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STATISTICS IN THE SUDAN

THE PAST, THE PRESENT AND THE FUTURE

Paper submitted by the Delegation from Sudan

STATISTICS IN THE SUDAN
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1. Introduction

Paragraphs 4 and 5 of E/CN.14/STAT/L.1, 17th April 1959, asked for information about statistical progress in the Sudan; the plans for the future; and difficulties being experienced.

A general outline is given below. More detailed information about the work, organization and staff of the Department is given in appendices 1 to 4.

2. Historical Background

The Department of Statistics was created a separate Department in 1953. But the decision that 'statistics' must be greatly improved was taken before that, towards the end of 1946, when a qualified statistician was recruited by the Department of Economics and Trade. At that time, the statistical information available consisted almost solely of foreign-trade statistics. Since these were prepared manually by a mere handful of staff, comprehensive, quickly-prepared foreign-trade statistics were out of the question.

The initial step was to enlarge substantially the staff of the then Statistical Section of the Department of Economics and Trade, and to purchase a modern installation of Powers-Samas accounting machines.

During the first few years, attention was concentrated on relatively easy tasks. Foreign trade was classified according to the Minimum List; and, with the aid of the Powers-Samas machines, it was possible to prepare - very rapidly - comprehensive monthly and yearly foreign-trade statistics. Various indices were calculated: cost-of-living indices, indices of wholesale prices, indices of prices and volume of import and export goods. In addition, data on internal

trade statistics were collected from District Headquarters and other sources and were regularly published. Data, for example, on retail and wholesale prices, on the production of cotton and gum, on the output of electricity, cement, beer, etc., on the number of vehicles and miles of road, and on banking and finance. But the information, it must be admitted, was very inadequate; and indeed still is. A serious gap was (and is) the lack of any reliable crop estimates, except for those of cotton and gum. Other routine tasks undertaken were quarterly and annual estimates of Sudan's Balance of Payments; detailed analysis of the Exchange Control forms; and the preparation by the Powers-Samas Installation of the payrolls of nearly all the accounting units in the Government. The last mentioned task had the advantage of providing a more even load for the Powers-Samas Installation. A further responsibility was the Central Registry of Births and Deaths, which keeps these records and is responsible for supplying birth and death certificates on request.

Such routine tasks as the above were interspersed with work for the Wakefield and Mills Commissions, writing economic reviews, making studies of particular commodities (gum), and very occasionally, in collaboration with other Departments, designing and analysing research experiments.

When these 'bread and butter' tasks were running smoothly, the Department of Statistics was free to go after larger fish. The first really large-scale undertaking carried out by the Department was the census. From its inception to its completion it took over five years. After a detailed plan had been prepared, a pilot census was held. This tested the plan and provided data about variances. The census proper was held in 1955/56 and the analysis took two years to complete. The results, when all the reports and maps have been published, will be very well documented.

An equally important undertaking - more so in many ways - was the first estimated of Sudan's national income, completed in March 1959 after over two years work. A full report was written; and this should be published shortly. Estimates of Gross Domestic Product were made from both the output side and the expenditure side. An input/output table for Sudan was constructed. And Government accounts, although something of a digression from the main enquiry, were completely reclassified, the idea being to make them more informative and a better instrument for policy decisions. The reclassification of Government accounts was in itself a formidable task. Nevertheless it seemed well worthwhile. The census and the national-income estimate represented major advances along the Sudan's statistical front.

In recent years a number of social surveys have also been undertaken by the Department. The survey of the Deims, in collaboration with Khartoum University, and that of labour conditions in Gezira are but two examples.

3. The Present Position

Population statistics, thanks to the census, are comprehensive and very adequate. But agricultural statistics, as already mentioned, are very unreliable and incomplete. And the same can be said about Labour statistics. Although detailed estimates of the net output of forestry, fishing and manufacturing industry were given in the national-income report, these estimates had a wide margin of error. Moreover, the methods used for making these estimates, although the best that could be devised in the circumstances, were not soundly based.

Statistics on transport, with the exception of road transport, are good. And education statistics have recently been greatly improved. But vital statistics and Health statistics are practically non-existent (data, however, on fertility and mortality were collected during the census).

Statistics on foreign trade are comprehensive and satisfactory. And so are

those on the Balance of Payments. Statistics on money and banking are good.

Government accounts as they now stand have many defects. They do not present a consolidated picture of expenditure; nor are they classified regionally and functionally. Government accounts were shown reclassified in the National Income Report but only for 1955/56.

There are, in sum, many gaps in the statistical information available. In the national-income enquiry Gross Domestic Product was estimated from the output side and the expenditure side, but not directly from incomes. Even though the data about incomes are scant, the information that does exist would be interesting.

More detailed information about the statistical position in Sudan is given in appendix 1.

4. Suggested Future Work: General Reviews

The all important question now is, what work should the Department concentrate on in future. It is not sufficient to detail work over the next six months. If the Department is to run efficiently, without interruption or dislocation, a programme must be made covering several years.

It is recommended that the main tasks should be implementing the national-income report; attempting, in collaboration with Ministry of Health, to improve vital statistics (at present more or less non-existent); and, to an ever increasing extent, collaborating with other Departments in research experiments and social surveys. If social surveys undertaken on behalf of other Departments and in collaboration with them are to be fitted into the Department of Statistics' programme of work, the Department, obviously, must know about them well in advance. This is another important reason for having a National Advisory Committee; for it could discuss such projects and decide which were worthwhile. As matters now stand, the Department has no indication at all of what demands other Departments will make on it.

It is therefore quite impossible for it to plan ahead.

5. Implementing National-Income Report

Almost certainly this will be the most important work of the Department.

It will cover a broad range of activities, including:

Consumer Budget Studies

Quinquennial Estimates of National Income

Annual Estimates of Investment

Co-operating on Government Accounts

Research on Capital Coefficients.

Although the first estimate of Sudan's national income provided extremely valuable information, giving a birds-eye-view of the whole economy, some of the component estimates had undeniably large margins of error. The constant aim of the Department of Statistics must be to make the estimates progressively more accurate. Sampling surveys of all sorts offer by far the best prospect of achieving this aim. But success will not be achieved quickly; it will be achieved only after a constant struggle over a period of years. Since consumer budget studies give a high yield of information in relation to their cost, attention, it is recommended, should in the first instance be concentrated on them.

A highly trained field staff will be required for these budget studies; and, closely supervised, they will move from area to area. Consumer budget studies will provide information (from the expenditure side) about the output of the crops; on the consumption of milk, meat and dairy products; on the consumption of fuel, forestry products and water - indeed on consumption generally. Undertaking consumer budget studies will have the advantage of 'Killing several birds with one stone'. For besides improving national-income estimates, they will - in time -

provide data for the revision of the 'weights' of the existing cost-of-living indices, and for the construction of regional indices. Further, they will provide data about income elasticities of demand: highly pertinent informative for planning economic development.

Until the national-income can be estimated much more accurately than at present, it is a waste of effort to make annual estimates. About that there can be no doubt. For such estimates would not be accurate enough to give a reliable guide to changing economic trends. Instead, for the time being, it is recommended (1) that national-income estimates should be made every five years. This, it is hoped, is a sensible compromise. Even estimates made every five years, if given a wide circulation, will acquaint administrators with the importance of national-income accounts.

Certain component estimates, however, should be made annually. In particular an annual estimate should be made of Gross Domestic Investment. (This will complement the estimate of Foreign Investment contained in the Balance of Payments.) The basis of the estimate will be Government Accounts, the Balance Sheets of the large firms, foreign-trade statistics, estimates of the gross output of Building and Civil Engineering, and the like. To obtain the cost at market prices of imported capital goods, the appropriate transport and distribution margins will have to be added to the C.I.F. Values. The first step in making this particular component estimate is to classify all imports according to whether they are capital or consumer goods. To make this subdivision is never quite so easy as it sound - certain goods fall into both categories. It is advisable - in order to reduce the task to mere routine and to ensure comparability - to use standardized

(1)

However, the next estimate of the national income should not be done until more reliable data are available on agricultural production, either from consumer budget studies or from Ministry of Agriculture's sampling plans.

working sheets. Estimates of Gross Domestic Product should be made both according to sponsor type of investment and industry.

In the national-income report a whole chapter was devoted to Government accounts. Government accounts were classified economically, functionally and regionally, and the results incorporated in six Tables. These gave a consolidated picture of Government expenditure; capital expenditure was differentiated from current expenditure; all duplications were eliminated. Reclassifying Government accounts took over six months; and in the process certain members of the Department of Statistics gained a valuable insight into them. It is recommended that these members of the Department of Statistics should co-operate with members of the Ministry of Finance, and possibly of the Organization and Methods Branch, to produce similar Tables annually. No doubt the original Tables can be greatly improved upon. It should be stressed that the new classifications of Government accounts are a supplement to, not a substitute for, existing Government accounts.

The existing accounts serve admirably the purpose for which they were designed:

to ensure that units spend funds in the way approved. But they are poor instruments of policy. The problem of preparing reclassified Government accounts - and

preparing them rapidly and with little effort - will be mainly an administrative one.

It will not be easily solved. But unless a great effort is made, the experience gained will run to waste. And that would be a very great pity.

Finally, it seems highly desirable to undertake research work on capital coefficients. Recent economic literature abounds with references to them, stressing their relevance to economic planning. By capital coefficient is of course meant the ratio of the cost of the marginal increment of capital to the annual value of its output. Capital coefficients vary from industry to industry and country to country. Data about capital coefficients are useful in making

an overall plan - in deciding what proportion of Gross Domestic Product should be annually invested; also in making plans for particular industries.

6. Other Tasks

(a) Vital Statistics

Vital Statistics in Sudan have sadly lagged behind and a concerted effort to improve them is overdue. At present, births and deaths in Sudan are grossly under-registered, only about one birth in five being registered and about the same proportion of deaths. Sudan is thus deprived of valuable demographic data. A knowledge of specific differential fertility and mortality rates is badly needed. It is needed to enable the Government to formulate a quantitative and qualitative population policy; to draw attention to abnormal mortality in different regions and occupations; to enable life tables to be constructed; to indicate, possibly, the most useful lines of medical research in Sudan. During 1957/58 a 'Board for Improvement of Birth and Death Registration' was created. It consisted of representatives from Ministries of Interior, Education, Health, and the Department of Statistics. A full report was prepared. The recommendations made, however, have not yet been put into force; to implement them requires financial aid. But immediately the funds are approved, the suggested scheme should be started. It will take several years of effort - even on the most optimistic assumptions - to make the new system effective.

Improving Birth and Death registration, however - substantial task though it is - is only a part of the task of improving vital statistics. Statistics on Health and Morbidity generally are required. The World Health Organization has indicated what can usefully be done in under-developed countries. Undoubtedly in Sudan there will be many problems. But the basic problem is administrative - how reliable information can be collected, without incurring substantial expense.

The Ministry of Health, jointly with the Department of Statistics, needs to devise a suitable system of collection - a system that will be adapted to machine-accounting methods. The required analysis can then be completed easily and quickly. No country in the long run can afford to neglect its health.

(b) Social Surveys for Other Departments

With ever increasing frequency in recent years the Department of Statistics and other Departments have successfully collaborated in undertaking social surveys. The surveys have been very varied. The advice of a statistician is certainly needed in designing a sample. Moreover, the Department of Statistics can help in drawing up the Questionnaire; in supervising the field work; and in undertaking the analysis.

Quite unknown are what surveys the Department of Statistics will be asked to undertake in future. Most likely they will be numerous. This is far from satisfactory; for in such circumstances the Department of Statistics is unable to plan ahead. As stated earlier, a National Advisory Committee (or some such Body) is urgently needed to plan statistical work in the government as a whole.

7. Field Staff

The Department of Statistics, if it is to undertake the above tasks, will need a field staff. The Department has two Field Inspectors at present on its permanent establishment. In the past, whenever a survey was undertaken temporary staff (supervised by the two Field Inspectors) were employed. But there are serious disadvantages to temporary staff. Considerable time has to be spent on training them. Their pay is therefore high for the work accomplished. Further, the quality of their work, despite training, is below that of permanent staff. If field work is undertaken only occasionally, these disadvantages must be put up with; it is more economical to do so. However, the time has now come when the volume of

field work justifies the Department's having a permanent field staff on its establishment.

It is suggested that the Department of Statistics should have on its establishment three Field Inspectors and twelve enumerators. The two existing Field Inspectors are scale F; and scale J would seem suitable for the enumerators. Each team, consisting of one Field Inspector and four enumerators, would require a lorry and driver. Since the Department already has on its establishment two Field Inspectors and two lorries and drivers, the additions required are one Field Inspector, twelve enumerators, one driver (and one lorry).

The secret of success in field work is training and close supervision. That is why it is so necessary to have capable, responsible men as Field Inspectors, who have drive and initiative.

The consumer budget studies alone - to say nothing of the other tasks - would continuously employ the proposed field staff for over two years.

8. The Need for an Advisory Committee

The Department of Statistics has reached a stage, it is believed, where it can make a substantial contribution to planning economic development. But to make certain that it does so, its future work must be very carefully considered and priorities determined. Because the Department of Statistics works rather isolated from other Departments, there is a very real danger that its energies may be fritted away on work not of top-class importance. That the Department of Statistics should come directly under the Council of Ministers was undoubtedly a sound decision. It was thus freed from Departmental pressures; at the same time it stands ready to do work for all Ministries. But to keep it in close touch with the needs of other Departments, it is strongly recommended that a National Advisory Committee be set up. The suggested Committee could consist of the Permanent Under-Secretary

Ministry of Finance, the Directors of the Ministries of Agriculture, Health, Education; Commerce, Industry and Supply; and the Director Department of Statistics. Its function would be to review the statistical situation and to advise on the work to be undertaken. To advise, that is, not only on the work to be undertaken by the Department of Statistics but by other Ministries as well. Only thus will duplication of effort be avoided and a co-ordinated statistical programme devised. And only thus will full use be made of scarce statistical resources.

9. Possible Difficulties

Since the Department of Statistics became a separate Department in 1953, it has, it is hoped - within the limits set by its establishment - achieved useful results. It could not have done so without the support of the Ministry of Finance, which approved the funds. The census was an expensive undertaking; without the funds it obviously could not have been undertaken.

The Department of Statistics will need the equally generous support of the Ministry of Finance in future. Funds are needed to put the new system of birth and death registration into operation. A larger establishment is required - a field force. Funds, too, will be needed for social surveys of all sorts. Without this support, the Department of Statistics will almost inevitably stagnate.

The Department of Statistics also urgently requires a highly qualified technical advisor. The United Nations has been asked to supply a suitable person.

Staff and funds - these, as always, may be problems. If they are solved, the path ahead should be clear.

10. Priorities

To recapitulate: it is recommended that the Department of Statistics should concentrate on (a) implementing the national-income report; (b) improving vital

statistics; and (c) undertaking social surveys and research work in collaborating with other Departments. Implementing the national-income report entails undertaking consumer budget studies, making quinquennial estimates of the national income, preparing annual estimates of Investment, helping to reclassify Government accounts, and undertaking research work on capital coefficients. These tasks, collectively, are much more, needless to say, than the Department can possibly undertake at one time. The work will have to be spread over a period of years. Accordingly, priorities must be laid down.

It is suggested, tentatively, that top priority should be given to the consumer budget studies and to the annual estimates of Investment. But determining priorities, it has been argued, should be the work of the proposed National Advisory Committee.

Without question, the Department of Statistics has a unique opportunity of making a major indirect contribution to economic development. And it is an opportunity that must not be missed.

APPENDIX I

This appendix states the availability of the statistics mentioned in the annex to E/CH.14/4. The headings and sub-headings are given in the same order as in that annex.

(a) Population

The information mentioned in the sub-headings (i), (ii), (iii), & (iv), was obtained in the 1955/56 census. Crude birth and death rates only were obtained, not specific fertility and mortality rates. Mortality and fertility rates are not obtainable annually from birth and death registration, since births and deaths are grossly under-registered.

(b) Labour

An estimate of the number of employees in the main manufacturing industries was made as part of the national income enquiry. No reliable information exists on sub-headings (ii) to (iv).

(c) Agriculture

(i) Reliable estimates exist on the production and acreage of cotton, also on gum production. Other crop estimates have a very wide margin of error. The Ministry of Agriculture has plans for estimating crop yields by sampling methods, but it will be some years before the plans are in operation.

(ii) Area and production of private cotton schemes is known.

(iii) Subsistence production of such crops as dura, sesame, and groundnuts cannot be separated from commercial production. See C(i) above.

(iv) No information is available about the distribution of land holdings.

(v) Subjective estimate exist of the number of the different types of animals, but no scientific estimates have been made.

(vi) Indirect estimates of animals slaughtered from the number of hides and skins exported. Direct estimates are available for the large towns only.

(vii) Prices of the main crops in the main centres are available.

(viii) Estimates of Gross Domestic Investment, by type of activity were made in the national income enquiry;

(d) Forestry

No reliable statistics have been made of forest resources. The Dept of Forests Reports that annual production of sawn and unsawn timber. But timber collected without licence is not reported - such as firewood and poles used in African-style houses.

(e) Fishing

No reliable statistics exist. In the national income enquiry the catch was estimated from consumer budget studies.

(f) Industry

(i) Although estimates were made in the national income enquiry of the number of employees and the net output of the different types of manufacturing industry, the margin of error was large. Nor was the method of estimation satisfactory.

(ii)&(iii) No reliable information exists.

(iv) Estimates of Gross Capital Formation were made in the national income enquiry. The estimates were made by type of activity, but not separately for each section of economy.

(v) Electricity output is known.

(vi) Information about prices is not collected regularly.

(g) Transport

1. Water Transport.

Data on sub-headings (i),(ii),(iii), are available.

2. Rail Transport.

Data on sub-headings (i),(ii),(iii), are available.

3. Air Transport.

Data on sub-headings (i),(ii),(iii), are available.

4. Road Transport.

(i) Information about road mileage classified by type of road, although produced is not very reliable.

(ii) The number of vehicles by capacity and type is prepared annually.

(iii) Estimates of Gross Investment in transport and equipment was made in the national-income enquiry.

(h) Education.

This information is available in the recent study made by a UNESCO expert. The Ministry of Education is to prepare such statistics annually.

(I) Health Services.

The number of registered doctors and nurses is available, and so is the number of hospitals and beds. But reliable Health & Morbidity Statistics do not exist.

(j) External Trade.

(1) Exports

Information for all sub-headings is available.

(2) Imports.

Information for all sub-headings is available.

(k) Money and Banking

(i) Such information is available and will shortly be regularly published.

(ii) Is available, but will not be published.

- (iii) Information about bank Debits is not compiled.
- (iv) The Central Bank is not yet established.
- (v) Gold and foreign exchange holdings will be published monthly.
- (vi) All dealings are at the official rate.
- (vii) Balance of Payment estimates have been prepared for a number of years.
- (viii) Price indices of import and export goods are available.

(l) Government

- (i) Such information is produced regularly.
- (ii)&(iii) These classifications were produced in the national income enquiry, but are not prepared regularly.
- (iv) Revenue for each main tax is published annually.

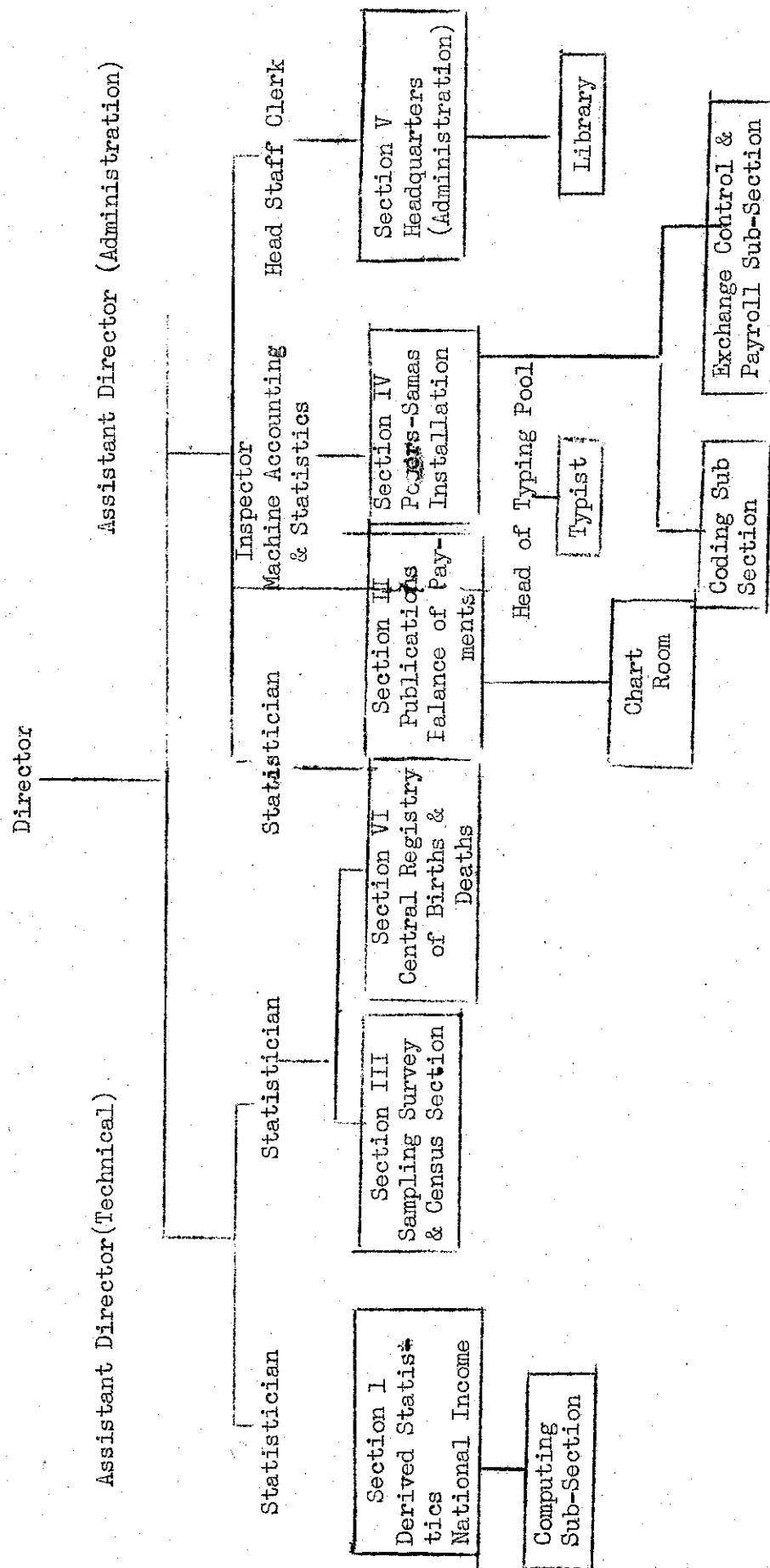
(m) Personal Income and Expenditure

- (i) No estimates exist of income distribution by size.
- (ii) Consumer budget studies were undertaken in "Three Towns" as a prelude to revision of weights of cost of living indices. They were also undertaken as part of the national-income enquiry.
- (iii) Cost-of-living indices are calculated monthly.
- (iv) See the national-income report.

(n) Housing

A survey of housing and social conditions in the New Dheims was undertaken.

DEPARTMENT OF STATISTICS
CHART OF ORGANIZATION



WP. 15.

APPENDIX 3

Summary of Posts by Grade

<u>Grade of Post</u>	<u>Number of Posts</u>	
Superscale	1	
A & P Stage 6	2	
A & P Stage 5	1	Hors cadre
A & P Stage 3,4	4	
SP & T Stage 1,2	9	4 hors cadre
SP & T Stage 4	4	2 hors cadre
SP & T Stage 3, 4	3	
SP & T Stage 3	2	
SP & T Stage 1, 2, 3	1	
SP & T Stage 2	4	
Clerical Stage 2	1	
SP & T Stage 1	21	
Clerical Stage 1	6	
Preliminary Stage	6	
Ungrouped Clerical Scale	25	equivalent to former scale K
Ungrouped Clerical (Female)	22	
Typists	<u>3</u>	
Total	<u>115</u>	

APPENDIX IVORGANISATION OF DEPT. & WORK DONE BY EACH SECTION

The Dept. is divided into the undermentioned sections:-

- Section I - Derived Statistics - Economic Research
 - National Income
- Section II - Publications - Balance of Payments -
 Routine Enquiries
- Section III - Sampling, Survey, Census Section
- Section IV - Powers-Samas Installation
- Section V - Headquarters Section
- Section VI - Central Registry of Births and Deaths

Section I (Derived Statistics - Economic Research - National Income)

This section is under charge of a statistician and is aided by a computing sub-section. It is responsible for making quinquennial estimate of the national income; for writing economic reports; for undertaking economic research; for computing all derived statistics; and for doing any computing needed by other sections or other Depts. Cost-of-living indices, wholesale price indices and indices of the prices of import and export goods are examples of derived statistics calculated by this section. An example of economic research is the report on the gum industry, "Some Aspects of Gum Arabic Production".

Section II (Publications - Balance of Payments - Routine Enquiries)

The publication of the monthly report on "Foreign Trade and Internal Statistics" and of the "Annual Foreign Trade Report"; the quarterly and annual estimates of the Balance of Payments; and the answering of all routine enquiries, are the responsibility of this section. The raw data on foreign trade (the Customs Declarations) are "processed" by the Powers-Samas installation and the tabulations still in code are passed to this section, which prepares the material for the Printer. This section also collects data on internal trade and prepares it for publication.

Section III (Sampling, Survey and Census Section)

This section's duty is to plan, in complete detail, any sampling surveys that may be undertaken; and also to plan future population censuses. For undertaking future censuses a huge temporary staff will be needed; but this section - again suitably augmented - will plan the basic preliminaries.

It is also the function of this section to plan the sampling design of any research experiments undertaken by other Depts., and to be responsible for the statistical analysis.

Currently being undertaken is a survey of cotton-picking labour in the Geriza.

Section IV (Powers-Samas Installation)

The permanent staff of this section consists of an Inspector, an Assistant Inspector, 2 head girls and 20 female punch or machine operators. The installation prepares the payroll and pension statements for over half the accounting units in the Government. It "processes" the Customs Declarations and Exchange Control Forms; it does the machine analysis of any social surveys undertaken.

The Inspector of the Powers-Samas Installation, in addition to controlling the installation, is in charge of two sub-sections, the coding sub-section and the payroll sub-section. Their tasks, respectively, are to code the information on the following Customs Declarations, ready for the machines, and to check the notifications of pay changes and the final payroll tabulations.

Section V (Headquarters Section)

This section attends to the administrative work of the Dept.

Section VI (Central Registry of Births and Deaths)

The Central Registry of Births and Deaths is responsible for maintaining the records of birth and death registration for the whole of Sudan. The birth and death registers comprise a library of some 6,000 volumes. A large part of the work of the section consists in verifying, upon request whether people's births have been registered, then issuing birth certificates, (or certificates of non-entry). Since most schools require to see children's birth certificates before accepting them, the spread of education has greatly increased the work of this section.

The Director, Dept. of Statistics, is automatically the Registrar General of Sudan,

2nd December, 1958

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