



UNITED NATIONS
ECONOMIC AND SOCIAL COUNCIL

Distr.
LIMITED

E/CN.14/CAS.10/7
4 May 1977

Original : ENGLISH/
FRENCH

ECONOMIC COMMISSION FOR AFRICA
Tenth session of the Conference
of African Statisticians
Addis Ababa, 17-22 October 1977

CURRENT WEAKNESSES IN AFRICAN NATIONAL ACCOUNTS
ESTIMATES AND SUGGESTIONS FOR IMPROVEMENT WITH
A VIEW TO FURTHER IMPLEMENTING THE SNA

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INTRODUCTION

1. It is known that good national accounts statistics constitute one of the most effective tools for assessing the performance of the economy and making macro-economic projections in developed and developing countries. In the African region, the requirements of development planning in recent years have resulted in an increasing awareness of the need to improve the collection of basic statistics and national accounting work in many countries. A growing interest has been shown in the implementation of the United Nations revised system of national accounts (SNA) : compilation of main accounts and supporting tables to meet the needs of countries and use of definitions and classifications of the system as a framework for the formulation of data collection programmes.

2. The progress achieved in the implementation of the SNA by African countries was reported by the ECA secretariat at the ninth session of the Conference of African Statisticians in October 1975 ^{1/}. Since then the situation has not changed greatly in respect of the number of compiling countries as well as the development of basic statistics which are a prerequisite for improving the quality of estimates and more elaborate national accounts.

3. The purposes of this paper are to outline the actual weaknesses in the national accounts estimates of African countries and to suggest solutions for improvement with a view to further implementing the SNA, which is still at an early stage in most cases.

WEAKNESSES IN THE BASIC STATISTICS USED

4. At present the common weaknesses in the basic statistics used for compiling national accounts in many countries are:

- (a) Deficiency of statistics on gross output and value added of agriculture, especially for food crops and livestock : quantity, valuation of gross output, components of value added.
- (b) Lack of information on gross output and value added in the services sector and the unorganized activities which are usually not covered by censuses and surveys, such as small-scale industries, handicrafts, and own account construction
- (c) Lack of relevant information on household expenditures.

(a) AgricultureQuantity estimates of gross output

5. The quantity estimates of gross output include a significant amount of guess work owing to the lack of available statistics, even for major agricultural commodities.

^{1/} See Document E/CN.14/CAS.9/17.

6. Concerning agricultural crops, apart from export crops, for which the quantity of production is assessed through purchases and changes in stocks of marketing boards, and industrial crops, for which the production is calculated from data on exports and local consumption, the estimates of the remaining crops, principally the food crops, are very unsatisfactory. In most cases, they are based on eye estimates by the field agents of the department of agriculture. Market reports are seldom available. In some countries, estimates of food crops are based on a variety of sources such as data on population and estimates of per capita consumption from fragmentary and sporadic household surveys or information on acreages and yields from partial annual or less frequent agricultural surveys and crop cutting exercises. Figures on production of fruits and vegetables are generally not available. In these conditions, the data for supply/utilization balances even for major agricultural commodities are more or less roughly compiled.

7. In the case of livestock, in many countries of the region, the number is known only for cattle from administrative censuses or vaccination campaigns carried out by the livestock service. For other species, the number is roughly estimated by the same authority. Information required to calculate gross output of livestock (such as off-take rates) and as livestock products is often not available.

8. For forestry and logging, the estimates of output are rather poor in many countries. They usually cover timber cutting and firewood only. Information on timber cutting is quite often inaccurate since, in a number of cases, the quantity is given in "number of trees" and not in square metres for each quality of timber. As for firewood, owing to the lack of information, the production is in general roughly estimated on the basis of "assumed" household consumption in the rural areas.

9. With regard to fishing, the quantity estimate is more or less satisfactory for industrial marine fishing but traditional fishing at sea and in inland waters is very poorly documented in most countries. Some countries estimate the production of this activity through the income approach by estimating the average earning per fisherman and multiplying this figure by the "estimated" number of fishermen. Others base their estimates on household consumption surveys, assuming that the quantity of per capita consumption remains unchanged. In these conditions, any estimates made of the total output at the present time can only be considered as order-of-magnitude figures.

Valuation of gross output

10. Data on producers' prices, which are the prices received by the farmer at the first point of sale collected from direct inquiries, required for the valuation of gross output are generally not available. Apart from problems of availability of trained statistical personnel and financial resources for price collection, difficulties arise from the absence of organized agricultural marketing in most rural areas, the absence of standard units of measure for some commodities, the practice of bargaining etc. There is also the problem of weighting the prices in different areas and at different periods of time to arrive at annual average producers' prices.

11. Apart from the case of cash crops for export (coffee, cocoa etc.) and industrial crops (groundnuts, cotton etc.), for which the prices paid to the growers are usually fixed by the Government, the prices used to evaluate output for other crops are in general not satisfactory. The following variants of producers' prices appear to have been used.:

- (i) producers' prices fixed by government authorities, which often differ greatly from the current prices, particularly for the main food crops;
- (ii) prices received by the farmers in representative markets;
- (iii) wholesale prices after deduction of "estimated" trade and transport margins.

12. For livestock, the lack of accurate information on producers' prices for live animals by species and for livestock products is common to many African countries. The same observation can be made for traditional sea and inland fishing. Therefore the value of output is calculated using sale prices to slaughtering houses for live animals and retail prices for livestock and fish products, taking into account the estimated trade margin and transport.

Estimating value added of agriculture

13. Besides the deficiency of accurate statistics for estimating the quantity of gross output and its valuation, the frequent and general lack of information on cost structure and intermediate consumption collected from farm income and expenditure surveys (for crops and livestock) and small-scale sample surveys (for forestry and logging, and fishing), does not lead to a reliable figure of value added. For crops, information on employment, intermediate inputs, wages and salaries paid in cash and in kind and consumption of fixed capital is usually available only for modern farming or State holdings in some countries. For traditional farming, livestock, forestry and traditional fishing, input-output coefficients used in obtaining value added are generally estimated very roughly.

14. In consequence, the reliability of essential statistical information is bound to be of reduced significance in preparing agricultural development plans and setting feasible targets.

(b) Gross output and value added of services and other unorganized activities

(i) Services

15. At present, estimates of gross output and value added of the services sector in the countries concerned are subject to a wide margin of error and often less reliable than those made for the goods-producing activities. The weaknesses concern principally road transport, wholesale and retail trade, especially petty trading, and ownership of dwellings.

a. Road transport

16. Accurate annual statistics on the stock of vehicles distributed by type and by owners' activity are often not available. Usually information on gross output and value added is gathered through annual questionnaires only for organized road transport

(inter urban and intra-urban passenger bus enterprises, long distance and local trucking). Data on ton-kilometres of goods and passenger-kilometres transported and on average prices are lacking in many countries of the region. As for individual transporters (trucks, taxis), information on receipts, consumption of fuel, repairs and maintenance collected through small-scale sample surveys or inquiries is available only in very rare cases. Thus, the gross receipts and intermediate expenses are very roughly estimated.

b. Wholesale and retail trade

17. Estimates of the trade margin for wholesale and retail trade (in most countries wholesalers are at the same time retailers) are based on various sources. In the absence of direct information, a number of countries use the "mark up" method, applying estimated trade margins to the value of locally produced and imported goods. The principal limitation of this approach is the absence of information on the volume of goods traded, especially for a number of locally produced goods used also for own consumption, and the type of trade services being provided. Many countries use the analysis of income tax returns submitted to the tax department by the trading establishments or data from annual surveys of the distributive trade. As for small retailers and petty trading, information on the numbers involved and on average income is in general lacking. If sample surveys are undertaken, they apply usually to main centres only and the coverage is too limited for the results to be representative. Often, owing to the lack of financial resources and personnel, the results obtained for one year are applied over relatively long periods.

18. With the present state of statistics, data on trade and transport margins by commodity groups through surveys of distribution and annual inquiries are rather difficult to obtain because the traders in most countries do not keep records of purchases and sales by commodity group.

c. Ownership of dwellings

19. Data on housing by type and rent are very deficient in most countries because of the general lack of basic data sources such as housing censuses and household budget surveys. Therefore estimates of the contribution to GDP by the real estate industry are usually poor in coverage and accuracy. Some countries roughly estimate only imputed rent in the urban areas while others do not even include this item in their estimates. Very few countries try to impute rental value for owner-occupied traditional dwellings in the rural area. Concerning rent actually received, gross output is usually estimated on the basis of tax on rent when it is available.

20. Since a significant proportion of housing in developing countries is owner occupied, the extent of imputation for rental incomes can affect greatly the total value estimated for housing services. Besides, the lack of data on inputs such as insurance expenses, repairs and maintenance, annual depreciation, mortgage interest etc. leads to a very unreliable estimate of value added.

(ii) Other unorganized activities

a. Small-scale industries and handicrafts

21. In many countries of the region, the output of small-scale industries and handicrafts is quite significant. However, usable data for such activities can not be obtained as part of regular census operations. Usually estimates are built up through area sample surveys, coupled with information from population censuses on the number of persons engaged. However very few countries collect these kinds of information through area sample surveys. If employment and earning surveys are undertaken in a certain number of countries, they do not often cover these activities.

b. Own account construction

22. The estimate of output and value added in construction activities in developing countries involves great difficulties owing to the complexity of the industry and the general lack of relevant data on the cost composition for various types of buildings. Besides the mixture of different types of construction undertaken by contractors, i.e. residential and non-residential buildings, infrastructure such as roads, dams, bridges, airfields and electricity and communications networks, there are own account construction, including repairs and maintenance, undertaken by enterprises, Government, households and traditional dwellings and farm buildings. The various components of the industry have different cost composition but, with the present state of statistics in African countries, it is impossible to treat them separately to arrive at an accurate figure for the industry.

23. As regards own account construction by the Government and enterprises, statistics on gross output can be collected for the former through administrative statistics on government expenditures and for the latter through the use of annual questionnaires. However direct data on value added for the activity are not available.

24. Concerning own account construction of dwellings in urban area, traditional housings, farm buildings and community structures in rural areas, information required for the estimate of output and value added is not available. Very few are the cases where partial information from rural households income and expenditure sample surveys is available and used to estimate own account construction in rural areas. A number of African countries estimate the output for traditional housing only while others do not cover this activity in their construction figure. Farm buildings are in most cases left out.

(c) Household expenditures

25. At present, most African countries have obtained estimates of private final consumption expenditure as a residue, that is, by deducting the other expenditure from total GDP, which has been compiled in the first instance from the production approach. A limited number of countries that have compiled the table on final consumption expenditure of households have used the commodity flow method. Owing to the weaknesses of basic data for obtaining reliable figures on the resources and uses (gross output of commodities locally produced, trade and transport margins on local goods marketed and on imported goods, etc..) the data obtained may not reflect the actual expenditures of households.

26. The best source for estimating this aggregate is household consumption expenditure surveys, including surveys on the enterprise activities of members of the households (e.g. farming, petty trading, handicraft etc..) From these surveys, data on receipts, consumption expenditure, savings etc... are collected systematically both for estimating the consumption expenditure of households in commodity detail and for completing the system of income distribution statistics. However, few countries in the region have so far attempted comprehensive surveys covering all regions of the country and all population groups. Usually, because of financial and manpower difficulties, the countries that have undertaken these surveys have given them only limited geographical coverage, or have covered only one section of the population (urban households in most cases.) Even in the case of those countries that have undertaken household budget surveys of national scope, the validity of the estimates might be subject to question owing mainly to the generally high percentage of illiteracy among the respondent householders.

SUGGESTIONS FOR THE DEVELOPMENT OF BASIC STATISTICS
WITH A VIEW TO FURTHER IMPLEMENTING THE REVISED SNA

Development of basic statistics

27. Owing to the present weaknesses in the basic statistics, national accounts estimates in most African countries fall rather behind the needs of economic analysis and planning purposes. These include basic data series for benchmark years on agriculture, population, industrial production, income and expenditures of households as well as current statistical series such as data on current and capital government expenditures, external trade and balance of payments.

28. Improvements in the reliability of existing data and the collection of new data are essential for the further implementation of the revised SNA in order to provide countries with a valuable tool for serious economic planning. Therefore, provision should be made by the various Governments in the plan for this purpose (financial resources needed, trained personnel etc...).

(a) Agriculture, forestry and fishing

29. Up to 1976, 30 African countries had participated in the 1970 round of agricultural censuses. To collect information required to assess the role of this important sector in the economy and to base agricultural plans on firmer foundations it is essential that well organized annual agricultural surveys with extensive crop cutting exercises should be undertaken in order to know the variations in output from year to year. Important information such as changes in the labour force (paid and non-paid family workers), and in the mode of production, farm management, expenditures on inputs, fixed capital formation and use of production of crops and livestock (sale and own consumption). should be collected through sample surveys or income and expenditures surveys of farm households. Supplementary information such as data on imports and local production should also be used to estimate intermediate consumption (seeds, insecticides, fertilizers.)

30. As for livestock, supplementary specific surveys should be undertaken to gather information on the off-take rate for various species, on the population number of each specie classified by sex and age and the production of livestock products.

31. Concerning forestry, relevant data should be collected for the production of timber, expressed in square metres for various qualities, and of other forestry products and the cost of production for timber etc... Production of firewood may be estimated from the consumption side using information gathered through household budget surveys.

32. For fishing, current sample surveys should be undertaken to obtain indicators to extrapolate the gross output and value added of this industry, particularly traditional fishing for which data are very deficient. Information to be collected include the following: number of fishermen, number of boats in operation, types of fishing gear and equipment, yield by boat and by main types of fish products, expenditure on inputs such as fuel, maintenance services of fishing boats and gear, expenditure on baits and spare parts for fishing boats etc.. Information on own consumption (salary paid in kind, food) may be gathered through this specific sample survey and/or household income and expenditure surveys.

33. The development of price statistics is essential for improving the valuation of the gross output of the activities listed above and for estimating national accounts aggregates in constant prices. More resources should be allocated for the collection of price statistics and the staff should be properly trained for this purpose. The development of price statistics includes comprehensive surveys of the marketing procedures adopted for crops and fish products, the collection of periodic average producer prices at farm gate or at village markets, and of prices received by the growers when commodities are sold directly to wholesalers, to co-operatives, to marketing boards or through intermediaries. Prices of agricultural commodities generally vary widely in time and place. In principle, weighted average producer prices should be used for calculating the value of gross output. However, with the present state of statistics development, data on quantities sold by the producer needed for the construction of index numbers are quite impossible to obtain particularly for food crops and other agricultural products which are partly sold and partly consumed.

(b) Service sector and unorganized activities

34. Since a significant part of the service sector and other unorganized activities is not usually covered by regular censuses and surveys, the best sources of information are population censuses and surveys which provide data on the population involved and small-scale special surveys or inquiries for obtaining indicators to estimate output and inputs. Administrative data such as income tax returns and excise taxes should also be used to estimate gross output.

35. For owner-occupied dwellings, data on housing can be collected through population surveys or/and housing surveys and household budget surveys. The last two sources have the advantage of providing information on expenditure on rent and maintenance costs besides the characteristics of dwellings. These statistics are essential for arriving at a satisfactory figure on the output and value added of the real estate industry particularly in the urban area. For the rural area, the annual imputed income may be estimated as equal to the cost of maintenance. Information on this item may be collected through inquiries.

36. Concerning small-scale industries, handicraft and petty traders, indicators for extrapolating gross output and value added can be collected through small-scale sample surveys. The results obtained per unit are multiplied by the number of units known through population censuses and surveys or employment surveys to arrive at the figure of income by type.

37. As for own account construction, the basic data required depends on the method used for estimating each type of construction:

- (i) For houses built with materials such as cement, bricks etc.. in the urban area, the value of output can be estimated on the basis of building permits. However this method is not satisfactory, since it does not cover the repairs and maintenance for which building permits are not required. Besides own account buildings often take more than a year to be completed. Therefore, the relatively better method seems to be to estimate the value of gross output based on the use of building materials. Here also, the quality of estimate depends on the information on the various types of own account construction (types of building, repairs and maintenance), the ratio of input-output applied for each type and the value of building materials used. The latter item is usually obtained as residual e.g. after deduction of the value of materials used for other forms of construction from the total value of supply (locally produced and imported building materials used during the accounting year).
 - (ii) To estimate the value of output for traditional farm buildings, the best source of information is farm income and expenditure surveys.
 - (iii) For traditional dwellings, significant indicators for estimating gross output may be obtained from rural household budget surveys.
- (c) The need for developing statistics on income and expenditure of households

38. The main source for developing household sector statistics is the household budget survey which aims at gathering data on income distribution, consumption and saving. For planning purposes, this information is necessary to assess the pattern of expansion in final demand as income levels rise. Data on the distribution and disposition of family income are also needed in dealing with the policy of promoting steady economic growth and stabilizing prices.

39. From the national accounting point of view, household budget surveys constitute the main source for estimating non-monetary transactions (subsistence activities). Only by developing household sector statistics can national accountants compile satisfactory data on the consumption expenditure of households, using the results obtained from household budget surveys cross-checked with the figures estimated from the commodity-flow method. The reliability of the SNA tables on the composition of final consumption expenditure, income and outlay and capital expenditures of households will be greatly improved.

40. A recent effort on the part of the United Nations Secretariat and ECA to improve basic statistics on the households sector has been to evolve, in collaboration with the countries of the region, a multi-purpose household surveys programme for Africa. The project is intended as a follow up to the African Census Programme, which is already making a significant contribution to the improvement of African demographic statistics and will enable the collection of integrated demographic, social and related statistics through household surveys.

CONCLUDING REMARKS

41. The improvement of basic data series, both in quantity and quality, constitutes the main requisite for developing the reliability of national accounts estimates and the further implementation of the SNA. For this purpose, the system provides an excellent framework for the collection of integrated sets of statistics. The classifications, accounts and tables of the SNA provide the necessary valuable data for economic analysis as well as for the formulation and evaluation of development plans.

42. It is hoped that the Governments of the region are fully aware of the importance of the problem and provide sufficient resources (finance, manpower etc.) in their plans for the accelerated development of basic statistics.

43. For national accounts to become an effective tool for economic analysis and planning, it is necessary that the actual defects should be remedied. Besides improving the reliability of the estimates, the series should be released on an annual basis with not much time lag in both current and constant prices. They should be comparable so to avoid possible confusion on the part of users.