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TECHNICAL CO-OPERATION: TRAINING OF STATISTICAL PERSONNEL

Review of training of statistical personnel

Report of the Secretary-General

SUMMARY

At its twentieth session, the Statistical Commission "requested the Secretary-General to submit to the Commission at its twenty-first session a comprehensive review of major training activities undertaken in the world to include not only regional and national training centres but also such training activities as seminars, workshops and short courses organized by the specialized agencies and similar international bodies."

The present document, following a discussion of some issues arising in the training of statistical personnel (paras. 3-29), reviews the statistical training activities carried out under the aegis of the regional commissions (paras. 30-64), specialized agencies (paras. 65-81) and countries (paras. 82-124). Points for discussion by the Commission are included (para. 125).

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\* E/CN.3/535.

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## INTRODUCTION

1. At its twentieth session, the Statistical Commission "(a) endorsed document E/CN.3/525 on the review of training of statistical personnel as a useful account of training centres within and outside the United Nations system; (b) requested the Secretary-General to submit to the Commission at its twenty-first session a comprehensive review of major training activities undertaken in the world to include not only regional and national training centres but also such training activities as seminars, workshops and short courses organized by the specialized agencies and similar international bodies." 1/

2. The present document contains a discussion on a number of issues arising in the training of statistical personnel in developing countries, as well as an account of the major training activities undertaken in the world including regional and national training centres and training activities organized by the specialized agencies and similar international bodies.

## I. ISSUES ARISING IN THE TRAINING OF STATISTICAL PERSONNEL

Training activities in the context of technical co-operation among developing countries

3. The United Nations regional commissions and the specialized agencies are making every attempt to include statistical training activities as part of their general effort to promote technical co-operation among developing countries (TCDC) actively. Technical co-operation among developing countries is achieved through activities such as exchanges among developing countries of statistical publications, especially those of a technical or methodological nature, the organization of country courses, observational training and international statistical meetings and conferences in developing countries. The Economic and Social Commission for Asia and the Pacific (ESCAP) is active in conducting such activities. A number of developing countries are hosting the Statistical Training Programme for Africa (STPA) centres and the user countries are providing fellowships for students to attend. The Food and Agriculture Organization of the United Nations (FAO) organizes National Demonstration Centres for Agricultural Census (NDC) in selected developing countries. A few participants from selected neighbouring countries are also invited to attend NDC so as to enable them to organize similar training for their staff on return to their countries. Most of the regional training activities of the World Health Organization (WHO) are organized in the context of TCDC. Some health statisticians who are awarded fellowships are trained in neighbouring countries.

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1/ Official Records of the Economic and Social Council, 1979, Supplement No. 3 (E/1979/23), para. 175.

Contributions of countries towards co-ordinating and strengthening the regional and national training centres which they use

4. Examples of national contributions are the fellowships which the user countries provide to students attending the STPA centres and direct contributions towards the cost of running the institutions. In addition, user countries are represented on advisory boards of statistical training centres. As regards WHO regional training centres, the host countries cover a considerable part of the financial requirements and provide many trainers. In the case of national training centres, the countries concerned bear almost all the costs and provide teaching staff, although some international help is occasionally required. Some countries bear the expenses of training their nationals abroad.

Co-ordinating role of the regional commissions or the specialized agencies with respect to national, subregional and regional training programmes

5. The legislative bodies in the field of statistics of the regional commissions and of the specialized agencies are actively concerned with the statistical training needs of the member countries. The statistical units of the international agencies, as secretariats of the legislative bodies, are responsible for co-ordination of all training activities. An important part of the regional advisory services of the international agencies is the training of the counterparts, inter alia, in collection techniques and statistical analysis of data.

6. A major component of the National Household Survey Capability Programme (NHSCP) is the training of the participating national staff through long-term and short-term training abroad, regional and subregional courses, study tours, workshops and the like, in relevant fields of interest. These activities are being co-ordinated by the regional commissions in close collaboration with the regional and national training institutions.

Type and amount of assistance rendered by non-United Nations organizations to the national, subregional, regional and other training facilities

7. A number of donor agencies, international as well as bilateral, are supporting or are willing to support the development and expansion of the individual training centres within the STPA. Among these are the European Community (EC), the Commonwealth Fund for Technical Co-operation (CFTC) and bilateral donors such as the Overseas Development Administration (ODA) in the United Kingdom of Great Britain and Northern Ireland, the Ministry of Coordination and the Institut National de la Statistique et des Etudes Economiques (INSEE) in France, the Government of the Federal Republic of Germany, the United States Agency for International Development (AID) and the Government of Sweden. There are also some examples of assistance by non-United Nations organizations to FAO. The United States Bureau of the Census organizes over-all training courses in statistics, which include courses in agricultural statistics of direct interest to FAO. The Munich Centre for Advanced Training in Applied Statistics for Developing Countries and the University of Kent in the United Kingdom have special training courses in agricultural statistics.

Reorientation of training courses towards the training needs identified in the National Household Survey Capability Programme

8. From the explorations so far made by the regional commissions, it seems that there is need, among other things, for intensive job-oriented training of the staff of the national statistical offices in several fields such as sampling, survey methodology, data processing etc. so as to develop self-reliance in conducting household surveys. It is highly desirable that, in order to make the utmost use of scarce resources and to minimize duplication of effort, training for the National Household Survey Capability Programme (NHSCP) should be closely co-ordinated with the programmes of national, subregional and regional training institutions. A case in point is the need to co-ordinate training for the African Household Survey Capability Programme (AHSCP) with STPA.

Extent to which practical needs are taken into account in the programmes of training institutions and possible need to lower academic entry requirements to attain this objective

9. Practical orientation of training programmes is emphasized by all regional commissions and specialized agencies as well as by national, subregional and regional training institutions. A problem in many of the countries least developed statistically is that of finding candidates who meet the admission requirements of the centres. It is desirable to maintain standards, but a too rigid adherence to high academic entry requirements may adversely affect countries which are in great need of statistical personnel. There is need, therefore, for some flexibility in the selection of candidates from the countries least developed statistically. In this connexion, it is interesting to note that some of the STPA centres have lower academic entry requirements but a longer duration of study.

Country courses as a vehicle for professional training and extent to which certain national centres should be expanded to serve a subregion

10. In recent years, there has been considerable discussion concerning the degree to which regional training centres should give greater emphasis to country courses as a vehicle for professional training of a practical nature, concerning the appropriate distribution of course contents between regional and national training centres and concerning the extent to which certain national centres should be expanded to serve a subregion.

11. The ESCAP view is that there is considerable merit in providing for expansion of certain national centres to serve subregions. Courses provided by such institutions at the subregional level would probably be more relevant to the needs of the user countries, provided a minimum standard is maintained in the quality of training. This may also help in achieving greater homogeneity in the educational level and language of the participants which in turn should provide the participants with maximum benefit from the courses.

12. The view of the Economic Commission for Africa (ECA) is that it is desirable that STPA centres offer increased facilities to host national in-service training. There is a need for greater co-ordination between regional and national training centres. With the flow of professional statisticians trained at

STPA centres into government service that is envisaged within the next 10 years, the responsibility for middle-level training and for junior professional courses should eventually be taken over by institutions in the individual countries, as the number of trainees involved are usually very high.

13. The WHO view is that regional training centres will be more cost-effective if they concentrate on teacher training. Teachers thus trained will be able to enhance the quality of national training programmes.

Institutions responsible for training middle-level personnel and advice and assistance rendered by regional training centres to national training centres

14. The view generally held by the regional commissions and specialized agencies is that there is a need for closer co-operation between regional training centres and those national training centres that are catering exclusively to their own nationals. It is also felt that the training of middle-level statistical personnel should be the responsibility of national training centres. Regional training centres could provide assistance to national training centres by training the national trainers.

Extension of regional training facilities to include the training of systems analysts and programmers

15. Adequate training of technical personnel in data processing is still much needed in developing countries. It is expected that as countries acquire more computer equipment and related technology, their training needs will escalate over the next several years. Consequently, an added demand for introducing more automated data processing in the field of statistics can be expected.

16. Large-scale training needs cannot be met by a single institution in a region. For programmers, it could at best organize courses to train trainers so that local programmer training facilities can be established and promoted within the countries of the region. The regional commissions could supplement this activity by providing regional advisory services and clearing-house facilities for statistical software packages.

17. The problem of training systems analysts is much more complex. At present, most training is provided by the computer manufacturers in their parent offices and in their branches. A homogeneous regional training programme is difficult to envisage.

18. Since there are bound to be differentials in the growth of computer facilities in the developing countries of a region, another direction in which effort could usefully be made is to create facilities for training programmers at the subregional level, possibly through the TCDC arrangement with the subregional centres located wherever computer facilities are available.

19. Some international organizations hold the view that the training of systems analysts and programmers should be more related to, or even integrated with, that of statisticians in regional as well as national statistical training centres. To this end, regional training facilities should be increased.

Training of trainers as a factor in the development of national training centres

20. With a significant increase in the statistical activities of the countries of a region, programmes for the training of trainers will be vital. In fields such as statistical methods, survey methodology and data processing, where a large number of persons would need to be trained, the need for developing countries to augment their training capabilities is the greatest. The trainers will in turn train thousands of enumerators and processing staff.

21. It is generally agreed that the training of trainers should be given high priority so that the trainers may stay abreast not only of the subject-matter but also of educational principles and techniques. The training should include study tours to well-known statistical training centres in other countries. This is indispensable for an adequate development of national training facilities.

Desirability of regional training centres undertaking research projects

22. The ESCAP view is that the primary responsibility of regional training centres is training statistical personnel either directly or through the training of trainers. But some amount of job-oriented or associated research would be useful, such as evolving better teaching techniques, assembling and disseminating teaching materials which are of relevance to work, monitoring the rapidly changing computer and related technology, advising on the most suitable computer equipment and software for regional and country application and the like. Furthermore, undertaking research projects on specific topics and issues of interest to the countries of the region will enable the staff of the regional centre to familiarize themselves with the practical problems of the countries, thereby making the training programmes purposive and problem-oriented and enhancing the usefulness and prestige of the institutions.

23. The ECA view is that this activity is desirable in order to bridge the gap between theory and practice. The research facilities envisaged for the training centres would enable students to be trained in research methods and so become qualified to work independently on problems of economic and social statistics in their countries after graduation. The regional centres might also be commissioned by countries to do specific research for which national facilities are lacking. The centres might conduct seminars in fields of special interest to the participating countries.

24. The FAO view is that limited research projects should be undertaken by regional training centres for training and demonstration purposes only.

25. The WHO view is that to be involved in research projects does not necessarily improve the level of teaching at a training centre; it may even impede the training. What should be encouraged, however, is a continuous study of the functioning of the health statistical services, of problems and of users' needs for statistics. Information obtained from such a study will be essential for designing learning objectives for national as well as regional training.

Drawing up guidelines for the academic and training needs of statisticians at different levels

26. The development of guidelines covering the academic and training needs of statisticians at different levels is highly desirable. As a start, efforts should be made at the country level to define and meet prevalent specific needs of the country. Guidelines on how to define such needs should then be prepared at the regional or even international level. However, considering the differences in basic educational standards, statistical experience, etc., obtaining in different countries of the developing world, more than one set of guidelines may be necessary at least at the subregional level.

Post-graduate programme at regional training institutes

27. It is generally felt that post-graduate programmes at regional training centres for short-term training in specialized fields should be organized, provided that the necessary specialization is available among the staff of the centre. The experience of the Statistical Institute for Asia and the Pacific, all of whose programmes are short-term (six months or less) and mostly at the post-graduate level, shows that such courses are regarded as extremely valuable by the participating countries.

Locating training institutions in universities

28. The location of regional training centres in universities will no doubt have the immediate benefit of providing a large faculty, a library and other facilities. However, this has disadvantages where university regulations limit admission of certain students and where universities tend to give too academic a bias to the courses. The advantages are that some exceptionally intelligent trainees of the centres may also eventually enrol for a degree at the university, which is more sought after than a diploma. However, since the training programmes of the regional centres need to have an applied orientation, suitable precautions need to be taken to ensure a healthy blend of both types of orientation.

Procedure for evaluating training programmes and following up trainees

29. The experience of the regional commissions, specialized agencies and training centres has been somewhat limited in this area. The Statistical Institute for Asia and the Pacific has endeavoured to evaluate its training programmes by a number of methods, including course evaluation by the present participants through confidential questionnaires and evaluation on questionnaires by previous participants and by their present superior officers. Though the information elicited in this way is a useful guide, it cannot be said that these methods have produced a significant evaluation of the programmes. Courses sponsored by WHO have been assessed mainly through an evaluation of student and teacher performance. Evaluation of the content of the teaching programme, that is, its relevance to the actual needs of students for a better performance of their job, has been of rather recent date. However, more experience is needed from field-testing of assessment methods before any definitive recommendations can be formulated.



## II. STATISTICAL TRAINING ACTIVITIES CARRIED OUT UNDER THE AEGIS OF THE REGIONAL COMMISSIONS

### A. Statistical training activities in the Economic Commission for Asia and the Pacific region

30. Statistical training is one of the major components of statistical development activities promoted by the ESCAP secretariat. The Committee on Statistics, the ESCAP legislative body for statistics, provides the mandate for all regional statistical activities including training, and the Statistics Division is responsible for over-all co-ordination of such activities. Though the Statistics Division is not directly involved in imparting systematic training, workshops, working groups and seminars that it frequently organizes either by itself or in collaboration with other divisions of the secretariat and donor agencies, have a significant training component principally through exchange of ideas and experience. The recommended action programmes help the member countries to improve and modernize their statistical systems. The regional advisory services provided to countries by the Statistics Division also have a training component.

31. The Statistical Institute for Asia and the Pacific (SIAP), located in Tokyo and functioning since 1970, is the primary United Nations agency in the region promoting formalized statistical training. A variety of courses is offered covering sampling and statistical methods, demographic, economic and social statistics and national accounting, which are oriented to the needs of the statistical organizations in the member countries.

32. The primary responsibility for organizing and conducting training courses at the regional, subregional and country levels in these subjects rests with SIAP. In its third phase of activities, SIAP proposes to explore ways and means of promoting closer collaboration with other training bodies, particularly the national training institutions, in order to achieve the common goal of greater and self-sufficient statistical competence in the region.

33. The training programmes of SIAP, particularly the short courses, are oriented towards meeting the practical needs rather than imparting academic training in statistics. Practical needs often arise either in a particular subject-matter field or in relation to a particular activity. In either case, the approach adopted in training is to attack the specific problems of applied interest and restrict academic instruction to the extent necessary to appreciate the application of appropriate statistical techniques to these problems.

34. Country courses are frequently designed for middle-level personnel. The training of middle-level personnel is generally a mixture of on-the-job training and short in-service courses. The Statistical Institute for Asia and the Pacific is now making a major effort to organize training for trainers specifically to assist national training efforts.

35. One of the long-term objectives of SIAP is to assist countries to develop adequately their own training capabilities so as to be more self-sufficient. The Statistical Institute for Asia and the Pacific has, therefore, attempted not to

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duplicate in its courses material that is already available through courses in national institutions. This policy led to a review of the content of the general course which has been in operation for the last 10 years and to the provision of advanced courses/seminars which provide access to new ideas and to the establishment of a forum for learning from regional experience, an opportunity that would otherwise be unobtainable within the countries. With an increased emphasis on country courses, SIAP will have greater scope for training suitable persons to train their colleagues within their countries.

36. The Institute implemented its full work programme for 1979, including the completion of the ninth general course, the first three months of the tenth general course, four country courses, one workshop and two advanced seminars for senior statisticians.

37. The work programme for 1980 included the completion of the tenth general course in March 1980. The general course, originally of 10 months' duration and, since 1976, of six months' duration, has been a major activity of SIAP since its inception. However, the need for this type of training has now declined in many countries, although it is still sought in the Pacific countries and one or two of the least developed among the developing countries. There is also some concern that half the resources of SIAP are committed to this course, thereby restricting the possibility of undertaking a number of other activities which could be expected to have greater impact. The objectives, content, duration and approach to this course are, therefore, under serious consideration.

38. Two advanced courses/seminars are planned for 1980. The first will be a repetition, in modified form, of one conducted in 1979 on statistics of poverty, redistribution and basic needs-oriented development strategies; this is considered justified by the current importance of the subject. The second advanced course/seminar will be on the processing, analysis and use of 1980 agricultural census results to meet the new demands of the development strategies for the 1980s. Seven country courses are also planned for 1980.

39. The International Statistical Education Centre (ISEC) at Calcutta is a regional institution functioning since 1950 with the active collaboration of the International Statistical Institute, the Indian Statistical Institute, UNESCO and the Government of India. Participants in the ISEC programmes are drawn from the ESCAP region, as well as from West Asia and the Commonwealth countries of Africa. Training grants are given by the United Nations, the Commonwealth Secretariat and the Government of India.

B. Statistical training activities in the Economic Commission  
for Latin America region

40. The Centro Interamericano de Enseñanza de Estadística (Inter-American Statistical Training Centre) (CIENES) was established at Santiago, Chile, in 1962, on the basis of an agreement between the Government of Chile and the Organization of American States (OAS). It is supported by the General Secretariat of OAS, the Inter-American Statistical Institute, the Government of Chile and the University of Chile. Its objective is to impart statistical training to technical personnel

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from Member States of OAS, including those engaged in teaching and scientific research.

41. From 1962 to 1970, CIENES concentrated its attention on satisfying the training demand in the region mainly through its inter-American course on statistical techniques, in which 313 participants from Latin America were trained.

42. From 1971 to 1976, CIENES conducted a systematic programme of national courses. Seventeen national courses were offered to 351 staff members of the national statistical services of various countries of the region. In addition, CIENES continued to offer the inter-American course on statistical techniques, though with a modified curriculum aimed at training in a specific subject-matter each year. During this period, 178 participants were trained.

43. During 1971-1976, 16 specialized courses were offered by CIENES at the inter-American level to 294 staff members of national statistical services.

44. Since 1977, CIENES has had a programme of training in statistical techniques with a view to promoting collaboration with the staff of the national statistical services in operating national courses at a basic and an intermediate level and also with a view to concentrating on efforts on inter-American specialized courses to meet the needs of the national statistical services in the region. As a consequence of this and in view of the available resources, the general inter-American course on statistical techniques was discontinued in 1977. From 1977 to about the middle of 1979, 23 national courses were offered to 543 participants. During the same period, 10 courses and seminars on specialized subjects at the inter-American level were offered to 214 participants.

45. The Centro Interamericano de Enseñanza de Estadística is proposing to reorient its activities from 1980 onwards, taking into account the evolution of the statistical training problems of the region and the available resources.

46. The policy of CIENES is that only those courses and seminars which cannot be effectively handled at the national level are organized and conducted at the inter-American level.

#### C. Statistical training activities in the Economic Commission for Africa region

47. The Statistical Training Programme for Africa (STPA) is the latest development in African efforts to provide opportunities for the training of adequate numbers of staff required to produce the statistics needed for economic and social development.

48. Although the training programme initiated in the 1960s largely fulfilled its original targets, the staff position in many African statistical offices has remained unsatisfactory for a variety of reasons. These include (a) the loss of trained personnel to other government departments, private sectors and to more developed countries; (b) the under-utilization of existing facilities owing to a lack of information on courses offered, admission requirements and financial

resources; (c) the tendency for many training courses and especially those offered in universities to be overly academic.

49. Accordingly, at its tenth session in December 1977, the Conference of African Statisticians adopted STPA on the basis of the recommendations of a working group which had met at Munich in August 1977 to review the statistical training needs in Africa.

50. The essential objective of STPA is to ensure that the region has a permanent supply of trained staff in statistical and other services for Governments as well as for the private sectors. To meet this objective, STPA is conceived as a 10-year programme aiming to make Africa self-sufficient by increasing the number of statistical personnel and improving and maintaining the quality of the personnel in service.

51. In this connexion, the Conference of African Statisticians supported the view that ECA should play a role of co-ordination and leadership in establishing a regional mechanism which would provide operational support for existing training institutions with a view to: (a) improving their efficiency; (b) developing their courses along more practical lines; (c) ensuring that they become self-supporting.

52. The Institute of Statistics and Applied Economics (ISAE), Makerere University, at Kampala, Uganda, in 1975 introduced an advanced course leading to the degree of Bachelor of Statistics after three years. The institute organizes a nine-month post-graduate professional programme leading to a Diploma in Statistics for the re-training and training of officials in the region. Under this programme, those who attain a higher class at the first degree may be admitted to the one-year Master of Statistics degree course at Makerere University. The Institute also runs a three-year course leading to the B.Sc. degree in statistics and economics mainly for local students.

53. The Institute of Statistics and Applied Economics was planned as a national project offering regional services under the auspices of the United Nations Development Programme, (UNDP) which provided regional funds. When UNDP applied its regional funding policy more rigorously, the project had to be financed from the UNDP country programme for Uganda and from the Ugandan national budget. Efforts have been made to institute a regionalization programme under STPA. It has been recommended that ISAE train more than 600 top-level statistical personnel from 17 African countries during the period 1978-1988.

54. The Department of Statistics, University of Ibadan, Nigeria, runs three training programmes covering all the countries in the region:  
(a) M.Sc. (Statistics), one year; (b) B.Sc. (Statistics), three years;  
(c) Post-graduate Diploma (Statistics), one year. The Department is currently drawing up a practical programme.

55. The East African Statistical Training Centre (EASTC) at Dar-es-Salaam, United Republic of Tanzania, was another UNDP regional project offering one-year training at certificate and diploma levels. When UNDP phased out its assistance, the Centre was taken over by the East African Community. The Tanzanian Government

took over the running of the Centre when the Community dissolved in 1977, and recently, efforts have been made to regionalize the institution under STPA.

56. The Department of Statistics, University of Botswana, was part of the UNESCO regional statistical training project set up at the University of Botswana, Lesotho and Swaziland (UBLS). Initially, it provided one-year training at the certificate level. It now provides training leading to a diploma and a higher-level degree course in addition to the certificate course.

57. The Department of Statistics, National University of Lesotho, was also part of the UNESCO regional project and offered courses leading to a diploma or a degree. The Department also provides training leading to the certificate level. Courses with a practical bias continue to be provided. Plans are currently being formulated for a five-to-six-week training programme in a government statistical service during vacations preceding the last year of the course for the award of a degree.

58. Operating under the University of Ghana are both the Institute of Statistics, Social and Economic Research (ISSER) and the Department of Statistics; the Institute of Statistics, Social and Economic Research has absorbed a UNDP-funded centre which had provided training for intermediate-level personnel. The Institute, now funded by the Government of Ghana, provides training for intermediate-level statistical personnel. The Department of Statistics, in collaboration with ISSER, offers statistical courses leading to a degree or a post-graduate diploma (three years and one year respectively). The courses have a practical bias and include a compulsory training programme during a long vacation after the last year of the course, which leads to a degree. The principal beneficiaries of the Institute are Ghanaians although it is also open to nationals of other countries.

59. For a description of the French-speaking centres, see paragraphs 82-93 below.

D. Statistical training activities in the Economic Commission  
for Western Asia region

60. The Arab Institute for Training and Research in Statistics was established at Baghdad in 1976 by the Governments of Iraq and of 14 other Arab countries with the co-operation of the United Nations; FAO and UNESCO have been associated with the Institute from its inception. It is financially supported by UNDP and the participating countries.

61. The long-term objectives of the Institute are to improve the quality and increase the number of statisticians needed for central and sectoral statistical offices and statistical units and for conducting censuses and surveys in the member countries and to assist countries in strengthening their national statistical organizations and training centres and developing and improving all other national statistical activities. The immediate objectives are to provide training in various statistical fields for senior staff and their assistants as well as technical officers who will, in turn, train large numbers of staff in their own countries, to provide guidance and training for research on statistical

methodology and problems of immediate importance and of particular interest to the region and to provide consultant services in various statistical activities, particularly on surveys, as well as on censuses and related data processing. The Institute pays special attention to those countries whose statistical services are at an initial stage of development.

62. A nine-month advanced course on applied statistics is given at Baghdad. One course commenced on 15 October 1978 with 18 participants from eight countries. The next nine-month course commenced on 15 October 1979 with 17 participants from seven countries. This course is divided into two semesters, with mid-semester and end-of-semester examinations and a mid-year vacation of two weeks.

63. A nine-month intermediate-level course in general applied statistics is given at the Statistical Training Centre at Amman, in co-operation with the Jordanian Department of Statistics. One course commenced on 1 October 1978, another on 1 October 1979. The initiation of this course in October 1977 partially meets the requirement of an interim six-month roving course stipulated in the original project document of the Institute.

64. Five short courses on specialized subjects were held at Baghdad during 1979. They were on vital and health statistics, national accounts in constant prices, electronic data processing, agricultural statistics and foreign trade statistics. In addition, the Institute conducted three short courses in other Arab countries in 1979. They were on fishery statistics, commodity balances and input/output tables.

### III. STATISTICAL TRAINING ACTIVITIES ORGANIZED BY THE SPECIALIZED AGENCIES

#### A. Food and Agriculture Organization of the United Nations

65. Training is one of the important activities of the Statistics Division of FAO to encourage and assist countries planning to participate in the decennial World Census of Agriculture (WCA). Lack of trained statistical personnel has been one of the major reasons for non-participation of many countries in WCA and for not carrying out properly previous censuses of agriculture by many countries. For this reason, the importance of training of census personnel, especially at the grass-roots level, is emphasized in the programme for the 1980 WCA. Starting in the 1978-1979 biennium, the Statistics Division embarked on organizing National Demonstration Centres (NDCs) for the 1980 WCA in the developing regions of the world to provide training and demonstration of the various census operations for local census personnel. The general content of the NDC course is directed mainly towards practical field work in agricultural census operations. The NDC course will obviously vary from one country to another depending upon the type of agriculture, census experience, staff, facilities available, etc. Therefore, it is not possible to prescribe a standard course to meet the needs of all developing countries.

66. The global organization and conduct of NDCs will be the responsibility of the Statistics Division in close collaboration with the statistical staff of the

FAO regional offices and the country FAO/UNDP agricultural statisticians. National institutions will be contracted to organize and conduct NDCs. The National Demonstration Centres will be organized at the initiative of and financed by the Government of the host country. The FAO representative, or the senior agricultural adviser, and the UNDP resident representative in the country will also provide support and assistance. The duration of each NDC will be approximately two to four weeks.

67. Classroom lectures will be limited to the concepts, definitions and methodology necessary for the participants to appreciate the census methodology, the importance of the field work and other practical procedures designed to improve the quality of census results.

#### B. United Nations Educational, Scientific and Cultural Organization

68. The training of personnel in those statistical areas that fall within the competence of UNESCO takes mainly the form of seminars, workshops and short courses. Thus, training is not institutionalized and there are no statistical training centres established by UNESCO.

69. Training seminars and workshops have so far been conducted chiefly in education statistics. However, in addition to the increasing number of seminars and workshops in this field, it is expected that six regional seminars on science and technology statistics and six national seminars for improving methods of data collection in culture and communication statistics will be organized during the period 1980-1983.

70. The most important training project presently in operation is entitled "Training seminars on statistical methods with special reference to projecting school enrolment"; it is financially supported by the United Nations Fund for Population Activities (UNFPA). The seminars aim at upgrading the skills of statistical personnel working in Ministries of Education, with a view to enabling the personnel to prepare statistical analyses and projections which take adequately into account population variables.

71. Another project in education statistics is the organization of training workshops on the collection of statistics on out-of-school and adult education.

#### C. International Civil Aviation Organization

72. The need for training statistical personnel has been recognized in the International Civil Aviation Organization (ICAO) since the late 1950s, when an increasing number of developing countries began to join ICAO. The simultaneous development and expansion of the ICAO statistical programme have reinforced this need.

73. The ICAO training activities consist of short training courses, informal workshops and provision of guidance material.

74. During the last 10 years, some 15 short courses have been held at the request of individual countries or groups of countries. The courses, which are normally conducted by air transport officers attached to the six ICAO regional offices, are aimed at providing training in the collection and organization of civil aviation data. The training consists of a detailed examination of the ICAO statistical reporting requirements and the procedures for complying with them.

75. In 1976-1977, ICAO conducted a survey among Contracting States to determine the needs for training in aviation statistics. Of the 73 developing countries that replied to the questionnaire, 65 indicated requirements for training personnel. Of these States 40 preferred full-time courses and 25 preferred on-the-job training. There appeared to be a requirement for the training of over 500 persons altogether.

#### D. World Health Organization

76. Training in the management of health statistical services has been given high priority by WHO. Health personnel is scarce in most developing countries and has to be increased before any activities planned to meet the health needs of communities can be carried out efficiently. The World Health Organization is expected to provide guidance regarding teaching approaches and learning materials and to organize or participate directly in training activities for national workers and teachers. The training of teachers of health statistics and related subjects has become an urgent concern in the WHO programme of statistics education and training. Another concern is the need to bridge the gap between statistical theory and practice and to develop statistical competence in the health-care areas.

77. As part of its endeavour to raise the quality of health-care delivery through more effective use of statistical material and methods, WHO has since 1962 sponsored a number of training programmes designed to improve the teaching of statistics to medical and health personnel. One activity in this field was the Inter-regional Conference on Teaching Statistics to Medical Undergraduates, held at Karachi, Pakistan, from 4 to 9 March 1978. The meeting was attended by 83 participants from 34 countries, the statistical advisers from the WHO regional offices and headquarters staff. The Conference was co-sponsored by the Government of Pakistan and the International Epidemiological Association.

78. Consultants of WHO assisted in the preparation of guidelines for medical record maintenance and of self-instructional booklets for doctors and other health personnel to guide them in data collection, processing and use if and when statistical assistance is not available.

79. In order to facilitate the implementation of the Ninth Revision of the International Classification of Diseases (ICD-9), the WHO unit on ICD, in collaboration with WHO regional offices and centres for the classification of diseases, started to organize courses in 1977 for the reorientation of trained coders to the use of ICD-9.



#### E. International Monetary Fund

80. The International Monetary Fund (IMF) has offered training courses to officials of IMF member countries since 1950. The IMF Institute, located in the headquarters building at Washington, DC, was formally established in 1964, since which time, it conducted more than 100 sessions attended by some 2,500 participants from 133 member countries for periods varying from four to 24 weeks.

81. The Institute courses are given in English, French and Spanish and cover three primary areas, namely, financial analysis and policy, public finance and balance-of-payments methodology, fields in which IMF has special interest. In conformity with the course objectives, participation is limited to officials who are employed by finance ministries, central banks and other financial agencies and whose professional assignments are related to the subject-matter of the course. Preference is given to candidates from developing countries.

#### IV. STATISTICAL TRAINING ACTIVITIES CARRIED OUT BY COUNTRIES

##### A. France

82. The training of statisticians from developing countries has always been considered at the Institut National de la Statistique et des Etudes Economiques (National Institute of Statistics and Economic Studies) (INSEE) as an essential aspect of its technical assistance activities. The activities of INSEE in training national cadres are very diverse. They consist of basic training, carried out by the Ecole Nationale de la Statistique et de l'Administration Economique (National School of Statistics and Economic Administration) (ENSAE) and the Centre Européen de Formation des Statisticiens-Economistes des Pays en Voie de Développement (European Centre for Training of Statisticians-Economists from Developing Countries) (CESD) and of refresher courses. For the latter, INSEE is sometimes the chief organizer and sometimes a supporter of the activities of organizations such as the Centre de Perfectionnement Economique et Financier (Centre for Economic and Financial Improvement) (CEPEF) or the Munich Centre for Advanced Training in Applied Statistics for Developing Countries (see paras. 96-101 below).

##### 1. Basic training

##### (a) In France

83. Created initially as the applied school of INSEE, ENSAE became a national school in 1960 with the objective of training higher cadres who would serve the administration, the public and the private sector as specialists in statistics and economics. It trains the senior cadres of INSEE (administrators and attachés). Its statutes permit the admission of a small number of foreign students. Thus, ENSAE trained 105 statisticians from developing countries between 1964 and 1979.

84. The Centre Européen de Formation des Statisticiens Economistes des Pays en Voie de Développement was created in October 1962 following the attainment of

independence by many African countries. It is a private association governed by French law. It trains senior cadres of statisticians who are required to produce, manage and use statistical information in developing countries for making decisions of an economic and social nature concerning the nation, the region and the enterprise. To fulfil this function, CESD uses a training centre located in the ENSAE building in Paris. It is run by a Council of Administration composed mainly of Europeans. It is currently administered by the director of ENSAE.

85. Two types of diplomas are awarded at CESD: (a) Engineers of statistical work (ITS), and (b) engineers, statisticians, economists (ISE).

86. The training at CESD has some areas in common with that at ENSAE (mathematics, theoretical statistics, theoretical economics and computer programming); training in some areas is adapted to the statistical and economic working conditions of the developing countries, such as problems of growth in these countries, national accounting, sociology of development etc. Between the first and second years, students undertake practical on-the-job training in an enterprise or in a Government of a developing country.

(b) In Africa

87. The question of transferring the training at the ITS level from CESD to Africa has been studied since the end of the 1960s. A number of schools have been created in Africa since independence to train workers in statistics. Since 1977, CESD is no longer training at the ITS level. This is now being offered at the following six schools: (a) Statistical School, Abidjan, Ivory Coast; (b) African and Malagasy Institute of Statistics and Applied Economics, Kigali, Rwanda; (c) Institute of Planning Techniques and Applied Economics, Algiers, Algeria; created within the framework of the Algerian policy of developing university institutes of technology; (d) Institute of Statistics, Planning and Applied Economics, Yaoundé, United Republic of Cameroon; (e) National Institute of Statistics and Applied Economics, Rabat, Morocco and (f) Statistical College of the National School of Applied Economics, Dakar, Senegal. At Dakar, this type of training is given from time to time rather than on a regular basis.

88. The courses at each of these schools have features peculiar to them owing to the context in which each was created. However, more or less formal relationships exist among the schools. For this reason, one speaks of an integrated system of training higher-level statisticians in French-speaking Africa.

89. A formal relationship exists among the schools at Kigali, Yaoundé and Abidjan. In fact, the three select their students through a common entrance examination organized and evaluated by CESD.

90. The corps of national teachers at the schools being insufficient in number, considerable technical co-operation is required. Persons rendering technical assistance are often ex-students of ENSAE who either render technical assistance in lieu of their national service or have a teaching contract. The co-operation service of INSEE plays an important role in the recruitment and placement of teachers in schools where they are needed. In 1979, 18 ex-students of ENSAE were full-time teachers at the schools.

## 2. Refresher courses

### (a) In France

91. The technical assistance of INSEE takes several forms:

(a) INSEE organizes technical co-operation programmes for the statistical training centres in a number of developing countries. These programmes extend over several years and consist of sending statisticians from INSEE and from the French statistical system on missions of short or long duration to these countries and of accepting trainees from these countries.

(b) In 1979, ENSAE and CESD organized their first session of refresher training for statisticians from developing countries. The session dealt with computer programming.

(c) CEPEF is a training organization created on the initiative of the directorate of forecasting of the Ministry of Economy and of INSEE, with assistance from the Ministry of Foreign Affairs, Ministry of Co-operation, International Institute of Public Administration (Prime Minister's Office) and General Planning Commission. CEPEF plans intensive refresher training courses of short duration (one to two months) for foreign government employees who have already had some administrative experience. The courses are, inter alia, on short-term forecasting, planning, national accounts and rationalization of budgetary choices.

### (b) In other parts of Europe

92. The Government of the Federal Republic of Germany each year organizes at the Munich Centre for Advanced Training in Applied Statistics for Developing Countries refresher courses for French-speaking statisticians from developing countries. The statisticians of INSEE participate actively as teachers and prepare and edit numerous lecture notes and mimeographed material for the courses.

93. In addition, CESD co-ordinates the refresher courses organized in Europe. Every two years, it organizes a meeting of the United Kingdom Overseas Development Ministry, the Institute of Social Studies (The Hague), the Munich Centre for Advanced Training in Applied Statistics for Developing Countries, CEPEF and CESD in order to ensure that the English and French refresher courses during the following years are complementary rather than competitive. Representatives of the Economic Commission for Africa and of the International Statistical Institute attend these meetings on co-ordination.

## 3. Problems encountered and perspectives

94. In the course of two decades of participation in statistical training for developing countries, INSEE has encountered a number of problems which have led it to modify the type and nature of its participation. The two important improvements which have marked this period are the assistance towards a progressive transfer of basic training to countries and the development and

co-ordination of activities related to refresher training. The coming years should witness the strengthening of these movements.

95. In training in refresher courses, two trends seem clear. One is the training of trainers in France and the other is the eventual development of refresher-course training in interested countries on a regional basis by the existing training centres.

#### B. Germany, Federal Republic of

96. The Munich Centre for Advanced Training in Applied Statistics for Developing Countries was established in 1972 by the Government of the Federal Republic of Germany, the European Community and CESD. The Centre is managed by the Carl Duisberg-Gesellschaft e.V., a private non-profit organization which has long-standing experience in providing professional training to foreign specialists and managers within the framework of developing the policy of the Federal Republic of Germany and the European Community.

97. The courses are given alternately in French and English. The purpose of the Munich Centre is to meet the increasing demand for scientifically founded and practice-oriented training for statisticians from developing countries. The courses are meant for post-graduate students who hold a diploma of university level or an equivalent degree in statistics and who have some years of experience in practical statistical work in a statistical office or a government agency of their country.

98. The Munich Centre offers the following types of courses: (a) courses of four months' duration, held at Munich for statisticians having completed their university studies and having had some practical experience. The programme changes from year to year. Two courses are given per year, one in English and one in French; (b) seminars of three weeks' duration, held at Munich for directors or their deputies; (c) "Sur place" courses of four to six weeks' duration, held in developing countries for statisticians from a selected number of countries.

99. One major problem faced by the Centre is the heterogeneity of the participants. In spite of the same level required of all participants of the courses (completion of university studies and some practical experience), the trainees often have differing backgrounds as they come from various countries.

100. The evaluation carried out by the Centre concerns the content of the course as well as its organization and lecturers. It is done by questionnaire, which is distributed to the participants once every week to evaluate lecturers and at the end of the course in respect of all other questions. In addition, the lecturers are invited to state their views of the participants through informal interviews.

101. The Carl Duisberg-Gesellschaft, which manages the Centre, obtains financial resources mainly from the Federal Ministry of Economic Co-operation, Bonn. The current running costs are exclusively financed from that source. Fellowships are provided mainly by the European Development Fund of the European Community and also by the Federal Ministry of Economic Co-operation and occasionally by other institutions.

C. Netherlands

102. The Institute of Social Studies was established at The Hague in 1952. It was founded by the 10 universities in the Netherlands and is financially supported by the Government of the Netherlands. It works in close collaboration with the Central Bureau of Statistics of the Netherlands and the Central Statistical Office of the United Kingdom.

103. The objective of the Institute is to contribute to national and international efforts to understand and solve problems of economic and social development. In 1962, eight-month courses in statistics and national accounting were started. The Institute also carries out research and collaborates with universities and governmental agencies in developing countries on teaching and research programmes. Trainees prepare research papers adapting statistical methods to conditions prevailing in developing countries. The Institute admits about 25 trainees from developing countries annually.

104. Teaching is provided by the staff of the Institute with the help of guest lecturers from government statistical offices, universities, etc. Tuition fees are charged by the Institute but are reimbursed by the Netherlands Government and also by international organizations and sponsoring Governments.

*see Add. 1*  
D. UK #104a-104k  
E.D. United States of America

105. The International Statistical Programs Center (ISPC) of the Bureau of the Census has been conducting formal statistical training programmes at Washington, D.C. since 1946. The objective has been to teach essential concepts of official statistics, how to produce and use them and how to improve the statistical system. The training places emphasis on applied skills; basic theory and methodological fundamentals are taught at the beginning of the programme, as necessary, to provide a basis for the applications. Over the years, as the needs of statistical programmes in developing countries have changed, both the programme content and the methods of instruction at ISPC have been modified. Courses in survey design and evaluation techniques, systems analysis and data management and control of non-sampling errors have been introduced gradually as the applicability of these more sophisticated perspectives has been found to be increasingly appropriate in the national statistical systems to which participants return after training at ISPC. Core courses in statistical methods and sampling, statistical technology and survey management have been streamlined and strengthened; at the same time, programme flexibility has been increased and the possibilities for more specialized training have been expanded.

106. The current programme covers a broad spectrum of statistical activities associated with censuses and current surveys. The training is intended primarily for general and survey statisticians, mathematical statisticians, data-processing technicians and administrators who have had some working experience in national statistical programmes. An integrated two-year curriculum has been developed in each of six regular specializations: sampling and survey methods; agricultural surveys and censuses; population statistics and demographic analysis; economic surveys and censuses; computer data systems; and statistical technology and survey management.

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107. While courses in the participant's curriculum of specialization comprise most of his or her programme, some core courses are required of all participants. The required courses include statistical methods, sampling, control and evaluation of non-sampling errors, training for statistical activities and management of statistical activities.

108. In addition to training provided in one of the six regular specializations, special-purpose training programmes can be arranged. Special-purpose training programmes vary in length from three months to one year, depending on the training objectives of the participant.

109. The content of both the long-term programmes and the workshops arranged by ISPC incorporates United Nations principles and recommendations and is designed to support United Nations and FAO statistical programmes such as the 1980 World Population and Housing Census Programme, the 1980 World Census of Agriculture, the National Household Survey Capability Programme and the 1983 World Programme of Industrial Statistics.

110. Training programmes of ISCS are conducted by full-time instructional staff who occasionally invite guest lecturers to supplement the regular instruction. Classroom instruction by the lecture-discussion method is co-ordinated with laboratory sessions in which problems, using data and other materials from the participants' countries, are solved and evaluated.

111. The major problem faced by ISPC is the heterogeneity of the participants with respect to English language fluency, academic preparation and the extent and level of experience in national statistical programmes. Since all the training is conducted in English, a minimum fluency level, as measured by the test of the American Language Institute at Georgetown University (ALIGU), is required. To cope with the heterogeneity in academic background and experience, ISPC gives some courses at two levels. This allows better prepared and more experienced participants to skip fundamentals and move to more advanced topics and applications.

112. All ISPC courses are graded and frequent assignments and tests give the participant and the training adviser continual measures of the extent of progress. Feedback from the participant is also important in enabling the training adviser to adjust the training programme to meet the participant's objectives. In addition to verbal feedback at weekly consultations or more frequent informal discussions, participants are required to complete brief questionnaires about training objectives, accomplishments to date and suggestions for programme changes. Based on the results of these evaluation efforts, as well as on the knowledge and judgement of the training staff of the statistical needs of developing countries, the content and structure of the ISPC training programmes are updated continually.

113. The current operating expenses of ISPC training programmes are financed entirely by the participants' sponsors, including the United States Agency for International Development, the United Nations, the Organization of American States, private foundations and agencies of the participants' Governments.

114. International statistical training programmes at the Bureau of the Census are conducted in close co-operation with four other statistical agencies at Washington - the Economics, Statistics, and Co-operatives Service (ESCS) in the Department of Agriculture; the National Center for Health Statistics (NCHS) in the Department of Health and Human Services; the Bureau of Economic Analysis (BEA), which, like the Bureau of the Census, is in the Department of Commerce; and the Bureau of Labor Statistics (BLS) in the Department of Labor. The agricultural surveys and censuses training adviser in the ISPC training programme is a staff member of ESCS who is seconded to the Bureau of the Census from the Department of Agriculture. The joint United States training programme in agricultural statistics for which the adviser is responsible is viewed as a co-operative undertaking of FAO and of the United States Bureau of the Census and ESCS. Under a recent agreement between NCHS and the Bureau of the Census, training in civil registration and vital and health statistics will be conducted as part of the ISPC training programme in population statistics and demographic analysis. The National Center for Health Statistics co-operates with ISPC by suggesting course materials and arranging supplemental consultations or short courses. The two other major statistical agencies, BEA and BLS, offer international training programmes which are structurally independent of ISPC training. While there are no formal links between these programmes, there is considerable informal co-operation, including exchange of participants and instructional staff. The BEA national economic accounting training programme and the BLS labour statistics training programme are described in paragraphs 115-124 below.

115. Training in national economic accounting has been conducted for technicians from developing countries by the Bureau of Economic Analysis (BEA) at Washington, D.C., since 1947. The current training programmes are designed to meet the great need of these countries for specialists in national economic accounting who are capable of adapting and organizing the factual materials at hand - that is, censuses, surveys and administrative statistics - into a comprehensive, integrated set of accounts for the nation's economy.

116. Training programmes are provided at various levels. They include a basic, 11-month training course, regularly scheduled short-term programmes and ad hoc opportunities for advanced study in national economic accounting. The basic course emphasizes the conceptual framework and methodology of national income and product accounting. The basic course stresses the development of an integrated system of national accounts based on the United Nations System of National Accounts (SNA).

117. The introduction of regularly scheduled short-term courses is a recent innovation. These are eight-week seminars designed to meet the needs of experienced technicians for advanced study in one or more areas of national economic accounting.

118. The number of participants enrolled in BEA training programmes has been kept small. It is felt that the basic 11-month course can accommodate 15 participants to best advantage. This is seen as optimal both from the point of view of staff and facilities and of the important consideration of attention to the training

needs of individual participants. Participants may be sponsored by the United States Agency for International Development, the United Nations, the Organization of American States, private foundations and agencies of the participants' Governments.

119. For more than 30 years, the Bureau of Labor Statistics (BLS) has provided training in labour statistics at its training facility at Washington, D.C. The current BLS programme features a series of seminars, each six to eight weeks in length. The seminars, which bring together statisticians, economists and analysts from developing countries all over the world, are designed to strengthen capabilities in collecting and analysing human resources data and related economic and social statistics and in applying the results to policy formulation, especially for human resources development.

120. A seminar on prices, income distribution and poverty and one on analysis of labour statistics are offered annually. Topics of other seminars vary from year to year.

121. Each seminar includes at least one field trip, as well as lectures, discussions and workshops. Special appointments and individual study programmes are arranged to meet the needs of individual participants in each seminar. Special programmes also are arranged for periods between seminars for those participants attending more than one seminar.

122. In addition to its Washington-based seminars, BLS also conducts seminars overseas on request. Such seminars may be held for either an individual country or a region; they range from two to four weeks in duration.

123. The number of participants enrolled in the BLS seminars at Washington averages approximately 20. Participants may be sponsored by their Governments, by the United Nations, the United Nations Development Programme or the International Labour Organisation, by non-profit organizations such as the Ford Foundation or the Asia Foundation or by the United States Agency for International Development.

124. Like other statistical training programmes at Washington, the BLS labour statistics training programme accepts many participants from non-English-speaking countries. While each seminar is conducted in English, interpreter services are often provided for Spanish-, French-, Portuguese- and Arabic-speaking participants.

#### V. POINTS FOR DISCUSSION

125. The Commission may wish to comment on the various issues arising in the training of statistical personnel (paras. 3-29).

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