ECONOMIC COMMISSION FOR AFRICA

Fifth session of the Joint Conference of Africa
Planners, Statisticians and Demographers

Addis Ababa, Ethiopia, 21-28 March 1988

APPLICATION OF ACCOUNTING FRAMEWORKS TO
NATIONAL PLANNING
1. The paper attempts to outline the main accounting frameworks designed for the systematic and integrated recording of data/flows for economic and social analysis and planning. It examines the main features of these systems and their potentialities for analysis and planning. The paper makes no claim to be exhaustive.

2. A knowledge of the people and wealth of a country, any country, is essential for management and good government. Over the years, sustained efforts have been made by many countries to collect such economic data that were available into a system capable of informing economic policy formulation. In the 1960s when most African countries gained their independence from colonial rule, the issues which caused most concern were those of economic growth, or rather a comparative lack of it.

3. The historical origins of the system of National Accounts date back 300 years, and it is not the intention of this paper to discuss such origins. Suffice it to mention that before World War II few developing countries were engaged in the compilation of national economic accounts. The subject was left more to universities and research institutions than to government departments. However, with the growing for realization of the benefits of planned economic development and the increased use of plans/fixing targets, etc. the national accounts approach became widely accepted. The United Nations System of National Accounts (SNA) and supporting tables was first produced in 1952, and last revised in 1963. Work on the fourth revision is in progress. The system provides a coherent framework for recording and presenting the main flows relating to production, consumption and external trade.

The System of National Accounts (SNA)

4. General features: The scope, structure and classification of the SNA are shown in Annex I. Annex I shows that the SNA deals with all the flows and stocks of an economy and that the various transactions and holdings of economic agents are integrated into coherent, inter-connected sets of accounts which are articulated in terms of the operations of an economy. The SNA may be divided into three sets of accounts as follows.

(i) Accounts on the production and import of goods and services and the disposition of these supplies to consumption, capital formation and exports;

(ii) Accounts on the incomes generated in production, the distribution and redistribution of these incomes among economic agents, and their appropriation of the resulting disposable incomes in order to finance consumption and capital investment;

(iii) Accounts on the stocks of assets and liabilities held by economic agents at the opening and closing of a period of account and on the revaluations which link the opening stocks and the capital transactions during the period of account to the closing stocks.
5. The accounts and classifications of the system are designed so that consistent data may be compiled at levels of aggregation ranging from detailed accounts in respect of individual kinds of economic activities, institutional units or government purposes to consolidated accounts for the nation as a whole and range from detailed to highly summarized statistics of individual commodities, redistributive transfers or financial claims. This feature of the SNA makes it possible to use the data of the system for coherent and consistent analysis and planning at the project, sectoral and national level.

Accounts on goods and services

6. The accounts of the system on goods and services call for data at both current and constant prices. The scope, structure and classification of the accounts at current and at constant prices are identical. Constant price data are needed in dealing with questions such as the rate of growth, the use of resources, productivity and trends in economic welfare. Together, the current price and constant price data furnish measures of price trends, areas of inflationary and deflationary pressures and the contributing factors.

7. There are two key features of the SNA (series F. No. 2 Rev. 3) published in 1963, both of which are very relevant to the estimation and application of input-output tables. In the SNA, all the accounts are presented in a matrix layout and all transactions are recorded as between two sectors or categories of an account. Secondly, the system incorporates and makes on input-output table an integral and important part of the statistical framework of national accounting. Thus the system not only extends the basic principles of the input-output table to all other transactions in the economy, it also emphasizes the key role which input-output can play in national accounting and the important link between the two.

8. One of the most important uses of input-output tables is in medium term planning (an exercise which most, if not all African countries, have had to do given the rather versatile nature of their economies particularly in recent years) where the aim is to obtain a detailed forecast of supply and demand within the economy for a "target year" five or ten years ahead. A certain growth rate in total national product and in the main components of demand is assumed over the planning period and an input-output model can then be used to disaggregate the forecast and obtain estimates of industry output levels as well as import and factor input requirements; the latter can be balanced respectively against expected exports and factors, especially labour availabilities, to test whether or not the assumed growth rate is feasible. The exact benefits which can be derived from such an exercise may vary according to the nature of the economy where it is carried out.
Use of the SNA in analysis

9. Potentialities of the SNA for economic and social analysis in terms of the main accounts of the system are shown in annex II. Some of the analytical and policy uses to which the data of the accounts may be put are outlined in the Annex.

10. Economic and social analysis is concerned with the circumstances and trends of the past, ranging from the distant to the most recent. Aspects of the past which are subjects of study may be divided into (i) underlying structure and institutional arrangement of an economy, highlighting the strong and weak points, and where change is or may be needed, (ii) the economic and social conditions and performance of an economy and the circumstances and trends which need to be rectified and (iii) the strategic explanatory factors for, and the relationship between, the observed conditions and trends and their policy implications. This paper discusses the uses of the data of the main accounts of the SNA along those lines.

A. Accounts on goods and services

11. The SNA provides a framework for considerable data in respect of the structure and circumstances of, trends in, and the determinants of, production.

Structure of production

12. The current price series on the gross output of commodities, intermediate consumption of commodities, value added and its components, and employment, classified according to kind of economic activity and type of producer, that are called for in a number of the standard tables of the SNA, may be used to delineate many aspects of the structure and circumstances of production. The kinds of industries and commodity production which are important and should be the focus of attention, can be identified; the relative roles of private and public industries can be determined; and the stage of development, degree of diversification and the extent of inter-dependence of domestic production can be assessed. The degree of inter-dependence of domestic production may be determined from input-output tables based on data in respect of technical coefficients and the coefficients and the relative supply of commodities from domestic production and imports. Data on imports coupled with information on the structure and relative productivity of domestic industries, should be of assistance in carrying out policies of imports substitution and in deciding on import requirements.

Trends in production

13. Though it is feasible to delineate shifts in the industrial distribution of production by means of percentage distribution of value added classified by kind of economic activity, it is necessary to use the constant price data of the SNA in order to measure most aspects of the trend in production. The constant price data on value added (the gross domestic product) can be used to construct indices of expansion or contraction in the level of production, and give more precise measures than the current price data of changes in the industrial distribution, stage of development and degree of diversification of production. Data on real gross output, intermediate consumption and value added and its components, coupled with figures on employment and stock of fixed assets, may be used to compile indices of the productivity (efficiency) with which intermediate materials, labour
and fixed assets are employed. Relative trends in the volume of competitive and complementary imports and the volume of similar domestically produced commodities indicate how policies of import substitution are working, and provide more precise basis for estimating import requirements than do the comparable current price data. Comparisons over time of the real gross output of industries and their real consumption of intermediate materials may reveal bottlenecks in the supply of these items.

14. Implicit index numbers of prices may be compiled in respect of gross output, intermediate consumption and value added and its components from the corresponding current price and constant price series of the SNA. These price indices should be valuable for such purposes as detecting points of inflationary or deflationary pressure in the economy. Comparisons of the trends in the price and volume of the gross output of various industries with the trends in the prices, volume and productivity of their direct and indirect inputs should reveal important relationships between prices, the volume of production, productivity and profitability.

Production in relation to final demands

15. The demand for commodities are important factors in the trends and the volume of production and the prices of commodities. In this regard, national accounts data on private and government consumption expenditure, increases in stocks, gross fixed capital formation and exports are useful for estimating these trends. Current price series as well as constant price series are useful in short-term analysis; attention has usually been paid to the more dynamic or the exogenous elements of final demand, namely, increase in stocks, gross fixed capital formation, exports and government consumption expenditures.

16. In order to explain the trends in the output of various industries in the light of the trends in the final demand for various commodities, it is necessary to compile a commodity X commodity or industry X industry input-output table from the standard input-output table of the SNA and to invert it. For this use of the input-output table, and for purposes of estimating the gross output and the required inputs of various industries which correspond to a given level and composition of final demand, it is best to work with the constant price input-output tables of the SNA.

Consumption expenditure

17. Data on the level and composition of household consumption expenditure are useful for assessing the level of living of the population and for determining the amount and assortment of commodities demanded. The SNA calls for data classified according to object of expenditure for the first purpose, data classified according to commodities purchased for the second purpose, and data cross-classified by object of expenditure and kind of commodity for purposes of translating the first classification into the second.

18. Data on government consumption expenditure are valuable for assessing the impact of these outlays on the level of economic activity and prices. From these points of view, the classification needed is that of the SNA in respect of the composition of government expenditure according to the kinds of commodities purchased and direct inputs used. These data, particularly when expressed in constant prices, are also valuable for purposes of evaluating the demand on real resources of proposed government programmes.
Gross capital formation

19. Changes in stocks are an important factor in the valuation of the gross domestic product in the short-run. Data are therefore needed on stocks as a whole in order to measure the direction and magnitude of their variation and on their commodity and industrial composition, in order to identify the kinds of stocks which play an important part in these functions. The SNA makes provision for the data series needed for these purposes.

20. Gross fixed capital formation is a significant factor not only in the demand for the gross product in the short-run, but also in production capacity and productivity in the medium and long-run. Series such as those in the SNA on the level and composition of gross fixed capital formation, are useful in analyzing the performance of, and trends in an economy. Series on gross fixed capital formation classified according to kind of economic activity are used for constructing models of accumulation and analyzing investment policies. The SNA also calls for the cross-classification of data on gross fixed capital formation by kind of commodity and by kind of activity so that figures of fixed capital formation in given industries may be translated into figures of the requirements for specific commodities.

Exports of goods and services

21. Data on the exports of goods and services are a strategic exogenous factor in determining the level of production. In addition, the earnings of foreign exchange from exports largely determine the capacity to import. The series of the SNA on the level and composition of exports are applied to dealing with such questions. Current price data on total exports and exports of various commodities can be used to assess the role of exports in the demand for domestic production, to measure the earnings from exports, and to identify possible areas of expansion in exports. The constant price series on exports may be used to analyse trends in exports and the correlation between the volume of exports and the volume of domestic production in the case of various kinds of goods and services.

B. Accounts on financial transactions

Structural analysis

22. The data in the income and outlay and capital finance accounts of the SNA delineate certain aspects of the institutional arrangements of economy and the structure of financial transactions.

23. The series may be used to assess the role and importance in an economy of various institutions. For example, the series could be used to measure the relative weight in the economy of incorporated and unincorporated forms of non-financial enterprises, or of private and public enterprises.

Income and outlay

24. Data on the income and outlay accounts of the SNA are basic in the formulation, and evaluation of income, fiscal and social policies.
Capital finance

25. Data on the capital finance accounts of the SNA are valuable in dealing with such questions as the sources of finance of fixed capital formation, the requirements for foreign investment, trends in the money supply, drains in international reserves, etc. Data in the capital finance accounts indicate the national and foreign sources of finance of the gross fixed capital formation of a country and the extent to which the gross savings of her institutional units are used for other purposes.

Balance sheet

26. The balance sheet accounts of the SNA will provide data for purposes of studying the magnitude, composition and distribution of the wealth of a nation.

Use of the SNA in planning

27. The applications to which the data called for in the SNA can be put for purposes of national planning are, in most respects, the same as those outlined above for economic and social analysis. Data on the structure, resources and institutional arrangements underlying an economy are needed in order to delineate the environment in which planning is to be carried on and the arrangements and circumstances which should be modified or altered for the objectives of the plan to be achieved. Information in respect of the recent performance of, and trends in, the economy is required for formulating appropriate plan objectives and targets. Such data are also required during the plan period in order to monitor and measure the progress or lack of it, being made towards plan targets, to detect obstacles to fulfilling the plan and map out strategies for dealing with bottlenecks.

28. Data series on the composition of household consumption expenditure and disposable income, or total consumption expenditure form the basis for defining relationships between consumption expenditure on narrow groups of goods and services, on the one hand, and the total outlay on consumption, or disposable income, and the relative average prices of these groups of goods and services, on the other. Government consumption expenditure is preferably treated as an exogenous variable which is estimated in the light of government programmes.

29. Input-output analysis would be desirable in order to work out the implications of the estimates of final uses in respect of the gross output and intermediate and direct inputs of various industries and in respect of complementary and competitive imports. It may be necessary to modify the technical coefficients of the input-output tables used for this purpose since these coefficients will have been based on past experience.

Restructuring the national accounts for integration with social and demographic data

30. This paper has so far tried to highlight the importance of the SNA as a framework for organizing data on the operation of an economic system, and the various applications to which the data of the system can be put for purposes of national planning.

31. Notwithstanding these advantages of the SNA, there is no doubt that some statisticians, planners and demographers for that matter, see the system as a monolithic, excessively ambitious and dogmatic structure which requires developing countries to produce data in which they have no analytical interest, using classifications and conventions which are quite inappropriate to their circumstances and so on. In many ways this criticism may be unfair as evidenced from even a cursory look at the original conception of the SNA. The strength of the SNA lies in its inherent flexibility of approach to classification and aggregation, and this is such as to permit it to embrace many of the distinguishing characteristics of the developing countries. In the system "the user is left free to put his emphasis where he pleases and to leave some parts of the system completely aggregated while other parts are elaborated in detail". 1/
32. However, there is justification in the acceptance of the fact that the numerous objectives of developing countries cannot sensibly be subsumed into the single object of faster economic growth, i.e. growth of gross domestic product or gross national product. Any judgement of the record of development in the African region in the 1960s and early 1970s before the economic malaise of the late 1970s and 1980s, which is based on the standard indicator of growth of GDP per capita can only conclude that it has been an enormously successful period in comparison with other periods; growth rates of the order of 5 per cent and above were recorded for a number of African countries. In spite of this even a casual review of many of these countries readily reveals acute poverty, bigger unemployment even among university graduates; and there does not seem to be in evidence much of the general rise in living standards which economic growth is supposed to bring along with it.

The incorporation of the social dimension

33. In the light of the observed inadequacies of conventional economic frameworks and the current opinion that an emphasis on economic growth has failed the developing countries in many ways, an alternative procedure for measuring the quality of life appear to be more relevant and preferable as a means of guiding development policy. Such a measure seem necessary if it is agreed that the ultimate objective of development is the well-being of the individual, of all individual.

34. What is needed is a unified approach to development planning, an approach which sees development as a societal process rather than as just a movement of certain key economic aggregates; e.g. GDP, GNP. The lack of the development of even the basic economic statistics for the preparation of the national accounts as well as other basic statistics such as data on agricultural and other industrial production, prices, growth and distribution of the labour force, etc. has been very marked especially during Africa's present economic and management crisis. The SNA could provide a sound basis for a unified statistical development, provided that its extremely aggregative approach to the household sector is reviewed, and the data called for in the system are used with social indicators and composite 'development' indices; provided due recognition is given to the important, but so far neglected contribution made by women and youth to development in general and agriculture and distribution in particular.

35. Questions of distribution are not dealt with in the SNA. Systems like the SNA rather naturally start from a general point of view given the fact that analytical interests and policy problems vary from country to country, so there could be little point in highlighting particular interest and problems. In addition, comprehensive data on the distribution of income are notoriously difficult to obtain and fit into a wider framework.
36. As stated in the SNA, the original conception of the system included
distributional information. However, at the time of revision of the SNA, work on
these questions was relegated to a separate body "The statistical office is
engaged in preparing an integrated system of statistics of the distribution
of income, consumption and wealth which at the macro level fits completely into
the SNA (and also into the "PS) and at the micro level is complementary to those
two systems." 2/

37. The last two decades has seen considerable progress in the theoretical and
empirical development of Social Accounting Matrices (SAM). SAM was introduced
in response to the need to incorporate the demographic and social dimensions in
development planning, in a situation where the objectives of policy go beyond the
simple question of growth. SAM is not yet used in any systematic way in developing
countries, either as an accounting tool or as a basis for economic planning. The
position is broadly similar to that which prevailed earlier with respect to the
compilation and use of input-output tables and models. While the potential benefits
of such models were widely appreciated, input output tables were not, and still have not
been commonly regarded as an integral part of a country's system of national accounts.
Although input output tables have been compiled for about half the countries of the
African region at one time or the other since 1955, and these models have been used
for national economic planning, they tend to be regarded as being outside the main-
stream of national accounts. Since SAM is largely an extension and elaboration of
the input-output accounting system, it is not surprising that, in spite of its
potentials for national planning, its use has so far been limited to a number of
ad hoc case studies.

SAM as an analytical tool

38. It has been mentioned above that a fundamental weakness of the SNA relates
to its extremely aggregative approach to the household sector. It was in recognition
of this defect that SAMs were introduced to re-arrange the existing data to provide
more appropriate and meaningful breakdown of information for social and economic
analysis, e.g. by disaggregating estimates of household income and expenditure, etc.

39. The SNA structure has been disappointing in so far as its impact on analytical
work in developing countries is concerned. As an analytical tool, SAM essentially
provides a snapshot of the economy of a country, and may also be used to forecast
the effect of changes in policy, using it as a self contained model or in conjunction
with exogenous models; it is a fully integrated data system i.e. corresponding row
and column totals are equal by definition; SAMs are useful for studying income
distribution and redistribution. (In the SAMs for Botswana, Kenya and Swaziland an
attempt was made to integrate into the system detailed information relating to the
distribution of personal income by size or household composition); in the area of
government policy decisions, SAMs have been used to measure the likely effects of
various levels of increases in public service salaries on the private sector salaries,
SAMs have been used in analysis of the effect of national disaster, such as drought
or pestilence, on the production of major crops, and also to measure the effects of
changes in markets and price for major export commodities. In each case the SAM was
used to measure the likely effect on the distribution of income; final demand for
domestic production; volume and value of domestic output; government expenditure
and revenue; demand for imports and other components of the balance of payments.
This is not to suggest that these analyses were by themselves used to determine
government policy; the point is that they provide a significant inputs to the decision
making process.

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2/ See paragraph 27 below.
40. Like the SNA, SAM has had its critics. The SAM approach has been criticized as having aroused interest in being able to provide a much better understanding of economic process, especially in the developing countries, i.e. providing a formula for 'growth with redistribution' policies. The SNA, in contrast, by concentrating on commodity flow and inter-industry production activities in the growth process was seen to have effectively ignored the influence of production activities on the pattern of income and demand.

41. SAM as a development planning framework has been criticized on two aspects: Firstly, it is said that the definitional categories chosen impose fundamental constraints and limitations on the descriptive and explanatory powers of the system. Secondly, monetary measures - even when referring to income distribution - have only a limited capacity to evaluate the effectiveness of development policy. Financial flows need to be supplemented by other indicators of socio-economic progress. The distribution of wealth, education, employment and skilled manpower; access to amenities and services; delivery systems, opportunities, etc. all have a direct bearing on social well-being. These features, unfortunately, are difficult to incorporate into a single framework.

42. The main difficulties in constructing SAMs will be those of data availability and the reconciliation of data from different sources. The national accounts constitute the main sources of data. For SAMs which are constructed with the main aim of studying income distribution, detailed information on income and expenditure of households is required. Such data will come from household income and expenditure surveys.

Conclusion

43. This paper highlights the SNA and the SAM as the main accounting frameworks used by countries in the African region for the systematic and integrated recording of data for economic and social analysis and planning. While national accounts have been compiled for all African countries, and there exists data series on these accounts for the majority of these countries, available data indicate that SAMs have so far been constructed for Botswana, Congo, Mauritius, Rwanda, Swaziland. A few other countries of the region are in the process of constructing SAMs.

44. The national accounts provides a comprehensive framework of economic statistics. However, macro-economic frameworks provide an incomplete measure of economic well-being and progress, in that they pay very little attention to the distribution of the resources produced in the economy.

45. Some attempts have been made to develop social indicators which will measure social progress and influence development planning. However, one problem with

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social indicators is that they are sometimes extremely difficult to identify with social progress. The problem is one of translating well-intentioned social objectives into clear, precise and unambiguous quantitative terms.

46. Macro-economic and social accounting frame works are essential for effective planning for development. The fact that the SNA has not paid enough attention to distribution is not a good reason for neglecting production, particularly, in countries of the African region where there is, apparently, not much to distribute unless production can be substantially increased.
A condensed version of the system of national accounts

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Note: In the columns: opening and closing assets are balanced by opening and closing liabilities; and net tangible assets are balanced by net worth.
### Areas of economic analysis and policy in relation to the national accounts

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