

UNITED NATIONS
ECONOMIC
AND
SOCIAL COUNCIL



Distr.
GENERAL



E/CN.14/353
E/CN.14/CAS.5/2
30 June 1966

Original : ENGLISH

ECONOMIC COMMISSION FOR AFRICA
Eighth Session
Lagos, 13-25 February 1967

REPORT OF EXPERT GROUP ON EDUCATION AND TRAINING OF STATISTICIANS
IN AFRICA

M66-863

REPORT OF EXPERT GROUP ON EDUCATION AND TRAINING OF STATISTICIANS
IN AFRICA

Introduction

1. The Expert Group was appointed by the Secretary General of United Nations to advise on steps to be taken for the improvement of facilities for the education and training of statisticians in the developing countries of Africa. The Group consisted of Sir Harry Campion (United Kingdom), Mr. G. Goudswaard (Netherlands), Mr. Hassan Hussein (United Arab Republic) and Mr. Robert Gardiner, the Executive Secretary of the Economic Commission for Africa who acted as Chairman of the Group. The Secretary General was represented by Mr. Robert Gardiner and by Mr. P. J. Loftus, Director of the Statistical Office of United Nations. The Group was assisted by Messrs. W.L. Booker, A. Mullier and K.C. Wang of the ECA secretariat.
2. The Group met in Addis Ababa from 13 to 21 January 1966 at the headquarters of ECA. The secretariat of ECA had assembled information on existing facilities for the training of statisticians at various levels in Africa. Particular note was taken of a document entitled Report on Statistical Training Centres and a Statistical Manpower Survey of Africa (E/CN.14/CAS.4/9) of 16 September 1965 and of sections of the Report of the Fourth Conference of African Statisticians (E/CN.14/CAS.4/17) of 22 November 1965 which were relevant to the Group's work.
3. The Group was informed that the main interest of United Nations in this field was the training of official statisticians to meet the needs of the African countries in the administration and planning of their economic and social development programmes. Estimates made by the secretariat of ECA indicated that the number of professional statisticians required for government service in the African countries by 1970 would be three times the number now in post. The Group was requested to review existing facilities in the light of these needs and to consider what special steps could be taken towards meeting this objective.

4. The Group felt that the problem of meeting the requirements of Governments could not be wholly disassociated from the need to provide qualified statistical personnel for the universities, research institutions and also private industry and trade. Indeed, these needs complement each other. The application of statistical techniques was being extended to many fields and government employment was only one of the possible openings for professional African Statisticians. The Group thought therefore the aim of providing facilities for training statisticians should be set in a wider framework than that of meeting the more immediate needs for official statisticians and some allowance should be made, in estimating requirements, for training of other statisticians.

Requirements at the Higher Level

5. The Group first examined the statistics assembled by the E.C.A. secretariat on the subject of requirements for official statisticians at the higher level. These were presented to the Fourth Conference of African Statisticians in a Report on Statistical Training Centres and Statistical Manpower Survey of Africa (E/CN.14/CAS.4/9). Some conclusions on this document are set out in the Report of the Fourth Conference of African Statisticians (E/CN.14/CAS.4/17). In addition E.C.A. had collected information from countries about existing facilities for training of statisticians at the higher level in November 1965 for the purpose of the Group's discussion. In this context statisticians at the higher level are taken as those listed in Appendix II of E/CN.14/CAS.4/9 namely professional statisticians (senior statisticians and statisticians) or the corresponding categories "ingénieurs statisticiens - économistes" and "ingénieurs des travaux statistiques".

6. The number of professional statisticians stated to be required by 1970 for service in the African governments amounted to 800 (excluding the Republic of South Africa). This figure consisted of estimates for the U.A.R. alone amounting to 130. The remaining 670 consisted of 390 for French speaking countries of Africa and 280 for English speaking countries.

7. The Group noted that this figure of 670 was a net addition in total strength after wastage. After studying the figures in detail they considered that the total should be regarded as a minimum. The returns from which the estimates were taken were obtained from each country individually and were influenced by the existing and expected vacancies in the government service, budgetary restrictions, expected availability of suitable candidates and current facilities for training.
8. In addition to the total above, account must also be taken of the needs for statisticians outside the government sector. In African countries in their present state of development the non-government sector absorbs a smaller number of statisticians than the government sector. This is in marked contrast with the experience of many developed countries. On a conservative basis the Group have made a token addition of one half to the government demand to estimate the total requirements for all African countries.
9. Bringing together the various estimates the Group suggest that the total requirements net of wastage needed for the next five years up to 1970 can be taken as at least 1000 and is probably more for African countries excluding the U.A.R. and the Republic of South Africa.
10. The size of this overall requirement can be seen from the fact that the total number of professional statisticians for government service in Africa will have to be trebled by 1970. If the United Arab Republic which has a large statistical establishment is excluded, the number required is between four and five times the present establishment. The 670 professional statisticians needed for government service will require to be trained predominantly in either English or French (see Table I). A small number, those needed by the North African countries, can also be trained in the Arabic language.

Table I. Number of Statisticians Required by 1970
for Government Service in African
countries^{a/} other than U.A.R.

	<u>Total</u>	<u>Language of Instruction</u>	
		<u>English</u>	<u>French</u>
Official Statisticians	670	280	390
of which			
Senior Statisticians	140	50	90
Statisticians	530	230	300

a/ excludes Republic of South Africa

Facilities for Higher Level Training

11. In the material assembled by ECA on the subject of higher level training facilities, higher level training was taken to include all training carried on in universities or in centres of equivalent standing, whether intended to produce official statisticians, statisticians to work in private industry or academic institutions, or simply intended to provide the necessary statistical knowledge to students of various disciplines other than statistics. In the case of French facilities in the French language, only the three principal institutions providing statisticians for government service have been considered in this report since their output is adequate. Non-government needs in the French language group have to be met by other institutions of higher learning.

(a) United Arab Republic

12. Facilities for the training of statisticians are provided by the Department of Statistics of the Faculty of Economics in Cairo University, as well as by the Institute of Statistical Studies and

Research of Cairo University. The numbers graduating from these two Institutions each year amount to about 50. It has been estimated that the Central Statistical Organization of the UAR will need in the next five years 130 professional statisticians, approximately 100 statisticians and 30 senior statisticians. It is expected that the excess over the number required by the C.S.O. of UAR can easily be absorbed by the other government offices and organizations and by other fields. Senior statisticians can be provided partly by promotion and partly by recruitment of graduates with M.Sc. and Ph.D. in statistics. At present many of those with M.Sc. and Ph.D. degrees in statistics got their final training outside Egypt. However, facilities for post-graduate degrees are now being built up but it will necessarily be some time before they can meet anticipated needs. As far as Executive Class Officers are concerned, sufficient numbers can be secured from graduates of the Faculties of Commerce of the various local universities. Besides courses in Economics, Accountancy and Business Administration these graduates are given courses in statistics for between 80 and 160 hours. In this way they get a basic grounding in statistical methods and applications. All the teaching is carried out in Arabic except for some occasional courses which are given in English.

(b) French Language Group

Rabat Institute of Statistics and Applied Economics

13. This Institute, which is financed by the Government of Morocco and the United Nations Special Fund, gives a three-year course in statistics with certain options for specialization in the third year of the course. It produces about 25 graduates a year. Selection of students is by competitive examination. The diploma of the Institute is officially recognized for government service as equivalent to a university degree.

Abidjan

14. The School of Statistics of Abidjan gives a two-year undergraduate course plus a preparatory course of one year. The diploma is that of the "ingénieur des travaux statistiques". It has facilities for graduating 15 students a year.

Centre européen pour la formation de statisticiens-économistes pour les pays en voie de développement (C.E.S.D.).

15. This centre, located in Paris, was established specifically for the training of statisticians of African countries associated with the European Economic Community and for this reason is included in this review of facilities available to meet the needs of African countries. It gives a three-year course leading to the diploma of "ingénieur statisticien-économiste" and a two-year course leading to that of "ingénieur des travaux statistiques". Admission to the higher course requires two to three years of university study plus a competitive examination unless the candidate has a university degree in science or economics. Admission to the lower course is based on a high school certificate plus a competitive examination. Facilities exist for 10 to 15 graduates a year for the higher course and 20 to 30 for the lower course.

(c) English Language Group

16. The University of Nigeria gives a 3-4 year course in mathematics with a statistics option and in economics with specialization in statistics. It is estimated that facilities exist for about 15 graduates a year.

17. The University of Ibadan, in collaboration with the Federal Office of Statistics, provides a 2 year course leading to a diploma in statistics. Students must have a school certificate including mathematics and must have completed the 9 months course for statistical assistants conducted by the Federal Office of Statistics. The annual output is ten diplômés.

18. The University of Ghana provides training for the degree of B.Sc. (Econ.) with specialization in statistics as well as a one-year post-graduate diploma course in statistics. Facilities exist for 10 graduates a year for the B.Sc. (Econ.) with statistics, 5 a year for the post-graduate diploma in applied statistics.

19. The Group was informed of certain plans for the extension of statistical training facilities at the professional level in Ghana and Tanzania for which United Nations assistance has been requested.

Evaluation of Needs and Facilities at the Higher Level

20. For the needs of the U.A.R. the Group considered that the facilities in Cairo were adequate because of the success of the Institute of Statistical Studies and Research and of the Faculty of Economics of the University of Cairo in producing a flow of trained personnel to meet the substantial demands of the government and educational and other institutions of the U.A.R. Moreover, the facilities of Cairo were available to other countries for statistical training in the Arabic language.

21. The Group's assessment of the situation in the French speaking countries showed that, while there was a requirement of 390 official statisticians by 1970, facilities existed for 70 to 85 graduates a year. It was noted that some African countries had indicated a need for professional statisticians at the highest level of the French system, namely that of the "ingénieur statisticien-économiste". There was a possibility of a shortfall in this particular group over the period 1966-1970, but on the other hand the post-graduate facilities in Cairo were available to the Arabic speaking countries of this group. The Group therefore felt that although continued efforts would be necessary to maintain and expand existing facilities, no special steps were necessary at present to establish new institutions for the French speaking countries.

22. The largest gap between requirements and facilities was found in the English speaking group of countries where the facilities, almost entirely in West Africa, were capable of yielding only about 40 graduates a year and therefore could not meet the requirement for 280 graduates by 1970. The Ibadan course started only in October 1965 and is not of full graduate level. In contrast with the French speaking group the graduates of the courses in the English language are not specifically destined for the government service.

23. It appeared to the Group, from the data presented to it, that there was an urgent need for the development of training facilities in the African continent as a whole. The Group appreciated the efforts already being made to provide them in individual countries, in some cases with outside help. The Group hoped that the development of the existing facilities in the Arabic, French and English speaking countries would be continued and recommended that all possible support be given to them. The progress made in the Arabic speaking and French speaking countries was greater than in the English speaking. The Group considered that the next step should be to provide more training facilities in the English speaking countries, and if a choice had to be made, in East Africa. The Group would recommend this to the consideration of the Secretary General. The kind of facilities required, the Group suggested, would be the establishment of an Institute of Economic and Social Statistics devoted primarily to the training of English speaking official statisticians from African countries to the level of a first degree. The development of this Institute and of other facilities for the training of African statisticians should be kept under review in the light of changing requirements.

24. It was considered essential that the Institute be attached to a university. In this way the students would receive a degree of the university which would be necessary to attract the number of students which the Group had in mind, viz. a total of at least thirty graduates a year after the end of the third year of operation. Attachment to an

existing university would be the most economical and expeditious. Such an association with a university would also enable the Institute to develop training at the post-graduate level as well as facilities for statistical research. A close link should be established between the Institute and the national statistical office of the country in which the Institute is located in order to facilitate practical training for the students. Although the administration and operation of the Institute would be the executive responsibility of the university, the Group would recommend that provision should be made to assure the scientific standing of the Institute and its special character as serving a substantial number of countries. This might be accomplished by providing for a council which would include representatives of the host government, the sponsoring university, the Secretary General of United Nations, other financing bodies and the international scientific interests in this field such as the International Statistical Institute.

25. It may be noted that to produce 30 graduates a year it is necessary to have an annual intake of students in excess of this number because of the wastage in the course of the three year period of study. There is an additional wastage, in a restricted sense, in the loss of graduates to fields of activity other than statistics. No estimates can readily be made of the possible wastage. The proposed Institute will make a substantial contribution to filling the gap between the supply and the demand but cannot fill it in the first years of its operation. The inability to meet anticipated requirements for statisticians for Africa immediately has to be seen against the background of the world shortage of statisticians which is acute not only in Africa but also in other parts of the world. The size of the proposed Institute (30 graduates a year) is such as might reasonably be accommodated within an existing university. An expansion might be possible later.

26. The research facilities envisaged for the Institute would enable students to be trained in research methods and so become qualified to work independently themselves on problems of economic and social statistics in their countries after graduation. The Institute would also serve as a place where countries might commission specific pieces of research work for which national facilities are lacking. In this way it was felt research work generally in fields of economic and social statistics would be stimulated in the participating countries. The Institute might conduct seminars in specific fields of statistics of special interest to the participating countries.

Training at Other Levels

27. In making its recommendation for the establishment of an Institute for the training of professional statisticians the Group took account of existing facilities for training at a level lower than this and the need to provide qualified teaching staff to give this type of training. The E.C.A. has established centres at Addis Ababa, Achimota, Dar-es-Salaam and Yaoundé which provide training, in general of one year's duration, mainly for government personnel. The object of these centres is to train staff for the necessary executive tasks below the professional level.

28. The Group felt that these centres had filled a serious gap in the training arrangements in Africa at a time when the governments still did not themselves have the professional staff which would normally provide such training either directly or in co-operation with the universities of the countries concerned. In some cases the middle level training centres had made efforts to establish courses, in co-operation with the local universities, leading to a junior professional diploma. Such courses were considered to be valuable as they provided a means by which staff working in the official statistical service could obtain a certificate of qualification even though they could not obtain entrance to a degree course at a university. The Group considered that

with the flow of professional statisticians into government service which they envisaged within the next five years, the responsibility for middle level training and for the junior professional courses should eventually be taken over by appropriate institutions in the individual countries.

Conclusions

29. The Group reached the conclusion that there was an urgent need for greater facilities for the training of statisticians for Africa. It is hoped that the steps being taken to extend existing facilities would proceed with both multilateral and bilateral assistance. The Group considered that the next step should be to provide more facilities in the English speaking countries, and specifically in East Africa where the need was greatest. This might be done by establishing an Institute of Economic and Social Statistics attached to one of the East African universities. While this step would not completely fill the gap by 1970, the Group felt that, if accompanied by measures to extend existing facilities, it would meet the most urgent needs in Africa.