

ASIAN STATISTICAL INSTITUTE

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Genesis

The Asian Statistical Institute (ASI) has been organized by the countries of Asia under the aegis of the United Nations Economic Commission for Asia and the Far East (ECAFE) in cooperation with the United Nations Development Programme (UNDP) for providing training at a professional level for the statisticians of the statistical services of the countries of this region, which have been increasingly using statistics for planning of economic and social development and for assessment of plan achievements. There has been a rapid growth of the statistical activities during the last two decades in the region served by the ECAFE owing to various programmes undertaken for economic and social development and due to the variety of statistical analysis made possible through the use of the sampling method and by mechanization and computerization of tabulation work.

While the need for trained statistical personnel in the government service is steadily growing, the training facilities, particularly at professional level, are becoming inadequate. In some countries of the region, even academic training in statistics is not at all available, or is available only to a very limited extent. While recognizing the importance of strengthening and expanding the existing facilities for training at university level, it is to be noted that the training needs of operational statistical personnel at different levels, who constitute the bulk of statistical services in governments and public enterprises, are generally, and are likely to continue to be, at least for some time, beyond the scope of university teaching.

The Conference of Asian Statisticians (COAS) in its sixth session held in 1964 recommended the establishment of a statistical research and training centre for the region to promote training, and methodological and operational research conducive to statistics development and to bring about regional cooperation in statistical activities. The ECAFE in its twenty-first session in 1965 endorsed this recommendation. At the suggestion of the COAS and the ECAFE, an expert group was set up by the Secretary General of the United Nations in 1966 with three members—Dr. C.R. Rao (Chairman), Dr. Y. Morita and Dr. G. Goudswaard—to advise on steps to be taken to improve the facilities for the education and training of statisticians in the countries of the ECAFE region.

The Expert Group in its report expressed the view that special efforts were required to strengthen and extend the university and other courses in those countries

which were at present producing professional statisticians, to adapt suitable courses for the training of official statisticians in the main fields of economic and social statistics and to enable those countries to absorb more students from the countries which lacked suitable facilities. For this purpose, it was recommended that multilateral and bilateral assistance should be sought. The Group also recommended that an Asian Institute for the development of statistics should be established for the purpose of supplementing the flow of professional statisticians for government service, and made some concrete suggestions as to the courses to be provided by the proposed institute. The Expert Group felt that provision should be made to assure the scientific standing of the Institute and its special character as serving a number of countries by providing for an advisory council which would include representatives of the host government, the United Nations, other financing bodies and the international scientific interests in that field.

The ECAFE, at its twenty-third session held in 1967 accepted the offer of the Government of Japan for providing host facilities for locating the proposed Institute in Tokyo and requested the Executive Secretary to secure the necessary financial assistance from the UNDP to supplement the counterpart contributions pledged by member countries for establishing and operating the Institute at Tokyo.

A one-man Preparatory Assistance Mission with Mr. I.G. Jones was set up by the UNDP in 1968 in connection with the establishment of the ASI to report on the needs of the proposed institute in terms of staff, funds, books, etc. and to prepare the basic elements of a plan of operation.

Mr. Jones in his report mentioned that the countries of the region he had visited were interested in the general course to be conducted by the proposed Institute if it presented the statistical operations and systems concerned in a comprehensive manner and structured so as to advance the selected trainees to a high level of competency in the work of the statistical offices, and that they would welcome training in specialized subjects which were treated in considerable depth and in accordance with the most up-to-date techniques, as this would prove valuable in obtaining greater uniformity as well as greater skill in the conduct of the United Nations world censuses and other programmes in the countries. Additional benefit could be gained by the regional institute arranging for a range of optional courses which could be changed from year to year in accordance with the current international recommendations and programmes and the needs of the countries of the region.

The report of the Preparatory Mission included information on the level of training desired by the countries of the region, availability of candidates, financing of trainees, counterpart contributions, etc. and specific recommendations on staff needs, text books, calculating equipment, demonstration materials, selection of candidates, coordination, national seminars, budget, etc. Besides these, the report also presented the basic elements of the plan of operation of the proposed Asian Statistical Institute.

In 1969, the plan of operation of the Institute was finalized and the Director (Project Manager) and the Deputy Director (Teaching and Training) were appointed to prepare the curriculum, establish the Faculty, send Governments brochures and requests for nominations for fellowship, etc. The first ten-month General Course of the Institute was inaugurated in Tokyo on 3 June 1970 with thirty-two Fellows from fifteen developing countries of the region selected out of nominations filed by these countries.

2. Functions

The main function of the ASI as mentioned earlier is to train professional statisticians for the statistical services of the governments of the developing member and associate member countries within the ECAFE region. The specific functions of the Institute as laid down in the plan of operation are the following :

- (i) a general training course for professional statisticians for Government service ;
- (ii) an advanced course of training for statisticians of senior standing, in specialized fields of statistics, for about four to six weeks ;
- (iii) advanced seminars and applied courses in specific subjects, for statisticians of senior standing in the countries, for about four to eight weeks ;
- (iv) facilities for preparation of manuals and other training expositions required for teaching ;
- (v) facilities for research by the teaching staff of the Institute, in cooperation with the ECAFE secretariat ;
- (vi) facilities for officers and research workers deputed from the countries to carry out special studies and research of an applied nature ; and
- (vii) assistance in the organization and improvement of facilities for statistical education and training at all levels in the national and sub-regional centres.

The scope and the contents of the courses mentioned in (i) to (iii) are discussed in Sections 4 and 5 and in the Appendix.

3. Organization

The sponsoring Governments, the UNDP and the United Nations (which serves as the Executing Agency for the UNDP) are jointly responsible for the execution of the plan of operation of the Asian Statistical Institute to realize the objectives enumerated in Section 2. Within the United Nations, the ECAFE carries out the substantive and other responsibilities of the Executing Agency, in consultation with the Statistical Office of the United Nations, FAO, UNESCO and the other Speciali-

zed Agencies. The Government of Japan, as the Cooperating Agency, provides the office space, hostel facilities, equipment, library and general services.

The Institute functions as an autonomous institution under the aegis of the ECAFE, guided by an Advisory Council of eleven members (the Executive Secretary and the Chief of the Statistics Division of ECAFE, a representative of Japan, five members of recognized professional standing from the member and associate member countries (other than Japan) in the ECAFE region elected by the ECAFE, the Project Manager/Director of Institute and representative each from FAO and UNESCO).

The Faculty of the Institute consists of the Project Manager/Director, Deputy Director (Teaching and Training) and seven Lecturers. On the administrative side, the United Nations has provided a Programme Officer, an administrative Officer and a Secretary to the Project Manager/Director, and the Japanese Government have provided a Deputy Director (Administration), an Administrator and other administrative and general service staff. The teaching and training work of the Institute is supplemented by special lectures and seminars by experts in specialized fields provided by the Government of Japan and the United Nations specialized agencies such as FAO, ILO, UNESCO, etc.

In addition to the regular budget of the Institute shared by the UNDP, Government of Japan and other sponsoring countries, the Government of the Federal Republic of Germany have provided funds to appoint a Lecturer for two years. The Government of Netherlands have provided for two fellowships every academic year for the ten-month General Course. The Government of the USA have made available the services of an expert on electronic data processing for a period of three months. The Government of France and USSR are also expected to provide some assistance in kind. As part of their contribution, the Government of Japan provide twelve of the thirty-two fellowships presently offered in the General Course and also experts for special lectures. The specialized Agencies of the United Nations also provide experts for giving special lectures.

4. Courses

The courses offered every year consist of the following:

- (i) General Course for ten months ;
- (ii) Advance Course for four to six weeks ; and
- (iii) Country Courses for four to eight weeks.

4.1 General Course

The ten-month General Course, conducted during the period June-March every academic year, is the main course of the Institute. The purpose of this course

is to impart general proficiency to about thirty participants (called Fellows) in all the major fields of Government statistics and it is so designed as to bring out the interrelated uses of the data and the methodologies involved. The course consists of a compulsory part and an elective or optional part.

In the compulsory part, teaching and seminars are undertaken in five subjects :

- (i) General statistical methodology and supporting mathematics ;
- (ii) Demographic and social statistics ;
- (iii) Economic Statistics (statistics of industry, business, labour, trade and finance) ;
- (iv) Economic accounting and national income analysis ; and
- (v) Agricultural statistics.

Two supplementary courses on

- (a) economic and social theory ; and
- (b) electronic data processing .

are also conducted, the former with emphasis on its role in the quantitative analysis of economic and social processes and development and the later with emphasis on aspects of particular importance to official statisticians not necessarily directly responsible for data processing operations. For those Fellows not having adequate background of basic mathematics, a special course is given particularly designed to equip them with mathematical tools useful for studying statistical methods.

The elective part of the course consists of five seminar courses in the five subject areas, of which each Fellow has to choose two seminar courses of his interest. The topics of these courses in the subject fields are selected every year taking into account the current needs and the recent developments in these areas. For instance, the topics chosen for the 1970-71 General Course are the following :

Statistical Methods—Basic elements of sampling with emphasis on applications ;

Demographic Statistics—Approaches to vital statistics with special reference to sample surveys on births and deaths ;

Economic Statistics—Preparation for the World Programme of Industrial Statistics ; and

Economic Accounting—Problems and practices of preparing input-output tables.

(No seminar course was given in Agricultural Statistics in 1970-71).

As mentioned earlier, arrangements are made for special lectures to be given by experts in the subject fields from the Specialized Agencies of the United Nations and from the statistical offices of the Government of Japan.

As part of the General Course, visits to statistical offices of the Government of Japan dealing with specialized fields are arranged to enable the participants to have a first hand knowledge of the practical scope of and the problems involved in applying the methodologies covered in the course. Arrangements are also made for field visits within Japan to familiarize the Fellows with the conditions under which data collection and compilation are usually undertaken. For instance, the Fellows of the first General Course (1970-71) made two field visits, one in October 1970 and the other in January 1971, to observe the 1970 Japanese National Census, which is conducted once in every five years, and the vital statistics system and collection of data on family income and expenditure, retail prices, etc.

4.2 Advanced Course

The objective of this course, which is conducted for four to six weeks in February-March, is to focus attention on the high-priority statistical programmes of the United Nations and to provide a forum for exchange of experience among the participants (called Senior Fellows). About fifteen statisticians of senior standing in the Government statistical offices are taken for the course. The topic of this course is expected to vary from year to year depending on the current needs. The topic selected for the 1971 Advanced Course is the 1973 World Programme of Industrial Statistics.

4.3 Country Courses

The purpose of the Country Course, which is given for four to eight weeks during April-May in the country itself, is to provide short-term training facilities in the countries which have acute shortage of trained professional statisticians in particular subject fields. This is likely to be particularly useful in providing trained statistical personnel at the higher professional levels for a new or expanded statistics development programme. Such courses can be given only at the specific request of the country concerned. The selection of the topic and the content of the course are decided jointly by the country concerned and the Institute taking into account the general purpose of the country courses and the specific needs of the concerned country. Local expenses for this course are to be borne by the country itself. A slight variation of the country course is to have sub-regional courses for which neighbouring countries can send their participants to get training at professional level in a subject or statistical programme of current interest.

5. Programming of the General Course

The organization of the content of the course and the mode of training to be employed in the General Course present challenging problems, as the following aspects are to be kept in view :

(i) The objective of the course is to provide a deep insight into the data needs of Asian countries and the methodologies appropriate for collecting, processing and presenting data useful for economic and social analysis and planning.

(ii) The course, which covers five major subject fields,—Statistical Methods, Demographic Statistics, Economic Statistics, Economic Accounting and Agricultural Statistics—is to be completed in ten months.

(iii) The sequencing of topics in the five subject fields is to be so done that the inter-relationship between these areas are brought into focus.

(iv) The wide difference in education, background and experience expected among the Fellows undergoing this course is to be recognized.

Taking the last point first, diagnostic tests on the basic background knowledge required for this course are given to the Fellows on their arrival to find out whether some of the Fellows need special courses and course material to improve their background knowledge with a view to enabling them to follow the regular course. For instance, after the diagnostic test in 1970 for the first General Course, a course in essential background mathematics was given to those Fellows needing this basic knowledge.

The course in each of the five subject areas consists of approximately 35 lectures and 35 seminars each of one and half hour duration. For each lecture, the fellows are given lecture outlines with suggested reading material and discussion topics which form the basis for discussion in the seminar classes. For the seminars, the Fellows are divided into two sections of sixteen each to facilitate discussion. Sometimes the seminar classes are also used as laboratory session or for other special but related purposes. These lectures and seminars are given in the morning session, and two afternoons each week are scheduled for completion of workroom assignments given in the subject areas.

In the lectures emphasis is placed on conceptual aspects, methodology and applications. The routine derivations of results are not generally undertaken, unless the derivation itself helps in illustrating a particular problem under discussion. In the seminar classes, the idea is to promote discussion among the Fellows and the lecturer to bring out the similarities and contrasts of the conditions obtaining in the different countries of the region and to focus attention on finding solutions to special problems.

The sequence of topics in each of the five subject fields is so designed that to the extent possible related aspects are discussed at about the same time. In the

Statistical Methods course, descriptive aspects are taken up first so that they are available for use in the other courses. Then the problems of sampling, estimation, principles of statistical inference, etc., are taken up. In the applied subject fields conceptual aspects of statistical measurement are dealt with first and the Fellows are encouraged to get to know their own country in terms of its statistics and to learn to interpret the various measures as part of an overall statistical system.

To dovetail the sequence of lectures in the different subjects in a meaningful way and with a view to minimizing duplication of topics between the courses, and in case of duplication to making them planned duplication, the contents of each of the 35 lectures in all the subject fields are drafted first by each lecturer and by reviewing the topics taken up in the different subjects week by week, suitable modifications and adjustments are made by the Faculty in the contents and sequencing of the lectures to bring about as much of inter-relationship between the five subject fields as possible.

As mentioned earlier, the regular course is supplemented by shorter courses on Economic and Social Theory and on Electronic Data Processing and by special lectures by experts in specialized areas from the Government of Japan, the Specialized Agencies of the United Nations and other national and international agencies.

Every week, each Fellow of the General Course takes one lecture and one seminar each of one and half hour duration in each of the five major subject areas and two work room assignment classes of about two hours each. The course in Economic Theory consists of about fifteen two-hour periods and that on Electronic Data Processing consists of about twenty lectures and workshops each of two-hour duration. Besides these, there are special lectures of two hours each by experts in specialized areas during a period of six weeks. Also during a twelve-week period, each Fellow elects two out of five elective seminar courses given in the five subjects.

6. Research Activity

The institute is keenly interested in research in applied statistics and its promotion. The expert Group set up by the United Nations in 1966 had stressed the importance of carrying out research projects of an applied nature useful to the countries of the region in the development of statistics and to provide facilities for supervision of the work of officers and research workers deputed from the countries to carry out special studies or research of an applied nature. In its first meeting in 1970 the Advisory Council of the Institute also stressed the importance of the Faculty of the Institute undertaking research in applied statistical problems common to the countries of the region and making available the results of their research to all the countries.

Among the possible research projects being explored by the Institute is the preparation of a prototype sample birth and death statistical survey which

would be appropriate for providing reliable data on births and deaths, and could be recommended as a survey for implementation by the countries of Asia. The prototype is proposed to be so designed as to provide adequate estimates of annual national population change by components of change — births, deaths and migration — by broad age groups.

7. Concluding Remarks

The COAS in its tenth session held in 1970 recognized the difficulty in assembling candidates having similar educational background and experience for the General Course, and stressed that this should not prevent the General Course from being at an advanced level even if it required an improvement of backgrounds of some trainees by having them first trained at institutes providing training at a lower level. The Conference expressed interest in and satisfaction with the devices being used to determine the background character of the trainees attending the General Course and the evaluation programme of the accomplishments of the trainees while attending the institute. It was also suggested that the Institute should examine the difference in level and content of training in the different institutes offering training in statistics in the ECAFE region, as such an examination should prove of value in planning the programme of the Institute and in improved coordination among the several institutions.

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APPENDIX**Contents of the General Course**

To give an insight into the contents of the General Course, a brief outline of the courses in the five subject areas is given here.

Statistical Methods

Recognizing the wide difference in the academic qualification, background and experience to be expected among the Fellows, the course is given starting from an elementary level. Also, a special course on supporting mathematics sufficient to comprehend the statistical formulae, statistical tables, etc. is given for those Fellows who are found to need this basic background. In presenting this course, emphasis is laid on the conceptual aspects, basic assumptions and limitations of each statistical technique and these are discussed with illustrations provided by live data in the fields of economic, demographic, social and agricultural statistics. The course content can briefly be indicated as follows.

Collection and compilation of statistics—summarization of data—regression and correlation analysis—problem of specification—sampling and estimation—principles of statistical inference—sampling from finite population—design of experiments—statistical quality control.

Demographic and Social Statistics

This course is presented with emphasis on the concepts and definitions most appropriate for meeting the data requirements of the users and for integrating the results in demographic and social statistics system, paying special attention to the international statistical programmes and recommendations. The combined use of demographic and social statistics data for studying the standard of living of the population is also discussed. The problems of a system of demographic and social statistics and accounting are also taken up in depth.

Objectives, scope and contents—size and spatial distribution and mobility—population characteristics—family planning—population replacement and growth—health statistics—educational and cultural activities—housing—labour force—level of living and its statistical indicators.

Economic Statistics

The course is given with emphasis on the concepts and problems of collection and analysis of economic data. Broad measures of economic activity such as index numbers and economic accounting are presented in such a way as to relate the data collection to methods of analysis. Attention is given to censuses

and their relationship to complementary annual and more frequent enquiries. Then the problems of data collection in the areas of prices, transport, finance, construction, etc. are taken up.

Objectives, scope and contents—classification problems—summary economic measures—periodic censuses and monthly, quarterly, annual enquiries—statistics of employment, wages and unemployment—family income—price data—Government, financial, construction, transport, industrial, etc. statistics—time series analysis—index numbers—production function—analysis of demand, supply and cost functions.

Economic Accounts

The major objective of this course is to provide a working knowledge of the methods of constructing national accounts and of collection and processing of data for use in the basic tables. Special attention is devoted to discuss the various approaches which can be adopted to overcome the difficulties posed by non-availability of data in the requisite details. Further, to get an insight into the various methods of estimating national income and related accounts, attention is given to discuss the existing estimates in the countries of the region, their limitations, the sources of data, and the uses to which these accounts are put.

Development of national income accounting—basic concepts—system of national accounts—structure of accounts—international comparison—use in economic and statistical analysis—revised United Nations system of national accounts—system of material product balances—input-output analysis—inter-relation between different accounts—distribution of income.

Agricultural Statistics

The course emphasizes the methods of collection of current and basic agricultural statistics through sample surveys, censuses and other techniques. The concepts used in agricultural statistics are discussed in detail with illustrations from developing countries. Attention is devoted to show the practical uses of agricultural data in development planning, forecasting and other analytical uses. Statistics of food consumption, prices and trade in agricultural commodities are also discussed. The Fellows are required to familiarize themselves with FAO yearbooks and to obtain information on the methods of collection of agricultural statistics in their countries.

Objectives, scope and contents—methods of collecting agricultural statistics—agricultural censuses—current statistics—crop area statistics—crop production—temporary and permanent crops—livestock and livestock products—related agricultural statistics—index of agricultural production—food consumption statistics—forestry and fishery statistics.