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STATISTICAL TRAINING ACTIVITIES IN TURKEY  
August 1965 - July 1969

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I. INTRODUCTION

The Development Statistics Project in Turkey was established to support the effort of the Turkish Government in developing an efficient and reliable statistical system to serve both the government and the private sector in their policy-making, planning and progress evaluation. A restricting element in accomplishing this goal was the dearth of trained statisticians in Turkey. The Statistical Training Center of the State Institute of Statistics was established by law in December 1963 in order to overcome this deficiency, and began operation in October of 1964. A Statistical Training Advisor was added to the Census Bureau Statistical Team in 1964 and he remained here during the first academic year of operation of the Statistical Training Center.

In August of 1965 I arrived in Ankara and have served as Senior Statistical Training Advisor for four years. My function has been to advise and assist my counterpart, Head of the Training

Department in the operation, management, planning, curriculum development, faculty selection, and administration of the Training Center. This includes related activities that have a bearing on the accomplishment of the goals of the Statistical Training Center and on its programs.

The Statistical Training Center was organized as a continuing element of the State Institute of Statistics and a wing to house the classrooms and faculty offices of the Center was added to the SIS building and occupied in January 1967. The Head of the Training Department (formerly Director, Statistical Training Center), reports directly to the President, State Institute of Statistics.

My primary responsibilities as Senior Statistical Training Advisor were to work closely with the Head, Training Department in accomplishing the following objectives:

1. To operate and administer a Statistical Training Center within the State Institute of Statistics for upgrading the professional statistical skills of the staff of the State Institute of Statistics, other government agencies and selected

elements of the provide sector. Graduates of the Center provide a cadre of specialists who employ their upgraded skills in implementing the statistical programs of the Government of Turkey. Some continue into more advanced studies in Turkish universities, while others qualify for participant training in the United States and elsewhere.

2. To develop through training and recruitment a strong staff of Turkish instructors and technicians who can take over the duties of the foreign advisors and instructors.
  
3. To select highly qualified individuals from the Statistical Training Center and other sources for Participant training; to observe their progress while engaged in this training; to help insure their effective assignment upon return; and to observe and guide their progress in the future.

From these primary objectives flow a number of specific detailed programs that are considered necessary for an effective accomplishment of the overall goals. These, together with the degree of their accomplishment, existing problems and recommendations are discussed below.

## II. TRAINING DEPARTMENT PROGRAMS

### A. Statistical Training Center

The Statistical Training Center two-semester, non-degree course is open to any college graduate who can qualify in open competitive examinations held each October, providing his company or agency will pay his salary during the nine-month training period.

In its first academic year the Training Center gave certificates in Statistics to 29 students who completed satisfactorily the two semesters of training in Statistics, Mathematics, and Economics. Recently the Center completed its fifth successful year, at the end of which a total of 136 students had been awarded Certificates in Statistics. In addition to the value of this training in upgrading the skills of the trainees, there has been a multiplier effect in the dissemination of this technical knowledge to assistants and associates. Moreover, the opportunity to observe and assess the capabilities of the students during an entire academic year has made it possible to improve the quality of selectees for the Participant Program, which will be discussed in a later section of this report.

The Statistical Training Center, during this Advisor's tour, has had an unusually strong Turkish faculty. To accomplish this, it was necessary to recruit professors from nearby universities. In the first two years, nearly all of the teaching staff consisted of such outside specialists. In the recently ended academic year only two outside faculty members, both of outstanding ability, taught at the Training Center. The State Institute of Statistics supplied all the remaining members of the instructional staff from within its own agency (including the lecturer-interpreter in this Advisor's courses).

In each academic year courses have been given in Applied Statistics, Basic Statistics, Mathematics, Probability, Sampling, and Economics. In addition a variety of other courses have been given for one or more semesters as classroom time permitted or as qualified faculty members were available. Courses, for example have been given in Econometrics, Mathematical Programming, Demography, Public Finance, Structure of the Turkish Economy, and Atlantida. Other courses that are being considered for future academic year offerings either regularly or on a one-time basis, depending upon changing requirements and staff availability are: Quality Control, Design of

Experiments, Regression Analysis, Statistical Inference, Theory of Sample Surveys, Introduction to Mathematical Statistics, and Fundamentals of Operations Research.

Classroom lectures in Applied Statistics, Probability and Sampling courses have been supplemented with laboratory sessions each week, thereby affording the students an opportunity to add a practical element to their classroom instruction.

In order to provide up-to-date instruction in special related subjects, a number of short term seminars (one day to two weeks in duration) were given to the Training Center student body each year. Among the subjects presented were: Automatic Data Processing, Linear Programming, National Income, Response Errors in Surveys, and Statistical Applications of Electronic Computers. All of the lecturers were highly qualified, and some were international experts in their fields.

#### B. In-Service Training

In-Service Training for current SIS staff employees is an additional element of the Training Center objective. Until rather

recently the Center was so undermanned as to preclude the accomplishment of this objective. However, in May, the first of what we hope will become a series of in-service courses was inaugurated. This was the In-Service Training Course in Applied Statistics for middle management and was conducted two entire days a week for one month. Thirty-six Division supervisors attended the course. Of these, thirty-three received certificates of successful completion at the graduation ceremonies of the Statistical Training Center in July.

It is contemplated that future in-service courses will cover, additionally, clerical operations such as editing, coding, computation of percentages and variances, compilation of Statistical tables and other clerical functions. They would also include such subject areas as writing procedures, preparing survey instructions, designing questionnaires, writing specifications for machine processing, wiring boards, operating office and tabulating machine equipment, etc. These courses would carry no academic credit, but would stress the practical application of modern statistical methods to problems of current interest.

C. Conference and Other Professional Meetings

The Statistical Training Center serves as a focal point for conference and similar professional gatherings relating to statistical, economic and social matters of public interest. In September, 1966, the Center organized its first nation-wide Inter-University Statistical Conference. The ten papers which were presented on a variety of statistical topics were subsequently published in paperback form. The Conference was conducted at a high professional level and was quite successful. As a consequence, this Conference has become an annual event. Last year it was sponsored by the Turkish Statistical Association (to be discussed in a subsequent section of this report).

The Training Center has also organized and conducted a variety of other national and international conferences, seminars, and symposia both at the modern, well equipped SIS Conference Hall as well as outside of Ankara.

In January 1969 a series of Chambers of Commerce seminars was inaugurated, in Istanbul. It has since been conducted in Adana, Ankara, Samsun, and Erzurum. In September, it will be held in Izmir.

The series of seminars is designed to improve the quality and timeliness of data furnished to the State Institute of Statistics by acquainting the statistical staff of the Chambers of Commerce, industry members of the Chambers of Commerce, and representatives of local newspapers with the functions and data responsibilities of the SIS and the importance of furnishing this agency with quality data in timely fashion. Top executives (including the President) and experts of the SIS conduct these seminars at the several locations. On a recent visit to Adana by this advisor the General Secretary of the Chambers of Commerce expressed his gratification with the Seminar conducted there and requested that another be given next year.

D. Training Center Facilities

In addition to classroom and administrative offices a Statistical Laboratory is available at the Training Center for giving supplementary practical instruction for selected courses. The students work problems relating to their course material, conduct short-term sampling projects, perform probability experiments and the like. One or more instructors advise and assist the students at each of the laboratory sessions.

A small, specialized statistics library and a reading room are planned as part of the Statistical Training Center itself, to make reference material readily accessible to students in training. In addition, Training Center students have access to the main SIS library. This library, while relatively new, is building up its inventory of books, periodicals and other documents and publications at a respectable rate. While some books in this technical field are being published by Turkish authors, the rate of output is still low and the bulk of the library's titles are primarily in English. Several hundred books have been ordered for the library by this advisor with AID funds in the past four years.

E. Texts and Reference Books

Virtually no texts in Turkish were available in the subjects taught at the Training Center at its inception. A number of publications covering course material in these subjects have been prepared by staff and faculty members to meet this requirement. Following is a list of the titles that have been published to date:

Tevfik C. Cavdar, "Turkiye'de Sosyal Hesaplar, Öngörmeye Kullanilislari (Social Accounts in Turkey, Use in Estimations), 1964, mimeographed.

- Hasan Lay, Türkiye Milli Geliri (Turkish National Income), 1965, mimeographed.
- Veli Beygirci, Tarım İstatistikleri Ders Notları (Course Notes for Agricultural Statistics), 1965, mimeographed.
- Hüsamettin Tuncel, Dış Ticaret İstatistikleri, (Foreign Trade Statistics), 1965, mimeographed.
- Özgen Yeğenoğlu, Sevk ve İdare Alanında Kısa Bir Gezinti (A Short Review of Leadership and Management), 1965, mimeographed.
- Morris J. Slonim, Theory of Probability, 1966, mimeographed.
- Morris J. Slonim, Olasılık Kuramı, (translation of above), 1966, mimeographed.
- Tevfik C. Cavdar, İktisat ve İstatistik için Temel Matematik I, Diferansiyel ve Integral Hesap (Basic Mathematics for Statistics and Economics, Differential and Integral), 1966, mimeographed.
- Morris J. Slonim, Numune Alma Tekniği Esasları, (Principles of Sample Selection, 1966.
- Howard L. Jones, Sevk ve İdare için İstatistik (Statistics for Leadership and Management), 1966.
- Ratip Yüceuluğ, Demografi (Demography), 1966.
- Herman Goldhamer, Verilerin Tasnifi (Data Processing), 1966.
- Hasan Lay, Milli Muhasebe Sistemi, Metodolojik İnceleme, (National Accounts System, Methodology Study), 1966, mimeographed.

"Universiteler Arasi İstatistikciler Konferansi, Eylül 1966,  
(Inter-University Statisticians Conference, Sept. 1966).

General Budget of the Republic of Turkey (English translation  
of the Expenditure Line Items), 1967.

C. P. Tilanus, 1935-1960 Türk Nüfus Sayımlarında Yas Yığılımı  
Sorunu, (The Problem of Age-Heaping in Turkish Population  
Censuses), 1967, mimeographed.

"Universiteler Arasi İstatistikciler Konferansi, Eylül 1967  
(Inter-University Statisticians Conference, Sept. 1967)

Erol Karaoğlu, "Örnekleme Giriş (Introduction to Sampling)  
1968, mimeographed.

" " Özgür Yegenoğlu, Orta Doğu Ülkeleri ile Ticari İlişkilerimiz  
(Our Commercial Relations with Middle Eastern Countries)

James W. Land, Economic Accounts of Government in Turkey,  
1969.

James W. Land, Economic Accounts of Non-financial Public  
Enterprises in Turkey, 1969.

Tevfik C. Cavdar, Ekonomi Teorisine Giriş (Introduction to  
Economic Theory), 1969, mimeographed.

#### F. Translated Texts

It is true that the course material texts noted above are of considerable value in conducting the Training Center classes, and that some titles are appearing in Turkish by Turkish authors. Nevertheless,

the total is a mere trickle compared with the large volumes of titles in this field in English and in some other languages. Unfortunately, few of the students are sufficiently fluent in English to avail themselves of the excellent statistical library at SIS. For this reason, the Training Center has made several attempts to initiate a program of text translation. However, the translation and publication of technical texts is an expensive matter and lack of funds, problems of royalty rights, and dearth of qualified, acceptable translators and editors have nullified most of our efforts in the past. A small start is expected to be made in the near future, however and this, hopefully, will lead to a broader translation program. Simon and Schuster, Inc. and this advisor have waived royalty rights to the paperback "Sampling", and translation of this small book will begin soon.

G. Turkish Statistical Association

In September 1967 the constitution of the Turkish Statistical Association was approved. The legal formalities of obtaining a charter had already been completed, and sixty-five members joined the Association at this initial meeting. Sabahaddin Alpat, President of SIS was elected first President of the T.S.A. The Association has

already had a significant impact in disseminating statistical developments and research in Turkey among its membership, which has grown to some 200 members. The annual conference of the T.S.A. in 1968 was eminently successful and the 1969 conference will be held in August of this year. The first issue of the Journal of the Turkish Statistical Association was that of June 1968. The December 1968 issue was No. 2 in the series. With the March 1969 issue it became a quarterly and in the opinion of this advisor, is an excellent publication with an excellent format, especially for a new publication of a young association. The June 1969 issue presently in preparation has articles in both Turkish and English, for the first time, with summaries in the second language.

#### H. Participant Training Program

An extremely valuable element in the AID Development Statistics Project is the Participant Training Program. Under this program qualified members of the SIS staff and, in some cases, personnel of other agencies are sent to the United States for academic degree programs, academic non-degree training, or for special training courses such as those conducted by the Census Bureau and the Bureau of Labor Statistics.

In addition to the training received by the participants, their associates and assistants who have not had such training frequently receive some of the benefits through formal or informal on-the-job training. One participant presently working toward a graduate program in Statistics is expected to be a lecturer at the Statistical Training Center, as well as to provide expertise to other SIS departments requiring assistance in the application of advanced statistical techniques to the solution of problems in data survey and analysis.

Forty-seven participants have returned from training in the United States since September, 1956 under the Development Statistics Project and earlier related projects of AID and its predecessors. Two of these had two separate training programs each. Three of the participants were with other agencies at the time of departure, one has retired, and only seven have transferred to other agencies or to private enterprise during this period.

Thus, thirty-six of the forty-seven former SIS AID participants are still with the SIS. Its President, Sabahaddin Alpat is a former participant, and many others occupy key positions at the

Institute. Two are Department Heads, one a Deputy Department Head, nine are Division Chiefs, and four are Assistant Division Chiefs. In addition, the Director of the Statistical Training Center, the Director of the Central Bureau of Intelligence and the Librarian of SIS are former AID participants. The impact of the AID participant program on SIS has been significant and beneficial, in this advisor's opinion.

As of July 1969 there were sixteen participants in the United States under the Development Statistics Project, of whom four are working toward graduate degrees. Documentation has been prepared for an additional seven, of whom three are being proposed for graduate degree training. This represents a marked increase in the number to undertake graduate degree study, inasmuch as only four former participants received M.A. degrees from September 1956 to the present.

I. Miscellaneous

1. Members of the Training Department, SIS have given a number of talks and presented a number of papers at Turkish and international conferences. This advisor has, among others,

given talks on statistical subjects to Toprak Mahsulleri Ofisi (The Soil Products Office), the Agricultural Equipment Association, Spor Toto, and the Budget Reform Group, Ministry of Finance.

2. The Training Center some months ago organized training courses for two statisticians from the Iranian Ministry of Health at the SIS and the Turkish Health Ministry. In September, two Pakistanian statisticians will arrive and special training courses will be organized for them.

3. The Director of the Training Department and this advisor jointly co-authored an article published in the Journal of the American Society for Quality Control of June 1967 titled "The Statistical Training Center of the Turkish State Institute of Statistics".

### III. RECOMMENDATIONS

#### A. Statistical Training Center

The long-range plan for the Statistical Training Center has been for its takeover by a University within a reasonable period of

years. In my opinion, the purpose served by the Training Center is different than that served by a University Statistics department. The Training Center's purpose is to upgrade the skills of college graduates working in the field of statistics with applied courses in mathematics, economics, probability, statistics, sampling, etc., and to relate these subjects to the problems of collecting, compiling and analyzing the kinds of data they deal with in their daily work. The universities place more emphasis on theory, as a rule, and are concerned with degree credits. Moreover, while the Training Center four years ago relied almost entirely on outside teaching staff, it now has within SIS enough competent instructors to conduct all of its training without outside assistance if need be. There is an additional advantage in using its own staff members as faculty, inasmuch as teaching is an excellent way to master a subject and keep up with developments in the particular field of study.

There is, moreover, a continuing need for the kind of applied training afforded by the Statistical Training Center, as the supply of trained statisticians in Turkey will continue to be inadequate for the foreseeable future. In addition, the present Training Center plan, an annex to the main SIS building, was built specifically for conducting the planned training activities and is well-suited for the purpose.

For the above reasons, it is recommended that the Statistical Training Center remain an integral part of the SIS, operated and administered by the SIS, with faculty obtained for the most part from within its own resources.

B. In-Service Training

In any data-gathering organization there is a continuing need to keep managers, technicians and clerical staff current on modern developments in their respective fields. Progressive agencies devote considerable attention to this matter, and the SIS has not neglected it in the past. However, the pace of this activity should be stepped up, if adequate training staff can be provided. Priority demands on the time of the potential trainees must also be considered, to be sure. An excellent beginning has been made with the recent Applied Statistics for Middle Management course, and the Head, Training Department has plans for expanding this area of activity to the extent possible.

C. Professional Meeting

The Training Center has, in my opinion distinguished itself with

the excellent organization and high level of conduct of a variety of national and international professional meetings. My only recommendation in this area is that it should be continued as in the past.

D. Library

The SIS library, now headed by a former participant trained in library science has excellent physical facilities and apperas to be developing at a commendable pace. There is a wide and excellent selection of books in English on statistics, economics, computer science and operations research. However, with the rapid advances in these fields and the number of new titles appearing annually, and in view of the growing number of SIS employees with competence in English, funds should be provided for acquisitions of selected new titles as they appear.

E. Participants

This element of AID Technical Assistance is having a highly beneficial effect on the ability of the SIS to perform its mission in an effect manner. In the past four years we have sent approximately

ten participants a year to the United States and the FY 1969 quota will exceed this number because of availability of additional funds. To be sure, the availability of technically qualified personnel is a limiting factor, as is the language competence of prospective participants. The current work requirements of the SIS must also be weighed in freeing personnel for a year or more of study abroad. Within these limitations, however, a participant program of double or more the present size would result in a major contribution to the more rapid development of a truly modern, reliable statistical system for Turkey. Significant strides forward have been observed by this advisor during his four years here, and there is no doubt that the Participant Program has contributed in considerable degree to this progress. It should be noted here that from 1956 to the present thirty-eight additional SIS participants received training under OECD, UN, RCE, FAO, ASTEF and other auspices in several other countries as well as in the United States. It is hoped that this phase of participant training will continue, and at an even higher rate.

It was noted earlier that the ratio of participants receiving academic training to total participants has increased considerably in the past two years. This trend should be accelerated to the degree permitted by the availability of qualified personnel.

F. Language Training

Our prospective AID participants are in the main well qualified technically for their course of training in the United States. Few, however, have any significant knowledge of English. While most are able to qualify under the AID language requirements in several months, language still presents a barrier to effective absorption of training, especially in the academic field. In view of the considerable investment in each of these participants it would certainly be worthwhile to invest an added amount in some form of intensive language training whether here or in the United States prior to the start of training. A visiting professor at an SIS meeting recently told of the highly effective three-month ULPAN plan of Hebrew language training in Israel. The feasibility of conducting a similar language program in English, here in Turkey may be worth investigating.

G. Text Translations

Lack of funds for the relatively high-cost item of technical text translation, the need for editing and revising the first translator's efforts, the relative dearth of fully qualified translators, the existing restrictions on supplementing government

salaries by after-hours work in this area of work, and the curtailment of AID funds for payment of global royalty rights to publishers constitute an imposing barrier to an effective text translation program. Nevertheless, continuing efforts should be made to operate such a program in order that students of the Training Center, the staff of SIS and of other government agency statisticians, university students and others may have an opportunity for broader study and reference in statistics and related fields than is now afforded them. The Head, Training Department of SIS has pledged his efforts to continue his search for a breakthrough in this important activity and if Census, AID/W and AID/Turkey will bend their efforts in this direction as well, a solution may well be forthcoming. It has already been noted that a start will be made with translation of this advisor's non-technical "Sampling" inasmuch as publishers and author have waived royalty rights.

#### IV. ACKNOWLEDGMENTS

This tour as Statistical Advisor was my first, and it has been a challenging, instructive and rewarding one. In my considered opinion the Statistical Training Center of the State Institute of Statistics of Turkey has been a highly successful operation under any measures of accomplishment that may be applied.

Many have contributed to the efficient and productive conduct of this activity, many more than can be mentioned in these few paragraphs. It is necessary, however, to state that the wholehearted cooperation, friendly assistance and warm consideration of the President of the SIS, Sabahaddin Alpat have been essential ingredients in the achievement of this record of accomplishment.

In addition, without the guidance, planning and personal efforts in all phases of the training activity of Yasar Yaser, Head of the Training Department of the SIS the Training Center and its subsidiary elements could hardly have achieved their present degree of attainment. His dedication, energy, organizing ability, managerial skill, and decision-making ability coupled with sympathetic understanding are in very large measure responsible for the outstanding performance of the SIS training effort. He has made this tour a pleasant and memorable one for me and for my entire family. We regard him as a warm friend as well as my professional counterpart.

Yasar Bey's assistants and the Training Center faculty members both from within the SIS and from outside sources also deserve a share of the credit. They have always been friendly, helpful and competent.

Our Division Chiefs at Public Administration, Arthur M. Handly and Thomas Thorsen have helped in many ways to make our task her easier, while John Welty, their assistant has performed a plethora of tasks relating to the Participant Program and other elements of our training mission because of his interest in getting the job done quickly and properly.

I owe much to the suggestions, advice, assistance and understanding of three Census Bureau Statistical Team Chiefs - Milton D. Lieberman, Lowell T. Galt, and Waller Wynne, Jr. Their broad knowledge of this entire field of activity, their extensive experience and their competence have contributed greatly to the satisfaction I have derived from this tour of duty.

The staff of the International Statistical Program Office at the Bureau of the Census have been quick to respond to my numerous calls on their services and have provided critical assistance when needed.

Although I am retiring now I shall continue to follow with keen interest the progress of the Training Department as well as of the entire SIS mission and to maintain the warm friendships that the entire family has made here.