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THE ORGANIZATION OF STATISTICS IN BAHAMAS, BARBADOS, BELIZE AND TRINIDAD AND TOBAGO

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1. Introduction

The purpose of this paper is to investigate the relationship between the organization of statistics and the efficiency of the statistical systems in four selected *Commonwealth Caribbean countries - Bahamas, Barbados, Belize and Trinidad and* Tobago.

In the discussion of the statistical organization, we briefly review: the Ordinances under which the systems were set up (Sec. 2); the location of the central statistical agency within government (Sec. 3); the degree of centralization of the statistical system (4); the organizational structure of the central agency(5); and the staff situation (6). Training is not covered in this paper as it is to be discussed in Session V of the Colloquium. In each section, we begin with a brief look at the historical development of the system, but our main concern is with the current situation.

As indicators of the efficiency of the statistical system, we look particularly at the output of the statistical offices (Sec. 7) and the effectiveness in the use of computers(8). As regards the former, we consider the volume, accuracy and timeliness of the published statistics, as well as the special tabulations and analyses undertaken on behalf of Government and non-government agencies.

We conclude with an evaluation of the statistical system in terms of the relevance for, and use of its statistics, and suggest areas for discussion by the Seminar for improving the role and function of the statistical systems (Sec. 9).

The Author has been able to obtain a great deal of data relating to Trinidad and Tobago. In part this is because he is 'on the spot', but it is also true that the Central Statistical Office (CSO) of Trinidad and Tobago has prepared and published comprehensive and illuminating Annual Reports for many years, as well as other special reports on its work and problems. By contrast, only very limited information has been available for the other three countries, comprising mainly the reports prepared for the annual meetings of the CARICOM-based Standing Committee of Caribbean Statisticians (SCCS).

Partly for this reason, and partly in order to keep this paper to a reasonable length, the description of the Trinidad and Tobago situation is given in some detail, while the discussion is more summary for the other countries unless they differ significantly from the former country.

2. The Statistics Ordinances

The statistical system in each of the four countries under review was established by a statistical Ordinance. In Trinidad and Tobago, the Ordinance first establishing the CSO was Chapter 42, No. 1. This has been amended as the Statistics Act Chapter 19:02 of 1980.

This Act stipulates that 'there shall be a Statistical Department with a Statistician at the head of it' and sets out the duties of the Statistician as:

a. to take any census in Trinidad and Tobago;

b. collect, compile, analyse, abstract and publish statistical information relating to the commercial, industrial, agricultural, mining, economic, social and general activities and conditions of the people of Trinidad and Tobago;

c. collaborate with other Government Departments in the collection, compilation, analysis and publication of statistical records of administration; and

d. generally organize a co-ordinated scheme of economic and social statistics relating to Trinidad and Tobago, in accordance with the provisions of this Act.

Among the other provisions of the Act are that:

1. The Minister may appoint committees to advise the Statistician (or any competent authority to whom functions have been delegated (see 10 below);

2. Statistics should not be published in a manner to betray the confidentiality of information about any individual person or undertaking;

3. The Statistician is given power to require persons to supply information;

4. For the purpose of taking a census, any authorized official has power of entry into any household or establishment;

5. Any persons employed in the execution of duties under the Act can be charged for improperly disclosing or using any information collected under the Act, for knowingly compiling for issue any false statistics, or knowingly destroying or defacing any document containing information collected under the Act;

6. Any person in possession of information could be charged under the Act if he refuses or neglects to give information required under the Act, or knowingly gives false information;

7. The Minister may make regulations for better putting into effect the provisions of the Act;

8. Every person employed in the execution of any duty under the Act must take an oath of secrecy before a Magistrate or other authorized official;

9. Any person who considers himself aggrieved by the demands for data from the Statistician may appeal to a judge in Chambers against such demands; and

10. The Statistician may, with the approval of the Minister delegate any of his functions to a competent authority.

The Statistics Laws for the other three countries are not at present available to the Author. My understanding is that they are similar, but representatives from the statistical organizations in these three countries could indicate whether there are any significant differences between their laws and the Trinidad and Tobago Statistics Act.

3. The Location of the Statistical Agency within Government

In each of the four countries, the central statistical agency now falls within a Ministry.

In Trinidad and Tobago, the Central Statistical Office started, in the colonial days, at the beginning of the 1950s, as an independent organization, with the then Government Statistician reporting directly to the Governor. With internal self-government and independence, the CSO was placed within the Ministry of the Premier/Prime Minister, considered most appropriate for a department required to service all government.

For a brief period - 1962-1969 - the CSO was taken out of any Ministry and existed as an independent department reporting directly to the Prime Minister in all matters, the Director of Statistics having the status and responsibility, of a Permanent Secretary as regards administrative matters. In 1969, however, the CSO was reintegrated into a Ministry - the super-Ministry of Finance, Planning and Development with the Director of Statistics reporting to the Minister through the 'super-Permanent Secretary'. This, however, proved impractical, and soon the Director was reporting through the subordinate Permanent Secretary of Planning. In 1972 the arrangement was regularized, the CSO being made a division of the Ministry of Planning.

From 1987, with the change of government, the CSO was shifted back to the Prime Minister's Ministry. However, by the time this Colloquium takes place it will have been shifted, once again, this time to a new Ministry of the Economy.

In the Bahamas and Barbados, the statistical agency is, and has been for a long time, within the Ministry of Finance. The situation in Belize is set out in the following brief 'HISTORICAL BACKGROUND' to that country's Report to the 11th Meeting of

SCCS in 1986.

"Ever since the evolution of the Central Planning Unit (CPU) as a separate government agency back in the 1960s, there had always been a small but growing statistical unit within the CPU. Originally, the main function of the statistical unit was restricted to the compilation of Trade Statistics. During this period, staffing in this unit was confined to 2 or 3 compilers of similar rank to that of second class clerk. Between the late 1960s and early 1970s, the functions of the office expanded. In addition to the provision of basic trade statistics, more detailed analysis of this area was gradually demanded, together with statistics on other areas e.g. statistics on the economy, population, etc. In order to meet these demands, staffing at the senior level increased by one (1) statistician, and at the junior level by one (1) statistical assistant. Statistics on other areas like Government Finances, Consumer Prices, etc. gradually became necessary and in 1983, when it was decided to dissolve the Central Planning Unit, the Central Statistical Office (CSO) was established as a separate department within the Ministry of Finance and Economic Development, and continues to maintain this status now within the Ministry of Foreign Affairs and Economic Development."

But, as UN (1980) points out, much more important than the legal status of the statistical service, is its status in the sense of the agency's professional and administrative standing in the eyes of other government bodies and the public. Even with the highest possible legal status, a statistical agency will not enjoy high professional and administrative esteem, "if it provides data that cannot be transformed into meaningful information, publishes the results of censuses and surveys late, prepares statistics that are inconsistent or incompatible with related data, performs the dissemination function poorly ..."

But this, of course, is part of a vicious circle: if a statistical agency has low **de facto** status, it will not receive the resources and support it needs to function efficiently and hence will not be able to enhance its image.

The statistical agencies in the four selected countries have, to differing degrees, all suffered from such low status for more or less of the time. The 'vicious circle' problem was extensively discussed in the opening paragraphs of the 1986 Annual Report of the CSO of Trinidad and Tobago, which addressed the criticisms being levelled at the CSO, despite its many achievements. Some of this is constructive criticism, which CSO welcomes and is, in fact, continually reviewing its methodologies with a view to improving the quality of its output. On the other hand, some of the problems arise because of inconsistencies in statistics obtained from different sources within government which have not been prepared consistently. Moreover, as the Report points out, the CSO is operating under serious difficulties, many of them engendered by the 'bureaucratic constraints'. The other three countries faced similar problems to differing degrees.

In a paper on this issue of status of the statistical agency, Eric Straughn (1987), Director of Statistics of Barbados, pointed out that in most countries of the Region, the statistical offices were understaffed, their existing staff were not adequately trained, and

there was a lack of data processing capability. All these, in his view, contributed to the low efficiency, and hence low status of the statistical offices, and an improvement in status consequently was dependent on improvements in these areas.

It is to be stressed, also, that the situation of the statistical agency within government is really important only with respect to its impartiality and professional independence. Once again, then, the legal status is less important. Wherever it is situated, if the statistical agency is, and is seen to be, impartial and professionally independent it could expect the respect and support of government departments and the general public; if it is not, then the confidence in and the usefulness of the service will be impaired.

In Trinidad and Tobago, prior to the Ministerial system of government, the CSO was clearly impartial and professionally independent as indicated above. Throughout its history it has continued to be fully impartial in its collection and distribution of statistics. As regards its professional independence, with the advent of ministerial control, the CSO, as a courtesy, submitted its reports and releases to the minister in charge for his information, a few days before public release. Up the end of the 1970s no approval was required by the Director of Statistics prior to releasing statistical information.

But for a brief period, 1981-1983, this situation was changed, and the CSO was required to submit all its publications to the Ministry to obtain approval to publish from a special Review Committee. While no change to any of the data was ever required, this procedure did result in long delays in releasing already printed data. Fortunately, it was only for a short while, as such loss of professional independence would be most unfortunate, for it would allow, or appear to allow, the release of what should be totally impartial statistics to be dependent on political or other considerations.

In the other three countries, as in Trinidad and Tobago except for the short period just mentioned, the governments have up to now always honoured the promise in the statistics ordinance, of an impartial and professionally independent statistical service.

4. The Degree of Centralization

The relative advantages of centralization and decentralization of the statistical service have been thoroughly discussed over the years. In UN (1980), among the advantages of centralization listed were that: it enables a country to make best use of its scarce statistical resources particularly in a small country; it is convenient and efficient for users; "it is usually easier for an administratively autonomous, politically neutral central office, concerned only with statistics, to be free from special influences and interests"; a centralized service is better able, than a decentralized one, to plan an integrated system of statistics, and to implement uniform standards, definitions and classifications. On the other hand, the principal argument against centralization, according to UN (1980), is that statisticians may become isolated from the users of statistics, with the risk of the statistics becoming irrelevant, on the one hand, and the

administrators being less able to appreciate and use the available statistics on the other.

At the outset, the statistical service in Trinidad and Tobago was set up quite definitely as a centralized one. Efforts during the late 1950s and the 1960s to destabilize this situation, interestingly enough spearheaded for the most part by international agencies - the ILO and WHO/PAHO - resulted in doing the opposite - strengthening the centralized agency. For example, after the Ministry of Labour, on the instigation of an ILO adviser, undertook labour force surveys in 1958 and 1959 using different definitions from those used in the preceding three years by the CSO, opposition politicians and newspapers had field days insisting that unemployment had doubled during the two or three years than the new government had been in power. Realizing the confusion and danger inherent in having inconsistent statistics emanating from government, Cabinet directed, in 1960, that no statistics should be collected or released by any government Ministry or department without the approval of the CSO.

This has now changed. In its 1986 Annual Report, the CSO found it necessary to make a 'Case for a National Statistical System', claiming that 'All and sundry, who have the inclination, can and do operate their statistical operations without any concern for an integrated and cohesive national statistical system'.

Continuing on this theme in its 1987 Annual Report, the CSO observed that its difficulty in getting early response from the private sector stemmed, in large measure, from 'the "the paper explosion" occasioned by numerous agencies of government imposing "form filling" in duplicate and triplicate for various official transactions. Added to these official requirements were numerous surveys from government and non-government sources which duplicate the work of the CSO in part or whole'. This has also been the experience in Barbados, and to a lesser extent, in the other two countries as well.

However, the CSO was proposing rationalization rather than a complete (or greater) centralization of the collection and publication of statistics, for it went on, in the 1986 report to put forward 'The Case for Decentralization' giving Financial Statistics, Balance of Payments and National Income as prime candidates, presumably to the Central Bank. In fact, the Bank has for many years been preparing and publishing financial statistics which are in turn published by CSO, and this year the Bank has also taken over, by arrangement with CSO, the preparation of the Balance of Payments. This accords with the requirement of the Statistical Ordinance that the Statistician collaborate with other Government Departments.

As in Trinidad and Tobago, the statistical systems in Barbados, Bahamas and Belize were all set up as centralized systems. In none of these countries does centralization imply that no other government agency is permitted to publish statistics. For example, in Barbados the Annual Digest of Education Statistics is prepared and published by the Ministry of Education, and there are other examples of such 'specialist' publications in all the countries. I would assume that even under full centralization, Ministries/Departments other than the statistical agencies, would be permitted/encouraged to collate statistics from their own administrative records or

special enquiries confined to the particular Ministry/department which are necessary for their own better management.

On the other hand, these ministries/departments should not become involved in the general collection of data from the wider public, nor should they publish for public use any statistics which they have compiled, without consulting with and, preferably, getting the approval of, the central statistical agency. This, presumably, was the concern of the CSO of Trinidad and Tobago in its 1986 Report.

5. Organizational Structure

In each of the four countries, the central statistical agency is headed by a professional statistician. The offices are organized in divisions, with one or more 'functional' divisions concerned with administration and general services, while the statistical activities of the department are distributed among divisions on a subject-matter basis. These divisions are, in turn, further sub-divided into sections and/or units where the size of the organization warrants it.

In Trinidad and Tobago, the major subject-matter divisions are: National Accounts; Economic Statistics; Population and Social Statistics; and Agricultural Statistics. As an example of the breakdown into sections/units, the National Accounts Division is sub-divided into four subject-matter sections on: National Income; Balance of Payments; Research, Integration and Development; and Business Surveys.

The Service divisions in this country are: Administration; Data Collection; Data Processing; and General Services. Again as an example, the last division is sub-divided into the following sections/units: Training; Publication and Information; Library; Composing and Printing; and Charts and Diagrams.

While this is the general approach to organizational structure in all four countries, because of the large variation in size (see 6. Staff) there is also large variation in the complexity of the structure. This is demonstrated by a comparison of the organization Charts for Belize and Trinidad and Tobago - **Appendices I and II.** In the case of the smallest organizations, the inherent organizational structure is gleaned from their major statistical activities (see 7. Output).

In each of these central statistical organizations, the integration function is important, but this is clearly so to a much greater extent in the larger offices - Trinidad and Tobago and Barbados. In Bahamas and Barbados there is a Deputy Director to assist the Director in this function; in Trinidad and Tobago there is no Deputy or Assistant Director and the Director must, therefore, rely on assistance from his senior professional and administrative staff.

In Belize, integration can largely be ensured by personal contact between the head and his small group of senior staff. In the three larger organizations more formal steps must be taken. The use of departmental committees has proved useful for this purpose.

In all four of these countries external committees have also played an important role. Perhaps the best known is the Population Census Advisory Committee, set up in each country to include staff of the statistical/census office and other concerned ministries/departments, as well as representatives of a number of non-government organizations, to advise on census plans and to act as public relations agents for the census. Similar external committees have been set up for other censuses and large-scale surveys (Agriculture, Business, Household Surveys), some of them being technical rather than general committees.

A very important aspect of statistical organization relates to the arrangements for the collection of data through censuses and surveys. Except for Belize, the population census has been the responsibility of the statistical department for many years. This will be so in Belize for the first time for the 1990 round of censuses. In general, this has involved setting up a large, **ad hoc** unit for running the census. In Trinidad and Tobago, and to a lesser extent in Barbados and Bahamas a nucleus unit is maintained between censuses.

Trinidad and Tobago introduced an important innovation into the Region when it set up, in 1963, a permanent unit for carrying out sample surveys of the population (CSSP). There is now such a unit in Barbados, and consideration is being given to the matter in the other two countries in accordance with efforts to build up a household survey capability throughout the Region. In the countries there is also some organizational arrangements for the taking of business surveys.

6. Staff

The greatest variation between the statistical organizations in the four countries is in their size in terms of numbers of staff. This varies from a high of about 330 in Trinidad and Tobago to 70 in Barbados, 60 in Bahamas and 20 in Belize. This variation is, of course, related to the size and complexity of the economy of the countries.

Within each country, the experience in general is that statistical agencies find it difficult to get adequate staff and resources for the efficient performance of their designated duties. Reference has already been made to this, above, in the quoted comment of Eric Straughn (1987).

In its Report of the 11th Meeting of SCCS, the statistical agency of Belize considers: "The present staff structure of the Central Statistical Office is reasonably practicable given the current fiscal and economic constraints". However, the report acknowledges that there is a growing demand for more statistics and statistical analyses, and sees the shortage of skilled manpower as a major constraint to meting these demands.

In Trinidad and Tobago where the shortage of staff has been more vociferously acclaimed, as early as 1961 we find the then Director of Statistics, the Author of this paper, complaining in a letter dated 6 November to the Permanent Secretary to the Premier about the alarming deterioration in the quality of the department's statistics

because of the extreme shortage of both trained and untrained staff, and giving notice of his intention to suspend work in 12 major areas including: National Income and Balance of Payments, the CSSP, Establishment and Business Surveys and a number of annual reports.

As indicated earlier, the situation improved soon afterward. Indeed, after the shift of CSO to the Ministry of Development in 1969, there were significant increases in the professional staff (from 6 in 1967 to 15 in 1972) as well as in non-professional staff. The CSO did not, however, benefit as much as it should from these increases because of the rapid turn-over in professional staff that was taking place at that time.

In recent years the staff situation is once again grim. The Annual Reports for 1986 to 1988 speak of: shortage of staff positions at all levels; difficulty in getting approval to fill established posts; the existence of a large pool of temporary staff, many with 15 years or more of service; a lack of opportunity for persons who have received the department's in-service training; and so forth. This has necessarily led to some demoralization. On the other hand, it has been pointed out to the Author, that these problems, which are in some measure associated with the economic downturn, have not been as bad for the CSO as for most ministries and departments. One example sighted is that the CSO has not been required to give up its temporary staff (about 85 of its staff of 330) on which so much of its work depends, and financial provisions have been forthcoming for work on the 1990 Population Census and other projects.

Since, as we have indicated earlier, there would be government officials outside of the central statistical organization who are, nevertheless, involved in the collection, collation and analysis of statistics, it would be of interest to get some idea of how many such persons there are. The only countries for which I have seen such information [Ramprakash (1987)] are Barbados and Trinidad and Tobago, and for the former only a small number (10) of designated posts have been identified. In the case of Trinidad and Tobago, however, the number of government officers outside of the CSO working on statistics was given as 160 or about 50 percent of the number in the CSO.

7. Statistical Output

The central statistical agencies of the four countries all publish a number of statistical reports and bulletins covering a wide variety of topics, and also prepare many special tabulations and analyses on the request of the Government and others. The publications and topics covered are common in the major areas but necessarily differ in accordance with the national needs, the resources of the statistical agency, the organization of the statistical system and so forth. For Bahamas, Barbados, and Belize, the following major areas of output are taken from their respective reports to the 11th SCCS meeting in 1986:

Bahamas:

Population Census (including Projections and Life Tables); Household Budgetary Survey and Retail Price Index; Labour Force Survey; External Trade; Shipping Statistics,

Agriculture and Fishing Statistics; National Accounts; Demographic and Social Statistics; Establishment Statistics; Construction Statistics; and the Statistical Abstract and various summary reports.

Barbados:

Overseas Trade; Tourism; the Continuous Household Sample Survey; Criminal, Judicial and Penal Statistics; Retail Price Index.

Belize:

Labour Force Survey; Agricultural Census; National Accounts; Government Finance Statistics.

Clearly, in no instance is the list a comprehensive one of the agency's output, or even its publications.

As an indication of such a comprehensive list, the list of publications of the CSO of Trinidad and Tobago is given at **Appendix III.**

It is difficult to comment generally on the completeness of the output of the Statistical offices, as this would require an in-depth study of the demand, and more particularly the unmet demand, for statistics in each country. But this, in turn, would be complicated by the fact that in these countries the potential users of statistics are not, in general, trained or experienced in the use of statistics, so that the role of the statistical agency cannot be limited to satisfying the expressed demand. Instead, the agency must take the lead and, hopefully, create demand for statistics, by publishing and actively disseminating statistics which it considers are appropriate for policy-making social and economic planning and administration and management within and without government.

In a study of the adequacy of statistics for planning in the Region, Busby (1987) drew attention to the following negative characteristics of Statistical Offices in the Caribbean:

- the heavy emphasis on the collection and processing of trade information (no doubt in the smaller countries)

- the heavy investment in the capture and processing of information on traditional primary products

- the difficulty of incorporating new economic activities into the data set to be monitored

- the increasing lateness in the appearance of statistical publications

- the scarcity of measures of real growth as opposed to nominal growth

- the apparent predilection to the continuation of series whose importance might have been eclipsed by domestic or world events, and finally

- the level of analysis afforded by the level of disaggregation of the figures.

Most of these shortcomings no doubt persist, given the problems of statistical organization, inefficient resources and inadequate training. I will comment on only one of these - "the increasing lateness in the appearance of statistical publications". We have heard a great deal of this. But while this has certainly been true for a number of large-scale censuses and surveys, as well as for many other reports in the past, there is no indication that the general statistical reports in the four countries are particularly bad, in this regard, at the present time.

In the case of Trinidad and Tobago, only the Annual Vital Statistics Report is now very late (last year for which data published for births in 1984), and this is because of long-standing problems with getting returns from the District Registrars of Births and Deaths. In all of the countries where there is a problem of late publication of any reports special efforts are being taken to try to improve the situation, including the introduction of overtime work in the case of Tourism statistics in Barbados according to its 1986 Report to SCCS.

Inadequate computer facilities or inefficient use of computers, has been a contributor to lateness in the past. The indications are that this source of difficulty is disappearing as the countries improve their equipment and competence (see 8. Computers below).

Having to rely on the central government printery can also be a major contributor to the late publication of reports. This would not be a problem in Trinidad and Tobago which has had its own printing unit since the early 1960s. If it has been a problem in Bahamas, this should have been overcome, as the 1986 Report states that 'the printing capacity of the department received a tremendous boost with the acquisition of new equipment...'. The other two countries - Barbados and Belize - did not complain of this in their Reports.

In addition to the general reports dealt with above, the statistical agencies are all involved in preparing special tabulations and special analyses for their governments and non-government bodies. Most of these are **ad hoc**, projects and though time-consuming and important do not find themselves in the formal listing of the agency's output.

In their 1986 Report to SCCS, the CSO of Belize did list a number of these activities for that year, including: providing data to IMF for their annual report; advising

research students from Germany engaged in urban studies; supervising the fieldwork for a USAID Livestock project; advising PAHO/WHO in their immunization survey; and drafting a proposed Population Policy for Belize in conjunction with the Ministries of Health and Home Affairs.

The CSO of Trinidad and Tobago makes scattered references to such activities in its Administrative Reports. For example, the 1986 Report noted that the CSO collaborated with the former Ministry of Finance and Planning in the conduct of a survey of the elderly, and that trained staff of the Computer Division had assisted, and were eventually seconded to various government ministries to assist them with getting their data processing programmes on stream. The 1987 Report, in its Introduction, was happy to record that "staff of the CSO were given opportunities to participate in significant planning activities such as observer status in the National Planning Commission, representation in a Cabinet appointed committee to make recommendations for an appropriate monetary policy, and membership on departmental committees of the Ministry and Mobilization...". Other instances of such special activities are scattered through the Reports, including a claim that the CSO saved the Government half-a-million dollars by undertaking the computerization of the Immigration Department records.

All such special activities by the statistical agency are, of course, beneficial and important for the agency as it is for the government and the country. In Section 9 (Evaluation) we comment on the importance for the statistical agencies to ensure that their statistics are being put to use. These special activities are instances of direct use of the output and the services of the agency, and must enhance both the usefulness and the status of the statistical organization.

A much-debated question with regard to the output of a central statistical agency, is whether it should confine its activity to collecting, collating and publishing statistics, or should also be involved in the analysis of these statistics. There is no need to repeat the arguments here, as these are well-known. If we consider only what can or should be done now, instead of the future ideal, it is clear that the statistical agencies do not have, at present, the staff and resources to undertake serious analysis and research, particularly in the light of the existing pressures on the organizations to collate and publish all that it should, as we have just discussed. On the other hand, much of the potential usefulness of statistics is lost if no analysis and research is done, and there is no indication that there is, or is likely to be, any other department/agency with the competence and responsibility to do this.

The question whether the statistical agency should be involved in statistical analysis is, therefore, at this stage, a detail: the important issue, which should be continually stressed, is the need for some organization(s) to be continually undertaking the essential role of analysis and research both to maximize the usefulness of the available statistics and to improve the statistical programme, on the one hand, and to justify the expenditure in data collection, collation and publication on the other.

8. Effectiveness in the Use of Computers

Since this paper is being written by, and presumably for, non-experts in computers, this section must, necessarily be general and non-technical. We know that although computers have been in use in the region for some time - the CSO of Trinidad and Tobago acquired its first computer for the 1960 population census - computers are still relatively new; and when one takes into account the revolutionizing microcomputers, very new.

For this reason, plus the fact that statistical agencies in the region have always been finding it very difficult to obtain adequate resources, we would expect that the full potential of computers is still to be achieved.

Computers were originally brought into statistical offices purely for purposes of data processing. The conception was that electronic data processing would appreciably shorten the time between data collection and data publication and that, moreover, more complex tabulations could be provided than using the traditional data processing procedures. In addition, to the extent that the computer could provide tabulations in a form ready for offset printing, the whole process of preparing and publishing statistical data could become very much quicker and more accurate.

This was not so at first: computers were, on the contrary, a "bottle-neck". But this is changing. In this regard, the CSO of Trinidad and Tobago has been reporting significant progress in recent years. The year 1983 began with computer problems resulting from a malfunctioning air-conditioning unit in the computer room. There were consequent delays in all areas. By 1986, however, considerable progress had been made. A major achievement in that year was the installation of the main frame enhancement - the new ICL ME29/54 - and the enthusiastic and co-operative manner in which the staff responded to the new challenge.

By the following year the Computer Division's emphasis was on training: the Systems and Programming Units received training in advanced computer techniques and the use of the new facilities, while the subject-matter personnel were instructed on accessing and using various packages on the main frame to improve efficiency and self-reliance. The year 1987 also saw the Computer Division extend and integrate its role and activities from solely controlling the processing of data to include responsibility for co-ordinating the services and setting standards for users of micros stationed at Head Office.

There was also some restructuring of the Computer Division with the establishment of a Research and Development Unit, a Training Unit and a Maintenance Unit. This had immediate benefits in terms of both greater staff efficiency and greatly enhanced output.

By 1988 the CSO Administrative Report could once again report a 'significant year for the Computer Division'. The 'current technology was fully exploited', there were major improvements in the use of a number of software packages, the

microcomputers and the main frame were successfully linked, and arrangements were completed for the transmission of captured data **via** telephone lines. As a result, the division could report that 'the processing of all jobs under CL (Command Language) was reduced appreciably, and with a faster turnaround time to capture data, the division was able to complete all routine jobs on time, and satisfy all **ad hoc** requests, which increased significantly in number in 1988'.

In addition to the normal data processing of the department's statistical data, the Division has undertaken services for other government ministries/department such as capturing Passports data for the Immigration Department, and payroll data and personnel records for the departments of the Ministry of Finance in 1986.

Within this period there have been important technical improvements in the Computer Division which are outside the scope of this non-technical paper. In general, however, the indications are that there has been outstanding improvement in the technology and output of the computer division.

And yet considerably more needs to be done. In its 1986 Annual Report, the CSO considered 'What the New Technology has to offer CSO' in terms of office automation and computer technology. While acknowledging the stimulating challenges in these fields, the Report admitted some bewilderment at that time about just how best to proceed. In addition there was, and still is the financial constraint which prohibits pushing forward as rapidly as one would like.

Without going into any such detail for the other countries, it is clear that each of them is very much aware of the potential for computers and are taking steps to organize their departments and train their staff to make maximum use of computers and the new information technologies in improving their efficiency.

For example, in their 1986 Report to SCCS, the Barbados Statistical Service states that "it is planned to increasingly computerize more of our activities as time goes on" and were getting 3 microcomputers as a start. In the same year, the Bahamas reported approval to set up a data processing unit within the Department of Statistics for the first time, thus freeing them from dependence on the centralized computer unit. By 1988 they were processing all of their data except for imports and exports which they hoped to be doing in 1989. However, while this had improved timeliness of their reports, accuracy had become a major problem. This was clearly a 'teething problem'.

By 1988 the last country to do so - Belize - had computerized its central statistical agency and was just beginning to benefit from this.

9. Evaluation and Suggestions for Discussion

We have, so far, reviewed the statistical organization in Bahamas, Barbados, Belize and Trinidad and Tobago looking, in particular, at the relationships between this organization and the departments' overall efficiency.

But, while productive efficiency must be a key objective of a national statistical system, this cannot be the final criterion for evaluating the system! Such final evaluation must be based on the use which is being made of statistics thus produced. In other words, what makes a statistical system successful is not, in the final analysis, the fact that it has produced, in good time, a large volume of accurate and relevant statistics, essential as this is. It is rather the use that is being made of these statistics by policy-makers, planners, administrators, managers and others, in government and non-government agencies, as well as by researchers and others concerned in making or advising on decisions related to the social and economic development of the country and in managing the country's affairs. If no use is being made of the statistics, then the statistics are clearly of no use.

We conclude this paper, therefore, with an evaluation of the use being made of the output of the statistical agencies, and give some ideas, for discussion, on what may be done to enhance the use of statistics in the Region.

Our first observation is that the statistical organizations do not, at present, undertake serious, if any, evaluation of the use that is made of their statistics. Given the considerable cost of the statistical services in these countries, such an evaluation should be regularly undertaken to justify the programme as a whole, as well as the individual projects within it.

How could such an evaluation be undertaken? An obvious start would be to investigate the distribution of the department's statistical publications, paying particular attention to those that are purchased or specially requested. But this, of course, is very crude. Distribution, or even sale of reports does not necessarily mean that they will be used. Moreover where the publication is multi-topic, or even multi-table on the same topic, there is no way of knowing, from a study of distribution, which topics/tables are being used.

Statistical departments may, therefore, be well advised to consider undertaking market research studies into the demand for their publications and, in greater detail, for their different tables/tabulations.

Armed with such information, the statistical department needs to take active steps to stimulate the use of statistics and to disseminate its data.

A variety of efforts can be undertaken to stimulate use. For the most part these involve ways of educating users and potential users of the availability of statistics and how they may be useful. Among the steps that may be taken are: involving users and potential users in the selection of the statistical series to be produced, their periodicity, lay-out and so forth; preparing short papers, newsletters, radio programmes to keep users informed; undertaking a proper marketing campaign including examples of how the department's statistics can be used; developing material for and having meetings with potential users, including staff and students of secondary schools as well as with policy-makers and managers who are not numerate, with a view to educating potential users (See Harewood (1989).

There is evidence that the various statistical departments are taking action in some of these areas: what this seminar could do is to discuss and make recommendations on the above and other ways in which such action could be enhanced and made more effective.

The statistical organizations all take the accepted steps to disseminate their reports. These include sending free copies to appropriate government departments and regional and international bodies and to selected organizations and individuals; press releases at the time of publication of reports and bulletins; and in some cases the preparing of lists of their publications, though the distribution of such lists, in turn, tend to be restricted.

This seminar should consider ways of improving the dissemination of statistics. The statistics organizations must get away from any idea that their responsibility ends with the publication of statistics. Apart from the usual measures such as were mentioned above, the organizations should carefully plan and vigorously carry out campaigns to promote the sale and use of their statistics.

Such a programme could include: the provision of courses and seminars to educate analysts in government, industry, research organizations; publication of booklets carrying the key statistics from the larger volumes of statistical tables, with some description, including diagrams and simple analysis of the statistics; publication of explanatory booklets simply describing the availability and use of the department's statistics; advising secondary schools and tertiary institutions on the inclusion of statistics in their curricula; and so forth (Harewood (1989).

But the whole approach to the disseminations of statistics should be reviewed by the seminar. A serious problem with the present approach of relying almost entirely on published reports for this purpose is that the published tables must be in sufficient subject-matter (and where appropriate geographic) detail to meet the anticipated needs of all probable users. However, this becomes counter-productive as it delays the publication of the data, while the sheer mass of data confuses the general user who must either return to the statistical agency for information which is already published but he does not know where, or worse yet, give up the idea of using statistics at all.

In the field of population censuses, ECLAC and CELADE have developed REDATAM aimed at providing easy and quick access to population census data on microcomputer for whatever geographic areas (comprising one or more EDs) and in whatever subject-matter detail the individual user may wish. Does the Seminar feel that ECLAC should be approached to develop similar systems for other areas of statistics?

And if this approach is practical, given the proliferation of microcomputers in these countries in both government and private organizations, should statistical organizations drastically cut down on their printed publications, confining these to a few simple general tables, and aim, instead, at providing users with the opportunity of obtaining tabulations which are tailor-made to their own needs, either on their own microcomputers or provided by the statistical agency as a paid service?

This would seem to be the ultimate lifting of computers out of the field of mere data processing to being the key tool in the preparation and dissemination of national statistics?

10. Conclusion

In writing the preceding Section, I have been influenced by the fact that the reports I have consulted for this paper have clearly indicated that the heads of the statistical agencies are very much concerned about: (a) running an efficient organization; (b) obtaining the staff and resources to ensure that they achieve this; (c) getting an appropriately high status for the statistical system both as an aid to efficiency and as an acknowledgement of their difficult and important task. All laudable objectives. I have, however, seen little indication of any similar intense concern that the Government and the country benefit from their work by making adequate use of their statistics.

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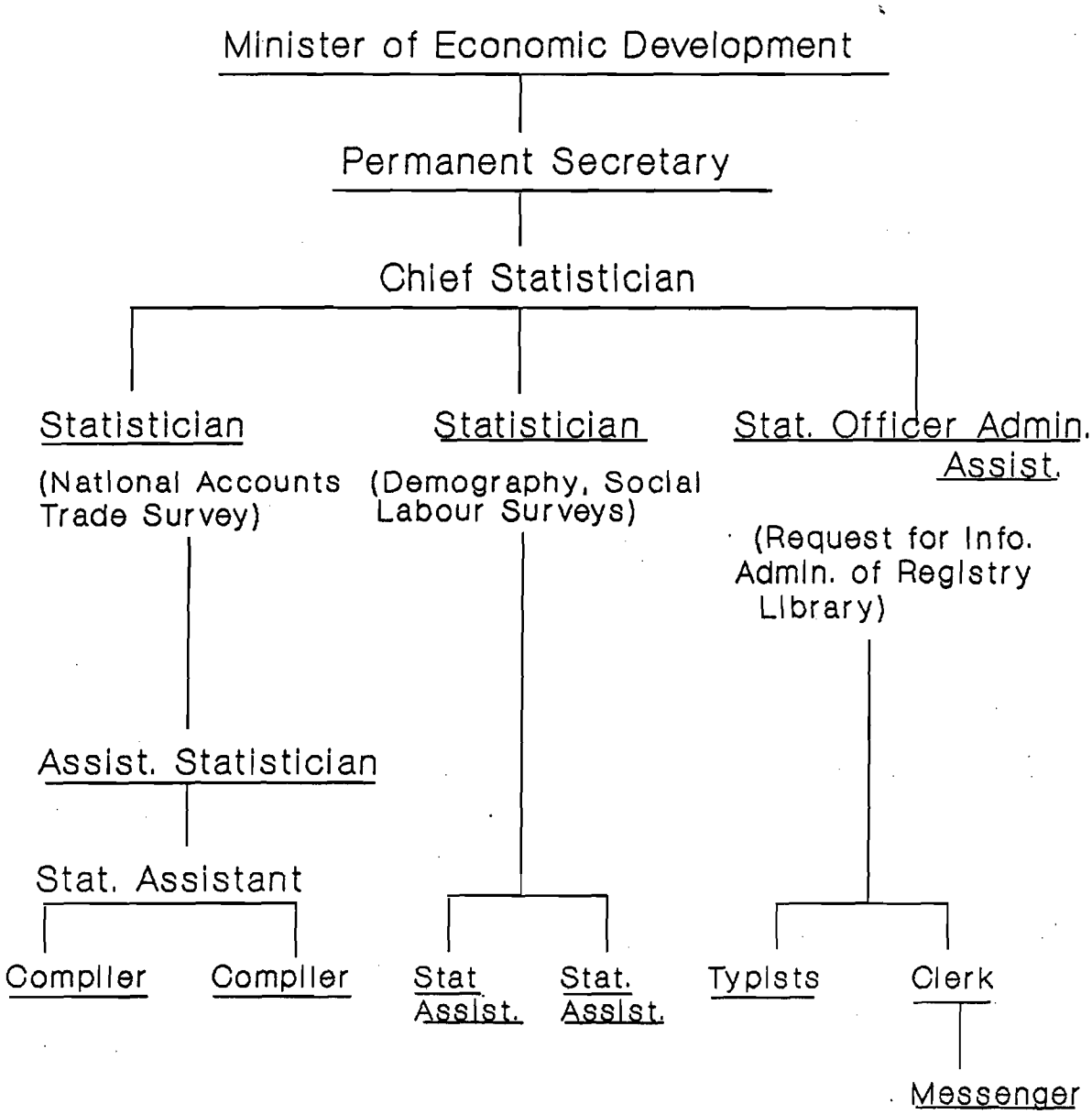
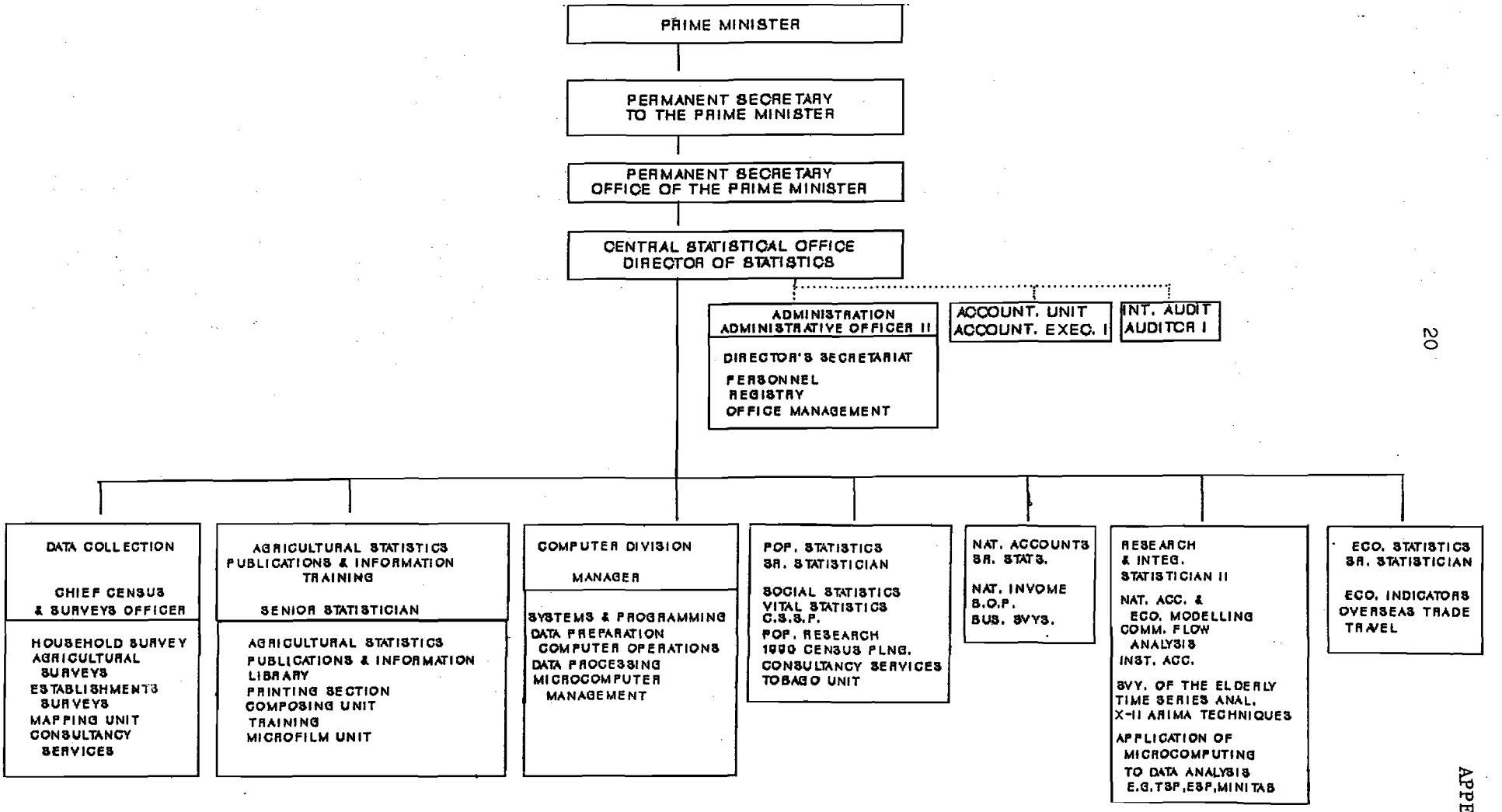
APPENDIX I

ORGANIZATIONAL CHART: BELIZE



ORGANIZATIONAL CHART: TRINIDAD AND TOBAGO



APPENDIX II

APPENDIX III

LIST OF REPORTS/BULLETINS RELEASED DURING 1987/1988 - TRINIDAD AND TOBAGO

REPORTS

QUARTERLY REPORTS	
Quarterly Economic Report	(250)
Economic Indicators Report	(350)
Quarterly Agricultural Report	(400)
Quarterly Travel Report	
SEMI-ANNUAL REPORTS	
Overseas Trade Report	(400)
ANNUAL REPORTS	
Overseas Trade Report	(400) (800) (325) (275)
Annual Statistical Digest	(500)
Statistical Pocket Digest	(14000)
Financial Statistics	
Balance of Payments	(400)
Population and Vital Statistics	(500)
Population and Vital Statistics	(300)
Agricultural Statistics Report	(400)

BULLETINS

AGRICULTURE
Poultry Production

Food Crop

Private Pig Farmers

INDICES
Index of Retail Prices

Index of Retail Sales

Index of Producers' Prices

Index of Domestic Production
and Industrial Sales

REPORTS

OTHER C.S.O. REPORTS	
C.S.S.P. Labour Force	(400)
	(400)
London G.C.E. Examination Results	(250)
Report on Education Statistics	(250)
Cambridge G.C.E. Examination Results	(300)
Agriculture Census	
Population and Housing Census	
Population Abstract	
Household Budgetary Survey	(650)
International Travel Report	(200)
National Income Report	(2500)
A Guide to the National Income	(150)
A Macro-Economic Survey of Trinidad and Tobago	(400)
Road Traffic Accidents Report	(100)
Pig Farmers Cost of Production	(525)
Cattle and Buffalo Report	(500)
Dairy Farmers Cost of Production	(150)
Social Indicators Report	(400)
Research Papers	(250)
C.S.O. Brochure	(700)
Survey of the Elderly (Institutions)	(200)
Survey of the Elderly (Households)	(250)

BULLETINS

Overseas Trade Bulletin

Monthly Travel Bulletin

OTHER C.S.O. BULLETINS
Quarterly Traffic Accidents

National Accounts

C.S.S.P Labour Force

Marriages and Divorces

London and Cambridge Examination Results

Births and Deaths