 Therapeutic appliances and equipment
 - 6.3 Medical, para-medical and dental services
 - 6.4 Hospital and related care

- 7. Education, recreation, entertainment and cultural services
 - 7.1 Education
 - 7.11 School fees and related charges
 - 7.12 School books and stationery
 - 7.13 School transport
 - 7.14 Boarding and lodging expenses at school
 - 7.2 Books, newspapers and magazines (other than school books)
 - 7.3 Equipment and accessories for recreation and entertainment
 - 7.31 Audio-visual equipment
 - 7.32 Musical instruments
 - 7.33 Photographic equipment
 - 7.34 Other durable equipment
 - 7.35 Non-durable goods
 - 7.36 Accessories and repairs
 - 7.4 Recreational, entertainment and cultural services
 - 7.5 Writing and drawing equipment and supplies
- 8. Miscellaneous
 - 8.1 Personal care, personal effects and personal goods
 - 8.11 Personal care services
 - 8.12 Personal care goods
 - 8.13 Jewellery, watches, etc.
 - 8.14 Other personal goods
 - 8.2 Expenditure on hotels, restaurants etc.
 - 8.21 Hotels
 - 8.22 Restaurants etc.
 - 8.3 Expenditure on package tours
 - 8.4 Goods not elsewhere classified
 - 8.5 Services not elsewhere classified

b. Items of Expenditure

6.71 The extent of detail required in regard to items of expenditure depends on the purpose of the survey. If the survey is meant to provide the weighting pattern for a consumer price index, information is needed in great detail at the item level, and every item which is likely to account for a significant proportion of the expenditure, given the level of economic development, has necessarily to be specified for data collection. For most other purposes, however, data may not be needed at the item level, and it would perhaps suffice to collect and tabulate the data at the sub-group level. Even so, for the sake of accuracy in data collection, it is generally considered necessary to specify at least some of the more important items in each sub-group. In fact, in some countries a complete list of all goods and services is specified along with the codes. For example, in Argentina (1983), the main schedule contains 76 pages of horizontal printing, each page listing about 20 items, thus including about 1500 items in all, classified into groups and sub-groups. In Mexico (1983-84) too, the main schedule runs through nearly 70 pages. In Peru (1985-86), the schedule contains 50 pages although a full list of items is not given under each sub-group. In some other countries such as India (1983), Zimbabwe (1984-85) and Botswana (1985-86), 10 to 25 pages are used for recording the consumption expenditure, and only the main items are listed in each sub-group.

6.72 A detailed list of items has the advantage that it minimizes possible omissions. Further, the provision of a printed code for each item facilitates the data-input process considerably. The questionnaires used in some of these countries require the enumerator to enquire about the expenditure on each of the specified items, as indicated by the following questions:

Argentina: In the last month, have you (that is the head of the household) or any member of the spending unit acquired (item in the list).

Mexico: In the last 3 months, how much did you spend on the following articles?

Peru: In the last 3 months, how much did you spend on account of articles listed?

Although a complete listing of items has the distinct advantage of minimizing omissions, there is a risk that a respondent may feel awkward if he has to report no purchase, item after item, and may, out of a sense of prestige, report some purchases even if they have not been made (during the reference period). It may, therefore, be desirable not to go through the entire

list, item by item, but to adopt an illustrative and open-ended approach as in Peru, where the main group is broken down into sub-groups and within each sub-group a few important items are listed and open space left to record purchases of similar items within the same sub-group. The listed items provide a prompt list for the enumerator to ask the household about the type of purchases to be recorded under each sub-group. It would, however, be necessary in that case to code the open-ended items at the data processing stage, or, preferably, provide a complete precoded list of items to the enumerator apart from the schedule.

6.73 If, however, the survey is to provide weights for a consumer price index, a more detailed item list is essential and the schedule has to include a comprehensive list of goods and services, so that very few items are left to be included under unspecified miscellaneous categories. It would, in fact, be advantageous to include item specifications in greater detail, classified as imported or indigenous, and ascertain the outlet from which the item was purchased, so that the survey results could be useful not only for the determination of the weights but also for the specification of items, selection of markets and sampling of outlets for price collection. That would, however, overload the survey schedule and make the survey unmanageable, unless it is confined to consumer expenditures to the exclusion of all other topics. An alternative course would be to ask the household to record the requisite details in the account books if the survey methodology envisages such maintenance. Another alternative would be to collect the requisite information through market surveys, which is easier and equally valid.

c. Cash, Credit, Monetary and Non-monetary Purchases

6.74 It is important to distinguish cash and credit purchases on the one hand and monetary and non-monetary purchases on the other. Cash purchases, as opposed to credit purchases, are those for which the payment has been made in full, in cash or kind (although the latter sounds a little inconsistent in terminology). Credit purchases are those for which full payment has not been made in cash or kind, and include purchases for which payment has been made in part. Monetary purchases are those for which payments are made or are expected to be made in money. Non-monetary purchases are those for which payments are made or are expected to be made in kind. Transactions made in cash, in exchange of money, are covered effectively by the normal procedures adopted for the collection of household expenditure data. Special procedures are, however, needed to deal with credit purchases on the one hand and non-monetary purchases on the other.

Credit purchases

6.75 The term "credit" calls for a clarification. It may be used in general to characterize purchases for which payment has not immediately been made at the time of the purchase. A more restricted use is in relation to the reference period used for the study of expenditures. In that case, the amount paid up during the reference period is taken as cash and the amount outstanding at the end of reference period is taken as credit. It is the latter that we shall be concerned with.

6.76 The purpose of recording credit purchases is essentially to balance the budget. This can be done by indicating in respect of every expenditure reported whether it involves any credit and, if so, recording the amount outstanding at the end of the reference period. This will no doubt involve a good deal of additional work, both in data collection and processing. An alternative would be to study the state of indebtedness in a separate section, taking care, in particular, to include as outstanding debt, the amounts which remain to be paid at the end of the reference period.

Non-monetary purchases

6.77 Non-monetary purchases are essentially barter deals still undertaken in the rural areas of developing countries, though on a limited scale. The main problem with these transactions is in regard to their valuation (see Chapter IV, para. 4.82). If, for instance, a household barter a kg. of rice from its own produce for 2 kg. of potato from some other household, it should be shown as an expenditure on potato. Rice as a source of income from self-employment must be shown on the income side and the quantity exchanged recorded under disposal of output (see para. 6.52 above).

d. Consumption of Home Production and Goods received in Kind

6.78 Consumption expenditure includes not only cash expenditure on consumption but also consumption of home produced goods, consumption of business stocks, consumption of goods and services received as income, and consumption of goods received as gifts. Consumption of home produced goods would include, in particular, all primary products and goods produced by the household by processing such products. If the household is engaged in secondary or tertiary production for the market, the consumption of such goods and services is also to be included. In order to ensure that all such consumption is included and properly valued, it is important that data on such consumption are collected separately from consumption based on purchases.

6.79 So far as food is concerned, it was suggested in Chapter IV that the acquisition and/or use, that is consumption, approach should be preferred, especially in rural areas (see Chapter IV, para. 4.65). Even in urban areas, if the reference period is too short, e.g. a week, one cannot assume that acquisition equals consumption. If, however, the reference period is fairly long, e.g. a month, one can safely assume that acquisition approximates consumption. So, if the suggested standard reference period of one month is adopted, it is not necessary to distinguish between acquisition and consumption. The schedule, however, will have to take into consideration the problems of both urban and rural areas. Accordingly, it is suggested that so far as food is concerned, the following data be collected in respect of each item for the reference month.

1. Unit of quantitative measurement
 - a. Standard unit
 - b. Local unit
 - c. Conversion factor (standard equivalent of the local unit)
2. Purchased
 - a. Quantity
 - b. Value
3. Consumption from other sources (quantity)
 - a. Home-grown or produced
 - b. Business stocks
 - c. Received in kind as income
 - d. Gifts and free collections
 - e. Total value of a, b, c and d.

Although the marginal data on consumption from other sources may not be equally important for beverages and tobacco, the above form may well be adopted for the entire major group Food, Beverages and Tobacco, to be covered in a single section of the proposed schedule. The quantitative data sought in 2 and 3 above may be recorded in local units.

e. Food consumed outside Home

6.80 Food consumed outside home may be of different categories: (i) food consumed in hotels, restaurants, cafes, etc. (ii) food consumed in packaged tours, (iii) food consumed in travel as part of transport services, (iv) food consumed at workplaces, (v) food purchased from shops, snackbars etc. and consumed on the spot, (vi) food consumed at other homes. Categories (i) and (ii) are to be covered in the Miscellaneous major group under expenditure on hotels, restaurants etc. and

packaged tours. Category (iii) is covered under Transport and Communication. They need not, therefore, be covered under Food, Beverages and Tobacco. Categories (iv) and (v) are to be covered under minor group 1.7 under Food, Beverages and Tobacco. If the food consumed at the workplace is free of cost, provided by the employer, its value should also be shown as income in kind. Category (vi) is not to be covered as it is taken as expenditure of the host household.

f. Housing

6.81 Data on house rents may better be collected along with other particulars on housing in a separate section and carried over to the section on Housing, Fuel and Power for purposes of expenditure analysis. The data requirements in this regard will be considered under Housing.

g. Schedule for the Section

6.82 Apart from Food, Beverages and Tobacco, which calls for supplementary data on consumption, and house rent which needs to be investigated in the wider context of housing, the rest of consumption expenditure can be investigated through a fairly simple schedule. As indicated in the chapter on Survey Methodology (Chapter IV), the data are to be collected by the acquisition approach for durables and semi-durables and the payments approach for the rest. In specific cases such as water and electricity charges, school fees etc. in which payments are made at intervals longer than a month, the expenditure estimates may be derived from data on last payments and the periods covered if that is considered more convenient. Further, in the case of durables, similar information needs to be collected in respect of the last year and in the case of semi-durables in respect of the last quarter. Data on periodic payments of intermediate frequency may also be collected in respect of the last quarter, if considered feasible, as an alternative to collection of data on last payments and period covered.

6.83 The SNA classification of household goods and services classifies household goods as durable, semi-durable and non-durable, and the services as such. That classification thus provides an indication of the cases in which supplementary data for a longer reference period are needed. Accordingly, in addition to the data in respect of the last month, which should be collected for all major groups, minor groups and sub-groups, supplementary data should be collected in respect of the following:

2.	Clothing and footwear	
	all minor groups and sub-groups	last quarter
3.	Housing, fuel and power	
3.1	Housing	
	3.15 Water charges	last quarter or last payment
3.2	Fuel and power	
	3.21 Electricity	- do -
4.	Furniture, furnishings, equipment and operation	
4.1	Furniture, fixtures and floor coverings	last year
4.2	Household textiles and other furnishings	last quarter
4.3	Heating and cooking appliances, refrigerators, washing machines, air- conditioners etc.	last year
4.4	Glassware, tableware and utensils	last quarter
5.	Transport and communication	
5.1	Personal transport equipment	last year
5.2	Operation of personal trans- port equipment	
	5.21 Tyres, tubes, parts, accessories and repairs	last quarter
5.3	Transport services	
	5.32 Air and ocean transport	last quarter
5.4	Communication	
	5.42 Telephone	last quarter
6.	Medical and health services	
6.2	Therapeutic appliances and equipment	last year
6.3	Medical, para-medial and dental services	last quarter
6.4	Hospital and related care	last quarter

- 7. Education, recreation, entertainment and cultural services
 - 7.1 Education
 - 7.11 to 7.14 last quarter or last payment
 - 7.3 Equipment and accessories for recreation and entertainment
 - 7.31 to 7.34 last year
- 8. Miscellaneous
 - 8.1 Personal care, personal effects and personal goods
 - 8.13 Jewellery, watches, etc. last year
 - 8.14 Other personal goods last quarter
 - 8.2 Expenditure on hotels, restaurants etc.
 - 8.21 Hotels last quarter
 - 8.3 Expenditure on package tours last quarter

6.84 Given the above scheme of data collection, the sectional schedule for Consumption Expenditure may now be conceived as a series of sub-sections, each dealing with a major group of items, arranged in the same order as the major groups in the Classification of Consumption Expenditure. Each sub-section may be divided into the requisite number of blocks, each block dealing with a minor group of items, arranged in the same order as the minor groups within the major group. Wherever necessary, each block may be divided into a number of sub-blocks, each sub-block dealing with a sub-group of items arranged in the same order as the sub-groups within the minor group.

6.85 For items other than Food, Beverages and Tobacco, there is no general need for any data on physical quantities. The data collected should, therefore, be confined to expenditure on purchases and the value of goods and services received in kind, the latter including consumption from home production, withdrawal from business stocks, income received in kind, gifts received in kind and free collections. For items other than Food, Beverages and Tobacco, receipts in kind may not in most cases be frequent or significant, except possibly, to some extent in clothing, footwear and fuel. Data on receipts in kind need not, therefore, be collected in the same detail as for Food, Beverages and Tobacco. It would probably suffice to collect the data under two separate heads viz (a) purchases and (b) receipts in kind. There should, however, be a provision

for collecting similar data for a longer reference period, year or quarter, as appropriate, as supplementary information, in addition to the data for the standard reference month. The general form for data collection for items other than Food, Beverages and Tobacco could thus be as follows:

Major group/ minor group/ sub-group/item/code	Consumption Expenditure			
	Last month		Last year/quarter	
	Purchases	Receipts in kind	Purchases	Receipts in kind

In practice separate columns should be provided for data relating to the last year and to the last quarter, and the inapplicable cells should be blocked or crossed out to avoid confusion.

h. Daily record

6.86 In many countries, including developing countries, sampled households are required to keep daily records of their consumption expenditures for a specified period. If, because of illiteracy, they are unable to do so, the enumerator visits the household every day or every second or third day and fills the daily record for the household. In most cases the scope of the daily record is restricted to expenditures on food, drink and tobacco. In some countries, other "daily" expenditures such as daily commutation are also recorded. In some others, however, the scope of the daily record is unrestricted, and all expenditures are to be recorded, together with details of consumption from own-account production.

6.87 While the desirability of a daily record is generally appreciated, an important point for decision is the item coverage of the daily record. There is apparently some merit in not restricting the item coverage. If a standard reference period of one month is adopted for basic data collection on household expenditures and if a daily record is to be maintained by the households, there is no valid reason for restricting the scope of the daily record. The record should better cover all items of expenditure, and even disbursements other than expenditure for the whole month. Restricting the scope of the daily record to some items may lead to a complete coverage for those items and possibly an incomplete coverage for the other items, leading to an overall imbalance, which should be avoided. Since the most frequent purchases, which are usually on Food, Beverages and Tobacco, are in any case to be covered by the daily record as a minimal requirement, extension of its scope to other items of expenditure is not likely to be much of an additional burden. In fact, the concept

of an account presupposes a complete account, not only of all disbursements but also of all receipts, if possible. If the expenditure data are to be based partly on a daily record, especially if it is open-ended, and partly on interview, there is bound to be some confusion leading to inaccuracies.

6.88 The forms used for the daily record generally provide appropriate columns for recording the daily purchases in quantity and value together with a description of the item and the date of purchase. In some cases the item groups and sub-groups are specifically mentioned and space is allocated to each group and sub-group in a printed account book. This helps the household incidentally to remember whatever is required to be recorded. It also helps coding, editing and processing the data.

6.89 Provision of separate space for the various groups and sub-groups would, of course, increase the size of the account book. However, if the coverage is restricted to Food, Beverages and Tobacco, it may be possible to provide separately for the groups and sub-groups and still keep the length of the record within manageable limits. If the item coverage is to be open, a feasible approach would be to divide the account book into two parts, one for Food, Beverages and Tobacco and the second for other items, and provide for groups and sub-groups in the first but only for groups in the second.

6.90 The daily record form should provide columns with the necessary space for entering the date, description of the item of expenditure, item code to be filled by the field office, specification of the item, source of purchase/acquisition, quantity purchased/acquired (in local unit) and value of purchase/acquisition. It should be understood that in addition to the purchases, items consumed from home production, business stocks and receipts in kind should also be recorded and the source of acquisition shown as such in the relevant column. The form of the daily record may be somewhat as follows:

Daily Record of Consumption Expenditure

Date	Item of Expenditure ^a	Code ^b	Specification ^c	Source ^d	Quantity	Value
1	2	3	4	5	6	7

^a Should include all goods and services purchased or otherwise acquired and consumed.

^b To be filled by field office.

^c Should indicate brand name, size and other relevant details.

^d In the case of items not purchased, indicate how acquired; if drawn from own production or business stocks, indicate accordingly.

10. Non-consumption Expenditure

6.91 Under the category of non-consumption expenditure, the ILO includes the following items of expenditure⁽⁷⁾:

- (a) Income tax and other direct taxation;
- (b) Pension and social security contributions and assimilated insurance premiums; and
- (c) Remittances, gifts and similar transfers

6.92 In addition, items of expenditure regarded by the ILO as consumption expenditure for certain purposes but not so regarded by the SNA and the Income Distribution Guidelines, and hence, not included under Consumption Expenditure, also need to be accommodated separately under Non-Consumption Expenditure. These include:

subscriptions and contributions to trade unions, political associations, social and fraternal organizations; and

taxes, duties, license fees and other compulsory charges unrelated to the consumption of goods and services.

6.93 An item, which has not even been mentioned in the ILO recommendations but has been recognized in IDG as a current transfer from total available income is interest on consumer debt. There is yet no agreement on how it should be treated - consumption, transfer, or partly consumption and partly transfer. However, in accordance with the IDG, which treats it as a transfer, it may be included as non-consumption expenditure.

6.94 Accordingly, non-consumption expenditures, may be classified as follows:

- 1. Direct taxes
 - 1.1 Income tax
 - 1.2 Other direct taxes
- 2. Taxes, duties, fees and other compulsory charges unrelated to the consumption of goods or services
- 3. Pension and social security contributions and assimilated insurance premia
 - 3.1 Pension contributions
 - 3.2 Provident fund contributions
 - 3.3 Social security contributions
 - 3.4 Life insurance premia
 - 3.5 Health insurance premia
 - 3.6 Property insurance premia
 - 3.7 Other insurance premia
- 4. Remittances, gifts and similar transfers

5. Subscriptions, contributions and donations to trade unions, political associations and social organizations

6. Interest on consumer debt.

6.95 The data on non-consumption expenditures should be collected for the standard reference month as well as for the last year in respect of all items.

11. Other Disbursements

6.96 Other disbursements which need to be taken into account for a proper balance of the current receipts and disbursements include:

- a. Additions to bank deposits and savings
- b. Amounts disbursed in repayment of loans taken
- c. Amounts given out as loans
- d. Amounts invested in stocks, shares, debentures etc.
- e. Amounts invested in real estate
- f. Amounts invested in co-operative or household enterprises
- g. Other disbursements including donations

Data on all such disbursements should be collected not only for standard reference month but also for the last year.

12. Indebtedness

6.97 Household income and expenditure surveys have often produced estimates of expenditure higher than the corresponding estimates of income, if not over the whole range of income, at least in the lower-income groups. Investigations into receipts other than income and disbursements other than expenditure, may sometimes indicate how the deficits have been met. Very often the explanation given is that the deficits have been met by credit purchases or borrowings. The veracity of such explanations cannot be usually verified. However, an inquiry into the state of indebtedness may provide the necessary clues and serve other purposes too.

6.98 For an inquiry into the state of indebtedness, data will have to be collected separately in respect of each loan outstanding on the date of the survey including credit purchases. As our interest is primarily in consumer debt, it would be in order to restrict the scope of the inquiry to loans taken for consumption purposes. However, in view of the fact that households do not always make a clear-cut distinction between loans taken for consumption and loans taken for business purposes, the latter may also be covered, if so desired. Data may be collected in respect of each loan, on the following items:

- a. Month and year of borrowing:
- b. Amount borrowed.
- c. Purpose of the loan: Capital expenditure in agriculture; capital expenditure in non-agricultural activity; current expenditure in agriculture; current expenditure in non-agricultural activity; financial investment; household expenditure; repayment of debt; others.
- d. Type of loan: Short-term pledged; short-term non-pledged; medium-term; long-term.
- e. Type and rate of interest: Interest free; simple; compound; concessional.
- f. Type of security: Personal security; surety security or guarantee by third party; first charge on immovable property; mortgage on immovable property; gold, silver, jewellery or ornaments; share of companies; government securities; insurance policies; agricultural commodities; other security; no security.
- g. Type of mortgage: Simple, usufructuary, conditional sale, other type.
- h. Source of loan: Government; co-operative society or co-operative bank; commercial bank; insurance company; social security fund; landlord; agricultural money-lender; other professional money-lender; trader; relatives; friends; others.
- i. Amount repaid during the last year.
- j. Amount outstanding.

If, however, all the above-mentioned details are not needed or considered difficult to collect, items d, e, f and g may be omitted and the inquiry restricted to a, b, c, h, i and j.

13. Housing

a. Housing Characteristics

6.99 In this sub-section, information is to be collected on the housing accommodation occupied by the sample household. According to the 'Principles and Recommendations for Population and Housing Censuses' (1980)⁽³⁾ issued by the United Nations, a housing unit is a separate and independent place of abode intended for habitation, or one not intended for habitation but occupied as living quarters, by a household at the time of the census. These recommendations distinguish between living quarters and housing units, the latter being an important category of the former. The concept of living quarters includes, in addition, collective living quarters such as

hotels, rooming houses, other lodging houses, institution and camps. If the survey covers persons living in hotels, rooming and lodging houses, etc. it would be more appropriate to use the term living quarters. If, however, the survey covers, as usual in most cases, households living in housing units, the term housing units would be more appropriate. We shall, therefore, continue to use the term housing unit, which we have been so far using, subject to the understanding that if the survey covers persons living in collective living quarters also, the term housing unit will be understood to mean living quarters in general.

6.100 In a housing census, one is primarily interested in taking an inventory of the housing stock and studying its characteristics. In a household survey, on the other hand, the focus of interest is basically on the housing conditions of households. The assumption here is that the household and housing unit are not necessarily coterminous, because a household as defined, may be mostly in the occupation of an independent housing unit, but sometimes only a part thereof, and, in exceptional cases, even more than one such unit. It is important, therefore, to demarcate the housing accommodation occupied by the household and study its characteristics and facilities. The information to be collected, is of three types: the physical characteristics of the building in which the housing unit is located, the particulars of the housing unit occupied and the facilities enjoyed by the household. The details to be ascertained are:

- | | |
|---------------|---|
| Building: | Type of building; year of construction (or age of the building); materials used for the construction of outer walls and roof. |
| Housing Unit: | Ownership; type of housing unit; cooking facilities; toilet facilities; bathing facilities; water supply; sewerage system; lighting type. |
| Household: | Tenure; rent; number of rooms occupied; facilities shared. |

6.101 The main purpose of including housing as a subject for the income and expenditure survey is to provide a fuller picture of the conditions and levels of living of households in conjunction with the data on household income and expenditure. The data could also be used for estimating the rental values of owner-occupied housing or rent-free housing enjoyed by households and as bench-mark data for the construction of the housing component of consumer price indices.

6.102 Once the items of inquiry and the classifications to be used are decided, the schedule on housing could be devised in any one of three alternative forms. It could be merely a listing of items with space provided for a code to be entered against each item, and a code list for each of the items given at the foot of the section. Alternatively, it could provide a code list for each item, immediately following the item and set apart a box space for entering the code. A third variant could provide a list of codes following each item, for the enumerator to circle one of the codes as appropriate. The choice of the form will depend upon the ability of the enumerator to enter the information in codes.

b. Rental Data

6.103 It has been suggested earlier that details about house rents paid by households and rental values of owner-occupied or rent-free housing enjoyed by households be collected in the section on housing along with the related particulars of housing, and the relevant values entered in the sub-section on housing under consumption expenditure. Accordingly, in this section information needs to be collected not only on the rent paid for rented accommodation, but also on the rental values of housing received free or at concessional rents from employers and charitable institutions.

6.104 In particular, the following details need to be collected:

- a. If, according to the information already collected on tenure, the household is an owner-occupier:
 1. Was this housing unit constructed by the household or purchased?
 - 1.1 If constructed, amount spent on the construction, including fixtures and fittings, if any.
 - 1.2 If purchased,
 - (i) year in which purchased
 - (ii) purchase value at that time
 - (iii) initial payment
 - (iv) number of instalments, if any
 - (v) periodicity of instalments
 - (vi) amount payable in each

2. In the current market conditions -
 - 2.1 If this housing unit were to be let out on rent, how much of rent would it fetch?
 - 2.2 If a similar housing unit were to be taken on rent, in the same area, how much would it cost?
 3. Has any part of this housing unit been let out?
 - 3.1 If so, proportion of floor area rented out.
 - 3.2 Rent obtained for that area.
 4. Amount spent last year on this housing unit:
 - 4.1 Maintenance and repair
 - 4.2 Property taxes
 - 4.3 Interest paid on loans taken, if any, for the construction or purchase of this unit.
- b. If, according to the information already obtained on tenure, the household is a tenant or sub-tenant:
1. Does the tenancy or sub-tenancy cover, besides living space, any
 - (i) furniture or furnishings?
(to be specified)
 - (ii) kitchen equipment?
(to be specified)
 - (iii) heating and/or cooling system?
(to be specified)
 2. Does the rental include
 - (i) water supply?
 - (ii) electricity?
 - (iii) gas?
 3. Is the household required to pay any other charges in connection with the tenancy or sub-tenancy? (to be specified)

4. Is this housing provided by the employer or by a charitable institution?
5. If so, is the rental subsidized?
6. If a similar housing unit were to be taken on rent in the same area, what would be the rent payable?

14. Household Durables

6.105 In household income and expenditure surveys, data are usually collected on durable possessions in order to provide a better picture of the levels of living. The list of goods covered varies from country to country, and generally, includes major household appliances such as airconditioners, refrigerators, washing machines, sewing machines and cooking ranges, transport equipment such as automobiles, motorcycles and bicycles, audio-visual equipment such as television sets, video-recorders, tape recorders and music systems and photographic equipment such as cameras. Items of furniture, though considered durable, are not generally included. However, some comparatively inexpensive articles such as blenders and mixers, juice makers, vacuum cleaners, electric irons and electric fans also feature in some of the lists. Some countries include silver, gold and jewellery, but it would be difficult to get accurate information about such valuable items which constitute part of household wealth and should, therefore, better be excluded. These statistics are not by any means expected to provide a complete inventory of all durable goods and certainly not even a minimal indication of the household wealth. They are regarded only as indicators of the level of living and should, therefore, include only a selection of items which generally distinguish upper-class living from the lower or middle-class living in a given society at a given point of time in the economic situation obtaining at that time, taking into account the general availability of the goods under consideration.

6.106 The data collected generally indicate the possession or non-possession of each specified item, and do not usually indicate even the number of units possessed of each specified item which would, of course, be useful if collected. Data on the date of acquisition of the item and its purchase value may also be considered useful for a demand analysis and other economic studies which treat such expenditures as capital formation. Classification of the item as imported or indigenous would also be of considerable interest. However, before extending the scope of these data, one has to examine whether the sample size, and the expected frequency of households possessing such goods would be able to support the contemplated analysis.

6.107 If information is required on the number of units possessed of each specified item, instead of a yes/no code, the number possessed itself may be recorded, the number 0 standing for non-possession of the item. If additional data on the date of purchase and purchase value are also to be collected, additional columns to record these data will have to be introduced.

6.108 In a national survey, conditions in rural and urban areas may be so different that it may be sometimes embarrassing and unrealistic even to ask of the rural households, in many developing countries, whether they have such articles as refrigerators and cooking ranges. It may, therefore, be advisable to draw up separate lists for urban and rural areas, taking into account the realities of the situation.

15. Worksheet for Valuation of Transactions

6.109 In filling the schedule, the enumerator may often encounter transactions in kind such as wages paid in kind, and consumption of home production. He may generally have to calculate the value by using data on relevant quantities and appropriate prices. The enumerator should keep a systematic record of these calculations for the supervisor to check and verify. Attached to the schedule, there should, therefore, be a worksheet to be used for such purposes. It should include columns for giving references to values entered, mentioning the items, quantities and prices involved and indicating the calculated values. The worksheet should also provide for recording the basic data used for other entries such as deductions from wages and salaries at source in the case of paid employment, estimated value of output in the case of trade, and outputs and inputs of self-employment activities in general.

16. Data for Analytical Units

6.110 In the foregoing, we have treated the household as a single economic unit. It may, however, be that there is more than one economic unit in the household as discussed in Chapter III. In order to analyze the incomes and expenditures of the different economic units, the data on incomes and expenditures have to be collected and recorded separately in respect of each such unit. So far as data on income from paid employment is concerned, as the data would be recorded for each person separately, this requirement would be met. But, for other items of income and expenditure, except food, drink and tobacco, and possibly housing, which are shared by the economic units in an inseparable manner, the corresponding sections of the schedule will have to be filled separately for each economic unit.

6.111 A distinction may, however, be made between the main unit, that is the main household, and the subsidiary units such as paying guests and domestic servants. If the schedule is filled in all its detail for the main unit, as it should be, similar information in respect of the subsidiary units, can perhaps be collected in a summary form for analytical purposes as was done in Sri Lanka (1985-86), where separate information for subsidiary economic units (domestic servants, boarders, etc.) was collected in respect of incomes for self-employment, property incomes etc. and expenditures on housing, fuel and light, clothing, services, consumer durables and non-durable goods at the group level (i.e. not itemwise) for the same reference periods as for the main household. The floor area 'occupied' by the economic unit was also recorded and valued to facilitate adjustment appropriate to the expenditure of the main household on housing. If more detailed data are required in respect of each of the subsidiary units, a separate schedule will have to be filled for each such unit.

References

- (1) United Nations: Handbook of Household Surveys (Revised Edition), Studies in Methods, Series F No. 31, 1984.
- (2) United Nations: Development and Design of Survey Questionnaires, National Household Survey Capability Programme, 1985.
- (3) United Nations: Principles and Recommendations for Population and Housing Censuses, Statistical Papers Series M No. 67, 1980.
- (4) United Nations: Handbook of Social Indicators, Studies in Methods Series F No.49, 1989
- (5) United Nations: Improving Statistics and Indicators on Women Using Household Surveys, Studies in Methods Series F No.48, 1988
- (6) For a fuller discussion on employment-income relationship, see the ILO Manual on Surveys of the Economically Active Population.
- (7) United Nations Economic and Social Commission for Asia and the Pacific: Household Surveys in Asia: Organization and Methods, 1981, see Annex to the section on Income and Expenditure Surveys.

HOUSEHOLD INCOME AND EXPENDITURE SURVEY
SUGGESTED CONTENT OF THE SURVEY SCHEDULE

1. Identification and Operational Particulars

1.1 Geographic particulars		1.2 Sampling particulars	
	'Code'		'Code'
1. State/Province	'	1. Stratum	'
2. District	'	2. PSU	'
3. Sub-district	'	3. SSU	'
4. City/town/village	'	4. Household	'
5. Ward/hamlet	'	5. Multiplier	'
1.3 Operational particulars		1.4 Processing particulars	
1. Enumerator	'	1. Date of scrutiny	'
2. Dates of data collection	'	2. Date of editing	'
3. Supervisor	'	3. Date of coding	'
4. Dates of supervisory check	'	4. Date of entry	'
5. Date of dispatch	'	5. Date of verification	'

2. Household Classificatory Characteristics

1. Household type	'	5. Household income	'
2. Household size	'	6. Household expenditure	'
3. Social group	'	7. Per capita income	'
4. Socio-economic group	'	8. Per capita expenditure	'

3. Household Membership and Composition

No.	Name	Age	Sex	hold	unit	ments	ments	(a)	(b)
1	2	3	4	5	6	7	8	9	10

(a) DS - Domestic Servant; PG - Paying Guest;
 (b) PM - Member Present; AM - Member absent; NM - Non-member

4. Activity Particulars of Household Members

No.	Name	Marital status	Li-teracy	Educa-tional attainment	Em-ployed	Number of days (last year)		Usual activity	Indus-try	Occupa-tion	Status
						Not employ-ment	If employed,				
1	2	3	4	5	6	7	8	9	10	11	12

5. Income from Paid Employment

No.	Name	Nature of job		Amount received in cash					Value of benefits received in kind last month					Bonuses received	
				last month					last month					last year	
				No. of days worked on the job last month	Basic wage or salary	Allowances, commissions and gratuities	Total before deductions at source	Deductions at source	Food	Housing	Clothing	Others	Total	Cash	Kind
3	4	5	6	7	8	9	10	11	12	13	14	15	16		
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

6A. Output of Self-employment Activities

Activities*	Transferred to...									
	(Quantity)									
	Others									
	as Consumed									
	loans, by Used for									
Total 'output (Quantity)	'Land-lord 'rent	La-'bour 'wages	'gifts 'or 'in ex-'change	house-'hold (Quantity)	'process-'ing (Quantity)	Sold	'Estimated 'value of 'total output			
1	2	3	4	5	6	7	8	9	10	
1. Agriculture (last year)										
Crop A										
Crop B										
Crop C										
2. Agriculture (last month)										
Crop A										
Crop B										
Crop C										
3. Livestock production										
4. Fishing and fish breeding										
5. Hunting and forestry										
6. Mining and quarrying										
7. Manufacture and repairs										
Product P										
Product Q										
Product R										
8. Construction										
9. Guesthouses and restaurants										
10. Trade										
11. Transport										
12. Services										
Service X										
Service Y										
Service Z										
13. Miscellaneous										
Total	x	x	x	x	x	x	x	x		

*Data to be collected for last month for activities 3 to 13. All columns may not be applicable to all these activities (see paragraph 6.53).

6B. Inputs of Self-employment Activities

I n p u t s	V a l u e o f i n p u t s			
	Agriculture	Other agricultural activities	Non- agricultural activities	
	Last year	Last month	Last month	Last month
	1	2	3	4
1. Agricultural seeds and seedlings				
2. Animal, poultry and fish feed				
3. Primary products used for further processing				
4. Semi-manufactured goods used for further processing				
5. Explosives, chemicals and chemical products				
6. Water, electricity, fuel and lubricants				
7. Other manufactured goods used as inputs				
8. Building materials used for construction				
9. Transportation, storage and communication				
10. Repair and servicing				
11. Rent, interest, brokerage, commissions and fees				
12. Hired labour				
13. Other miscellaneous costs				
Total				

7. Property and Other Incomes

7A. Rental income on real estate

Property	Gross rent received		Maintenance, running and collection costs		Property taxes paid, if any		Mortgage interest paid, if any	
	Last month	Last year	Last month	Last year	Last month	Last year	Last month	Last year
1	2	3	4	5	6	7	8	9

- 1. Land
- 2. Buildings
 - a.
 - b.
 - c.
- Total

7B. Other incomes

Source	Last month	Last year	Source	Last month	Last year
1	2	3	1	2	3
1. Royalties			7. Other social security benefits		
2. Interest			8. Remittances		
3. Dividends			9. Other incomes		
4. Pensions			10. Total		
5. Annuities					
6. Family allowances					

8. Other receipts

Source	Last month	Last year	Source	Last month	Last year
1	2	3	1	2	3
1. Insurance			6. Loans		
2. Inheritance			7. Loan repayments		
3. Lotteries and games of chance			8. Withdrawal from savings		
4. Sale of properties			9. Others		
5. Sale of durables			10. Total		

9.2 Clothing and Footwear

Group/Sub-group/Item	Item code	Last month		Last quarter	
		Purchases	Receipts in kind	Purchases	Receipts in kind
1	2	3	4	5	6

2.1 Clothing

2.11 Clothing materials

2.12 Made-up clothing

2.13 Tailoring

2.14 Repairs to clothing

2.2 Footwear

2.21 Footwear

2.22 Repairs to footwear

2.3 Total

9.3 Housing, Fuel and Power

Group/Sub-group/Item	Item code	Last month		Last quarter	
		Purchases	Receipts in kind	Purchases	Receipts in kind
1	2	3	4	5	6

3.1 Housing

3.11 House rent

3.12 Rental value of rent-free housing

3.13 Rental value of owner-occupied housing

3.14 Repairs and maintenance

3.15 Water charges

3.16 Garbage disposal

3.2 Fuel and power

3.21 Electricity

3.22 Gas

3.23 Liquid fuels

3.24 Other fuels

3.3 Total

9.4 Furniture, Furnishings, Equipment and Operations

Group/Sub-group/Item	Item code	Last month		Last year	
		'Receipts'		'Receipts'	
		'Purchases'	'in kind'	'Purchases'	'in kind'
4.1 Furniture, fixtures and floor coverings					
.....					
.....					
Repairs					
4.2 Household textiles and other furnishings					
.....					
.....					
Repairs					
4.3 Heating and cooking appliances, refrigerators, washing machines, airconditioners etc.					
.....					
.....					
Repairs					
4.4 Glassware, tableware and utensils					
.....					
.....					
Repairs					
4.5 Non-durable household goods					
.....					
.....					
Repairs					
4.6 Household services					
4.61 Domestic services					
4.62 Other services					
4.7 Total					

9.5 Transport and Communication

Group/Sub-group/Item	Item code	Last month	Last quarter
		'Receipts' 'Purchases'in kind	'Receipts' 'Purchases'in kind
5.1 Personal transport equipment			
.....			
5.2 Operation of personal transport equipment			
5.21 Tyres, tubes, parts, accessories and repairs			
.....			
5.22 Gasoline, oils and greases			
.....			
5.23 Chauffeur and driver services			
.....			
5.24 Other expenditure			
.....			
5.3 Transport services			
5.31 Road, rail and inland water transport			
.....			
5.32 Air and ocean transport			
.....			
5.4 Communication services			
5.41 Post and telegraph			
5.42 Telephone			
5.5 Total			

9.6 Medical Care and Health Services

Group/Sub-group/Item	Item code	Last month		Last year/quarter*	
		Purchases in kind	Receipts in kind	Purchases in kind	Receipts in kind
1	2	3	4	5	6

6.1 Medical and pharmaceutical products

.....
.....

6.2 Therapeutic appliances and equipment (Y)

.....
.....

6.3 Medical, paramedical and dental services (Q)

.....
.....

6.4 Hospital and related care (Q)

6.5 Total

x

x

Y - Last year; Q - Last quarter *As applicable (see col. 1)

9.7 Education, Recreation, Entertainment and Cultural Services

Group/Sub-group/Item	Last month		Last year/quarter*		
	Item	'Receipts'	'Receipts'	'Receipts'	
	code	'Purchases' in kind	'Purchases' in kind	'Purchases' in kind	
1	2	3	4	5	6
7.1 Education					
7.11 School fees and related charges (Q)					
7.12 School books and stationery (Q)					
7.13 School transport(Q)					
7.14 Boarding and lodging at school(Q)					
7.2 Books, newspapers and magazines (other than school)					
7.21 Books				x	x
7.22 Newspapers				x	x
7.23 Magazines				x	x
7.3 Equipment and accessories for recreation and entertainment					
7.31 Audio-visual equipment (Y)					
.....					
7.32 Musical instruments (Y)					
.....					
7.33 Photographic equipment (Y)					
.....					
7.34 Other durable equipment (Y)					
.....					
7.35 Non-durable goods				x	x
.....					
7.36 Accessories and repairs				x	x
7.4 Recreational, entertainment and cultural services				x	x
.....					
7.5 Writing and drawing equipment and supplies				x	x
.....					
7.6 Total				x	x

Y - Last year; Q - Last quarter

*As applicable (see col. 1)

9.8 Miscellaneous					
Group/Sub-group/Item	Item code	Last month		Last year/quarter*	
		'Purchases' in kind	'Receipts' in kind	'Purchases' in kind	'Receipts' in kind
1	2	3	4	5	6
8.1 Personal care, personal effects and personal goods					
8.11 Personal care services				x	x
.....					
8.12 Personal care goods				x	x
.....					
8.13 Jewellery, watches etc. (Y)					
.....					
8.14 Other personal goods (Q)					
.....					
8.2 Expenditure on hotels, restaurants etc.					
8.21 Hotels (Q)					
8.22 Restaurants etc.				x	x
8.3 Expenditure on package tours (Q)					
8.31 Transport					
8.32 Accommodation					
8.33 Food					
8.34 Other elements					
8.4 Goods not elsewhere classified				x	x
.....					
8.5 Services not elsewhere classified				x	x
.....					
8.6 Total				x	x

Y - Last year; Q - Last quarter. *As applicable (see col. 1)

10. Non-consumption Expenditure

Item	'Last 'month'	'Last year'	Item	'Last 'month'	'Last year'
1	2	3	1	2	3
1. Direct taxes			3. cont'd		
1.1 Income tax			3.4 Life insurance premia		
1.2 Other direct taxes			3.5 Health insurance premia		
2. Taxes, duties, fees and other compulsory charges			3.6 Property insurance premia		
3. Pension and social security contributions and insurance premia			3.7 Other insurance premia		
3.1 Pension contributions			4. Remittances, gifts and similar transfers		
3.2 Provident fund contri- butions			5. Subscriptions, contri- butions		
3.3 Social security contri- butions			6. Interest on consumer debt		
			9. Total		

11. Disbursements other than Expenditure

Item	'Last 'month'	'Last year'	Item	'Last 'month'	'Last year'
1	2	3	1	2	3
1. Additions to bank deposits and savings			5. Amounts invested in real estate		
2. Amounts disbursed in repayment of loans taken			6. Amounts invested in cooperative or household enterprises		
3. Amounts given out as loans			7. Other disbursements including donations		
4. Amounts invested in stocks, shares, debentures etc.			8. Total		

12. Indebtedness

Item	Loan 1	Loan 2	Loan 3	Loan 4
1. Month and year of borrowing				
2. Amount borrowed				
3. Purpose of the loan				
4. Type of loan*				
5. Type and rate of interest**				
6. Type of security*				
7. Type of mortgage*				
8. Source of loan				
9. Amount repaid last year				
10. Amount outstanding				

*Optional

13. Housing

Item	'Code or' 'figure ''	Item	'Code or' 'figure
<u>13.1 Building</u>		<u>13.2 cont'd</u>	
1. Type of building		5. Bathing facility	
2. Year of construction		6. Water supply	
3. Material used for walls		7. Sewerage system	
4. Material used for roof		8. Lighting type	
<u>13.2 Housing Unit</u>		<u>13.3 Household</u>	
1. Ownership		1. Tenure	
2. Type of unit		2. Rent	
3. Cooking facility		3. Number of rooms occupied	
4. Toilet facility		4. Facilities shared	

14. House Rent

Questions for owner-occupiers	' Code ' ' or ' 'figure'	Questions for tenants and sub-tenants	' Code ' ' or ' 'figure'
1. Was this housing unit constructed by the household or purchased?		1. Does the tenancy/sub-tenancy cover, besides living space, any	
1.1 If constructed, amount spent on construction, including fixtures and fillings.		(a) furniture or furnishings? (specify.....)	
1.2 If purchased-		(b) kitchen equipment? (specify)	
(i) year in which purchased		(c) heating/cooling equipment? (specify.....)	
(ii) purchase value at that time		2. Does the rental include-	
(iii) initial payment		(a) water supply?	
(iv) number of instalments		(b) electricity?	
(v) periodicity of instalments		(c) gas?	
(vi) amount payable in each instalment.		3. Is the household required to pay any other charges in connection with the tenancy/sub-tenancy? (specify.....)	
2. In the current market conditions,-		4. Is this housing provided by the employer or by a charitable institution?	
2.1 If this unit were to be let out on rent, how much would it fetch?		5. If so, is the rental subsidized?	
2.2 If a similar unit were to be taken on rent, in the same area, how much would it cost?		6. If a similar unit were to be taken on rent in the same area, what would be the rent payable?	
3. Has any part of this unit been let out?			
3.1 If so, proportion of floor area rented out.			
3.2 Rent obtained for that area.			
4. Amount spent last year on this unit for-			
4.1 maintenance and repair			
4.2 property taxes			
4.3 interest taken on loans taken, if any, for the construction or purchase.			

15. Household Durables*

Item	' Code ' ' or ' 'figure'	Item	' Code ' ' or ' 'figure'
<u>14.1 Household equipment and appliances</u>		<u>14.3 Audio-visual equipment</u>	
1. Airconditioner		1. Television	
2. Cooking range/stove		2. Video recorder/player	
3. Food processor/mixer/blender		3. Tape recorder/player	
4. Dishwasher		4. Phonograph/disc player	
5. Washing machine		5. Radio/tuner	
6. Drying machine		6. Music system	
7. Sewing machine		7. Piano/harmonium	
8. Vacuum cleaner		8. Stringed instruments (specify)	
9. Iron		9. Others	
10. Fan		<u>14.4 Photographic equipment</u>	
<u>14.2 Transport and communication equipment</u>		1. Video camera	
1. Motor car		2. Movie camera	
2. Motor cycle/scooter		3. Still camera	
3. Bicycle		<u>14.5 Other durables</u>	
4. Telephone		1. Clock	
		2. Watch	

*The list given above is illustrative.

CHAPTER VII

TABULATION, CLASSIFICATION AND ANALYSIS

A. Introduction

7.1 This chapter discusses problems connected with the preliminary processing of data collected through the field operations and substantive issues connected with the tabulation, analysis and presentation of the survey results. The next section deals, in particular, with planning and programming of the operations of scrutiny, editing, coding and validation of the survey data in preparation for further processing. Problems of data processing as such have been dealt with in detail in the NHSCP technical study on Survey Data Processing⁽¹⁾ and are, therefore, not covered in this chapter. The survey statistician, however, has to work out the tabulation plan which the data processing staff is to execute. The third section, therefore, discusses the main issues in the preparation of a tabulation plan, the choice of variables for estimation and tabulation, and related classifications. The fourth section suggests a minimal tabulation plan for the survey data, keeping in view their main uses. It also indicates broadly the types of analysis a survey statistician can attempt with the help of the tables suggested. The last section addresses itself to the important issue of delays in the production of results and offers a suggestion to effectively deal with this ubiquitous problem which has plagued many a survey organization.

B. Preliminary Processing of Survey Data

7.2 Before entering the tabulation stage, the data collected in the field have to pass through a series of preliminary operations such as scrutiny, editing, coding, imputation, adjustment and assignment of weights. The tabulation stage then begins with data entry and validation and ends with computer processing to produce the tables specified in the tabulation plan. Questions which arise at that stage include choice of software, phased processing, and file management. These problems are of a general nature, not specific to an income and expenditure survey, and will not, therefore, be covered in the present document which has been prepared essentially for the guidance of survey statisticians. In the present section, we shall cover the preliminary data processing operations which are the concern of the survey statistician.

1. Planning and Programming Operations

7.3 Specifically, the following preliminary operations have to be carried out after the survey schedules are filled and submitted to the survey headquarters for further processing:

- a. Scrutiny and editing
- b. Coding
- c. Imputations, adjustments
- d. Calculations of weights or multipliers
- e. Data entry, and
- f. Validation.

Computer processing for tabulation and production of the final tables will then follow.

7.4 A time-table outlining a programme of operations has to be drawn up in consultation with the data processing manager in respect of all the above-mentioned operations including computer processing. The time-table will have to take into account the resources available for these operations including the number of scrutinizers and coders and the number of data entry machines and operators. A flow chart should be prepared to show the sequence of stages through which data collected would reach the final stage of production of tables.

2. Scrutiny and Editing

7.5 The operation of scrutiny and editing of schedules can be organized in two different ways. Where the survey organization has had sufficient experience, the scrutiny and editing can be done in the field by the supervisors. They would, however, have to be given detailed instructions in this regard, for which a manual of scrutiny and editing instructions may have to be prepared to ensure that clear instructions are available to deal with different kinds of errors that may be found in the schedules. The advantage of supervisors doing this work in the field is that the enumerator can be consulted quickly after the schedule is filled and inconsistencies or incomplete entries can be rectified in the field itself. Once the schedule reaches the headquarters, rectification of these errors would require a reference back to the supervisors and, in their turn, to the enumerators. This is not an easy operation and in some countries it may be virtually impossible, because of inadequate communication facilities. Therefore, it is important to train the supervisors meticulously for this part of the survey operation. The intensity of work at this stage is inversely related to the efficiency of the field work and, more importantly, to that of the supervisory work.

7.6 If the communication facilities are good, scrutiny and editing can be done at headquarters by staff specially trained for this purpose. Experience shows that a group of well-trained "error-hunters" can in fact be very effective in detecting errors which may pass the notice of even experienced supervisors. More important, however, is the action to be taken when errors are detected. In countries where communication facilities are good - they have to be very good if they are to serve the purpose of the survey - and fast, the erroneous schedules should be referred back to the local supervisors who would in turn consult the enumerators, make the corrections and send the corrected schedules back to the headquarters. Even with the best postal facilities, there is a risk of losing the schedules in the process of transmission and retransmission. To be on the safer side, the enumerators should, therefore, be asked to keep a duplicate copy of the filled-in schedule, although it would, no doubt, add to their workload. If the postal facilities are not adequate - there would be many such countries - the corrections will have to be made by the scrutiny staff on their own. They would themselves have to edit the schedule according to predetermined rules.

7.7 The rules for editing will depend upon the nature of information collected in the survey schedule. If there are logical links between the sets of information obtained in different parts of the schedule, it is of primary importance to check the logical consistency of the entries. In this case, it is difficult to correct the errors without reference to the field, unless some 'priority' rules are set, to indicate which of the entries is to be accepted as entered and which is to be corrected accordingly. But the application of such rules may sometimes change the original information and the corrected information may not be 'true'. The true value can only be ascertained in consultation with the enumerator.

7.8 In a household income and expenditure survey, most of the data are quantitative and the most common errors are of omission: for instance, quantity may be recorded but not the value; a person may be shown as employed but no income recorded. Another type of errors is of inconsistent entries: e.g. quantity and value being inconsistent; expenditure on some items being too small or too large in relation to that on other related items. Some of the errors may be due to putting the decimal point at the wrong place and can be corrected. But in other cases it is indeed difficult to correct without reference to the field. Even that may not always be of much help: reconciliation between quantities and values can be achieved, but the other cases are difficult to correct, for the field staff would not be able to say how the mis-reported expenditure should be corrected unless they check back with the household for the reasons which gave rise to such entries. It is quite possible that what appears unusual did in fact happen, and

there is no "error", as supposed, in the entries. The practical course would, therefore, be to keep such schedules aside and decide, after due reference to supervisors and enumerators, and a careful study of the incidence of such cases, whether to accept or reject the schedules for processing. If what is considered 'unusual' appears to be quite a common occurrence, and it has been verified that there are no errors of reporting, the apparently defective schedules should be accepted for processing. They should be rejected only if they are based on incorrect reporting.

7.9 Considering the types of errors likely to arise in a household income and expenditure survey, if computer facilities are available for data processing, one can consider the possibility of arranging for the scrutiny on the computer itself. In that case, the ranges of values considered reasonable in each case should be pre-determined and the schedules in which the entries fall outside the tolerance limits, identified. These schedules should then be scrutinized further and decisions to accept, reject or correct taken as indicated above.

7.10 To decide whether the schedules should be scrutinized and edited in the field or at the headquarters, one should have some preliminary idea of the quality of survey work expected of the enumerators and the technical ability of the supervisors to undertake scrutiny and editing. If the survey statistician is not sure about this quality, scrutiny should better be undertaken at the headquarters. Even if it is decided to entrust the scrutiny to the field supervisors, there would still be need for a small unit at the headquarters to exercise quality control through sample checks on the quality of the scrutiny and editing undertaken by the supervisors. This, followed by computer checking as suggested above, would be a satisfactory arrangement in practice.

3. Coding

7.11 The workload involved in coding depends on the nature of data collected and the extent to which the schedule provides for the entry of data in codes. In a household income and expenditure survey most of the coding concerns the items of expenditure. A pre-coded schedule has an advantage but tends to become lengthy. The compromise solution of printing a selected list of items under each sub-group, and providing the enumerator with a comprehensive list of items with appropriate codes, would minimize the amount of coding to be undertaken at the processing stage.

7.12 If a daily record of expenditure is to be maintained by the household, it would not be possible for the household to code the items. Even if the household is to be assisted by an enumerator in entering the codes, the volume of coding work would be very heavy and would take a considerable amount of his time. An appropriate solution would be to summarize the data itemwise, enter the summary data in the prescribed schedule and code them at that stage.

7.13 On items of information other than expenditure, the schedule should provide for precoding as far as possible. At the scrutiny stage the supervisors should check the coded entries carefully and correct the wrong entries if any. The rest of the coding will have to be done at the headquarters, for which a small coding unit should be set up.

4. Imputations and Adjustments

7.14 Some of the raw data in the household income and expenditure survey have to undergo some processing before they can be tabulated. The processing is needed in particular for transactions in kind, conversion of quantitative data into standard units, adjustment of the income and expenditure data to standard reference periods, and estimation of data relating to analytical units.

a. Transactions in Kind

7.15 Transactions in kind covered in the household income and expenditure survey are to be converted into their monetary values according to the instructions provided for the survey. As the conversion calls for the use of prices obtaining at the time of the transaction in the nearest local market, the enumerator will have to ascertain the price data and evaluate the transactions. Some countries use a set of common prices at the national level for the evaluation of all transactions in kind, and in such cases, it is done at the headquarters. This procedure, however, deviates from the concept of local prices and has a different purpose. It is not recommended for household income and expenditure surveys in general.

b. Conversion Factors

7.16 If the quantitative data are recorded in local units of measurement, they have to be converted to standard units of measurement using appropriate conversion factors. If the equivalence of the local units with the standard units has been clearly established, the description of the units may be coded and the conversion factors entered so that the quantities could

be converted into standard units before they are tabulated. If the equivalence has not been established, the enumerator will have to ascertain the equivalence in consultation with local authorities and proceed as in the other case. If it is not possible to ascertain the equivalence, he may have to establish the equivalence on his own by physical weightment or measurement of the quantum of a local unit in standard units and then enter the conversion factor in the schedule for use in tabulation.

c. Standard Reference period

7.17 If different reference periods have been used in the schedule for collecting data on different components of income and expenditure, it will be necessary to convert the data to a standard reference period. For example, if the month is taken as the standard reference period, yearly data have to be divided by 12 and the quarterly data by 4. Weekly data have to be multiplied by 30/7. There could be two ways of performing this operation. One is to provide space in the Schedule itself for all items, where the enumerator will convert the data recorded into their equivalents for the standard reference period. This would be quite a heavy task for the enumerators to do and may not in fact be necessary except to check the consistency of income and expenditure. For that purpose, however, it is enough to adjust group and sub-group totals. If the data are to be tabulated by computer, the adjustments can well be done by the computer provided that the adjustment factors for different groups and sub-groups of items are indicated and the adjustment included in the computer program.

d. Analytical Units

7.18 If the household includes independent economic units, treated as subsidiary household units for analytical purposes, the data on household income and expenditure will have to be adjusted appropriately, in order to distinguish the incomes and expenditures of the subsidiary units from those of the main household. In particular, the expenditures on food and beverages recorded for the entire household as a single unit will have to be apportioned on a per capita basis, or more appropriately on the basis of consumption per adult equivalent. Similarly, expenditure on housing may have to be apportioned on the basis of the number of rooms occupied by different units, or more appropriately on the basis of the floor area occupied. These calculations should preferably be done at the headquarters.

e. Derivation of Variable Values

7.19 The value of a variable may not always be readily available in the schedule for further processing, as for instance, in the case of income from self-employment or imputed rental value of owner-occupied or free housing. It is possible to derive the value of the variable in such cases on the computer itself. For this purpose, the survey statistician will have to provide clear instructions for the derivation of the variable from the data elements recorded in the schedule. In that case, however, it will be difficult to check the internal consistency of data. It may not also be possible to undertake quick tabulations and release preliminary results of the type suggested later in this chapter. It is, therefore, suggested that wherever possible, the values of such variables be derived manually in respect of each household and entered in the schedule for further processing.

5. Calculation of Weights or Multipliers

7.20 In a self-weighting design, the sample observations can be directly summed up for the estimation of aggregates and ratios. The weights or multipliers for estimation of the aggregates, can be applied at the stratum level to the sample aggregates so formed rather than at the individual household level. In practice, however, a sample designed as a self-weighting sample does not remain so because of non-response. If the design is not self-weighting, it would be necessary to work out the multiplier applicable to each sample household (or for each cluster of households with a common sampling fraction) before the household data are aggregated. The multiplier calculation can be done in stages. The multipliers applicable to the primary stage and the intermediate stages of sampling down to the penultimate stage can be calculated even before the commencement of field work. As soon as the details of the ultimate stage selection and the number of schedules finally accepted for tabulation at the first stage are known, the calculation of the ultimate stage multipliers can be undertaken, taking into account the effects of non-response and substitution, if any. Finally, as the sum of the multipliers of all sample households is an estimate of the total number of households in the domain, it should be checked to ensure that this sum is not at variance with the corresponding total.

7.21 The multiplier applicable to each household should then be entered in the relevant schedule, in the space provided for that purpose in the section on identification and sampling particulars. An alternative would be to feed the list of multipliers along with the identification particulars of the household as an input to the computer. In that case, the data entry would not have to wait for the calculation of the multipliers.

6. Data Entry

7.22 The preliminary processing operations include data-entry and validation. The data entry operation involves the transfer of survey data from the schedules to an appropriate machine readable input medium. Thereafter, the necessary consistency checks are to be applied to the data so transferred so that errors in the schedules which might have escaped the notice at the previous stages as well as errors in data transfer, if any, are detected and corrected before further processing.

7.23 The input medium to be used for data entry and the computer equipment to be used for tabulation are subjects outside the scope of this document. Appropriate decisions on these and other aspects of data processing should have been taken before the survey is launched. Also, it is assumed that the number of data entry machines and operators required to meet the time limits fixed for the tabulation and release of survey results should have been decided in advance, taking into account the volume of data to be processed and made available in time for the operation.

7. Validation

7.24 The process of validation can prove to be one of the most time-consuming. The errors detected by the computer are required to be rectified and this could often prove to be a very cumbersome operation. The original schedules have to be checked and decisions taken about how the error should be dealt with. Many times these are not easy decisions and a reference to the field may become necessary if the error is such that, if it is not corrected, the entire schedule has to be rejected. In some cases, the rules of validation may provide the necessary guidance for correction of the data, especially if the data are qualitative. If the data are quantitative, as in an income and expenditure survey, the checks will have to deal mostly with the reasonability of quantities or values recorded in the schedule and rules will have to be provided for the acceptance or rejection of the data. It is the data which fall outside the limits that would have to be gone into by reference to the original schedules, and it is not normally easy to take a decision about reasonableness of this kind of data merely on the basis of the information that is available in the schedule. The only action that can be taken to reduce the time that this stage requires can be preventive. Unless at all stages, starting with the field work, the data have been examined and entered with great care, the computer will throw up defective data in large numbers of cases, and that would delay the further processing for a considerable length of time.

8. Programming Operations

7.25 It is vitally important, both from the viewpoint of quality of data and of timely generation of survey output, to initiate the preliminary processing operations soon after the initiation of the field work and proceed with it alongside the survey operations, taking up the processing operations for each sub-round as soon as its field operations are completed. As a practical target to be set in this operational planning, if the survey is organized in 4 sub-rounds (each with a representative sub-sample), the preliminary processing operations for the first sub-round should be completed before the field work for the second sub-round is over, so that within a period of about 4 months after the completion of the survey the preliminary processing operations for the whole survey are completed. The process could in fact be taken one step further by tabulating the results sub-roundwise as the survey progresses. That would facilitate providing a series of previews of the survey results before the survey data are fully tabulated.

7.26 Some of the issues discussed above are common to all surveys, and not peculiar to household income and expenditure surveys. Delays in processing the data and presenting the survey results have, however, become so common, and more so in the case of household income and expenditure surveys, which involve the processing of voluminous data, that it is necessary to plan carefully the entire survey operation in its totality. It is also important that the entire sequence of operations, starting with design of schedules, be kept open for continuous review and revision whenever necessary.

C. Preparation of a Tabulation Plan

7.27 Although the work of data processing and tabulation will be done by the data processing unit, the survey statistician has to indicate what tables are to be prepared and how they are to be prepared from the survey data. More specifically, he has to indicate how each cell entry in the table is to be built up from the basic data available from the filled-in schedules.

1. Types of Data: Quantitative and Qualitative

7.28 The data collected in an income and expenditure survey (as in most surveys) are of two kinds: quantitative and qualitative. The data on income and expenditure, both in quantity and value, provide quantitative measures of certain variables associated with the units of observation and are, hence, characterized as quantitative. The data on marital status, educational attainment, activity status, employment

status, industry, occupation, social group, type of housing and place of residence on the other hand, describe qualitatively certain attributes associated with the units of observation and are hence characterized as qualitative. While totals, averages, ratios and other quantitative measures can be computed on the basis of quantitative data, only numerical counts of units (such as persons, households), or proportions thereof can be worked out for the qualitative data. Whereas quantitative analysis is based on the values taken by certain variables in respect of different individuals or groups of individuals, qualitative analysis is based on the classification of individuals or groups of individuals by their attributes. The distinction between quantitative and qualitative data is, however, not that rigid at higher levels of statistical analysis, as quantitative statistics can be generated from qualitative data and quantitative data can be used to provide qualitative attributes for the classification of individuals or groups of individuals.

2. Estimation

7.29 For obtaining estimates of aggregates, based on qualitative or quantitative variables, one has to use the multipliers computed for estimational purposes. The multiplier applicable to a household is also applicable to all its constituent units and members. We shall now illustrate the process of estimation of aggregates implicit in the formula given in Chapter V for a self-weighting design at the national level by two examples:

- (i) Qualitative variables: Suppose that we want to estimate the total number of persons of a certain marital status, say married. The estimate can simply be obtained as the total of the multipliers of all persons in the sample who have the marital status classification "married". To obtain the classification of estimated number of persons by marital status, the procedure is first, to sort out all persons in the sample by the marital status class, and second, to obtain separate totals of corresponding multipliers for persons belonging to each marital status class.
- (ii) Quantitative variables: Suppose that we want to estimate the aggregate expenditure on a particular item of consumption expenditure, say bread. Each sample household has a "value" reported under expenditure on bread (it may be zero in some cases). It also has its multiplier. The value should be multiplied by the multiplier for each household, and the products so obtained should be aggregated over all sample households to give us the required estimate.

7.30 From the above illustrations the following simple rules of estimation of aggregates will be clear:

- (i) The estimate of the total number of units in the population belonging to a group defined by a qualitative characteristic is simply equal to the total of the multipliers of the units in the sample which belong to that group.
- (ii) The estimate of the total 'value' of a quantitative variable is equal to the total over all sample units of the products, obtained by multiplying the value of the variable for each unit by its multiplier.

7.31 In most cases, the survey data are used for estimation of averages, ratios and proportions rather than aggregates. The estimation of an average value of a quantitative variable is equal to the estimate of the total value of the variable divided by the estimate of the total number of units in the population. Thus the estimate of average household expenditure is equal to the estimate of the total household expenditure divided by the estimate of the number of households in the population. The estimate of the ratio of two variables is equal to the ratio of the estimate of the total of the variable in the numerator to the estimate of the total of the variable in the denominator. For example, the estimate of the per capita expenditure on food is equal to the estimate of the total expenditure on food divided by the estimate of the total number of persons. The estimate of the proportion of expenditure on food to total consumption expenditure is equal to the estimate of total expenditure on food divided by the estimate of the total consumption expenditure. The estimate of sex-ratio, that is the ratio of the number of females to the number of males, is equal to the ratio of the estimate of the total number of females to the estimate of the total number of males. The estimate of the proportion of population economically active is equal to the ratio of the estimated number of persons economically active to the estimate of total number of persons.

7.32 The tabulation plan should specify the qualitative and quantitative variables to be tabulated, the types of estimates to be computed, the tables to be prepared, and the levels at which they are required. Tables may be required not only at national level but also at sub-national and sectoral levels and in respect of specific groups of population, social or socio-economic. In such cases, the totals of multipliers or multiplied values of variables are to be taken not over the entire sample but only over those units which belong to the region, sub-region, sector or group specified in the tabulation plan. Thus, if the tabulation plan requires the estimates of per capita expenditure for a socio-economic group, e.g. farm households, the estimate would be equal to the estimate of total expenditure of all farm households divided by the estimate of total population of that group.

3. Cross-classification

7.33 Two or more qualitative variables can be combined to form a joint qualitative variable. Thus age (by which, we mean age group, a qualitative variable) and sex can be combined to give a joint qualitative variable: age x sex, the sign x implying that for each individual, information on both age and sex is to be used for determining the individual's classification. This type of tabulation is called cross-classification. It is easy to see that the number of classificatory cells of a joint qualitative variable depends on the number of qualitative variables thus combined and the number of classes each variable has. If we have 5 classes of marital status, 5 of educational attainment, 10 of age-group, and two (male/female) of sex, the joint qualitative variable (age) x (sex) has 20 classificatory cells, (age) x (sex) x (marital status) has 100, and the combination (age) x (sex) x (marital status) x (educational attainment) has 500. It is advisable to keep these galloping numbers in mind in preparing the tabulation plan.

7.34 Cross-classifications can also be considered in terms of two or more quantitative variables such as income and expenditure or in combinations of qualitative and quantitative variables such as employment status and income.

4. Variables for Tabulation

7.35 The preparation of a tabulation plan involves decisions on (1) the variables to be tabulated i.e. those for which estimates are to be obtained and the extent of detail in which the data are to be tabulated, and (2) regions, sectors and groups for which the variables are to be tabulated. For a table on per capita expenditure on consumption, the variables to be tabulated are the consumption expenditure and the number of persons who are household members. The per capita expenditure is to be obtained as a ratio of consumption expenditure to number of persons who are household members. A related question to be decided in this case is the extent of detail in which consumption expenditure is to be tabulated -- itemwise, in sub-groups, groups or major groups, or overall. The next question to be decided is the level at which the data are to be tabulated -- national level, regional level or sub-regional level, urban or rural, or both. In addition, the table should also specify the social, socio-economic or other household groups for which the data are required. We should note, in this connection, that a qualitative variable can be used not only as an attribute for the classification of statistical units such as households or persons and estimation of the numbers involved but also as a classificatory characteristic of the statistical units for an analysis of other qualitative or quantitative variables.

5. Personal Characteristics

a. Age and Sex

7.36 Data on age and sex are useful for the analysis of demographic and activity characteristics of persons as also for the nutritional analysis of food consumption. For purposes of the latter, data on the household size and composition are to be converted into adult equivalents. The age grouping, based on biological considerations, recommended by FAO⁽²⁾ for this purpose involves 12 groups viz.,

Under 1, 1 to 3, 4 to 6, 7 to 9, 10 to 12, 13 to 15, 16 to 19, 20 to 39, 40 to 49, 50 to 59, 60 to 69, 70 and above (in completed years).

FAO has further recommended that children below 5 years of age be classified, where feasible, by single year age-groups. The Income Distribution Guidelines⁽³⁾ have, however, recommended the following age-groups, taking into account the uses to which the classification is generally put. The grouping, which is apparently based on general demographic practice, also includes twelve groups, viz.,

Below 15, 15 to 19, 20 to 24, 25 to 29, 30 to 34, 35 to 39, 40 to 44, 45 to 49, 50 to 54, 55 to 59, 60 to 64, 65 and above (in completed years).

There is thus considerable difference between the two systems of age-grouping and it is not possible to reconstruct one from the other without resorting to a more detailed classification. Considering, however, the special interests of FAO in the detailed classification of the younger age-groups which need to be converted into adult equivalents, it would appear sufficient to adopt the age-grouping recommended by the Income Distribution Guidelines for general analysis and sub-divide the age-group "below 15" further in accordance with the FAO recommendations for purposes of nutritional analysis whenever such an analysis is undertaken.

b. Marital Status

7.37 The classification used for the analysis of marital status should be identical with that used for the population census and should identify as separate categories (a) single i.e. never married, (b) married, (c) widowed and not remarried, (d) divorced and not remarried, and (e) married but separated. However, if for purposes of social analysis, further sub-classes of local interest are needed, they can be adopted within the framework of the census classification.

c. Educational Attainment

7.38 The Income Distribution Guidelines recommend that the classification of educational attainment should be based on the International Standard Classification of Education (ISCED) adopted by UNESCO⁽⁴⁾. It need not, however, be adopted in its full detail, and may be restricted to the first two digits as follows:

1. Below first level of education
 - 1.1 without any formal education
 - 1.2 with some education but not completed first level.
2. First level of education.
3. Second level of education
 - 3.1 lower stage of second level completed
 - 3.2 higher stage of second level completed.
4. Third level of education
 - 4.1 non-academic third level completed
 - 4.2 first university degree or equivalent
 - 4.3 post graduate university degree or equivalent.

d. Employment Status

7.39 The International Standard Classification of Status in Employment recommends classification of the employed as: employers, own-account workers, employees, members of producers' co-operatives and unpaid family workers. This classification may be used for classification by employment status. For certain purposes, however, employers, own-account workers, members of producers' co-operatives and unpaid family workers (irrespective of time worked) may be grouped together as self-employed as recommended by the 13th International Conference of Labour Statisticians (1982) and adopted by the ILO.⁽⁵⁾

e. Industry and Occupation

7.40 The Income Distribution Guidelines suggest that the classifications of industry (kind of economic activity) and occupation used for the analysis of income and expenditure should be able to distinguish the groups of the economically active whose primary incomes are significantly different from those of each other and accordingly recommend that the divisions (two-digit categories) of the International Standard Industrial Classification of All Economic Activities (ISIC),⁽⁶⁾ except in the case of major divisions 7 and 8 (one digit categories) which could be adopted as such, and the major groups (one digit categories) of the International Standard

Classification of Occupations (ISCO)⁽⁷⁾ be used for this purpose. However, if the sample size is inadequate to provide accurate estimates in that much of detail, the data may be tabulated by major divisions of industry and major groups of occupation as a minimal grouping. Some of the numerically more important major divisions of industry and major groups of occupations may, however, be sub-divided, wherever possible and considered desirable in the national context.

7.41 A Revised International Standard Industrial Classification of All Economic Activities (Revision 3)⁽⁸⁾ was recently adopted by the United Nations Statistical Commission at its 25th Session (February 1989). A Revised International Standard Classification of Occupations⁽⁹⁾ was also adopted by the Fourteenth International Conference of Labour Statisticians convened by the ILO (October-November, 1987). These revised classifications would replace the preceding classifications under reference. It should be noted, however, that the revised classifications are more detailed than their preceding counterparts. In particular, the ISIC (Rev. 3) includes 17 Tabulation Categories instead of ten major divisions as in the past. For most purposes, it would perhaps be sufficient to tabulate the data based on household income and expenditure surveys by the new tabulation categories of the revised industrial classification. Tabulations based on occupation should refer to the new major groups of the revised occupational classification, which number ten, instead of those of the old classification which also numbered ten.

f. Socio-economic Status

7.42 The Income Distribution Guidelines propose a classification of the income recipients by socio-economic status, based on the combined consideration of the classifications of employment status, industry and occupation and the characteristics of the household enterprise. The classification proposed (vide Annex VII) is, however, too detailed for adoption in a household income and expenditure survey with a sample of the size suggested in Chapter V and calls for some particulars of information not envisaged in Chapter VI. The Guidelines, however, suggest a simpler classification for purposes of the detailed tables and a still simpler classification for the summary tables. Developing countries are, in fact, advised to adopt the latter. The recommended groups are:

1. Agricultural
 - 1.1 Employers
 - 1.2 Own account workers
 - 1.3 Employees
2. Non-agricultural
 - 2.1 Employers
 - 2.2 Own account workers
 - 2.3 Civilian employees
 - 2.4 Armed forces
3. Economically inactive
 - 3.1 Living in households
 - 3.2 Living in institutions

The Income Distribution Guidelines rightly envisage adoption of the socio-economic classification at the household level rather than at the individual level. This classification may, therefore, be considered further in connection with the household variables.

6. Household Variables

a. Qualitative Variables

7.43 There are quite a few qualitative variables of interest which can be used for the classification of households e.g. ethnic group, social group, socio-economic group etc. The household income and expenditure survey is not primarily meant to produce such classifications which can, in fact, be better obtained from population censuses. These and other household variables such as household type, size and composition can, however, be more purposefully used for the tabulation of data on income, expenditure and other quantitative variables in respect of various household groups of social or socio-economic concern.

7.44 Substantive data on housing collected in the household income and expenditure survey stand on a different footing and provide a number of qualitative variables for analysis at the household level on their own merit. So also are data on the possession of household durables.

b. Quantitative Variables

7.45 Quantitative variables such as household income and expenditure, constitute the main focus of a household income and expenditure survey. Data on income and expenditure, can also be used for the classification of households and for the analysis of other substantive data such as on housing, household durables and indebtedness in respect of household

groups based on such variables. These variables can also be used for the classification of households by quartile, decile, quintile, percentile, or more generally, fractile groups, and for the study of incomes, expenditures and socio-economic conditions at different levels.

c. Classificatory Variables

7.46 Variables generally used for the classification of households as a basis for the analysis of income and expenditure data are essentially of two types. The first is based on the residence of the household such as region or sub-region, and sector (urban or rural). The classification usually applies to all households within the PSU (unless the PSU is so defined as to include both urban and rural households). Most surveys would require as a minimum, separate data for the urban and rural sectors, and very often for major regions. The second depends on the information about the household collected through the survey and classifies each household individually. Some of the variables may, however, be based on the characteristics of individual members of the household. In such cases, rules will have to be established for classifying the household in an unambiguous manner on the basis of the characteristics of its members.

7.47 The classificatory variables suggested by the SNA, the Income Distribution Guidelines (IDG), the ILO and FAO are listed below:

	SNA	IDG	ILO	FAO
1. Household size/composition		x	x	x
2. Number of earners		x		
3. Socio-economic group	x	x	x	
4. Occupation		x		
5. Industry/farm or non-farm		x	x	x
6. Means of livelihood				x
7. Agricultural land possessed				x
8. Social/ethnic group				x
9. Income group		x	x	x
10. Fractile group		x	x	

7.48 Of the ten variables suggested, industry and occupation are essentially individual characteristics of earning members and cannot strictly be applied to the household. So is socio-economic group. However, as suggested in the Income Distribution Guidelines, the classification can be applied to the household by adopting the socio-economic classification of the head of the household as the classification applicable to

the household. The concept of means of livelihood is not well defined. However, if it is taken to mean the main source of income, it can be applied to the household provided that the information is collected in a form that would facilitate determination of the main source of income for the household. The rest of the variables present no technical problems. However, information on land possessed may not be collected in all surveys and is not applicable to all households.

7.49 Thus, the household variables which can be considered for classificatory purposes are: household size and composition; number of earners (or economically active members), socio-economic group, social or ethnic group, and income group.

7.50 The number of classes to be adopted for each classificatory variable should be based on considerations of the sample size. If the classification is to be used not merely for the classification of households but also for the tabulation of other data in respect of each of these classes or groups, unless the number of sample households in each group is sufficiently large, it would not be possible to meaningfully interpret the relationship between variables thus estimated and the classificatory variable used. In fact, adoption of too many classes, some of them with too few sample households, may lead to erratic results which do not show any relationship. Therefore, unless the sample size is large enough, one should not attempt too much disaggregation. A normal working rule may be to restrict the number of classes for any variable to a maximum of ten and consider possible grouping of classes wherever the number exceeds ten.

d. Household Size and Composition

7.51 The following classification, suggested by the Income Distribution Guidelines takes into account both size and composition of a household:

- One member;
- Two members: - two adults, one adult and one minor;
- Three members: - three adults, two adults and one minor, one adult and two minors;
- Four members: - two adults and two minors, one adult and three minors, others;
- Five members: - two adults and three minors, three adults and two minors, four adults and one minor, others;
- Six or more members: - two adults and four or more minors, three adults and three or more minors, four adults and two or more minors, others.

There are thus 17 classes generated out of 6 classes of household size. There is, however, no rigidity about this classification, especially in regard to the composition, and countries can adopt any classification that may be considered suitable for their requirement.

7.52 It should be understood further that while the classification by size is of primary interest not only for the classification of households but also for the tabulation of other data for each size group, the classification by composition is of secondary concern and may not be so essential for the analysis of income and expenditure data, as the classification by size.

e. Number of Earners

7.53 The classification by number of earners recommended by the Income Distribution Guidelines is merely a numerical classification distinguishing households with 1, 2, 3, 4, 5 and 6 or more earning members. The concept of earners adopted in the Guidelines includes all persons who receive primary incomes and, hence, same as that of economically active persons, including unpaid family workers. It does not include other "income recipients such as pensioners and those living on social security benefits or remittances. It is, therefore, conceivable that a household may have no earner at all. The classification should, therefore, provide for a group with no earners and should be amended accordingly.

f. Socio-economic Group

7.54 The classification recommended by the Income Distribution Guidelines for grouping households on the basis of the socio-economic status of the head of the household for purposes of summary tables on household income and consumption expenditure includes nine groups as indicated in paragraph 2.42.

7.55 In considering this classification for adoption, it should be noted that households headed by employers are in most countries very few in number and may not be adequately represented in the sample. Employers and own-account workers may therefore be combined as self-employed. Further, armed forces are generally excluded from household surveys and so are persons living in institutions. If the classification is to be applied at the household level, economically inactive persons living in households are in most cases classified along with the head of the household and cease to be a separate group. However, there may be need for a separate group for the households dependent on economically inactive heads. The number of effective groups would thus be only five, viz. agricultural self employed, agricultural employees, non-agricultural self-employed, non-agricultural employees and the

economically inactive. However, it may be useful to sub-divide the group of non-agricultural employees into two sub-groups to distinguish the manual and non-manual categories on the lines indicated in the basic classification of socio-economic status recommended by the Income Distribution Guidelines (vide Annex VIII) as the income and expenditure levels of those two sub-groups are generally wide apart. In fact, it would be desirable to adopt a similar sub-grouping even for the non-agricultural self-employed. The classification would thus include seven groups in all.

g. Social Group

7.56 Classification by social or ethnic group as recommended by FAO is important, not only for analysis of food consumption but also for other socio-economic analysis. Social groups may include not only ethnic groups but also other groups such as religious groups, caste groups, linguistic groups or racial groups, whichever may be relevant in a given situation. In many developing countries, this classification may in fact be more relevant to policy decisions than most of the other classificatory variables. Provision should, therefore, be made in the schedule for recording information on the social group and the information used not only for the classification of households but also for the tabulation of other data. In the determination of the classification to be adopted, attention should be given to the identification of the more vulnerable social groups which may be the 'target' groups for welfare-oriented policies and programmes. No international guidance can, however, be provided in this regard as the classification is meant basically to meet national needs.

h. Income or Expenditure

7.57 Classification by household income as recommended by the Income Distribution Guidelines, ILO and FAO, should be based on total household income, as defined by the Income Distribution Guidelines. Classification by available income may also be used for certain purposes such as the study of consumption and savings. However, in developing countries the difference between the total income and available income is likely to be marginal in the case of most of the households represented in the sample. For major purposes, therefore, it may be adequate to use the total income as a classificatory variable. It should be clarified further that, in the context of the proposed survey methodology, classification of households should be based on usual income rather than current income.

7.58 A word needs to be said about the system to be adopted for income groups or classes. The ILO publication on Household Income and Expenditure Statistics (No. 3, 1968-76) shows that in some cases the classes adopted were such that the open-ended classes at the bottom and the top accounted for large proportions of households, together exceeding 50% in a few cases.

Such a classification is clearly unsuitable for use in studies of income distribution. It is also observed that two out of every three households generally have income below the average household income. In determining the income classes due consideration should be given to these observations, and adequate provision made for the proper classification of households below the average, as well as those at the bottom and the top. As a working rule, it is suggested that, of the number of income classes envisaged to cover the whole income range, at least half should be devoted to incomes below the average and the open-ended classes at the bottom and the top should be such that they do not include more than 10 per cent of the households each.

7.59 Where data on income are not obtained or considered satisfactory, the classification may be based on total expenditure rather than total income. Although for certain purposes, classification by consumption expenditure may be of greater interest, considering the fact that in most cases non-consumption expenditures are only of a marginal nature, it is suggested that for general purposes, households be classified on the basis of total expenditure. It should be clarified again that in the context of the proposed survey methodology, classification of households should be based on usual expenditure rather than current expenditure.

7.60 Households may also be classified, if so desired, by per capita income and/or per capita expenditure. Such a classification would in fact be a better indicator of differences in levels of living as it eliminates differences in household size, but is no substitute for a classification by household income and/or expenditure, which indicates, in general, the socio-economic status of the household. Per capita income and/or expenditure may, therefore, be adopted as classificatory variables for economic analysis, though not necessarily for general purpose tabulations.

i. Fractile Groups

7.61 Income or expenditure groups defined in monetary terms are no doubt, of great importance for economic analysis, but they are of momentary significance because the value of the money is subject to change, sometimes rapid. In such situations, a more meaningful and useful method of classification is in relative terms. The median income or expenditure, for instance, classifies the households into two equal halves, the upper half and the lower half. Other possibilities include classification into quartiles, deciles, quintiles or percentiles. A generalized system of classification of the above type is known as fractile grouping.

7.62 The method involves the following steps:

1. Arrange the households in the ascending order of income (or expenditure).
2. Find the cumulative total of the household multipliers, step-by-step, starting with the lowest income household. There will be as many cumulative figures as there are sample households, the last cumulative will be the estimated number of households (say N).
3. Divide the estimated number N by the number of fractile groups proposed. If, for instance, it is 10, that is we want to obtain a decile grouping, we calculate $N/10$.
4. Starting from the bottom, scan through the cumulatives, till we reach a household the cumulative corresponding to which exceeds $N/10$. All households below that level form the first decile.
5. Proceed further till we reach the household the cumulative corresponding to which exceeds $2N/10$. All households below that level and above the level included in the first decile constitute the second decile.
6. Continue the process using successively the numbers $3N/10$, $4N/10$, $5N/10$ $9N/10$ to identify the lower 9 deciles. The rest of the households constitute the tenth decile.

The procedure can also be followed in the descending order instead of the ascending order.

7.63 For each fractile group thus demarcated, the average of the variable used for classification as well as the terminal values of the variable should be indicated to facilitate identification of the group in terms of the variable used for its demarcation. All the data collected in the survey including demographic and activity particulars, incomes and expenditures, housing and household durables, can be tabulated separately for each group to facilitate study of the differences in the conditions and patterns of living at different levels.

7.64 It is, however, to be noted that the fractile group of a household, unlike the group determined by the value of the variable, cannot be determined and coded in advance. It can only be determined when the data for all sample households are available and processed. The processing work involved in

fractile grouping is quite heavy and complex. If the survey data are to be processed by sub-samples, the fractile grouping has to be worked out separately for each sub-sample, as well as independently, for the whole sample.

D. Suggested Tabulation Plan

7.65 We shall now consider the types of tables that can be prepared from the data collected in a household income and expenditure survey. They are only suggestive and meant to meet the major data requirements. They do not, by any means, exhaust all the potential uses of the survey data and may be taken as an outline for preliminary tabulations. Depending on the needs of the country, and the results of the preliminary tabulations, further tabulations which may be of interest can be undertaken if so desired. Also, if some of the tabulations are not needed or considered inessential, they may be dropped. If some of the suggested data such as indebtedness are not collected, the related tabulations would of course be irrelevant.

1. Household Population

7.66 The personal characteristics of household population such as age, sex, marital status, literacy, educational attainment and activity status, are among the more important data to be tabulated as background information for data on household incomes and expenditures. In addition, data on the employment status, industry and occupation of the employed population and income from paid employment for those who had such employment during the reference period are also of direct interest. Data on demographic and activity particulars of persons collected in the survey are very simple and can be tabulated in the form of distributions taking two or three variables at a time for cross-classification. The limitations of sample size would inevitably restrict the depth of demographic and activity analysis. The focus of analysis should, therefore, be mainly on the demographic and activity particulars relevant to the study of incomes and expenditures.

7.67 In outlining the proposed tables, we shall adopt an abridged form of description using the notation indicated earlier for the simultaneous use of two or more classificatory variables. Thus, a distribution of persons by age, sex and marital status will be described briefly as "persons by (age) x (sex) x (marital status)". Bivariate distributions can be presented with one of the variables in a vertical column and the other in a horizontal row. If there are three variables, one of the variables has necessarily to be superimposed on one of the other two, and if there are four, two of the variables will have to be superimposed on two others. It is desirable to avoid taking more than four variables at a time as it would be difficult to present and meaningfully understand such tables. It would, in fact, be preferable to restrict the number of classificatory variables to a maximum of three at a time.

7.68 In the illustrative table mentioned above, the first classificatory variable, age, may be depicted vertically, and the second, sex, horizontally. The third variable, marital status may be superimposed on the second, which has fewer classes than the first. In effect, the table thus consists of three sub-tables, each showing the distribution of persons by age and marital status, one for males, one for females and the third for both sexes taken together. With 12 classes for age, 2 for sex and 5 for marital status, and the addition of one more cell for each variable to show the total, we have in all $(12 + 1) \times (2 + 1) \times (5 + 1) = 234$ cells.

7.69 Taking into account the data collected on age, sex, marital status, literacy, educational attainment, and activity, a minimal list of six tabulations is suggested as follows:

- A1. Persons by (age) \times (sex) \times (marital status)
- A2. Persons by (age) \times (sex) \times (literacy)
- A3. Persons by (age) \times (sex) \times (educational attainment)
- A4. Persons by (age) \times (sex) \times (activity)
- A5. Persons employed by (sex) \times (industry) \times (employment status)
- A6. Persons employed by (sex) \times (occupation) \times (employment status)

Tabulation A1 provides a broad picture of household composition, while A2 and A3 indicate the levels of literacy and educational attainment. Tabulations A4, A5 and A6 deal with the activity pattern. If the activity codes distinguish students as a sub-class of the economically inactive, one would also know how many of each age-sex group are students.

7.70 All the above tabulations should be prepared, as a minimum, for each social group, socio-economic group and household income group. The tables that emerge accordingly are:

- A.1.1 Persons by (age) \times (sex) \times (marital status), for social groups
- A.1.2 Persons by (age) \times (sex) \times (marital status), for socio-economic groups
- A.1.3 Persons by (age) \times (sex) \times (marital status), for household income groups

- A.2.1 Persons by (age) \times (sex) \times (literacy), for social groups
- A.2.2 Persons by (age) \times (sex) \times (literacy), for socio-economic groups
- A.2.3 Persons by (age) \times (sex) \times (literacy), for household income groups

- A.3.1 Persons by (age) x (sex) x (educational attainment), for social groups
- A.3.2 Persons by (age) x (sex) x (educational attainment), for socio-economic groups
- A.3.3 Persons by (age) x (sex) x (educational attainment), for household income groups

- A.4.1 Persons by (age) x (sex) x (activity), for social groups
- A.4.2 Persons by (age) x (sex) x (activity), for socio-economic groups
- A.4.3 Persons by (age) x (sex) x (activity), for household income groups

- A.5.1 Persons employed by (sex) x (industry) x (employment status), for social groups
- A.5.2 Persons employed by (sex) x (industry) x (employment status), for socio-economic groups
- A.5.3 Persons employed by (sex) x (industry) x (employment status), for household income groups

- A.6.1 Persons employed by (sex) x (occupation) x (employment status), for social groups
- A.6.2 Persons employed by (sex) x (occupation) x (employment status), for socio-economic groups
- A.6.3 Persons employed by (sex) x (occupation) x (employment status), for household income groups.

2. Household Characteristics

7.71 As suggested earlier, households should be classified by (1) household size and composition; (2) number of earners, (3) social group, (4) socio-economic group, and (5) household income and/or (6) household expenditure. In addition, they can also be classified by (7) per capita income and/or (8) per capita expenditure. There are thus in all 8 variables by which households can be classified. If bivariate classifications are envisaged, there can be 28 such possibilities. Some of them may not be meaningful, and some of them unnecessary. We have, therefore, to be selective in preparing a tabulation plan based on household characteristics.

7.72 The classification of each household by one or more household characteristics also implies a similar classification of the members of that household. Corresponding to each distribution of households, therefore, there is a related distribution of persons. Tables envisaging distribution of

households by various characteristics should, therefore, usefully carry with them as a by-product the corresponding distribution of persons who are members of those households. In view of the resulting complexity of these tabulations, it would be desirable not to take up more than two variables at a time for the cross-classification of households.

7.73 As the main purpose of a household income and expenditure survey is to study incomes and expenditures any tabulation envisaged at the household level should include either income or expenditure as one of the variables and use the qualitative variables as explanatory variable. Thus, bivariate distributions involving two or more qualitative variables can be ruled out. Since incomes and expenditures are highly correlated, not much can be gained by preparing bivariate distributions with income as one variable and expenditure as the other. No such tabulation is therefore suggested, although if considered desirable, it may be included. Distributions involving household income or expenditure as one variable and per capita income or expenditure as the other are also not suggested. By elimination, the tabulation plan based on household characteristics can be reduced to a set of tables with one of the four quantitative variables (viz. household income, household expenditure, per capita income, per capita expenditure) and one of the qualitative variables in a bivariate classification. That would give sixteen tables in all. If so desired, the tables may also provide in each case the corresponding distribution of the household population.

7.74 The tables thus emerging would be as follows:

- B1.1 Households by (household size and composition) x (household income)
- B1.2 Households by (household size and composition) x (household expenditure)
- B1.3 Households by (household size and composition) x (per capita income)
- B1.4 Households by (household size and composition) x (per capita expenditure)

- B2.1 Households by (number of earners) x (household income)
- B2.2 Households by (number of earners) x (household expenditure)
- B2.3 Households by (number of earners) x (per capita income)
- B2.4 Households by (number of earners) x (per capita expenditure)

- B3.1 Households by (social group) × (household income)
- B3.2 Households by (social group) × (household expenditure)
- B3.3 Households by (social group) × (per capita income)
- B3.4 Households by (social group) × (per capita expenditure)

- B4.1 Households by (socio-economic group) × (household income)
- B4.2 Households by (socio-economic group) × (per capita income)
- B4.3 Households by (socio-economic group) × (per capita income)
- B4.4 Households by (socio-economic group) × (per capita expenditure)

7.75 As suggested in paragraph 7.72 above, it would be useful to include in all the above tables the corresponding numbers of persons as the size of the household may itself vary in association with other socio-economic variables. It is, in fact, highly desirable to include the corresponding numbers of persons in tables involving per capita income or per capita expenditure as a classificatory variable.

7.76 These tables are simple to prepare and would not need much of processing time. They provide much of the essential information and are easy to interpret. They also provide interesting insights into the interrelationships of the household level variables and help to determine the choice of variables to be used as classificatory characteristics for the analysis of data on income and expenditure. If two variables show strong association (positive or negative), both of them need not be used as classificatory variables for the analysis of other data. If, on the other hand, they are not so associated with each other, there is a case for using both as classificatory variables. As the number of classificatory characteristics has to be restricted so as to keep the work of tabulation within limits imposed by available resources, this study of association will be very important. In fact, without an adequate knowledge of these associations, it would be difficult to attempt a meaningful interpretation of the tabulations based on these variables.

3. Income and other Receipts

7.77 The next set of tables deal with estimates of household income from various sources and other household receipts. According to the suggestions made in Chapter VI, data on income may be collected in considerable detail - separately for each employee in the case of paid employment and by type of activity in the case of self-employment. Data may also be collected on current incomes as well as usual incomes, with different reference periods. For purposes of tabulation and analysis, it is important to consider the form and content of the output that is expected.

7.78 First and foremost, we would like to know the average household income and its components for households of various social, socio-economic and other significant groups. For purposes of these tables, estimates of usual income would be more appropriate than those of current income. Estimates of current income would also be required for macro-level estimation of the corresponding aggregates. These estimates may usefully be prepared by household income groups based on usual income so that the relationship between usual and current incomes could be studied. A more detailed analysis of primary incomes from paid employment and self-employment would also be of interest. And for balancing current receipts and disbursements, one would like to have some estimates of receipts other than income.

7.79 For the estimation of average income for each group, one has necessarily to estimate the aggregate income for that group. Divided by the corresponding estimate of the number of households, it would provide an estimate of the average household income for that group. If the corresponding household population is also estimated, an estimate of per capita income for the group can then be derived. In outlining this part of the tabulation plan, the proposed tables will be described in terms of the final output expected rather than in terms of the intermediate aggregates required for the estimation of the expected output.

7.80 All the four qualitative variables suggested for classification of households are of relevance and importance for the analysis of data on household incomes. Among the quantitative variables, household income (especially usual income) would be more useful as a basis for classification, than household expenditure which depends on household income. For some of the tables, however, households may be classified by per capita income rather than by household income. The following 16 tables are suggested:

- C1.1 Average household income (usual) by source, for households grouped by household size.
- C1.2 Average household income (usual) by source, for households grouped by number of earners.
- C1.3 Average household income (usual) by source, for social groups
- C1.4 Average household income (usual) by source, for socio-economic groups

- C2.1 Average household income (usual) by source, for household income groups
- C2.2 Average household income (usual) by source, for household income groups (fractile)
- C2.3 Average household income (current) by source, for household income groups
- C2.4 Average household income (current) by source, for household income groups (fractile)

- C3.1 Per capita household income (usual) by source, for per capita income groups
- C3.2 Per capita household income (usual) by source, for per capita income groups (fractile)
- C3.3 Per capita household income (current) by source, for per capita income groups
- C3.4 Per capita household income (current) by source, for per capita income groups (fractile)

- C4.1 Average income from paid employment per employee by (industry) x (occupation)
- C4.2 Average value of inputs, outputs and income from self-employment in agricultural and non-agricultural activities per household engaged in self-employment by number of persons engaged in such activities

- C5.1 Average household receipts (usual) other than income, by source, for household income groups
- C5.2 Average household receipts (current) other than income, by source, for household income groups.

7.81 Tables of the C1 and C2 series provide breakdown of the average household income by source. The sources of income, for this purpose, may be classified and presented as follows:

1. Income from paid employment
2. Income from self-employment
3. Income from property
4. Current transfers and benefits
5. Total income

The data are to be compiled for each household group, classified by size in C1.1, by number of earners in C1.2, etc. Though not specifically mentioned in the description of the tables, the data for all groups combined should also be presented in each table. While most of the tables meant for

socio-economic analysis deal with usual income, two of the C2 series provide data on current income for comparative and estimational purposes. The grouping of households by income is, however, to be based on usual income in all cases and so is the fractile grouping based on income.

7.82 Tables of the C3 series provide a similar breakdown of the per capita income. The breakdown of the per capita income must be similar to the breakdown of household income, for common groups as well as overall. However, the grouping adopted for tables of the C3 series being different from the grouping adopted for the C2 series, the data emerging from these tables would be different. Tables of the C4 series provide some information of special interest in regard to income from paid employment and self-employment, relating, in particular, the incomes earned to the members engaged in such employment. Tables of the C5 series deal with receipts other than income.

4. Expenditure and other Disbursements

7.83 Tabulations of data on expenditure and other disbursements will be more or less similar to those on income and other receipts. While incomes are classified by source, expenditures are classified by item groups. However, as the number of items of expenditure is very large, one has to decide on the extent of detail required for each tabulation. The grouping of households for purposes of analysis would be similar to that adopted for income tabulations. In addition, tabulations may also be made by expenditure groups.

7.84 If the expenditure data are to be used for the construction of consumer price indices one has to decide in advance the purpose of the index, the population group or groups to be covered, and the income limits envisaged, if any. It is not proposed to enter into a discussion on these aspects here. It is, however, to be noted that tabulations meant to provide weighting patterns for consumer price indices should envisage item-wise tabulation of expenditures for each of the population groups for which a separate index is envisaged. In addition, item-wise tabulations of expenditures may be considered for the various income and expenditure groups to facilitate demand analysis. In most of the other tables, it would perhaps be sufficient to produce data on expenditures by item groups and sub-groups. In tables meant essentially for socio-economic analysis, tabulations by major and minor groups should suffice.

7.85 The following tables are accordingly suggested:

- D1.1 Average household expenditure (usual), by item groups, for households grouped by household size
- D1.2 Average household expenditure (usual) by item groups, for households grouped by number of earners.
- D1.3 Average household expenditure (usual), by item groups, for social groups.
- D1.4 Average household expenditure (usual), by item groups, for socio-economic groups.

- D2.1 Average household expenditure (usual), by item, for household income groups.
- D2.2 Average household expenditure (usual), by item, for household income groups (fractile).
- D2.3 Average household expenditure (current), by item, for household income groups.
- D2.4 Average household expenditure (current), by item, for household income groups (fractile).

- D3.1 Average household expenditure (usual), by item, for household expenditure groups.
- D3.2 Average household expenditure (usual), by item, for household expenditure groups (fractile).
- D3.3 Average household expenditure (current), by item, for household expenditure groups.
- D3.4 Average household expenditure (current), by item, for household expenditure groups (fractile).

- D4.1 Per capita household expenditure (usual), by item groups and sub-groups, for per capita income groups.
- D4.2 Per capita household expenditure (usual), by item groups and sub-groups, for per capita income groups (fractile).
- D4.3 Per capita household expenditure (current), by item groups and sub-groups, for per capita income groups.
- D4.4 Per capita household expenditure (current), by item groups and sub-groups, for per capita income groups (fractile).

- D5.1 Per capita household expenditure (usual), by item groups and sub-groups, for per capita expenditure groups.
- D5.2 Per capita household expenditure (usual), by item groups and sub-groups, for per capita expenditure groups (fractile).
- D5.3 Per capita household expenditure (current), by item groups and sub-groups, for per capita expenditure groups.
- D5.4 Per capita household expenditure (current), by item groups and sub-groups.

- D6.1 Average household disbursements (usual) other than expenditure, by item, for household income groups.
- D6.2 Average household disbursements (usual) other than expenditure, by item, for household expenditure groups.
- D6.3 Average household disbursements (current) other than expenditure, by item, for household income groups.
- D6.4 Average household disbursements (current) other than expenditure, by item, for household expenditure groups.

- D7 Average household expenditure (usual), by item, for groups of households specified for construction of consumer price indices.

7.86 It should be noted that "household expenditure", for purposes of the above tables, includes consumption as well as non-consumption expenditure. The latter may, for this purpose, be added to the eight major groups of consumption expenditure proposed in Chapter VI, and presented as the ninth. The minor groups and sub-groups would remain as proposed in Chapter VI.

7.87 As in the case of income tabulations, household income groups and the corresponding fractile groups should be based on usual income. Household expenditure groups and the corresponding fractile groups, should likewise be based on usual expenditure. Also, in the case of income tabulations, most of the tables meant for socio-economic analysis deal with usual expenditure. Some of the tables of the D2 and D3 series, however, provide data on current expenditures for comparative and estimational purposes. Tables of the D4 and D5 series provide data on per capita expenditures comparable to the data on per capita incomes. As in the case of income, these tables provide a different facet more appropriate for the study of levels of living. Tables of the D6 series present some data on disbursements other than expenditure, by income and expenditure groups.

7.88 Table D7 is meant specifically to meet the needs of consumer price indices, and may include a number of sub-tables, each covering aspecified household group.

5. Indebtedness

7.89 Data on indebtedness are meant to supplement the data on incomes, other receipts, expenditures and other disbursements in an assessment of the household economy. They should, therefore, be analyzed in the same manner as data on income and expenditure. In particular, they should be tabulated in respect of the same household groups as in the case of income and expenditure, that is by household size, number of earners, social groups, socio-economic groups, household income groups, household expenditure groups, per capita income groups and per capita expenditure groups.

7.90 The main focus in the study of indebtedness is on the percentage of households indebted, the amount in debt, the amount repaid last year and the conditions governing the loans. Accordingly, the following tables are suggested:

- E1.1 Percentage of households indebted, average amount in debt and average amount repaid last year, for households grouped by household size.
- E1.2 Percentage of households indebted, average amount in debt and average amount repaid last year, for households grouped by number of earners.
- E1.3 Percentage of households indebted, average amount in debt and average amount repaid last year, for social groups.
- E1.4 Percentage of households indebted, average amount in debt and average amount repaid last year, for socio-economic groups.
- E1.5 Percentage of households indebted, average amount in debt and average amount repaid last year, for household income groups.
- E1.6 Percentage of households indebted, average amount in debt and average amount repaid last year, for household expenditure groups.
- E1.7 Percentage of households indebted, average amount in debt and average amount repaid last year, for per capita income groups.
- E1.8 Percentage of households indebted, average amount in debt and average amount repaid last year, for per capita expenditure groups.

- E2.1 Number of loans outstanding, by (source) × (purpose) for social groups
- E2.2 Number of loans outstanding, by (source) × (purpose) for socio-economic groups.
- E2.3 Number of loans outstanding, by (source) × (purpose) for household income groups

- E3.1 Number of loans outstanding, by (type of interest) × (rate of interest) × (period elapsed), for social groups.
- E3.2 Number of loans outstanding, by (type of interest) × (rate of interest) × (period elapsed), for socio-economic groups.
- E3.3 Number of loans outstanding, by (type of interest) × (rate of interest) × (period elapsed), for household income groups.

- E4.1 Number of loans outstanding, by (type of loan) × (type of security) × (type of mortgage), for social groups.
- E4.2 Number of loans outstanding, by (type of loan) × (type of security) × (type of mortgage), for socio-economic groups.
- E4.3 Number of loans outstanding, by (type of loan) × (type of security) × (type of mortgage), for household income groups.

The E2, E3 and E4 series of tables may, if so desired, be expanded to include, besides the suggested distributions of loans, the corresponding distributions of the amounts outstanding. It should be noted, however, that the E3 and E4 series depend on certain items of information suggested for optional collection.

6. Food Consumption

7.91 Quantitative information on food consumption is one of the useful by-products of a household income and expenditure survey. To the extent data are available, they should be tabulated by social and socio-economic groups in the form and detail needed for nutritional analysis at the aggregate level.

7.92 Ideally, nutritional analysis is to be undertaken at the household level - with specific attention to each individual. It should take into account the age-sex distribution of the household members, their physical measurements, details of food consumed at home as well as outside home, the quality and quantities of foods consumed, the methods of cooking adopted and food losses, if any. Individual intakes are to be measured accurately with the aid of appropriate tools. The nutritional content of the foods consumed is to be determined and compared with the nutritional requirements in order to assess the adequacy of the food consumed. Individuals are to be classified as adequately nourished, under-nourished, over-nourished or mal-nourished. Data based on such micro-level analysis are to be summed up for macro-level assessments of nutritional adequacy. A nutritional study of that detail is neither feasible nor expected from a household income and expenditure survey. If it is, special arrangements will have to be made for the nutritional study and the requisite data provided at the household level for further analysis.

7.93 For a rough indication of the nutritional levels at the macro-level and for a study of inter-class or inter-group differences in nutritional status, tabulations based on the quantitative data of consumption together with the corresponding tabulations on household size by age and sex would be helpful. Accordingly, the following tabulations are suggested:

- F1.1 Average size of household by age and sex, for household income groups.
- F1.2 Average size of household by age and sex, for household expenditure groups.
- F1.3 Average size of household by age and sex, for social groups.
- F1.4 Average size of household by age and sex, for socio-economic groups.

- F2.1 Average household consumption (current) of food and beverages (in quantities) for household income groups.
- F2.2 Average household consumption (current) of food and beverages (in quantities) for household expenditure groups.
- F2.3 Average household consumption (current) of food and beverages (in quantities) for social groups.
- F2.4 Average household consumption (current) of food and beverages (in quantities) for socio-economic groups.

7.94 In the F1 series of the above tabulations, the average household size is to be broken down by age and sex and the resultant figures should be presented at least in two post-decimal digits. The age-group "below 15" should be broken down for this purpose in accordance with the age-grouping suggested by FAO (vide paragraph 7.36). The age-groups 20 and above may, however, be combined into three broader-groups e.g. 20 to 39, 40 to 59 and 60 and above, as a five-year or ten-year grouping is not really needed for this purpose. The data on consumption can be tabulated at the sub-group level whenever meaningful quantitative data can be presented at that level. In sub-groups for which no such meaningful quantities can be presented, the data may be tabulated separately for each of the more important items. If, however, the sub-group is not considered important enough to be tabulated item-wise, considering its negligible food value, it may be ignored. The tables suggested above do not cover all the tabulations suggested by FAO for food consumption and nutritional analysis but provide the more essential data as a minimal programme.

7. Housing

7.95 Tabulation of data on housing is to be organized in the same manner as that of data on other qualitative variables at the household level, using the housing characteristics as the variables. Thus, for each social, socio-economic or other significant household group, the estimated number of households is to be classified according to the housing characteristics of the household. In Chapter VI, a number of housing variables were considered for data collection. These include three variables concerning the characteristics of the building, eight variables concerning the housing unit and five variables concerning the accommodation enjoyed by the household. In addition, a series of questions concerning the rental values of owner-occupied housing and housing enjoyed free of cost or at

concessional rents were also proposed. The latter do not have to be tabulated as they are meant to be used at the household level for the determination of rental values. The values so determined, however, should be used as "rent" which is one of the housing variables mentioned above.

7.96 Of the classificatory variables proposed earlier for the classification of households and formation of household groups, household income, social group and socio-economic group, are the most useful for housing tabulations. In addition, household size may be used in relation to data on number of rooms for an assessment of adequacy. As most of the variables have very few classes, it should be possible to take up two variables at a time, either for cross-classification or for combined presentation in each table.

7.97 Accordingly, a set of 30 tables is proposed as follows:

- G1.1 Households by (type of building) x (age of building) x (social group).
- G1.2 Households by (type of building) x (age of building) x (socio-economic groups).
- G1.3 Households by (type of building) x (age of building) x (household income group).

- G2.1 Households by (material used for walls) x (material used for roof) x (social group).
- G2.2 Households by (material used for walls) x (material used for roof) x (socio-economic group).
- G2.3 Households by (material used for walls) x (material used for roof) x (household income group).

- G3.1 Households by (ownership) x (tenure) x (social group).
- G3.2 Households by (ownership) x (tenure) x (socio-economic group).
- G3.3 Households by (ownership) x (tenure) x (household income group).

- G4.1 Households by (type of housing unit) x (no. of rooms occupied by household) x (social group).
- G4.2 Households by (type of housing unit) x (no. of rooms occupied by household) x (socio-economic group).
- G4.3 Households by (type of housing unit) x (no. of rooms occupied by household) x (household income group).

- G5.1 Households by (no. of rooms occupied) x (household size) x (social group).
- G5.2 Households by (no. of rooms occupied) x (household size) x (socio-economic group).
- G5.3 Households by (no. of rooms occupied) x (household size) x (household income group).

- G6.1 Households by (cooking facilities) × (lighting type) × (social group).
- G6.2 Households by (cooking facilities) × (lighting type) × (socio-economic group).
- G6.3 Households by (cooking facilities) × (lighting type) × (household income group).

- G7.1 Households by (bathing facilities) × (toilet facilities) × (social group).
- G7.2 Households by (bathing facilities) × (toilet facilities) × (socio-economic group).
- G7.3 Households by (bathing facilities) × (toilet facilities) × (household income group).

- G8.1 Households by (water supply) × (sewerage system) × (social group).
- G8.2 Households by (water supply) × (sewerage system) × (socio-economic group).
- G8.3 Households by (water supply) × (sewerage system) × (household income group).

- G9.1 Households by (no. of rooms occupied) × (rental value) × (social group).
- G9.2 Households by (no. of rooms occupied) × (rental value) × (socio-economic group).
- G9.3 Households by (no. of rooms occupied) × (rental value) × (household income group).

- G10.1 Percentage of households sharing specified facilities (cooking, toilet, bathing, water supply) by (social group).
- G10.2 Percentage of households sharing specified facilities (cooking, toilet, bathing, water supply) by (socio-economic group).
- G10.3 Percentage of households sharing specified facilities (cooking, toilet, bathing, water supply) by (household income group).

7.98 Most of the above tables use two housing variables and one classificatory variable used for grouping households, and are similar in form to the B series. Tables of the G10 series are, however, different in form and present merely a set of four percentage indicators for each of the household groups.

7.99 Housing is one of the important components of the indicators of levels of living (see Chapter II). The survey data can be used for the construction of the indicators and for the study of their variation according to different household characteristics.

8. Household Possessions

7.100 The information on household possessions is simple and easy to tabulate. For each item, the information to be tabulated is merely the percentage of households possessing the item, which is obtained by dividing the estimated number of households possessing the item by the estimated total number of households. The percentages can be estimated for different social, socio-economic and other significant groups of households as in the income and expenditure tabulations. To the extent possession of an item is indicative of a higher level of living, the tabulations provide an idea of the level of living of the different household groups. It may be possible to study the relationship between possession of goods with income, and use that relationship to grade different groups of households, on a scale indicative of the level of living. The following tables are suggested as a minimal set:

- H1 Percentage of households reporting possession of selected items for household income groups.
- H2 Percentage of households reporting possession of selected items for household expenditure groups.
- H3 Percentage of households reporting possession of selected items for social groups.
- H4 Percentage of households reporting possession of selected items for socio-economic groups.

9. Regional Tabulations

7.101 The above proposals add up to an overall total of 136 tables, made up as follows, and include six tables of series E based on items of information suggested for optional data collection:

A.	Household population	18 tables
B.	Household characteristics	16 tables
C.	Household income and other receipts	16 tables
D.	Household expenditure and other disbursements	27 tables
E.	Indebtedness	17 tables
F.	Food consumption	8 tables
G.	Housing	30 tables
H.	Household possessions	4 tables

Depending on the content of the schedule actually adopted the tabulation plan may have to be modified to include additional

tabulations or delete some of the tabulations suggested. Section-wise, A to D may be regarded as the core for a household income and expenditure survey, and E to H considered optional dependent on topic coverage. Within each section, the tabulations may be expanded or curtailed as may be desired depending on the extent of analytical detail needed. If selected tabulations are required for female-headed households, as distinct from male-headed households, they can be accomplished by classifying the households accordingly.

7.102 The tabulation plan shows the tables proposed at the national level. If similar tabulations are required at the regional level, or for selected cities, one has to consider the desirability and feasibility of producing the proposed tabulations in all that detail at the regional and city levels.

7.103 The desirability of producing the tables at the regional and city levels depends on the need for such data at those levels and the use to which they are to be put. It is conceivable, for instance, that consumer price indices may have to be constructed at the regional or city levels. In that case, the data required for the construction of weighting patterns will have to be tabulated at those levels. Data meant for analytical research, however, may or may not be needed at those levels. For instance, data needed for demand analysis may be required at the regional level though not at the city level. On the other hand, data meant for the study of inter-relationships may not be needed even at the regional level.

7.104 The feasibility of producing the data at those levels depends partly on the cost of processing, compiling and presenting the data at those levels and partly on the sampling errors expected at those levels. Even though the cost of processing at regional and city levels may not be very much higher, the cost of compilation and presentation of the tabulation would increase directly with the number of regions and cities for which the tabulations are to be published. One would, therefore, like to minimize the number of tables to be produced at those levels, consistent with the needs.

7.105 The sampling errors depend not only on the sample size envisaged at each level but also on the extent of detail expected in the tables. Given the sample size adopted as an unalterable constraint, the only scope for manoeuvre lies with the extent of details expected in the tabulations. Therefore, to the extent possible, the number of classes adopted for each variable should be considerably reduced for regional tabulations. Another possibility is to give up bivariate distributions in favour of univariate distributions even if it means loss of some useful information. Thus, even if all the tabulations are to be made at the regional level, the extent of detail required at that level could and should be minimized in consultation with potential users of the data.

10. Quick Tabulations

7.106 To end the present chapter, we shall discuss the common problem of delays in the processing of survey data, viewing the survey project not merely as a statistical operation, but as a source of much-needed information. The purpose of the discussion is to identify the difficulties and find a possible solution. The suggestion presented here may not be universally acceptable, but the proposition that some such line of action is necessary should find favour with the survey statisticians in general.

7.107 One of the advantages of sample surveys is that they can give quick results as compared with other alternatives. Unfortunately, however, the experience of many countries has been that the results of sample surveys take an inordinately long time to appear. It is not uncommon to find a lapse of three to five years, after the completion of the field-work, before the survey results are released. To a certain extent the delay is attributable to the inefficiency of the processing equipment available to the survey organization. With the introduction of modern computers for data processing, it is to be expected that these delays will be considerably reduced, although the introduction of a fast data processing system may encourage demands for more comprehensive tabulations. Some tentative ideas on what can possibly be done to provide quick results soon after the completion of the survey, are presented in the following.

7.108 Generally, a tabulation plan based on the demands of data users aims at catering to the data needs of all users and tends to include all possible cross-classifications of the data collected. It is further multiplied enormously by the demand for similar tables for different regions, sectors and groups of population. Each tabulation may thus generate scores of tables depending on the extent of disaggregation of different types desired.

7.109 Some of the data requirements are conveyed even at the stage of survey planning and get reflected in the survey schedule which ultimately turns out to be long, minutely detailed and time-consuming, the only constraint being the resources available to the survey organization.

7.110 The massive data thus collected are to be edited and coded, before they enter the first stage of data processing. At that stage, the data are transferred to magnetic tapes, discs or diskettes. Validation checks are then applied to the data, an error list emerges, and the data are required to be corrected. All these operations take time, and the larger the volume of data collected, the more time-consuming and cumbersome this work becomes. A large staff has to be enga-

ged to attend to the rectification of errors thrown up by the computer and the process of tabulation cannot be taken up until all these errors are corrected.

7.111 The computer can, no doubt, produce the tables fast. But in the process, a huge volume of paper containing a large number of tables, as specified in the tabulation plan, is generated. Even to go through all the tables to ensure consistency, validity and reliability of the tabulated data calls for massive human effort and enormous time, and then only can the tables be considered as "fit" for publication. The time taken for printing tables also depends on their volume. Not all statistical organizations have the necessary resources to print all the tables thus produced. A long time is, therefore, taken in printing the results. By the time the results are printed and published, they are considered out of date, and there are new demands for the organization of another survey.

7.112 If this unsatisfactory state of affairs is to be remedied, certain compromises are called for; a reorientation of the survey objectives and priorities has to be brought about. The primary emphasis should be on producing the results within a specified time, and everything else has to fall in place in accordance with that objective. A way must be found to ensure processing and tabulation of the data as soon as they are collected, so that at least the summary results of the survey are available to the survey organization as well as to the main users. The following steps may help achieve this objective.

7.113 A brief summary schedule could be appended to the main survey schedule. It should include, in particular, the classificatory variables proposed for household level tabulations and summary information on the main variables investigated, namely household income, household expenditure, and the main components thereof. It would not exceed some 40 or 50 entries for each household and could even be tabulated manually if so decided. The summary should preferably be prepared in the field by the supervisor on the basis of the main schedule after the necessary scrutiny.

7.114 The summary schedules should be sent by the fastest means available to the data processing centre regularly in batches, soon after the completion of each sub-round of field-work and taken up immediately for further processing. A summary tabulation plan should be drawn up in advance for the production of preliminary results and the summary schedules tabulated according to that plan either manually or by computer expeditiously so that the preliminary results are available soon after the completion of the survey.

7.115 In drawing up the summary tabulation plan, one should aim at a simple tabulation of the summary data at the national level, for major domains of study such as urban and rural areas. Frequency distributions should preferably be based on one variable at a time and at the most two in exceptional cases. Tabulations involving quantitative estimates of aggregates or averages should also be simple, without too much of detail. Tabulations involving quantitative estimates for population groups should be confined to household groups formed by not more than one variable for each table. These tables would, by themselves, provide a considerable amount of useful information and meet the more pressing demands for data. If this procedure is followed, within a month or two after the field work is completed, preliminary results of the survey can be made available to the government to the other potential users, and to the public at large.

7.116 This plan has some definite advantages. Firstly, the usefulness of the survey would have been established in so far as it has been possible to produce results quickly for the use of the policy-makers. Secondly, the preliminary results will have given a useful preview of the nature of results to be expected from the final tabulations. Thirdly, if after looking at the preliminary results, the users indicate interest in further tabulations, they can also be readily executed on the basis of the data in the summary schedule, and included in the detailed tabulation plan prepared for the main schedule. Fourthly, the supervisors who are to prepare the summary schedule, will have, in the process, checked the main schedule thoroughly and corrected it wherever necessary. The preparation of the summary schedule will thus have a healthy effect on the main schedule. Fifthly, to the extent the summary schedule reflects errors in data collection, reports on such errors can be fed back to the field together with instructions for the avoidance of such errors. And finally, confidence will be created in the survey organization that it is possible to avoid delays in the release of survey results, and thus its image will be improved.

7.117 In making this suggestion, it has been ensured that it is attainable in practice. In the Indian National Sample Survey, some of the States, which survey parallel samples and undertake parallel tabulations independently, have adopted the scheme suggested above and have been able to present preliminary results within a month or two, after the completion of the survey, even without the use of electronic data processing equipment. Some States have, in fact, been presenting such results for the last several years, and with the recent introduction of computers, it is expected that the scheme will be firmly established as a part of the survey operation.

7.118 It is to be expected that the results obtained by detailed processing of the main schedule could be somewhat different from those based on the summary schedule. The following table which shows the results of the quick tabulation scheme suggested above and those obtained by detailed processing of the main schedules, as an illustration, covers 5630 rural households and 5500 urban households surveyed in 1983 (January to December) in the State of Maharashtra (India).⁽¹⁰⁾ The results of quick tabulation were ready by mid-February and published in March 1984. The results of the more detailed tabulations were available in May 1986. The differences between the two sets of results are in most cases found to be practically negligible, but the difference in time taken to produce the two results is considerable. Even when the quick results are released, they should only be considered as provisional and meant to meet the urgent needs.

7.119 This brings us to the question of what the user needs and what the statistician thinks he needs. Very often, what the user needs is information and not necessarily accurate statistics as the survey statistician understands. For policy decisions, governments do need survey data, but do not always require very accurate data in terms of sampling precision. A broad indication of the patterns and trends would often meet the requirements. The way household surveys are generally organized and oriented, this viewpoint is not always appreciated, and, even if it is, not always taken into account. While it is certainly important to collect, process and present statistics in the most efficient and accurate manner, using the most scientific methods, it may still be possible to produce quick results, equally valid, but possibly less accurate, to meet the user requirements. What happens generally is that in an attempt to ensure accuracy, no attention is given to the need for timely production of the results, while the user, who may not be equally interested in accuracy, has to wait inordinately to get what he wants. The disadvantages arising from the errors and inaccuracies involved in summary tabulations may, in fact, be considerably outbalanced by the advantages of the release of quick results which the scheme would achieve.

7.120 With the availability of micro-processors, it appears now possible to move a step further and arrange for the data entry also in the field itself, almost concurrently with the field operations. It would greatly help reduce the time-lag between data collection and data processing. Such an arrangement seems to have worked well in the World Bank's Living Standards Surveys which use micro-processor technology for decentralized data entry. The scheme suggested above, however, does not necessarily depend upon the induction of sophisticated hardware into the survey system.

Table

Per capita monthly expenditure on
different items of consumption

(National Sample Survey, 38th Round, 1983, Maharashtra, India)

Item group	RURAL		URBAN		STATE	
	Quick tabu- lation Rs.	Final tabu- lation Rs.	Quick tabu- lation Rs.	Final tabu- lation Rs.	Quick tabu- lation Rs.	Final tabu- lation Rs.
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Cereals	29.04	28.89	29.36	29.41	29.14	29.06
Pulses	5.73	5.72	7.80	7.79	6.40	6.39
Milk and milk products	6.36	6.33	18.14	18.18	10.17	10.17
Other food items	30.52	30.56	65.75	65.60	41.97	41.91
Total food	71.65	71.50	121.05	120.98	87.68	87.53
Clothing	9.54	10.69	12.35	14.98	10.45	12.08
Fuel and light	9.27	9.25	13.41	13.43	10.62	10.61
Other non-food items	24.86	24.82	62.79	61.03	37.16	36.55
Total non-food	43.67	44.76	88.55	89.44	58.23	59.24
Total	115.32	116.26	209.60	210.42	145.91	146.77

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ANNEXES

ANNEX I

Recommendations of the Twelfth International Conference of
Labour Statisticians (1973) on Methods of Family
Living Studies

OBJECTIVES, FREQUENCY AND SCOPE

1. Statistics drawn from household income and expenditure surveys usually serve one or more of the following objectives, although the difficulties inherent in collecting data make it unlikely that more than a few of these purposes could be served by a single survey:

- (a) to obtain weights and other useful data for planning price collection or the construction or revision of consumer price indices, indices of comparative costliness, etc.;
- (b) to supply basic data needed for policy making in connection with social and economic planning and to facilitate determination of needs or the establishment of targets;
- (c) to provide data for assessing the impact on household living conditions of existing or proposed economic or social measures, particularly changes in the structure of household expenditures and in household consumption;
- (d) to provide data for estimating the redistributive effects of direct and indirect taxation and of a wide range of social benefits, on the situations of the various types of family;
- (e) to analyze the variations in levels of living over a period of years and the disparities among households in the different socio-economic groups, geographic areas, rural and urban zones, etc.;
- (f) to supplement the data available for use in compiling official estimates of household accounts in the systems of national accounts and balances;
- (g) to furnish data on the distribution of household income and expenditure;
- (h) to provide information on particular aspects of living conditions of the population, such as those relating to food consumption, housing and health.

2. Data derived from household income and expenditure surveys may also be used in connection with the determination of minimum wage levels, assessment of the need for revision of minimum wages and other questions relating to wage determination.

3. As a survey may serve more than one of the purposes listed in paragraph 1, it is desirable to ensure that the survey is designed and executed taking into account also the particular requirements, as regards types of data, of secondary users of the survey results.

4. National programmes may consist of continuing surveys with or without infrequent large-scale surveys. As a minimum, a major sample survey of household income and expenditure, so far as possible representing all private households in the country, should be undertaken in each country at intervals not exceeding ten years. Under conditions such as rapid industrial expansion and migration from rural to urban areas, which bring significant changes in the economy and in real income, the surveys should be taken at intervals much shorter than ten years. In general, the developing countries tend to experience a more acute need for up-to-date data of the type provided by household income and expenditure surveys and an interval of not more than five years between surveys would be more appropriate in such countries.

5. (i) If a continuing survey is undertaken covering the full range of investigation of a major survey, but with a smaller annual sample, the average of the results of several successive years of such a continuing smaller-scale survey may provide a satisfactory substitute for a large-scale survey, in respect of data needed for certain applications.

(ii) Smaller-scale surveys should be undertaken in each country during the interval between two large-scale surveys to provide data for use in estimating changes in important aggregates derived from infrequent large-scale surveys.

6. (i) In principle, data should be obtained from households or from other sources on the components of, as well as on the aggregates of, household income and expenditure and on the composition of the household, including in particular the following:

- (a) aggregate household income (before deduction of social insurance contributions and taxes) and such details of income as it may be feasible and practical to collect, including information on income of individual members of the household;
- (b) direct taxation, fees and other charges not regarded as consumption expenditure and similar transfer payments;

- (c) contributions by households to social security schemes and related premiums for insurance contracts providing benefits such as sickness and maternity benefits, old age, invalidity and survivors' pensions, loss of employment and employment disability compensation, and assimilated benefits;
- (d) details of other household expenditures and consumption;
- (e) information on the membership of the household;
- (f) employment particulars relating to the head of the household (or the chief income earner, if not the head) and other members of the household.

(ii) The following information should also be collected from households, so far as possible:

- (a) particulars of the dwelling inhabited by the household;
- (b) inventory of selected household durable goods and other property;
- (c) outlays for investments, net changes over the reference period in savings and in household or personal liabilities;
- (d) other data relating to aspects of the situation of the family and its mode of living of particular interest for analyses of data obtained in surveys of household income and expenditure.

7. Household expenditure data provide valuable information for analysis of the food consumption and the dietary and nutrition situation of households but, in order to throw more light on these matters, a special diet and nutrition inquiry may be carried out concurrently with the household expenditure survey, perhaps using a sub-sample of the survey sample or an independent but closely correlated sample.

ORGANIZATION OF SURVEYS

8. To carry out household income and expenditure surveys and various other sample surveys, it is desirable that each country establish a sample survey unit. Such a unit would make provision for expert services in designing and selecting samples, training of interviewers, organization of survey field work, editing and processing of data. Practical possibilities for fruitful co-operation in this respect between countries, on a regional basis or otherwise, should be encouraged and technical assistance should be provided by international bodies, including the International Labour Office, to aid the developing countries.

9. At the planning stage of the survey as well as during the field work it is advisable to secure the collaboration of interested groups such as employers' , workers' and consumer organizations, and also to widely publicize at the appropriate time the objectives of the survey with a view to ensuring public co-operation, a high response rate and general acceptance of the results.

10. Since within the context of a general survey it may not be possible to provide results with sufficient precision for such groups as pensioners, low wage earners, those living in economically depressed areas, small-scale farmers, agricultural wage earners, non-agricultural wage earners living in rural areas and other particular groups for whom detailed data may be needed for certain purposes, special household income and expenditure surveys referring to such groups may be required from time to time. In particular, more detailed data may be collected for specified groups than for other groups included in a general survey sample, provided that special measures are taken to identify the households to be treated in this way and that the sampling errors relating to the data for these groups fall within tolerable limits.

BASIC CONCEPTS AND DEFINITIONS

11. Depending on the particular objectives of the survey, including the kinds of data to be featured in the final results, a choice may be made among several types of survey. However, the basic concepts recommended in the following paragraphs should be applied in all types of household income and expenditure survey.

Unit of data collection

12. The statistical units for collection of data on the income and expenditure of private households or families are defined as follows:

Household: the concept of household for income and expenditure surveys should be the same as the one adopted in the World Programme of 1970 Censuses of Population. A household may be either:

- (a) a one-person household, i.e. a person who makes provision for his own food and other essentials of living without combining with any other person, or
- (b) multi-person household, i.e. a group of two or more persons who make some common provision for food or other essentials of living. The persons in the group may pool their incomes and have a common budget to a greater or lesser extent; they may be related or unrelated persons

or a combination of both. The general criterion to be use in identifying the members of a multi-person household relates to the existence of common housekeeping arrangements.

Family: a family is defined for purposes of income and expenditure surveys as a type of household consisting of two or more persons related by blood, marriage or adoption who also satisfy the conditions of sharing the same housing unit and making common provisions for food and other essentials of living.

13. Sampling frames identifying the statistical units mentioned above are not always available and recourse must be made to frames such as housing lists, lists of addresses and so forth. Within the sample units selected from such frames, households or families as defined above should be identified for purposes of household income and expenditure surveys.

Income

14. (i) For household income and expenditure survey purposes, household income is the sum of money income and income in kind and consists of receipts which, as a rule, are of a recurring nature and accrue to the household or to individual members of the household regularly at annual or at more frequent intervals.

(ii) Household income is derived from the following main sources: employees' salaries, wages and other related receipts from employers, net income from self-employment, business profits, income from personal investments (rent, interest, dividends), royalties and commissions. For purposes of household surveys it is convenient to include as income the periodic payments received regularly from an inheritance or trust fund, alimony, pensions, annuities, scholarships, remittances and other cash assistance regularly received and various other periodic receipts together with social security and assimilated benefits in cash and in kind.

(iii) Household income in kind includes wage payments in kind, goods and services transferred free of charge by an enterprise (including farm) to an employee or to the household of the owner or part owner of the enterprise; it includes also the value of home produce consumed within the same household (e.g. agricultural products, livestock produce). Where an employee buys from his employer, for his household consumption, goods or services at concessionary prices and thus obtains a significant advantage, the value of these concessions may also be taken into account as income in kind. The estimated net rental value of owner-occupied housing is in principle also to be treated as income in kind and, similarly the estimated gross rental value to the occupier or rent-free housing, whether obtained as wages in kind or otherwise.

(iv) So far as possible, in order to provide supplementary income information on other receipts and financial flows in the household sector for use in making estimates for the national accounts and for other special purposes, the following items should be recorded in household income and expenditure surveys but should not be regarded as within the concept of household income even though the proceeds may sometimes be spent on consumption; receipts from sale of possessions, withdrawals from savings, lottery prizes, loans obtained, loan repayments (principal) received, windfall gains, lump-sum inheritances, maturity payments (other than annuities) received on life insurance policies, lump-sum compensation for injury and legal damages received. The general features distinguishing these particular receipts and other items excluded from income are the following: they are as a rule non-recurring (i.e., not occurring year after year) and are not regarded as income by the recipient household.

Consumption expenditure

15. (i) For household income and expenditure survey purposes, household consumption expenditure refers to all money expenditure by the household and individual members on goods intended for consumption and expenditure on services, plus the value of goods and services received as income in kind and consumed by the household or individual members of the household. Thus the value of items produced by the household and utilized in its own consumption, the net rental value of owner-occupied housing and the gross rental value of free housing occupied by the household represent part of household consumption expenditure.

(ii) Included in household consumption expenditure are payments, including sales taxes, made by the household for goods and services supplied and payments in connection with the use (consumption) of goods and services. Thus, payment by households for education, health and legal services are included. For certain purposes fees for driving permit, motor car registration and a number of similar charges should also be included in household consumption expenditure.

(iii) Household consumption expenditure excludes direct taxes, super-annuation and other social security contributions, savings bank deposits, contributions to savings clubs or building societies, life insurance premiums, cash transfers to and disbursements on behalf of persons outside the household, and repayment of loans. Also excluded are disbursements in the nature of investments, gambling losses, cash grants and donations (except small contributions of a recurrent nature to churches and charitable institutions).

Household expenditure

16. Household expenditure includes consumption expenditure and non-consumption expenditure. The non-consumption expenditure of the household includes income tax and other direct taxes, pension and social security contributions and assimilated insurance premiums, remittances, gifts and similar transfers by the household as a whole and its individual members. Excluded are additions to savings, amounts invested or loaned, repayments of loans and outlays for other financial transactions. However, wherever it is both feasible and convenient to do so, information on those items also may be collected from households for use in making estimates for national accounts or for other special purposes.

BASIC METHODOLOGY

17. (i) For income and expenditure surveys, the size of the sample of households should be sufficient to ensure adequate representation of households of different sizes and compositions, income classes and socio-economic groups, as well as urban and rural areas and different climatic zones within the country. However, as noted in paragraph 10 above, supplementary surveys may be required to provide data adequate for separate analysis of these groups.

(ii) The design of the sample and the selection of sample households should be made in accordance with appropriate sampling techniques in order to obtain results as precise as possible with the resources available, taking into account the circumstances such as availability of suitable sampling frames. So far as possible, the sampling method employed should permit calculation of sampling error. Thorough research should be carried out to find and clearly identify the most suitable sampling frame to determine the optimum stratification and other salient features of the sample to be used, as well as the best procedures for selection of the sample units.

18. In planning household income and expenditure surveys, provision should be made for preliminary or pilot studies through which proposed methods and questionnaires can be tested, interviewers trained and where necessary information useful for the design of an efficient sample can be gathered. So far as possible, provision should be made in the final survey plan for systematic checks and controls designed to detect, at an early stage, errors or deficiencies in the collection of data and in the responses obtained from households, with a view to necessary remedial action.

19. (i) For the collection of details of household income and expenditure, the relative advantages of using the interview method, or the account book method, or a combination of the two, in the particular circumstances of the inquiry should be

carefully investigated. Different methods of collection may be used for different components of the household account to obtain results of optimum quality.

(ii) Surveys normally should represent a full year of household accounts to take into account seasonal variation in income and expenditure.

20. (i) The choice of appropriate reference periods for collection of data on various components of the income and the expenditure of households needs to be based on careful experimentation in the practical application of the concepts and definitions and investigation of respondents' ability to provide the information. Where the interview method is used, analysis of data derived in past household expenditure surveys will frequently assist in determining the optimum recall period for different types of items in the household account, as well as appropriate reference periods for reporting of the data, which have a great bearing on the quality and reliability of the data collected.

(ii) Where apparent biases due to unsatisfactory recall or reference periods are discovered in the survey results (e.g. through comparisons with other data on total consumption of particular commodities) an attempt should be made to assess the extent of the biases among particular population strata by making further investigations such as a post-enumeration survey, or by thorough analysis of individual expenditure patterns among selected groups of households.

(iii) Similarly, apparent biases in reporting of expenditure, e.g. overstatement of consumption of luxury items or understatement of consumption of alcoholic drinks, tobacco, etc. should be thoroughly investigated with a view to assessment of their importance.

(iv) Other biases and non-sampling errors, often more important than the above, especially understatement of income, may arise in particular circumstances in certain countries. When these are detected, remedial action should be taken along the lines indicated above in subparagraph (ii) or information should be provided on their nature and importance. Particular efforts should be made to correct the understatement of income by households.

21. Every effort should be made to limit to the minimum the rate of non-response and in this connection the length of the reference period chosen for the survey can be of great importance.

22. The measurement of consumption expenditure should be made on the basis of the total quantity and value of goods and services consumed by, or purchased by, or delivered to, the household. The choice of the basis on which household consumption is to be measured usually depends on whether the items of consumption are mostly purchases for cash or are derived to a large extent from home production and receipts in kind. In general, it is more appropriate in developing countries to measure the goods and services actually consumed by households during the reference period, especially in rural areas.

23. In countries where consumption articles are mostly purchased, the measurement of household consumption expenditure should be made on the basis of the total quantity and value of the various consumption goods and services delivered to or obtained by the household during the specific period. In practice, data may often be satisfactorily collected on the value of goods and services paid for, irrespective of when delivery takes place. In using the latter basis, the quantities of goods and services paid for should also be recorded, wherever possible. Data on quantities consumed are particularly valuable for analysis of food consumption. Where there is little variation in stocks, the amounts purchased correspond with the quantities consumed.

24. (i) The quantity and the value of household consumption in the form of home produce consumed (e.g. agricultural and livestock products) and other receipts in kind should be estimated and recorded. The value according to appropriate prices (usually local retail market prices) should be entered as income and as expenditure to ensure that total food and other consumption, and the corresponding expenditures, are recorded on a comparable basis for different households.

(ii) Where retail prices are used, valuation on the alternative basis of producers' prices may also be useful for other purposes such as national accounts statistics.

(iii) If the rental value of owner-occupied housing (net) or rent-free housing (gross) is imputed, it should be estimated and entered as income in the household account. The same amount should be added to household expenditure. The amounts of housing charges paid by the owner-occupier, such as rates or community taxes on house owners, water and sewerage charges, repairs and maintenance of the dwelling, are treated as expenditure; the net rental value would not include these amounts. If the rent-free occupier of housing pays such housing charges himself, the rental value should be imputed on a net basis.

(iv) Other income in kind should be treated as recommended in sub-paragraphs (i) and (ii) above.

25. Important supplementary details concerning characteristics of households, their economic situation and living conditions should be collected on at least a sub-sample of questionnaires, wherever it is practical and desirable to do so, provided that safeguards have been taken to ensure that the quality of the basic data obtained on household income and expenditure would not be seriously affected.

CLASSIFICATIONS

26. Data on household income collected in household surveys should be classified in such a way and in such detail that it is possible to identify wages and salaries, incomes of members of producers' co-operatives, entrepreneurial income, property income and transfer income.

27. Data on household expenditure should be subdivided into consumption and non-consumption expenditures and in each case the data should be further classified in some detail. In particular, household expenditure should be reported in sufficient detail to permit their classification, so far as possible, according to the Classification of Household Goods and Services contained in the United Nations System of National Accounts (SNA, revised 1968) and to permit their classification in other ways to meet different purposes. Details should be shown for expenditures on food, drink and tobacco, clothing and footwear, rent and fuel, furniture, household equipment and operation, medical care and health, transport and communication, recreation, education and other consumption expenditure.

TABULATION OF RESULTS

28. (i) As a rule, data obtained through household income and expenditure surveys should be tabulated in considerable detail. The following tabulations are examples:

- (a) household members by sex and age group, for each type of household;
- (b) households by size (number of members) and types of household (various 'family nucleus' types and other households);
- (c) households by main sources of income and household income group;
- (d) expenditures of households on each item (or sub-group of items) of expenditure, by ranges of household income; separate data should also be given for urban and rural households respectively and, if possible, for farm households;

(f) income and expenditure of households of employees and of other socio-economic groups.

(ii) It is also desirable, particularly in connection with the investigation of many aspects of levels of living of the population, to make special tabulation of household income and expenditure according to fractile groups of households. Tabulations by fractile groups are also valuable for international comparisons over time.

29. For every group of households distinguished in tabulations of income or expenditure, the main characteristics of the households comprising the group should be indicated, giving such details as average size of household, average income per household, and the average per household of: adult males, adult females, children, persons working, persons retired and other persons unoccupied. The average number of income receivers and average number of rooms used by the household should also be indicated if possible.

30. (i) Data derived from the survey concerning food expenditure should be analyzed in relation to household composition and level of living of the household (as measured by total household income or consumption expenditure) and also in relation to other significant social and economic characteristics of the household, such as type of occupation or socio-economic group of the head of household.

(ii) An analysis of quantities of foods consumed, along the same lines as indicated in the preceding subparagraph, should be undertaken wherever the data available permit.

(iii) Consumption analysis should be carried out in respect of household expenditures for certain goods (other than food) and services which have particular significance for the study of levels of living of households, such as housing, education, health, household durables and automobiles.

PRESENTATION OF RESULTS

31. Household income and expenditure survey results should be published in as much detail as is practical and compatible with keeping confidential the data furnished by individual households. Users of the data would thus be able to rearrange the data to suit their own purposes, subject to the limitations imposed by sampling variability and other factors affecting the reliability of detailed items of data.

32. (i) In addition to presenting averages covering all households in the sample, the frequency distributions should be shown for important items of data.

(ii) Wherever the simple mean is published in respect of major items or sub-groups of items concerning income, expenditure or consumption which are subject to important reservations, it is desirable that the median should also be computed and published, or that some indication be given whenever the mean is subject to a large coefficient of variation.

33. (i) To assist in interpretation of the survey results, when these are published a description should also be given of the methods employed, including the sampling design and sampling methods. An indication of the variances of the sample data should be given for important items.

(ii) In the report on the household survey, information should also be given on the population universe covered by the survey, the response rate for various strata of the population, the theoretical or original sample and the effective response.

(iii) Other factors which have influenced the reliability of the survey data should also be mentioned, together with the result of any analysis made concerning the significance of non-sampling errors.

34. Full information should be given on the definitions applied and on the classifications used. If consumption scales are used, full details of their construction should be given. The methods of evaluation of incomes in kind and the corresponding expenditure should be described.

35. Since the quantity and value of various public and other social services (for instance, public education services, free medical services and the like) received free of charge by individual households cannot be readily evaluated, these items cannot be included in the individual household account. The report on the result of the survey should provide information (or references to sources of data) concerning such services, including, wherever possible, the total cost and number of beneficiaries and the estimated extent of consumption of the different services by the various strata of the population. Such data are essential to permit international and interregional comparisons of total private consumption of goods and services.

36. Services received free from other households, individuals outside the household or voluntary service organizations are also an important contribution to the level of living of some households. These services are of a voluntary nature and as a rule cannot be valued and included in the household consumption expenditure account. If possible, the report on the survey should draw attention to these services, whenever appropriate.

ANNEX II

Recommendations of the Fourteenth International Conference of
Labour Statisticians (1987) on Consumer Price Indices

Terminology

1. For the purposes of this resolution, the following terms are defined:

- (a) "Outlet" indicates a shop, market, service establishment, or other place, where goods and/or services are sold or provided to consumers for non-business use.
- (b) "Consumption" indicates all goods and services (or "items") that are used, acquired or purchased not for business purposes and not for the accumulation of wealth.
- (c) "Region" indicates any geographically defined area and/or type of area within a country.
- (d) "Scope of the index" indicates the population groups, regions, items and outlets for which the index is established.
- (e) "Reference population" indicates the population that falls within the scope of the index.
- (f) "Elementary aggregate" indicates the most detailed level for which expenditure or quantity weights are held constant for a certain period of time.
- (g) Consumption expenditure can be measured in terms of "Acquisition", "Use" or "Payment":
 - (i) "Acquisition" indicates that the total value of all goods and services delivered during a given period, irrespective of whether they were wholly paid for or not during the period, should be taken into account;
 - (ii) "Use" indicates that the total value of all goods and services actually consumed during a given period should be taken into account; and
 - (iii) "Payment" indicates that the total payments made for goods and services during a given period, without regard to whether they were delivered or not, should be taken into account.

The nature of a consumer price index

2. The purpose of a consumer price index is to measure changes over time in the general level of prices of goods and services that a reference population use, acquire or purchase for consumption. A consumer price index is estimated as a

series of summary measures of the period-to-period, proportional change in the prices of a fixed set of consumer goods and services of constant quantity and characteristics paid for, acquired or used by the reference population. Each summary measure is constructed as a weighted average of a large number of elementary aggregate indices. Each of the elementary aggregate indices is estimated using a sample of prices for a defined set of goods and services obtained in, or by residents of, a specific region from a given set of outlets or other sources of consumption goods and services.

The uses of a consumer price index

3. The uses of a consumer price index and their relative importance vary from country to country. They include:

- (a) general economic and social analysis and policy determination;
- (b) negotiation or indexation, or both, by government (notably of taxes, social security benefits, civil service remuneration and pensions, licence fees, fines and public debt interest or principal) and in private contracts (e.g. wages, salaries, insurance premiums and service charges) and in judicial decisions (e.g. alimony payments);
- (c) establishing "real" charges, or the relationship between money and the goods or services for which it can be exchanged (e.g. for the deflation of current value aggregates in the national accounts and of retail sales); and
- (d) price movement comparisons done for business purposes, including inflation accounting.

Sub-indices rather than the all-items index may be suitable for some of the above uses.

Scope of the index

4. The reference population should normally be defined very widely, specifying those income groups and household or family types that are excluded.

5. The regional scope should normally be defined as widely as possible, noting any exclusions. It should also be specified whether any regional limitation or breakdown of consumption expenditure and of price collection relates to sales in a region or to purchases by residents of a region.

6. Separate indices may be computed for different population groups or for different regions.

7. The extent to which expenditure abroad is included should be clearly indicated.

8. Ideally, the consumer price index should relate to all goods and services (including imports) used, paid for or acquired by the reference population for non-business purposes, without any omission of tobacco or other things which may be regarded as non-essential or undesirable. The range of goods and services included may, but need not, coincide with consumption expenditure as defined in a national accounts framework. Income taxes, savings, life insurance and pension fund contributions and financial investments (as distinct from financial services) should not be included in the consumer price index.

9. If second-hand purchases are represented in the index, then the weights for second-hand goods should be calculated net of the corresponding sales including trade-ins.

10. In some cases, such as insurance, health care, second-hand goods, etc., it may not be possible to use the same methodology as the general index. Groups of goods or services which fall within the scope of the index but which cannot be dealt with according to the general methodology, either because this methodology cannot be applied correctly for these items or because the necessary information is insufficient or lacking, may be included in or excluded from the calculations:

(a) in the case of their inclusion, special methods will need to be used;

(b) in the case of their exclusion:

- the group may be explicitly represented by another group to which the weights of the excluded items are allocated;
- the group may be purely and simply excluded from the index (price collection and weights) which assumes that its price movement is represented by the movement of the overall index.

In all the above cases, users should be informed as to the method followed.

11. The goods and services or household expenditures should follow a classification which is dependent upon the objectives of the index, previous practices, the methods of data collection, as well as upon the nature and quality of data available for the computation of weights. Nevertheless, it is desirable that this classification permit aggregation according to the eight major groups of the United Nations System of National Accounts (SNA): "Food, beverages and tobacco",

"Clothing and footwear", "Gross rent, fuel and power", "Furniture, furnishings and household equipment and operation", "Medical care and health expenses", "Transport and communication", "Recreation, entertainment, education and cultural services" and "Miscellaneous goods and services". If need be, a ninth group might be created, covering items which are not included in the household final consumption expenditure of the SNA.

Acquisition, Use or Payment

12. Having decided the scope of the index in terms of the reference population and the goods and services to be included, it should be explicitly considered whether the objectives of the index are best satisfied by adopting the concepts of Acquisition, Use or Payment. These issues should be examined, taking into account the theoretical index concept, acceptability to users, availability of data and resource requirements. These issues particularly arise in dealing with own-account consumption, owner-occupied housing, consumer credit, durable goods, remuneration in kind and goods and services which are provided without charge or are subsidized by government.

13. The concepts of acquisition or payment may be chosen if the index is defined in terms of money flows. Adherence to the conventions of national accounting may be desired if the deflation of consumer expenditure as defined in the national accounts is one of the major uses to which the index is put. When the design of the index is founded upon the consistent application of consumer demand theory, the concept of use may be appropriate. This concept implies estimating the rental value of owner-occupied housing if the data permit such estimates to be made reliably. Alternatively, it would imply the explicit inclusion of all owner-occupied housing costs.

Defining elementary aggregates

14. In defining elementary aggregates (in terms of kinds of goods or services, types of outlets and regions), the following principles should be observed:

- (a) related goods or services which are thought to display similar price movements should be grouped together in an elementary aggregate;
- (b) goods or services whose prices might reasonably be expected to move markedly differently should not be grouped together in the same elementary aggregate;
- (c) elementary aggregates should be distinguished whenever weights (including regional or outlet weights) are available or can be estimated;

- (d) such regional or outlet weights should be used in calculating the index even when separate regional or outlet-type sub-indices are not required;
- (e) elementary aggregates should be described so that any good or service can be unambiguously assigned to the appropriate elementary aggregate.

15. In the calculation of elementary aggregate indices, consideration should be given to the possible use of geometric means.

Weights

16. Weights are the relative expenditure or consumption shares of the elementary aggregates estimated from available data.

17. In deriving the weights of the elementary aggregates, a household expenditure survey is usually the main source of data. As far as resources permit, such surveys should be representative of household size, income level, regional location, socio-economic group and any other factors which may have a bearing on household expenditure patterns. The period of the survey should be a normal one (or temporary abnormalities should be adjusted in determining the weighting pattern) and should preferably cover a whole year if seasonal variations in expenditure patterns are important. When inflation during the period has been rapid and/or differed significantly between expenditure groups, either expenditure for the different sub-periods should be valued at the prices of a common time sub-period or the expenditure proportions of the different sub-periods should be averaged over the period, in the absence of any superior method.

18. Surveys of sales in retail outlets and household surveys on point-of-purchase can provide valuable information concerning the breakdown of consumption by outlet-type and by region. In the absence of such surveys, it is sometimes preferable for statisticians to use their personal knowledge of the markets and their nature rather than to apply equal weights to the different outlets or types of outlets and/or to different regions.

19. In countries which have reliable information concerning components of the household final consumption expenditure of the national accounts, such information can sometimes be used to derive an initial aggregate weighting pattern. In centrally planned economies, in particular, retail sales data may be a major source of weights. More detailed data from household expenditure surveys can be used to break down the aggregates or to adjust the figures to relate more closely to the reference population.

20. In countries where data from household expenditure surveys are not available and where the data on the components of the household final consumption expenditure of the national accounts are inadequate, data from various surveys such as of production, export and import and retail trade, and from administrative sources may have to be used to obtain an estimated consumption pattern.

21. Before any of the survey results are used to provide weights for the index, it is necessary to examine them carefully, e.g. in the light of the sampling and non-sampling errors, in order to judge whether the survey has provided reliable and representative information. Adjustments should be made, if necessary, using other available statistics.

22. Analysis of the data to show the expenditure patterns for different regions and categories of the population is useful, both to assist in revealing those categories for which the computation of separate consumer price indices may be warranted and for establishing the elementary aggregates and their weights.

23. The weights should be examined periodically particularly if economic circumstances have changed significantly, to ascertain whether they still reflect current expenditure or consumption patterns. The weights should be revised or adjusted if the review shows that is not the case. In any case, they should be revised once every ten years.

24. Whenever the composition and/or weighting pattern of the index is changed, the new index should be linked to the old index to provide a continuous series of index numbers.

Sampling for price collection

25. Sampling of goods and services and of outlets is necessary to decide what prices should be collected and where they should be collected for each elementary aggregate (except in cases of centrally determined and uniform prices). Sample selection methods and sizes should be adequate to provide the accuracy required for the objectives of the index.

26. Efforts should be made to ensure that samples of cities, urban areas or regions, of dwelling units, of sales outlets and of items and varieties priced are as representative as possible. Probability sampling, although involving difficult practical problems, will normally enhance the accuracy of the index and, moreover, will make possible an estimate of the sampling error.

27. Probability sampling gives every price within the scope of the index an opportunity for selection. Each price need not have an equal probability of selection. Indeed, efficient designs use probabilities that are proportional to variables that affect the precision of the estimates.

28. Implementation of probability sampling may be a gradual process. Where one begins will vary depending on the nature of the economic structure and the availability of data. Probability sampling might begin with geographic areas, or with detailed items within larger groups, or with outlets. Each stage of probability sampling makes some contribution to the quality of the indices.

29. If sufficient information or resources do not exist for constructing a probability sample which will give a good measure of price change, then the statistician should apply the best judgement and available data to select a representative sample of geographical areas, outlets, items and varieties. If, for example, resources are inadequate to establish a representative sample for the country as a whole, it might be appropriate to decide, in principle and a priori (that is, outside any random sampling), that certain regions, towns or urban areas where the collection of prices is less expensive represent larger groups of regions, towns or urban areas.

30. The samples of outlets and of goods and services and the specifications used for pricing should be reviewed periodically, and they should be updated if this is necessary to maintain their representativeness.

31. Particular attention should be paid to the way in which pricing is distributed in time. Price observations of the same item at the same outlet should, especially in the case of wide price variations, be made at regular intervals of, for example, about one month or three months, depending upon the frequency of the index compilation. Account should be taken of the fact that, when the index collection period is organized on the basis of weeks, there may be time discrepancies since a month or quarter is not composed of an exact number of weeks.

32. In the case of perishable goods, attention should also be paid to the time of day which is selected for price collection.

33. Rents should be obtained from a specially designed survey relating to a sample of dwellings which is periodically updated to ensure continuing representativeness and, particularly, that newly constructed units are brought into the sample.

The price data

34. The quality of the price data is the crucial determinant of the reliability of the index. Hence, great care should be taken to ensure that the prices obtained are actual transaction prices and are collected systematically at regular intervals. Standard methods for collecting and processing price data should be developed. Where centrally regulated or centrally fixed prices are collected centrally, checks should be made to ascertain whether the goods and services in question are indeed

sold and whether these prices are in fact observed. Where prices are not displayed, where quantity units are poorly defined or where actual purchase prices may deviate from list or fixed prices, check purchases by the price collectors are advisable and a budget should be provided for these purchases. Where prices are subject to significant fluctuations over the month or quarter, it is desirable to collect them more than once during the month or quarter.

35. Consistent procedures should be established for dealing with missing price observations whatever the cause, including: seasonally unavailable, unable to contact, non-response, rejected observation, temporarily out of stock. Price collectors should be well trained and well supervised, and should be provided with a good manual explaining all the procedures they have to follow. The price data sent in by the price collectors should be reviewed and edited for comparability, substitutions, unusual or simply large price changes and for price conversions of goods priced in multiple units or varying quantities, where the units or quantities do not form part of the specification. There should be procedures, such as repricing in the same outlets, for checking the reliability of the price data.

36. The specifications used for pricing, including the final selection of the particular variety and size by the price collector, where relevant, serve the purpose of securing comparability between successive periods and assisting selection and evaluation of substitutes. The specifications should be precise enough to identify all the characteristics that are necessary to ensure that identical goods and services are priced in successive periods in the same outlet. It should be noted that the relevant characteristics that are necessary to ensure that identical goods and services are priced in successive periods in the same outlet. It should be noted that the relevant characteristics of the goods or services should include, for example, terms of payment, conditions of delivery, guarantees, and type of outlet.

37. Substitutions will be necessary when priced items disappear permanently from the outlet(s) in which they are priced. An item which is no longer available in sufficient quantities or under normal sale conditions may also be considered to be unavailable. Clear and precise rules should be developed for identifying the substitute item. Precise procedures should be laid down for price adjustment with respect to the difference in characteristics when substitutions are necessary. Responsibility for such evaluation should be clearly established. Evaluations of the difference in characteristics and decisions on how to use substitute prices in the index should, to the extent possible, be based on solid, empirical evidence of the market valuation of the difference in

characteristics between the original and the substitute items. A number of techniques and data sources may be used to approximate this market valuation. In the absence of a satisfactory estimate of the specific adjustment for the difference in characteristics, a choice must be made between an assumption of no change and an assumption that the price difference is simply and wholly a reflection of the difference in characteristics. Under the former assumption, the price for the substitute should be compared directly with that of the item for which it is substituted; this assumption can be made only when the items are fairly similar. Where the whole price difference is taken as a reflection of the difference in characteristics, the index should be constructed by linking the series for the substitute to that of the item for which it is substituted.

38. Substitutions made because of a decline in representativeness or disappearance of an item from an outlet might possibly require that another outlet be chosen. This might also be necessary when an outlet disappears. In these cases, rules should be established to ensure that the price collector makes a correct choice with respect to a new outlet, and that the adjustments are made, if need be, to take account of the change in outlet or the change in the nature of the outlet. The rules should be consistent with the objectives of the index and with the way in which the price collection sample has been determined.

39. Substitutions will also be necessary if all items in an elementary aggregate disappear from most or all outlets. In such cases, if a substitute item representing the elementary aggregate cannot be found and appropriate adjustments for the difference in characteristics made, it may be necessary to redistribute the weight assigned to the elementary aggregate among other elementary aggregates within the next highest level of aggregation possible.

40. The prices to be collected are the regular actual transaction prices, including indirect taxes, paid by the reference population. Prices charged for stale, shop-soiled, damaged, or otherwise imperfect goods sold at clearance prices should be excluded unless they are a permanent and wide-spread feature of market conditions. However, sale prices, discounts, cut prices and special offers should be included when applicable to all customers and when the goods and services are offered in their normal availability.

41. Prices should be collected in all types of markets which are important. These may include open-markets and black-markets as well as state-controlled markets. Where more than one type of market is important, an appropriately weighted average should be used in the calculation of the index.

42. In periods of price control or rationing, where limited supplies are available at prices which are held low by subsidies to the sellers, by government procurement, by price control, etc., these prices as well as those charged on unrestricted markets should be collected. They should be combined in a way which uses the best information available with respect to the actual prices paid and the relative importance of the different types of sales.

43. Countries may wish to calculate, from the data collected for their consumer price index, average prices for selected reasonably homogeneous goods or services. However, their dissemination should be accompanied by an indication of the limitations of these calculations. Countries may also wish to establish efforts to collect separate data to support average price calculations, given considerable user interest in these data.

Dissemination

44. A consumer price index should be computed and publicly released as quickly as possible according to the resources available and to the user needs, preferably at least once every three months. Rules relating to the release of the data should be established, publicly known and strictly observed.

45. In general, retrospective corrections (e.g. as a result of an error in the data or in calculation) of the publicly released indices should only be done when absolutely necessary because of the difficulties such corrections cause for indexed contracts or payments. Instead, necessary corrections might be made to the index for the subsequent period. An explanation should be provided in order to avoid misinterpretation of the short-term price movement.

46. Sub-indices should also be released, at least for such major expenditure groups as food, clothing and footwear, housing, etc. Sub-indices for different regions or socio-economic groups or for special analytical purposes (e.g. travellers' expenses, imported items) might be publicly released if they were judged to be useful and the cost warranted it. Average prices or price ranges for important and reasonably homogeneous items may be released.

47. The exclusion of shelter from the all-items index makes the rates of price change more comparable across countries, although it does not eliminate all the difficulties encountered when making such comparisons. Countries should, therefore, provide for dissemination at the international level an index which excludes shelter in addition to the all-items index.

48. In order to ensure public confidence in the index, a full description of the methodology and data sources should be published. The document(s) should include, among other things, details of the weights, objectives of the index, and a discussion of the precision of the index. However, the precise identities of the outlets and goods and services for which prices are obtained and any other details which, if disclosed, would adversely affect the representativeness of the index should, in general, not be revealed.

49. The agency responsible for the index should consult with representatives of users on major issues. One way of organizing such consultation is through the establishment of advisory committee(s) on which users and outside experts might be represented.

ANNEX III

Programme for Statistics of Food Consumption and Nutrition
(FAO, 1981)

LIST OF ITEMS TO BE COVERED IN THE PROGRAMME

1. Items on Food Consumed or Acquired
 - 1.1 List of items of food consumed or acquired in terms of quantities and expenditure.
 - 1.2 Sources of food
 - 1.2.1 Purchased
 - 1.2.2 Home-produced
 - 1.1.3 Otherwise obtained
 - 1.3 Other information needed to complete food consumption data
 - 1.3.1 Information on factors affecting the nutritive value of food consumed e.g. moisture content, preparation practices, recipes.
 - 1.3.2 Information on food habits, preferences and restrictions.
2. Items on Household Characteristics
 - 2.1 Household size (number of persons in the household)
 - 2.2 Area of land in possession of the household
 - 2.3 Income or other measure of financial status of household
 - 2.4 Farm/non-farm status and rural/urban living
 - 2.5 Household means of livelihood
 - 2.6 Household social/ethnic group
3. Items on Characteristics of Individuals
 - 3.1 Sex
 - 3.2 Age
 - 3.3 Relationship to head of household
 - 3.4 Physiological status (pregnant or lactating women 15 years & above)
 - 3.5 Marital status
 - 3.6 Occupation
 - 3.7 Education

- 3.8 Residential status
- 3.9 Number of meals taken on given days (reference period)
 - 3.9.1 At home
 - 3.9.2 Out of home
 - 3.9.2.1 Casual
 - 3.9.2.2 Regular - free of cost
 - at subsidized rate
 - at market rate
- 4. Anthropometric measurements of members:
(for all persons in the household)
 - 3.10 Body weight
 - 3.11 Height
 - 3.12 Mid-arm circumference
 - 3.13 Skin-fold measurement

ANNEX IV

Programme for Statistics of Food Consumption and Nutrition
(FAO, 1981)

LIST OF FOOD ITEMS TO BE INCLUDED IN FOOD CONSUMPTION SURVEYS

I. FOOD FROM THE COMMON FOOD SUPPLY

1. Cereals and Cereal Products

- 1.1 Grains as whole grain, meal, flour (specify where important: wheat, rice, rye, barley, oats, maize (corn), millets, sorghums, etc.)
- 1.2 Pastes: macaroni, spaghetti, etc.
- 1.3 Commercial baked goods (specify where important: bread and other baked goods)
- 1.4 Other cereals and cereal products (specify where important)

2. Starches and Starchy Roots

- 2.1 Potatoes (Specify form where important: fresh (new, old), canned, dehydrated, flour, etc.)
- 2.2 Sweet potatoes (specify form where important: fresh, flour, etc.)
- 2.3 Cassava (specify form where important: fresh, flour, meal, etc.)
- 2.4 Other starchy roots (specify where important)
- 2.5 Starches (pure, dry) (specify where important: wheat, maize, rice, potato, cassava starches, sago, etc.)

3. Sugars and Sweets

- 3.1 Sugars (specify where important: crude, refined, cane, beet, palm, coconut, maple, etc.)
- 3.2 Syrups and molasses (specify where important: molasses of cane sugar, of beet sugar, cane juice, cane, maple, corn, carob, grape, date syrups, etc.)
- 3.3 Honey (including honey in the comb, etc.)
- 3.4 Others (specify where important: jams, marmalades, candy).

4. Pulses (Dry)

- 4.1 Beans (specify where important: broad beans, kidney beans, lima beans, mung beans, etc.)
- 4.2 Peas (specify where important: dry peas, lentils, chick peas, etc.)
- 4.3 Soybeans and soybean products
(specify where important: whole soybeans, soy sauce, soybean curd, soybean paste, soybean milk, soybean flour, etc.)

5. Nuts

- 5.1 Groundnuts
(specify from where important: in shell, shelled, roasted, salted, in butter, etc.)
- 5.2 Coconuts
(specify from where important: mature nuts, immature nuts, coconut milk, shredded coconut, etc.)

6. Seeds

(Specify where important: squash, watermelon, sunflower, sesame seeds, etc.)

7. Vegetables

(Unless otherwise specified, fresh forms will be assumed. Where important, canned, frozen, powdered, dried - except dry pulses - strained, chopped, pickled, etc. should be specified).

- 7.1 Roots, bulbs and tubers
(specify where important: beets, carrots, kohlrabi, leeks, mature onions, okra, parsnips, radishes, horse radishes, salsify, scorzonera, turnips, rutabaga, etc.)
- 7.2 Leafy vegetables
(specify where important: bean sprouts, beet greens, Brussels sprouts, cabbage, cassava leaves, celery, chicory and endive, kale, lettuce, mustard greens, okra leaves), parsley, spinach, onion leaves, other leafy vegetables).
- 7.3 Tomatoes
(specify where important: fresh, canned, etc.)
- 7.4 Other vegetables, edible flowers, stems
(specify where important: artichokes, asparagus, broccoli, cauliflower, celeriac, chayots, cucumbers, eggplant, sweet corn, pumpkins, squashes, gourds, red or green peppers, (fresh) beans and peas.)

8. Fruit

(Unless otherwise specified, fresh forms will be assumed. When important, canned, frozen, strained, chopped, etc. should be specified)

8.1 Bananas and plantains.

8.2 Citrus fruit

(specify where important: grapefruit, lemons, limes, oranges, etc.)

8.3 Fat-rich fruit

(specify: olives, avocados, etc.)

8.4 Other fresh fruit

(specify where important: apples, apricots, berries, breadfruit, cherries, dates, figs, grapes, guavas, jackfruit, mangoes, melons, papayas, passionfruit, peaches, pears, persimmons, pineapples, plums, pomegranates, quinces, sapedilla, sopote, soursop, etc.)

8.5 Dried fruit

(specify: dates, figs, raisins, etc.)

9. Meat and Meat Products, Poultry and Insects

9.1 Fresh and frozen meat

(specify where important: beef, veal, pork, mutton and lamb, goat, buffalo, camel, horse, rabbit, venison, whale and other domestic or wild species)

9.2 Offal

(specify where important: animal and type, i.e. liver, kidney, brain, heart, sweetbread, etc.)

9.3 Meat products

(specify where important: bacon, ham, dried beef, dried pork, canned beef, canned pork, sausages, according to main types, etc.)

9.4 Poultry and wild birds

(specify where important: chickens, ducks, geese, pigeons, turkeys, etc.)

9.5 Insects

(specify where important: distinguishing at least between adult insects and larvae).

10. Eggs

(Assumed fresh, unless specified: dried, frozen, yolks, whites; specify where important: hen, duck, goose, turtle eggs, etc.)

11. Fish and Shellfish

11.1 Fish, fresh

(specify where important, making a distinction at least between fat fish (salmon, trout, herrings, mackerel, etc.) and low fat types (cod, haddock, etc.)

- 11.2 Shellfish, fresh
(specify where important: lobsters, crawfish, crabs, shrimps, oysters, clams, mussels, etc.)
- 11.3 Fish, salted, smoked or dried
(specify where important: fat-rich types and fat-poor types)
- 11.4 Fish, canned
(specify where important: in oil, not in oil, fat-rich types, fat-poor types).
- 11.5 Shellfish, canned
(specify where important: lobsters, crawfish, crabs, shrimps, oysters, clams, mussels, etc.)
- 11.6 Other aquatic animals (alligators, turtles, frogs, etc.)

12. Milk and Dairy Products (excluding butter)

- 12.1 Milk, liquid, whole
(specify where important: cow, goat, sheep, buffalo, camel, etc.)
- 12.2 Milk, liquid, skim or buttermilk, partly skimmed milk.
- 12.3 Cream (where possible specify fat content)
- 12.4 Cheese
(specify where important varieties: hard, soft, semi-soft, from whole milk, partly skimmed milk, skim milk; whey cheeses, hard, soft, semi-soft, etc.)
- 12.5 Milk processed
(specify where important: evaporated, whole, unsweetened milk, condensed, whole, sweetened milk; condensed, skim, sweetened milk; dried whole milk; dried skim milk; yoghurt and other fermented milk, etc.)
- 12.6 Yoghurt, other fermented milk and fresh milk products.
- 12.7 Ice cream

13. Oils and Fats

- 13.1 Vegetable oils and fats.
(specify where important: oils, hardened shortening, etc.)
- 13.2 Animal fats
(specify: butter, ghee, lard, suet, tallow, etc.)
- 13.3 Marine oils (specify)
- 13.4 Mixed products of vegetable, animal or marine origin
(specify)
- 13.5 Other oil and fat products
(specify where important: mayonnaise, dressings, sandwich spread).

14. Miscellaneous

(specify where important: spices, cooking chocolate, cocoa, yeast, other raising agents, salt, condiments, etc.)

15. Prepared or Partially Prepared Mixtures of Food and Prepared Meals Obtained Outside and Consumed at Home

(Specify)

16. Beverages

16.1 Alcoholic drinks

(specify where important: beer, wine, spirits, etc.)

16.2 Canned or bottled soft drinks

(specify important varieties)

16.3 Other beverages: tea, coffee, yerba mate, etc.)

II. PURCHASED FOODS EATEN AWAY FROM THE HOME

1. Meals, snacks, etc. with specification of type and quantities of the food eaten, wherever possible.
2. Alcoholic drinks, with specification of the drinks as beer, wine, spirits, etc.
3. Ice cream, soft drinks, chocolate and sugar confectionery.

ANNEX V
Subject Coverage of LSMS in Côte d'Ivoire

A : Household Questionnaire:

Section Title	Subject
1 Household composition	Household roster, demographic data, information on parents of all household members.
2 Housing	Type of dwelling, housing and utilities expenditures.
3 Education	Completed schooling and schooling expenditures for all household members, 5 or older; schooling of all non-member children under 30.
4 Health	Utilization of health services and medical expenditures for all illness in the last four weeks; utilization of and expenditures for preventive services in the last 12 months.
5 Economic activities	Employment, income and time use data for the main and secondary jobs in the last 7 days and the last 12 months time use in the home.
6 Migration	Location and reasons for first and last moves.
7 Respondents for round 2	Best informed persons to respond to sections in round 2; selection of female respondent to respond to fertility section.
8 Characteristics of housing	Observations and measurement of housing by the interviewer.
9 Agro-pastoral activities	Land, crops, income and expenditure from raising crops and animals, livestock, farm equipment.
10 Non-farm self-employment	Income, expenditure, assets for three most important household businesses.
11. Expenditures and inventory of durable goods	Expenditures in the past 14 days and past 12 months; inventory of durable goods; remittances to others.
12. Food expenditure	Food expenditures in the past 14 days and past 12 months; consumption of home production in past 12 months.
13 Fertility	Birth history; use of maternity services and duration of breastfeeding for last live birth.
14 Other income	Income from other sources, including remittances from others.
15 Savings & credit	Savings and net debt the day of the interview; characteristics of outstanding loans to household members.

- | | | |
|----|----------------------------------|--|
| 16 | Anthropometrics | Height and weight measurements of all household members performed by anthropometrist. |
| 17 | Household composition last year. | Links ID codes of household members present in the two interviews. Summary information on household members who have disappeared since last year's interview |
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B: Village Questionnaire

Section	Title	Contents
1	Demographic information	Population, religion, ethnic groups migration patterns.
2	Economy and infrastructure	Main economic activities, economic trends, transport and communication, utilities, markets, seasonal labour market.
3	Education	Characteristics and location of the nearest primary and secondary school, adult literacy programmes.
4	Health	Access to health personnel and facilities
5	Agriculture	Marketing services for major crops, agricultural extension services, cooperatives, equipment and inputs, agricultural wages, sharecropping.

Source: LSMS (26) pp. 14, 15 and 18.

ANNEX VI

System of National Accounts (United Nations, 1968)

CLASSIFICATION OF HOUSEHOLD GOODS AND SERVICES.

(The symbols D, SD, ND and S stand for items classified as durable, semi-durable, or non-durable goods and services respectively).

1. Food, beverages and tobacco (ND)

1.1 Food

1.1.1 Bread and cereals

Rice, glazed or polished, but not otherwise worked (including broken rice); maize, meal and flour of wheat, barley and other cereals; cereal preparations; malt (including malt flour) and malt extract; macaroni, spaghetti, noodles, vermicelli and similar products; bread, biscuits, cake and other bakery products; preparations of flour, starch or malt extract, used as infant food or for dietic or culinary purpose; potato starch; sago, tapioca and other starches; sealing wafers, communion wafers and similar products. Includes tarts and pies other than meat and fish tarts and pies; macaroni and spaghetti cooked, ready for consumption; farinaceous products stuffed with substances other than meat; rice, cooked, ready for consumption.

1.1.2 Meat

Fresh, chilled and frozen meat of bovine animals, sheep and goats, swine, poultry, horses, game and edible offal; bacon, ham and other dried, salted or smoked meat and edible offals; meat extracts and meat juices, sausages, meat preparations, and canned meat. Includes meat pies; frog meat; meat of marine mammals such as seals, walruses and whales; meat soups in liquid, solid or powder form, whether or not containing vegetables, spaghetti, rice, etc.; paste products filled with meat such as canelloni, ravioli and tortellini.

1.1.3 Fish

Fresh, frozen, canned and preserved fish and other sea food and fish preparations. Included are tinned fish soup, snails, fish pie.

1.1.4 Milk, cheese and eggs

Fresh, evaporated, condensed and dried milk and cream (including buttermilk, skimmed milk, whey and yoghurt); cheese and curd; eggs, including treated eggs.

1.1.5 Oils and fats

Butter, margarine, lard and other prepared edible fats; cooking salad and other edible oils; peanut butter

1.1.6 Fruits and vegetables other than potatoes and similar tubers.

Fruits and other vegetables, fresh, dried, frozen or preserved, juices and nuts. Includes fruit-peel, nuts and parts of plants preserved by sugar (drained, glaze or crystallized); edible seeds; garlic; culinary herbs; mushrooms; rhubarb; tomatoes; truffles; vegetable soups, without meat or meat extracts or only traces; dried beans, lentils and other pulses.

1.1.7 Potatoes, manioc and other tubers

Potatoes, manioc, arrowroot, cassava, sweet potatoes and other starchy roots. Includes tinned and other products, like meal, flour, flakes, chips, except starches.

1.1.8 Sugar

Refined sugar and other products of refining beet and cane sugar, not including syrups.

1.1.9 Coffee, tea, cocoa.

Coffee, tea, cocoa and their substitutes.

1.1.10 Other foods, including preserves and confectionary.

Syrup; jam, marmalade and table jellies; honey; chocolate and sugar confectionery; salt; spices; prepared baking powders; sauces; mixed condiments and mixed seasonings; ice cream, vinegar; yeast.

1.2 Non-alcoholic beverages

Mineral waters and other soft drinks.

1.3 Alcoholic beverages

Spirits, wine, beer and cider, including beer and cider with low alcohol content.

1.4 Tobacco

Cigars and cheroots; cigarettes; smoking and chewing tobacco; cigarette paper; snuff.

2. Clothing and footwear (SD)

2.1 Clothing other than footwear, including repairs.

2.1.1 Clothing other than footwear

All made-up clothing and clothing materials including haberdashery, millinery and custom tailoring and dressmaking. Includes aprons, smocks and bibs; belts, gloves and mittens other than rubber; handkerchiefs except paper handkerchiefs; muffs and sleeve protectors; crash helmets; suspenders, accessories for making up clothing such as buckles, buttons, fasteners, patterns, zippers, etc.; hire of clothing.

2.1.2 Repairs to clothing other than footwear.

2.2 Footwear, including repairs.

2.2.1 Footwear

All footwear including rubbers, gaiters, spats, leggings and puttees; sports footwear other than boots and shoes with ice or roller skates attached.

2.2.2 Repairs to footwear

3. Gross rent, fuel and power.

3.1 Gross rents and water charges

3.1.1 Gross rents (S)

All gross rent in respect of dwellings, actual and imputed in the case of owner-occupied houses including ground rents and taxes on

property. House rent will in general be space rent, covering heating and plumbing facilities, lighting fixtures, fixed stoves, wash basins and other similar equipment which is customarily installed in the house before selling or letting. Also included are payments for garbage and sewage disposal and expenditures of tenants on indoor repair and upkeep, such as indoor painting, wallpapering and decorating. Rents paid for rooms in boarding houses, but not in hotels, are included. Rents of secondary dwellings such as summer cottages, mountain chalets, etc., are also included.

3.1.2 Water charges (ND)

3.2 Fuel and power (ND)

3.2.1 Electricity

3.2.2 Gas.

Natural and manufactured gas, including liquefied petroleum gases (butane, propane, etc.)

3.2.1 Liquid fuels

Heating and lighting oils.

3.2.4 Other fuels

Coal, coke and briquettes; firewood; charcoal; peat; purchased heat.

4. Furniture, furnishings, and household equipment and operation.

4.1 Furniture, fixtures, carpets, other floor coverings and repairs (D).

4.1.1 Furniture, fixtures, carpets, other floor coverings.

Beds, chairs, tables, sofas, storage units, and hallboys; carpets, large mats and linoleum, cribs, high chairs, playpens; door and dividing screens; sculptures, carvings, figurines, paintings, drawings, engravings and other art objects; venetian blinds; fireplace equipment; other furniture and fixtures.

- 4.1.2 Repairs to furniture, fixtures, carpets, other floor coverings.
- 4.2 Household textiles, other furnishings, and repairs (SD)
 - 4.2.1 Household textiles and other furnishings.

Curtains, sheets, table-cloths and napkins, towels, tapestries, bedding mattress and other coverings, of all materials; furnishings such as ashtrays, candlesticks and mirrors, awnings, counterpanes and door mats; flags; garden umbrellas; garment and shoe bags, laundry hampers and bags, and shoe racks; mosquito nets; steamer and travelling rugs; wastepaper baskets, flower and plant boxes and pots.
 - 4.2.2 Repairs to household textiles and other furnishings.
- 4.3 Heating and cooking appliances, refrigerators, washing machines and similar major household appliances, including fittings and repairs (D)
 - 4.3.1 Heating and cooking appliances, refrigerators, washing machines and similar major household appliances, including fittings.

Covers major equipment like clothes washing and drying, dish washing, ironing, sewing or knitting machines; electric floor scrubbing, waxing and polishing machines; vacuum cleaners; water softening machines; refrigerators, food freezers and ice boxes; room air-conditioning units; cooking appliances other than spirit stoves and plate-warmers; reflector ovens, camping stoves and similar appliances; toasters; electric fans, and electric coffee makers and heating appliances; lawn mowers; non-portable safes; water pumps.
 - 4.3.2 Repairs to heating and cooking appliances, refrigerators, washing machines and similar major household appliances.
- 4.4 Glassware, table ware and household utensils including repairs (SD)
 - 4.4.1 Glassware, tableware and household utensils

Pottery, glassware, cutlery, silverware; hand, kitchen and small garden tools (not power driven); all types of kitchen utensils, portable toilet and sanitary utensils for indoor use; electric bulbs, plugs, wire, cable and switches; heating pads, sauce-pans, non-electric coffee-makers; thermos bottles and flasks; watering cans, wheelbarrows, garden hose and sprinkling devices, and small garden appliances (not power driven); portable money boxes and strong-boxes, household scales; ladders; lock-smith's wares.

4.4.2 Repairs of glassware, tableware and household utensils.

4.5 Household operation except domestic services.

4.5.1 Non-durable household goods (ND)

Household goods of limited durability such as matches, household soap, scourers, polishes, cleaning materials; household paper products; candles and lamp wicks; clothes hangers; shoe polish; clothes pins; mops, brooms and brushes; rope, string and twine; dyes for dyeing clothing and household textile furnishings; nails, nuts and bolts, screws, tacks, washers, hooks, knobs, etc.; needles and pins; insecticides, fungicides and disinfectants, aluminium foil, etc.

4.5.2 Household services excluding domestic services (S)

Cleaning, dyeing and laundering; hire of furniture, furnishings and household equipment, including payments by subtenants for the use of furniture, etc.; service charge for insurance of household property against fire, theft and other accidents; payments for services such as chimney cleaning, window cleaning, snow removal, exterminating, disinfecting and fumigating, etc.

4.6 Domestic services (S)

Remuneration in cash and in kind of domestic servants, cleaners, cooks, etc. Includes payments in cash and in kind to baby-sitters, chauffeurs, gardeners, governesses, tutors, etc.

5. Medical care and health expenses

5.1 Medical and pharmaceutical products (ND)

Medicines, vitamins and vitamin preparations; cod and halibut liver oil; clinical thermometers, hot-water bottles and ice bags; first aid kits, elastic medical hosiery and similar medical goods.

5.2 Therapeutic appliances and equipment (D)

Major appliances and equipment; eye glasses; hearing aids; glass eyes, artificial limbs, orthopedic braces and supports; surgical belts, trusses and supports; medical message equipment and health lamps, wheel chairs and invalid carriages, motorized or not.

5.3 Services of physicians, nurses and related practitioners (S)

Fees paid to physicians, psychiatrists, nurses, physiotherapists, midwives, dentists, etc., who are not employed by hospitals; payments to medical and dental laboratories for tests, analyses etc. rental of the therapeutic equipment.

5.4 Hospital care and the like (S)

Fees to hospitals and clinics, including fees for services provided by physicians, nurses, etc. employed by, and ambulances of, these hospitals and clinics.

5.5 Service charges on accident and health insurance (S)

6. Transport and communication

6.1 Personal transport equipment (D)

Motor cars; trailers and caravans; motor cycles and bicycles.

6.2 Operation of personal transport equipment

6.2.1 Tires and tubes, parts and accessories; and repair charges (SD).

6.2.2 Gasoline, oils and greases (ND)

6.2.3 Other expenditure (S)

Payments for parking and garaging, bridge, tunnel, ferry and road tolls; driving lessons; hire of personal transport equipment; service charges on insurance of personal transport equipment.

6.3 Purchased transport (S)

Fares on railways, trams, buses, cabs, ships and airlines; fees for transporting personal transport equipment in ships, trains and aircraft; fees for baggage transfer, storage and excess charges; tips to porters, etc.; service charges for baggage and special transport accident insurance; moving and storage of household goods.

6.4 Communication (S)

Postal, telephone and telegraph services, including all expenditure on new postage stamps.

7. Recreation, entertainment, education and cultural services

7.1 Equipment and accessories, including repairs.

7.1.1 Wireless and television sets and gramophones (D)

Wireless and television sets; gramophones, record players and tape recorders; radio transmitting and receiving sets for amateur radio stations; clock-radios.

7.1.2 Photographic equipment, musical instruments, boats and other major durables (D)

Aeroplanes; boats and outboard motors; cameras, projection equipment, other photographic equipment, binoculars; microscopes and telescopes; pianos, organs, violins, cornets and other major musical instruments; typewriters; power driven equipment for woodworking, metalworking, etc.; horses; swimming pools which are not permanent fixtures.

7.1.3 Other recreational goods (SD)

Goods purchased in connection with hobbies which are not included in 7.1.2; harmonicas and other minor musical instruments not included in 7.1.2; records; flowers; sports equipment and supplies except sports clothing and sports

footwear; camping equipment; films and other photographic supplies; used postage stamps for philatelic purposes; children's outdoor play equipment, pets other than horses; feeding stuffs for pets; exercising equipment.

7.1.4 Parts and accessories for, and repairs to, recreational goods (SD)

7.2 Entertainment, recreational and cultural services, excluding hotels, restaurants and cafes (S)

Expenditure on theatres, cinemas, sports and other places of public amusement; expenditure on private entertainment such as hiring musicians, magicians, clowns, etc. for private parties; bridge, social dancing and sports lessons; gambling; portrait and other services, such as film developing and print processing furnished by photographers; hire of wireless and television sets, aeroplanes, boats, horses and other recreational equipment; veterinary and other services for pets; fees for use of teleferics, ski-lifts and similar conveyances; fees to mountain, ski, tourist and other guides; radio and television licences where government broadcasting stations exist; admission fees to museums, art galleries, historical monuments and botanical and zoological gardens.

7.3 Books, newspapers and magazines (ND)

Books, newspapers and other printed matter.

7.4 Education (S)

Fees to schools, universities, etc., excluding, if feasible, payments for food, beverages and shelter.

8. Miscellaneous goods and services.

8.1 Personal care and effects.

8.1.1 Services of barber and beauty shops, etc. (S)

Services of barber and beauty shops, baths and massage parlours.

8.1.2 Goods for personal care (SD)

Toilet articles and preparations including shaving equipment; electric hair driers and hair clippers, electric or not, permanent wave sets for home use; tooth and toilet brushes; repairs to such items.

8.2 Goods, n.e.c.

8.2.1 Jewellery, watches, rings and precious stones

8.2.2 Other personal goods (SD)

Travel goods, handbags and similar goods; umbrellas, walking sticks and canes; pipes, lighters, tobacco pouches, pocket knives; sunglasses; clocks; baby carriages; repairs to such items.

8.2.3 Writing and drawing equipment and supplies (SD)

Pens and pencils; rulers, slide rules, drawing sets and similar instruments; pencil sharpeners; paper punches, hand stamps and seals; typewriter ribbons and carbon and stencil papers, stationery; erasers, ink and paper clips.

8.3 Expenditure in restaurants, cafes and hotels *(S)

Included are the value of food, drinks and tobacco consumed; tips for services rendered by the personnel of restaurants, cafes and hotels; fees for use of camping sites and facilities.

8.3.1 Expenditure in restaurants and cafes.

8.3.2 Expenditure for hotels and similar lodging services.

8.4 Packaged tours #(S)

All inclusive tours which provide for travel, food, lodging, guide services, etc.

8.5 Financial services, n.e.c. (S)

Service charges for life insurance and for insurance against civil responsibility in respect of injuries to other persons or other persons' property not arising from the operation of personal transport equipment; actual charges for bank services; fees and service charges for brokerage, investment counselling, household finance company loans and

* It is desirable to have separately the outlay on food, beverages and tobacco made in restaurants, cafes and hotels, hospitals and other medical institutions, and educational services.

In addition, it is desirable to have data on the sub-division of the total outlay into transport, lodging, food and other items.

8.6 Services n.e.c (S)

Fees for legal services, to tax consultants and to employment agencies, membership dues in professional associations, charges for undertaking and other funeral services; expenditure for duplicating, blue-printing, photostating, addressing, mailing and stenographic services; payments for copies of birth, death and marriage certificates; charges for newspaper notices and advertisements; etc.

ANNEX VII
Distribution of Income, Consumption and Accumulation
Classification of Socio-economic Status (a)(b)

Major Group	Group and Subgroup
1.	Employers in
11.	Employers in agriculture. Heads of agriculture of unincorporated enterprises classified in major division 1 of ISIC (Agriculture, forestry, fishing and hunting) who have one or more employees, in addition to family workers.
	111. Mainly owning the land cultivated.
	112. Mainly renting the land cultivated.
2.	Own-account workers
21.	Own-account workers. Heads of un- and members of incorporated enterprises classified in major division 1 of ISIC (Agriculture, forestry, fishing and hunting) who have no employees, except family workers. Some countries may wish to include employers with one or two employees in this category instead of in category 11.
	211. Mainly owning the land cultivated.
	212. Mainly renting the land cultivated.
	22. Members of agricultural producers' co-operatives. Members of producers' co-operatives classified in major division 1 of ISIC (Agriculture, forestry, fishing and hunting). Persons working in the co-operatives, who are not members but receive wages and salaries only, are classified in major group 5 below

3. Employers outside agriculture
31. Employers outside agriculture
Heads of unincorporated enterprises classified in major divisions 2 to 9 of ISIC who have at least one employee, not including family workers.
3.11 Modern sector
3.12 Traditional sector

4. Own-account workers
41. Own-account workers in the professional, technical, consulting and similar fields. Own-account workers with occupations belonging to major group 0/1 of ISCO (Professional, technical and related workers). Some countries may wish to include here instead of in category 31 employers in these occupations who have one or two employees. Employees with similar occupations are classified in groups 61 and 62 below.
42. Other own account workers and members of producers' co-operatives in non-agricultural activities.

Heads of unincorporated enterprises classified in major divisions 2 to 9 of ISIC, except those classified in class 41 above, who have no employees except family workers. Some countries may wish to include here instead of in group 31 employers in these occupations who have one or two employees. Members of producers' co-operatives outside agriculture are included. Persons working in such co-operatives who are not members but receive wages and salaries only are classified in major group 6 below.

5. Employees in agriculture
51. Employees in agriculture. Employees of establishments classified in major divisions 1 of ISIC who fall into major group 0/1 (Professional, technical and related workers) and 6 (Agricultural, animal husbandry and forestry workers, fishermen and hunters) of ISCO. Also farm equipment operators who fall into unit group 9-8 (Transport equipment operators) of ISCO.
6. Employees outside agriculture
61. Managers and supervisors. Employees of establishments and public administration, classified in major group 2 (Administrative and managerial workers), in minor groups 3-0 (Clerical supervisors), 3-1 (Government executive officials), 3-5 (Transport and communication supervisors), 4-0 and 4-1 (Managers and working proprietors, wholesale and retail trade), 5-0 and 5-1 (Managers and working proprietors catering and lodging services), 5-2 (Housekeeping and related service supervisors and general foremen) and in unit group 4-21 (Sales supervisors) all of ISCO.
62. Professional and technical employees. Employees of establishments and public administration classified in major group 0/1 (Professional, technical and related workers) and in unit group 4-31 (Technical salesmen and service advisers) of ISCO.
63. Clerical, sales and service workers. Employees of establishments and public administration classified in major divisions 2 to 9 of ISIC

who fall into major groups 3 (Clerical and related workers), 4 (Sales workers) and 5 (Service workers) of ISCO, excepting those who belong to minor groups 3-0, 3-1, 3-5, 4-0, 4-1, 5-0, 5-1 and 5-2 and unit group 4-21 of ISCO, who are classified in group 61 above, and those belonging to unit group 4-31 of ISCO, who are classified in group 62 above.

64. Manual workers.

Employees of establishments and public administration classified in major divisions 2 to 9 of ISIC, who fall into major group 7/8/9 of ISCO (Production and related workers, transport equipment operators and labourers) excepting those belonging to group 7-0, who are included in group 61 above.

65. Members of the armed forces.

Persons who are members of the armed forces as a regular occupation and other persons who are in the armed forces, either for the first time, for training or on recall for a duration of at least six months.

651. Officers

652. Others

7. Economically inactive persons living in households.

- 71. Persons living mainly from social security benefits. Persons in households, living mainly from unemployment, accident, injury and sickness benefits, old age, disability and survivors' pensions.
- 72. Persons in households, living mainly from private pensions, annuities or property income.
- 73. Persons in households, living mainly from other transfers of income.

Persons in households, living mainly from war bonuses, pensions and service grants, scholarships, fellowships and similar transfers from government and non-profit institutions; and from transfers from households or individuals such as transfers from absent household heads. Also, persons in households living mainly from interest, dividends, royalties, life insurance benefits, etc.

- 74. Students.
- 81. Persons living in institutions. Persons in institutions, such as hospitals or homes for the care of the aged, the infirm, the needy, orphans, the mentally ill etc., supported directly by the institutions themselves; inmates of prisons.

(a) The ISIC referred to in this table is the International Standard Industrial Classification of All Economic Activities, Statistical Papers, Series M, No. 4, Rev. 2 (United Nations publication, Sales No. E. 68, XVII. 8). The ISCO referred to is the International Standard Classification by Occupations (International Labour Office, 1968).

(b) Family workers are classified to the same socio-economic class as the owner of the enterprise in which they work. The owner is usually the head of the household of which the family workers are members.