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CAIRO DEMOGRAPHIC CENTRE
ITS ROLE IN TRAINING AND RESEARCH*

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CAIRO DEMOGRAPHIC CENTRE
ITS ROLE IN TRAINING AND RESEARCH

By

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The Cairo-Demographic Centre is an inter-regional institution, co-sponsored by the United Nations and the Government of the Arab Republic of Egypt. It has been in existence since 1963 when the first agreement was signed between the two co-sponsoring parties. The first agreement lasted for approximately five years and represented Phase I in the life of the Centre. This was a formative stage, during which the Centre's programmes concentrated on training of young demographers and demographic assistants. Training cycles were first planned to cover 6 months and were then extended to 12 months. Apart from a few exceptional cases, trainees were all graduates from Universities or High Institutes in some subject related to demography and population studies - such as Statistics, Public Health, Sociology and other Humanistic studies. If they had no University degree, they must have had a few years of practical service in the field of population statistics (collection and processing of data, etc.).

2. During the period 1963 through 1967 some 94 trainees followed cycles and came from 9 Arab countries and one sub-Saharan country (Ghana). The Centre was first called as the "North African Demographic Centre" and it was housed in several apartments. Its scope was soon enlarged, however, to include the Arab Countries of south-west Asia, and to extend, as an exception to serve Ghana. The countries served were Morocco, Algeria, Libya, Sudan, Egypt, Jordan, Syria, Iraq, Kuwait and Ghana. All of these countries sent trainees, though in varying numbers. Experts, teaching at the Centre came from Egypt, India, France, Hungary and Ceylon (Sri Lanka). The United Nations was responsible for non-Egyptian experts and for fellowships to non-Egyptian trainees. A good nucleus for a specialized library was set up. Also a good programme of translation, especially of United Nations Manuals (Population and Demographic Aspects) into Arabic was well established.

3. In 1968 the Agreement of the Centre was renewed with basic modification in the structure and functions of the Centre. The Centre was renamed as the Cairo Demographic Centre. Its services became open to all interested countries in Africa, as well as to Arab countries outside Africa (i.e. in the Middle East). This meant that services of the Centre in the fields of training and research in population problems as related to development became widely open to sub-Saharan as well as other African countries. This was in line with the policy of the United Nations in widening the scope of its activities in the service of all requesting governments. It was also in line with the established policy of the Government of the Arab Republic of Egypt in placing its educational and

research facilities freely at the disposal of all interested governments in Africa and the Arab East. This meant that instead of serving some 10 countries as until 1967, the number of countries covered by our services rose by 1973 to 25 - eight in south-west Asia, six in North Africa and eleven in sub-Saharan Africa. In order to make it possible for non-Arab students to join the Centre, it was decided, as from 1968, to use the English language in teaching and research. This enabled us also to benefit to the full from our staff members appointed by the United Nations, and who were not normally in a position to use Arabic for teaching purposes or for supervising research. At the same time Arab students were given extra coaching in the English language, and were able to use more fully the resources of our library, where most of the literature and references were in English. For purposes of convenience, however, Arab students were allowed to answer their examinations in Arabic, in the case of subjects taught by Arab members of staff. Research reports, however, had to be presented in English, or at least English summaries of reports had to be presented with those reports written in the Arabic language. This increase in the use of English at the Centre widened the scope of its scientific contacts and established relations of exchange on the wider international level.

4. As mentioned above, Phase II in the life of the Centre (1968 through 1972) was one of marked change and re-organization. Training activities were much enlarged. As many as 169 fellowships were granted for training or for research (mainly training-cum-research). Of these fellowships 103 came from UN sources and were granted to trainees and research workers coming from outside Egypt, and 66 were given by the Egyptian government to its nationals. Staff members and assistants of research were correspondingly increased to meet the requirements of expanded training and research activities. New institutions and procedures were established to ensure better functioning of the Centre. Regular meetings of the faculty of the Centre were instituted, not only to deal with regular and running affairs and research business, but also to prepare plans and curricula for the re-organization of the functioning of the Centre, as an institution that concerns itself with both training of cadre to shoulder responsibilities in the population programmes of countries served by the Centre, as well as with research in topics relating to population and development in the area. The Advisory Committee of the Centre was re-constituted according to the 1968 Agreement of the Centre, and it became a more meaningful and effective organ for both planning and evaluation of our programmes. It held two important meetings in 1969 and 1971, and is scheduled to meet again in 1973. On it were represented the two co-sponsoring parties of the Centre, the governments served in Africa and the Middle East, interested international and U.N. Agencies, as well as the faculty of the Centre. The Governing Council of the Centre remained limited in number (3 U.N. and 3 Government representatives), but became more efficiently effective as a policy-making and governing body that meets (at least) once every year to review details of the Director's report, review and endorse recommendations of the Advisory Committee, approve the yearly plans and programmes of training and research, as well as review financial and administrative matters. As we shall see later, both of the Advisory

Committee and the Governing Council of the Centre maintained their structure and functions under the third Agreement of the Centre, signed on 22 June 1972, between the two co-sponsoring parties, and extending co-operation between them in the Centre for Phase III, running for a third five-years' period, from 1972 through the end of 1977.

5. The Library of the Centre was very much enlarged during Phase II of the functioning of the Centre (1968/72). Each year nearly 2000 items were added to our inventory of books, periodicals and pamphlets. We were also able to collect complete sets of censuses and other statistical data relating to population and developmental aspects of life in the countries we serve, especially Arab States. Altogether we now (1973) have some 15,000 items on our open shelves. This is perhaps one of the most complete specialized libraries and reference centres on Population studies in our area. The library is well classified, superbly housed, and it follows the open shelf system. In addition to our own staff and trainees, it is frequented by research workers from Egypt and visitors and research students from some of the other countries we serve. Since 1968 the Centre itself has been housed in a large mansion with two annexes, totalling 34 rooms, including three large halls. This is more than enough to cover our needs, with room for future expansion. Apartments formerly occupied by the Centre have been retained as a hostel for trainees from outside Egypt. Both the Centre and its hostel are well located in proximity to cognate university institutions, as well as to United Nations Offices in Cairo.

6. During its Phase I the Centre organized 4 cycles of training. The first was for six months, but later ones were for a full year. The trainees were granted what was then termed as the Diploma in Demography. During Phase II the Centre organized four training cycles of 12 months each, one research cycle of six months and three research cycles of 12 months each. For the general training, we developed what came to be known as the General Diploma Course. Trainees were selected with different university backgrounds and with degrees in Mathematics, Sociology, Economics, Human Geography, Housing Engineering, Medicine, etc. They were given the comprehensive course of training as outlined in Annex I below. The course was a balanced one comprising an Introduction and groups of subjects, which our Faculty and Advisory Committee termed in 1969 as the Basic Subjects, the Auxiliary subjects and the Complementary ones. The total hours were 860 of which 450 were lecturers, 360 were for laboratory work and 50 were for Seminars. The course covered twelve months, of which the first four weeks were reserved for orientation, refresher courses in the English language and Mathematics. During Phase II of the Centre the whole course was given in the English language. During Phase I teaching was given both in Arabic and in English.

The General Diploma course started in December each year. The period January through July was devoted to teaching and training. Intermittant examinations were terminated by a comprehensive one at the end of July (or in early August) which covered all subjects and was both written and oral. The trainees were graded from Pass (50%+) to Good (65%+), Very Good (75%+) and Excellent (85%+), and the total marks for the subjects were 800. Another 200 marks were left for the Research Report which each

trainee had to prepare during the three months of August through October. The trainee prepared his report under the close supervision of a member of the staff. A seminar for the General Diploma was held in November and the trainees were graded as above. A trainee who did not attain 50% of the total 1000 marks was considered as failure. Three such trainees have failed to satisfy our examiners about their standard of achievement, and consequently failed to get their diplomas - two in the year 1969 and one in 1972.

7. By the end of Phase II, i.e. in 1972, some 262 graduates on fellowships from the United Nations or the Egyptian Government, have gone through the Centre. These trainees came from 24 countries, 14 Arab and 10 sub-Saharan (see attached Table). A system of follow-up has been established to ascertain that upon their return to their own countries, the trainees would be employed in some work where they could use their demographic training. Most of them had actually come from Statistical Offices or Ministries of Planning, Manpower, Public Health (Family Planning) or Social Affairs. We estimate that nearly 80% of our graduates are actually engaged in national service pertaining to population and development or related services. Some of them are already occupying responsible technical posts in the fields of population policy and/or development. A few again have gone up to posts of leadership. Some are being used outside their own countries as junior experts employed by borrowing governments or international agencies. The remaining 20% are either occupying posts of marginal interest to population or have left the field for promotion in other fields. However, we believe that even such drop-cuts do not fail to have their impression and indirect influence, especially in bringing demographic knowledge and appreciation to reflect on adjacent fields of national service.

8. As already mentioned, Phase II was also characterised by the establishment of a new course of training-cum-research for the Special Diploma in Demography. In 1968 we started by a precursor course which we called the Six-Months Research Course. Eleven of our former graduates were placed on a research for the collection and analysis of data relating to population growth in 10 Arab countries in Africa and the Middle East. The graduates were trained on recent methods of evaluating relatively defective data. After the trainees had finished their course and the collection of data, the staff and research assistants of the Centre, continued work on the same topic for a further 9 months. The outcome was the production of a research monograph entitled "Demographic Measures and Population Growth in Arab countries". This was published in 1970. A full course of 12 months was already set up late in 1969. The trainees (9 holders of the General Diploma) together with the staff and assistants took the subject "Fertility Trends and Differentials in Arab Countries". Seven months were directed to training on methodology and collection of data (and some computer work). The remainder of the year was spent in writing down of research reports by the staff, the trainees and the research assistants. These reports were discussed in a seminar to which experts from the countries covered and from International Agencies were invited to participate.

The outcome was again published (under the same title) as our Research Monograph No. 2 (1971).

9. As from 1970/71, the Centre has established a programme for this type of group or team research work to cover a number of years. We decided to concentrate chiefly on topics that link up population research with development in the area we serve. The programme concentrates on Arab countries in Africa and south-west Asia, but latitude is given to cover some sub-Saharan African countries from which there may be trainees joining the Special Diploma course. In 1971 we chose the topic "Demographic Factors in Manpower Planning". The course was followed by a seminar, and the proceedings (including re-edited reports and papers) have gone to the press. The I.L.O. co-operated in the research and the seminar. In 1972 we chose the topic "Demographic Factors in Educational Planning", and UNESCO was the International Agency that co-operated. Reports were discussed in the seminar held in November 1972, and the book is now re-edited in preparation for printing. In the current year, 1973, we are choosing the topic "Urbanization and Internal Migration in Arab and some sub-Saharan African countries". In order to give some idea of the coverage of the research, we are giving in Annex II the curriculum of this course of training-cum-research. This curriculum includes a general training section (A) in auxiliary subjects (Mathematics, etc.), a second training section (B), dealing with methodology of research, collection and evaluation of data relating to the selected topic, section (C) giving the pattern outline of the research to be followed in preparing country or subject report to which about 6 months are allocated. In addition, field research is to be carried out by each trainee under the supervision of his supervisor in the countries covered by the survey. This field work usually covers about three weeks. Altogether we estimate that 500/man/days, would be spent in the field in connection with this research. The reports and papers prepared by the trainees and staff will be discussed in the seminar to be held in December of this year (1973). We have been able to arrange for co-operation of OECD (Organization for Economic Co-operation and Development, Paris) in this research. For the year 1974, the Population year of the UN, we are planning to take up the topic "Demographic Aspects of Social and Economic Development in Arab and some sub-Saharan African countries". It will be dealt with along the same lines as the previous topics.

10. Until the end of 1972 some 35 trainees have completed their Special Diploma course. To them should be added 11 who completed our so-called Six-Months Course of research and 13 who are taking the Special Diploma Course in 1973. While the holders of our General Diploma can be considered as assistant demographers or technicians who can well carry out national service in fields connected chiefly with population statistics or development projects, those who hold the Special Diploma can well be considered as qualified junior demographers. They have had fully 24 months of training and research work after graduating from a university in a subject related to population and development studies. Our graduates of the Special Diploma are actually proving their worth, especially

as qualified national cadre in population data analysis, and in development planning projects in a number of the countries we are serving. In addition to these graduates, we are planning gradually to add a few of the more qualified research workers in fields of demography and population. As from the year 1973 we are accepting a limited number (two or three each year) of the best graduates of the Special Diploma to prepare for the Master Degree in Demography and Population Studies. Indeed the Master Degree programme will constitute a special feature of Phase III in the life of our Centre (over five years: from October 1972 through 1977). Master Degree candidates will spend a minimum period of 12 months, during which they follow some short advanced courses and prepare a thesis on a selected Topic relating to their own countries. It is hoped that these, together with the best holders of the Special Diploma, will gradually build up a good nucleus of research workers in the field of population in the area we are serving.

11. In addition to the above training in the field of demographic research, the staff of the Centre have been contributing to demographic and population research. It has to be noted that, especially since 1969, there has been not only an increase in our Egyptian staff of experts and research assistants, but also a widening in the scope of recruitment of non-Egyptian staff. We were able, through the United Nations, and other resources made available chiefly by the UN Fund for Population Activities, to recruit and benefit from a large number of experts from several countries, including Belgium, Canada, Czechoslovakia, Greece, Guinea, India, Japan, Sweden, Switzerland and Syria, apart from those who came earlier from France, Hungary and Sri Lanka. Visiting experts and demographers of other nationalities also joined us for short visits. Thus our research community of experts and trainees at the Centre came from well over 35 countries, and our scientific co-operation took broad international dimensions. The individual researches undertaken by the staff and their assistants took the form of papers contributed to international meetings and conferences or published by the Centre itself. These papers appear as chapters contributed to our Research Monographs or will soon appear as Occasional Papers. Our first Occasional Paper is scheduled to appear in 1973. Also reference to these researches by our staff and some of our research assistants and trainees appears regularly in the Newsletter of the Centre, which is published twice a year. Indeed our individual researches have been a good way of establishing exchanges and contacts with scientific bodies engaged in population research.

12. Finally the Cairo Demographic Centre carries out some useful ad hoc services in connection with its programmes of training. These services have thus far been concentrated on translations of useful works into the Arabic language. It has to be recalled that there is now a growing consciousness amongst a widening public of readers in the fields of demography, population and development in the Arab World. Not all the interested readers could easily read material in English or French. At the same time technical demographic terminology in the Arabic language is still capable of being enriched. Only through efforts by Arab demographers in the translation, publication and dissemination of material could such an enrichment be attained. As a service to Arab readers in this respect

the Centre has established a programme of translation into Arabic and wide dissemination of such literature amongst interested readers and even the wide public. A trilingual dictionary (glossary) in English, French and Arabic was also published. Some 14 other works were translated into Arabic and were well received by a wide public all over the Arab World. These included both UN Manuals and other works of wider interest. It is hoped that this programme will both contribute to demographic literature in Arabic and enhance interest in the subject amongst a widening public of readers interested in studies of demography, population and development.

13. From the above review it becomes clear that the Cairo Demographic Centre (named from 1963-1967 as the North African Demographic Centre) has passed through three phases. Phase I extended from 1963 to the autumn of 1967. It was marked by the initiation of the training stage and the formation of young technician-demographers (totalling 94) from 10 countries, all Arab but one (Ghana). Phase II of another five years was governed by the second agreement between the co-sponsoring parties and extending to the end of September 1972. It was marked by the initiation of training-cum-research courses, and beginning of a fairly intensive programme of research and publication. Another 169 trainees and young research workers in demography and population problems, coming from 24 countries in Africa and the Middle East have gone through the Centre's programmes. They came from 14 Arab countries and 10 sub-Saharan ones. As from 1970 the inter-regional character of the Centre was officially recognized within the UN system. Then Phase III was agreed upon in the third agreement of the Centre, signed in June 1972, and extending its functions from October 1972 through the end of 1977. While a plan for consolidating training at the Centre was established and applied as from January 1973, the programme of research was much enlarged and intensified, especially in field research covering most of the 25 countries presently (mid-1973) served by the Centre, and including nearly all the Arab countries and some 11 sub-Saharan ones in Africa. By the end of 1973, some 311 fellowship holders will have gone successfully through our training and research programmes. Our researches are planned to be closely related to problems of population, development and environment in the countries served, as well as in a few marginal ones (such as the Arab Gulf States and some West African countries). They are carried out in collaboration with other interested international and national agencies working in the area. In these researches both our staff, our trainees and graduates, as well as some invited experts take part. Field work is becoming an important feature of our programmes. In addition to our General and Special Diplomas, a small group of our graduates are now being admitted to the Master Degree. Publication of our researches, as well as of translations (into Arabic) of some basic and standard works in Demography (including UN Manuals) are undertaken on a widening scale. We do hope that through this Phase III the Centre will go a good way towards meeting part of the expanding needs and requirements of the interested countries it is endeavouring to serve, in both fields of training and of research.

Table

TRAINEES AT CAIRO DEMOGRAPHIC CENTRE - 1963/1973

G = General Diploma, S = Special Diploma, 6m = Six months Research Course
and M = Master Degree

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total represents the number of fellowships successfully used, i.e. the number of diplomas granted. As all the months course, the Special Diploma and the Master Degree had previously held fellowships for the General Diploma, individuals successfully trained must be reduced by 61 (bringing it down to 250). Three unsuccessful fellowships not included in this Table. Also in the earlier years of the Centre four fellows had to attend two successive to qualify for the diploma. The four extra fellowships are not included above.

ANNEX I

COURSE FOR THE GENERAL DIPLOMA IN DEMOGRAPHY
AT THE CAIRO DEMOGRAPHIC CENTRE

Background

The training programme of the Cairo Demographic Centre began in 1963 with a short-term course of six months duration which was later converted into a long-term course of 12 months duration. The programme aimed at giving a one year course of training in Demography and allied subjects to about 30 students at a time, from the Arabic speaking countries of North Africa and the Middle East. During the four years period 1963-1967, 94 students joined the four cycles. Forty-three of the trainees came from Egypt and 23 from Sudan. Two students came from outside the region, namely from Ghana. The number of hours of instruction was 774 (412 hours of lectures and 362 hours of laboratory work) of which 404 hours (214 hours lectures and 190 laboratory) were devoted to Demography, 290 hours (118 lectures and 172 laboratory) for Mathematics and Statistics and 80 hours (all lectures) for Sociology, Economics, Genetics, Physiology of Human Reproduction, etc.. The media of instruction were Arabic, English or French, with about 70 per cent of lectures given in Arabic and all the seminars and other discussion groups conducted in Arabic. As from 1968, however, all instruction and supervision, were undertaken in the English language. Some of those Arab trainees who were not sufficiently proficient to write in English were allowed to answer their examinations in Arabic or in French according to the language of the examiner.

Admission to this course is open to:

- (i) trainees from interested countries in Africa and the Arab Middle East who may be granted fellowships for training at the Centre by the United Nations or by approved national or international institutions by special arrangement between the Centre and the Government concerned; and
- (ii) nationals of the Arab Republic of Egypt who may be selected as trainees by the government.

Admission is restricted to university graduates or to those who have followed a minimum of three years study in a recognized institute for advanced studies majoring in a subject related to demography, such as Statistics, Sociology, Economics, Human Geography, Public Health, etc. In special and very exceptional cases, candidates with no formal university education may be accepted on condition that they have practical experience for a period of at least three years in census taking, vital registration, analysis of population statistics, demographic surveys etc. These latter candidates may not necessarily be granted the General Diploma, and may not proceed to the Special Diploma course.

Period of Training is approximately 12 months beginning generally in January of each year and divided into two semesters, preceded by 4 weeks of orientation and separated by a two weeks vacation. The first semester is all devoted to teaching and the second is mostly for training on research, report writing and participation in seminars and discussion groups.

Programme. The training programme consists of class-room instruction, laboratory work, guided reading, individual research work and participation in seminars and discussion groups. The programme is divided into courses as follows:

<u>Title</u>	<u>Hours</u>		<u>Total</u>
	<u>Lectures</u>	<u>Lab.</u>	
I. Basic Subjects:	<u>270</u>	<u>200</u>	<u>470</u>
Introduction to Demography (Historical, Relation with other Disciplines, etc.)	15	-	15
Substantive Demography	110	-	110
Technical Demography	125	180	305
Family Planning	20	20	40
II. Auxiliary Subjects:	<u>105</u>	<u>140</u>	<u>245</u>
Mathematics	35	70	105
Statistics	50	70	120
Sampling	10	-	10
Research methodology	10	-	10
III. Complementary Subjects:	<u>75</u>	<u>20</u>	<u>95</u>
Sociology	20	-	20
Economics	20	-	20
Demography & Development Planning	20	20	40
Genetics	5	-	5
Physiology of Reproduction	10	-	10
-	-	-	10
IV. Demographic Seminars:	-	-	<u>50</u>
	<u>450</u>	<u>360</u>	<u>860</u>

Students who have adequate training in one or more of the auxiliary or Complementary Subjects may be exempted from attending lectures in those subjects. Also the above order of subjects does not reflect the chronological order of training in these subjects. Auxiliary subjects precede in the order of teaching, and most of the training in Technical Demography is given prior to or concurrently with Substantive Demography and Complementary subjects.

200. Substantive Demography. This course will deal with description of the world demographic situation, its variation from region to region, from one country to another, etc., trends and patterns of changes in demographic variables, inter-relations among demographic variables and with other socio-economic factors, population theory and policies, etc. The objective in this course is to make the students familiar with the fund of knowledge already accumulated by research workers in the field, and critically evaluate their significance and relevance to the economic and social development of developing countries. The necessary technical background related to the analysis of demographic data, and methods of computing demographic indices etc., is given in the allied course on Technical Demography.

The course is given under the following sub-headings:

201. Demographic Data (6)

Census and census taking, types of data that are available from population and housing census; vital registration system, data normally available from registration system; international recommendations on census taking, and vital registration.

The situation with respect to demographic data in Africa and the Middle East. Brief description of the accuracy of demographic data of the countries of the regions covered.

202. Survey of World Population Trends (7)

Growth of world population, ancient to modern times; recent trends in world population growth; outlook for population growth in the next 25 years; regional differential in growth patterns; comparison of developed and developing countries; population growth in Africa and the Middle East.

203. Population and Resources (7)

Definition of resources; Population in relation to resources of land, minerals and energy; impact of technology on natural resources; population growth in relation to industrialization and resources.

204. Mortality and Morbidity (15)

Basic measures of mortality and morbidity; trends of mortality in the world; regional variation, rural urban differences etc.; age-sex patterns of mortality; infant mortality; child mortality, etc.; factors affecting mortality trends; experience in developed countries and in developing countries; relationship to economic development; study of differential mortality; causes of death, in developed and developing countries; prospects for mortality decline in the future.

205. Fertility and Nuptiality (15)

Concepts and basic measures of fertility; trends and regional differences in fertility; factors associated with fertility declines and fluctuations in developed countries; factors associated with maintenance of high fertility in developing countries; study of differential fertility and its implication for the future trend of fertility in developing countries.

Age at marriage and widowhood; proportion married, widowed, etc. Influence of age at marriage and widowhood, etc. on birth rate and fertility.

206. Migration; International and Internal (10)

Concepts of international migration; international recommendations; principal streams of international migration in modern times; effects of immigration and emigration on the growth and structure of population; stimulating effects of skilled immigrants in economic development; socio-demographic factors affecting the volume and direction of international migration; economics of international migration; prospects of international migration.

Population re-distribution, urbanization and internal migration, types of internal migration; migration and distance; characteristics of internal migration: differential and selectivity; inter-relationship of population re-distribution, migration and economic growth; causes and effects of migration.

207. Urbanization (10)

Conceptual problems; survey of world urbanization trends and patterns with particular reference to Africa and the Middle East; characteristics of urban population; urban-rural differentials; problems of rapid urbanization in developing countries.

Patterns of city growth; metropolitanization, suburbanization; structure of communities; comparative urban research.

208. Population Composition (5)

Age-sex Composition of population, its trend and regional variations; factors affecting age-sex composition; implications of age-sex composition; aging of population.

Composition with respect to other characteristics: marital status, religion, etc...

209. Economically Active Population (10)

Basic concepts and measurements of economically active and inactive populations, labour force, employment, unemployment, under-employment, occupation, industry, etc... Trends and regional variation in the compo-

sition of population with respect to economic activity; effect of demographic processes upon the size of economically active population; effect of economic and social factors on the size of economically active population; occupational and industrial composition of the labour force in relation to economic development; participation of women in the labour force; length of working life, age at entry into labour force, age at retirement, etc.

210. Population Theory (5)

Population theories: Pre-Malthusian; Malthusian theory; Socialist theories; optimum theory; theory of demographic transition, etc.; recent economic-demographic theories.

211. Population Policy (5)

Need for population policies; Policies related to mortality control, fertility, marriage and family planning; policies related to migration and urbanization, etc... Population policies in African and Arab countries.

212. Demographic Factors and Economic Development (15)

Inter-relationship of demographic factors such as total population, rates of growth, fertility, mortality, distribution and composition of the population, etc., and economic factors like savings, capital formation, investment, output, etc.

300. Technical Demography

This course will deal with the methods of analysing demographic data, computation of demographic indices, rates and ratios, construction of life tables, stable population, etc. It is complementary to the courses given under substantive demography and may be given concurrently or in advance of the corresponding substantive section. The emphasis in the course is to teach not only the application of formulae and methods, but also to explain the underlying principles governing the methodology. The prerequisite for the course is a minimum standard in elementary mathematics and statistical methods. (Courses 501 and 502 which are given in the earlier months of the year).

The course is given under the following sub-headings:

301. Rates and Ratios (5) (5)*

Definition; general principles to be followed in the construction of rates and ratios; index numbers and their construction; standardization of ratios; direct and indirect methods; components of the difference between ratios.

*The figure in the first parentheses gives the number of hours of lectures and that in the second parentheses gives the number of hours of laboratory work.

302. Interpolation and Graduation (15) (20)

Need for interpolation and graduation in demographic analysis; simple formulae for interpolation: Newtons formula, Everetts' formula, etc.; Osculatory interpolation formulae; simple graduation methods; moving average and other mathematical formulae; use of interpolation formulae for graduation of age-distribution and mortality rates.

303. Evaluation and adjustment of demographic data I. (15) (20)

General principles of evaluation of population data; sources of errors; methods of detecting errors in census and registration data; methods of adjusting defective data, with particular reference to total population and age-sex distribution.

304. Mortality (20) (30)

Measures of mortality, crude and specific; computation of death rates from vital statistics and census data; measurement of infant mortality rate; measurement of death rates from incomplete data; estimation of mortality rates from death rates; construction of life tables.

Model life tables: the principles underlying their construction, their use in demographic analysis, etc.

305. Fertility and Reproductivity (15) (20)

Definitions; measurement of fertility from registration and census data; measurement of fertility from census data alone; estimation of fertility level and pattern from survey data.

Measures of reproductivity: rate of natural increase, net reproduction rate, intrinsic growth rate, etc..

306. Nuptiality (5) (10)

Definitions; measurement of marriage rates; construction of nuptiality tables; use of census data in estimating age at marriage, age at widowhood, etc. .

307. Migration (10) (10)

Definitions; measures of migration: use of birth place data, data on place of last residence, data on residence x years ago, etc.; methods of estimating net migration from census data: inter province, rural-urban, etc.; measures of migration selectivity and differentials.

308. Population Models (15) (25)

Stationary population, stable population, quasi-stable population etc.; use of model populations in the analysis of inter-relationship among demographic variables.

309. Evaluation and Adjustment of Demographic Data II (10) (20)

Use of survival ratios, model life tables, stable and quasi-stable populations, Brass technique, etc., in evaluating demographic data and estimating demographic parameters from incomplete and defective data.

310. Population Projections (15) (20)

Methods of population projections: mathematical, component, etc.; projection of total population; projection of sub-national populations; projection of population segments; household projections; accuracy of population projections; uses of population projections in demographic analysis.

400. Family Planning: Its Development and Evaluation (20) (20)

Lectures on family planning are intended to give the students some idea of the development of family planning movement in the world and to introduce them to the problems related to the evaluation of family planning programmes. The lectures will be given under the following headings:

1. Origin and development of family planning in developed countries.
2. Family planning movements in developing countries.
3. History of contraceptives.
4. Evaluation of a community family planning programme.
5. Methods of the measurement of contraceptive effectiveness.

500. Auxiliary Subjects

The auxiliary subjects given in this programme (Mathematics, Statistics, Sampling and Research Methodology) deal with tools which are required for a proper understanding of the techniques of population analysis. The level of teaching in these subjects is kept to the minimum that is needed in the teaching of technical demography. The topics to be covered in these subjects are listed below:

501. Mathematics: (35) (70)

Variables, functions, equations, numerical solution of equations; polynomials, logarithmic and exponential functions; arithmetic and geometric progression; permutations and combinations; binomial expansions; differentiation and integration of simple functions.

502. Statistics (50) (70)

Tabulation and presentation of data; frequency distributions; measures of central tendency and dispersion; bi-variate frequency distribution; regression and co-relation analysis; elements of probability theory; standard distributions such as normal, binomial, poisson, etc; simple tests of hypothesis including tests based on normal curve, t and χ^2 distributions.

Curve fitting and measurement of trend.

503. Sampling (10)

Elements of sampling theory including random sample, stratified random sample, multistage sampling, systematic sampling; errors in sample surveys.

504. Research methods: (10)

The aim of this course is to teach the students basic scientific principles in the conduct of social research, and procedures involved in the processing of data and writing of reports. Sampling and statistical methods are not included as they are given separately. A brief outline of the course is given below:

Basic scientific principles of social research; techniques of data collection; processing and analysis of data; report writing.

600. Complementary Subjects

601. Economics (20)

Concepts of price, cost, factors of production, economics of scale, division of labour, law of demand and supply, elasticity etc.

National income, per capita income, consumption, savings, capital formation, investment; economics of development; general factors in economic development; problems of economic growth in developing countries.

602. Sociology (20)

Subject matter of sociology; sociology and its relationship to demography and other social science; individual and society; the family; major groups; formal organizations and institutions; population and society; social structure and economic development; social change.

603. Demography and Development Planning (20) (20)

The concept of planning in historical retrospect. Planning on the national level. Planning for Community Development. Centralization of planning and decentralization of implementation of plans. Population growth and planning for economic and for social development. Population growth and planning of production (goods, land-use, etc.) and services (education, health, etc.). Reciprocal interaction between population growth on the one hand, and socio-economic change and the environment on the other. Examples from developed and developing countries. The role of demographic research and of demographers in national planning.

604. Physiology of Reproduction (10)

Anatomy and physiology of male and female human reproductive organs; the endocrine patterns of reproductive organs; control of reproduction; scope and limitations of contraceptive practice.

605. Genetics (5)

Physical basis of heredity; mendelian laws of heredity, variation; the genetic situation in man; studies of blood groups, etc.

700. Research Seminars (50)

During the course of the academic year each student is required to prepare a research report under the guidance of one of the experts at the Centre. These reports will be presented by the students in a seminar attended by all the students and faculty members. The final report on the students' research work will be reproduced and circulated to interested organizations. Copies of each report will be kept at the Centre's library.

The seminars give the students a chance to apply the demographic techniques he learned during the year to an actual situation, and thus enable him to appreciate for himself the need for very careful evaluation of demographic data of the region. It also gives training to the students in the writing of research reports, group discussions, etc.

ANNEX II

Special Diploma Course at C.D.C., 1973

Topic chosen for training-cum-research:

URBANIZATION AND INTERNAL MIGRATION IN ARAB
AND SOME SUB-SAHARAN COUNTRIES IN AFRICA

SECTION 'A' : GENERAL TRAINING IN AUXILIARY SUBJECTS

In all cycles of the training-cum-research course there shall be a standard section "A" of general training in auxiliary subjects and related demographic techniques. This shall be followed by sections "B" and "C" which change from year to year according to the topic chosen.

The standard course in section "A" consists of lectures and laboratory exercises as follows:

<u>Items</u>	<u>Hours</u>		
	<u>Lectures</u>	<u>Laboratory</u>	<u>Total</u>
1. Mathematics	25	25	50
2. Statistics	25	25	50
3. Demographic Techniques	15	15	30
4. Computer Work		30	30
	Total		160

1. Mathematics:

Elements of matrix algebra; simple tests of convergence and divergence of series; first mean value theorem of differentiation; maxima and minima of functions of more than one variable; expansion of functions in power series; definite integrals; first and second mean value theorem of integration; differentiation under the integral sign; numerical differentiation and integration.

2. Statistics:

Moments and cumulants of frequency distribution; analysis of variance techniques; multiple and partial correlation; non-parametric tests.

3. Advanced Demographic Techniques:

Functions relating to population characteristics (age distribution function of the population; mortality functions; fertility function; age distribution; function of deaths, etc.); stable population model (main assumptions, formulation of the model, derivation of the integral equation of Lotka and its solution, intrinsic rates); determination of a stable population when two demographic parameters are known (mortality and fertility, age distribution of the population and of death,...);

practical applications.

4. Computer Work:

The use of electronic computer in demographic analysis.

SECTION "B" CURRICULUM OUTLINE OF TRAINING IN CHOSEN TOPIC

Urbanization

1. Population distribution and redistribution

- concepts and definitions
- areal delimitations
 - political delimitations
 - homogenous areas
 - functional areas
 - model areas
 - economic areas
 - rural-urban classification
- methods of measuring distribution and redistribution

2. Statistics and measures of urbanization

- definition of urban, rural, primate cities, metropolis, megalopolis, etc.
- availability of data on urban-rural in Arab countries
- measures of urbanization
 - Durand-Palaez rate
 - Eldridge index
 - Arriaga's index
 - primacy index and rank-size rule
 - other indices

3. Historical aspects of urbanization trends and patterns

- World urbanization trend
- trend of urbanization in more developed countries
- trend of urbanization in less developed countries
- urbanization trend in Arab countries
- problems of international comparability of levels and trends of urbanization
- distribution of urban population by size of towns, comparisons of the pattern in the Arab countries with other less developed and more developed countries
- historical changes in the structure of urban population in Arab countries, and Africa and in other regions of the world.

4. Spatial patterns within cities

- ecological aspects
- concentric zone theory
- central place theory
- central city fringe relationships

5. Components of urban growth
 - relative importance of natural increase and migration; historical aspects
 - rural-urban migration and urbanization in Arab countries
 - study of the growth of major cities in Arab and African countries (Cairo, Alexandria, Damascus, Khartoum, Lagos, Monrovia, etc.)
6. Urban-rural differences and inter-relations
 - comparison of the composition of urban population with that of rural population; comparison of the large cities with medium size towns, small towns, etc.
 - sex
 - age
 - marital status
 - education and school attendance
 - industry, occupation, income
 - urban-rural continuum
 - comparison of the composition of population in different zones within big cities
7. Models and Projections of Urbanization
 - United Nations Projections
 - Kingsley Davis Projections
8. Theories of Urbanization
9. Urban Problems
 - Squatter settlements
 - Problems of adjustment and assimilation
 - Suburbanization
 - Housing and transportation problems
 - Political consequences
10. Urbanization and economic development
 - Urbanization and the strategy of economic development
11. Urban policy
 - Creation of new communities and satellite towns
 - Social Aspects
 - Operational Aspects
 - Economic Aspects, including cost-benefit analysis

Migration

1. Movement of population and its significance
 - migration as a component of population growth
 - migration as an adjustment to economic and social changes
2. Basic concepts and operational definition
 - migration interval
 - migrant and migration

- area of origin (departure)
- area of destination (arrival)
- migration streams
- lifetime migrant and lifetime migration
- in-migrant and in-migration
- out-migrant and out-migration
- gross and net migration

3. Principal sources of data

- censuses
- surveys
- population registers

4. Census data on internal migration

- place of birth
 - lifetime migrants
 - estimation of intercensal migration
 - problems of accuracy and adequacy
- duration of residence
 - migration cohorts
 - problems of accuracy and adequacy
 - cross-classification by place of birth
- place of last previous residence
 - character of the data
 - advantages and limitations
 - cross-classification by duration of residence
- place of residence at a fixed prior date
 - type of measure
 - advantages and limitations
 - cross-classification with place of birth
- Summary appraisal of the several approaches

5. Indirect measures of net internal migration

- Vital Statistics method
- Survival ratio methods
 - life table survival methods
 - census survival ratios
 - comparison of indirect measures with other measures

6. Measurement of rural-urban migration

- direct measures
- indirect measures of net migration

7. Rates, Ratios and other indices

- migration rates and ratios
- migration streams
- in-migration, out-migration, net migration
- indirect measures of net migration
- specific rates
- problems of annualizing period rates
- index or redistribution
- indices of migration differentials and selectivity

- some other indices
 - index of preference
 - index of velocity
 - index of net velocity
 - index of effectiveness

8. Uses of continuous population registers in migration analysis

- introduction
- problems of definition
- time series
- ecological comparisons
- quality of the data
- other limitations and other uses

9. Uses of sample surveys in migration analysis

- introduction
- advantages and disadvantages
 - advantages
 - disadvantages
- quality of the statistics
 - sampling error
 - non-response and other sources of error
- types of statistics
 - volumes and rates
 - time series
 - differentials: status at the time of survey
 - differentials: status at the beginning of the period
or time of migration
 - reasons for migration
 - possibilities of longitudinal analysis
 - other uses of sample surveys

10. Trends and patterns of internal migration

- trends and areal patterns of internal migration in Arab countries; inter-governorate, inter-regional, rural-urban, intra-urban migration
- characteristics of internal migration in general and rural-urban migration in particular
 - patterns in Arab countries
 - patterns in other African countries
 - (discussion of case studies)
 - sex
 - age
 - educational attainment
 - marital status
 - industry, occupation
- social and economic significance of migration differentials

11. Interrelation between migration and demographic and social factors

- migration and sex-age distribution of population
- migration and fertility

- migration and mortality
 - migration and manpower
 - migration and education
 - migration and economic growth
 - economic and social consequences of rural-urban migration
12. Migration models
- deterministic models - regression models, expected value approach
 - probabilistic models - Markov chains, computer simulation models
13. Migration theories
- Ravensteins generalizations
 - Stouffer's "intervening opportunities" hypothesis
 - Lee's "push-pull-intervening obstacle" hypothesis
 - the Kuznets-Thomas framework
 - case studies
14. Migration projections
- incorporation of migration component in regional and sub-regional
 - population projections, manpower and educational projections
15. Migration as an element in population policy
- settlement of nomadic populations
 - settlement of newly reclaimed lands
 - establishment of rural growth centres
 - rehabilitation of refugees in new areas
 - administrative aspects of migration projects
 - case studies

SECTION "C" OF COURSE: OUTLINE OF RESEARCH WORK

The final output of the research will be a monograph on Migration and Urbanization in some Arab and African Countries. This monograph will consist of two parts, and possibly a third one.

Part I. will consist of individual country reports. Each report will deal with the subject matter (migration and urbanization) pertaining to the particular country. In countries like Egypt where data are plentiful, the report will be detailed and cover all the topics described below, but in countries like the Sudan where data are not so plentiful, the report will deal with only a few of the topics.

Part II. will deal with cross-sectional studies assembling materials related to a particular topic from different countries. The emphasis in these chapters will be comparison among countries and between the regions covered and other major regions of the world.

Part III. will deal with analysis of new data to be produced by the Centre in collaboration with the census authorities in some of the countries covered. This Part will rely on field work.

PART I

OUTLINE OF COUNTRY REPORTS ON MIGRATION AND URBANIZATION

"Demographic Aspects of Migration and Urbanization in a given Country"

Contents

I. Introduction

1. Object of the study
2. Sources of data
3. Concepts and definition used in the available data and their comparison with definition in other Arab countries (e.g. definition of Urban), and in other regions.
4. Evaluation of the quality of the data.

II. Population Distribution and Redistribution

1. Distribution of total population by governorates; major geographic regions; urban-rural; cities and towns by size classes; within cities, etc.
2. Trends in the distribution patterns (inter-censal redistribution)
3. Components of population redistribution; relative contribution of migration and natural increase; trends in the relative contributions
4. Factors associated with the distribution and redistribution (general comments)

III. Levels, Trends and Patterns of Urbanization

(comparison of levels and trends with other Arab countries and other major world regions)

1. Growth of urban population in relation to total population and rural population
2. Measures of urbanization and trends in the indices of urbanization
3. Differential growth rates of towns of various size classes

IV. Characteristics of Urban and Rural Population

Comparison of the Characteristics of rural population with those of urban population; comparison of the characteristics of the population of big cities with those of medium size towns, small towns, etc.; comparison of the characteristics of the population in central city with those of suburbs etc.

Characteristics for comparison

- Sex
- Age
- Fertility, Mortality
- Education
- Marital Status
- Industry, Occupation, Income
- Housing conditions
- Availability of Water supply, Electricity, etc.

V. Patterns of Migration

1. International migration and its significance for national and regional population growth
2. Volume and areal patterns of internal migration; migration streams
3. Net migration by governorates
4. Net rural-urban migration
5. Sex-age composition of migration streams
6. Sex-age composition of net migration (inter-governorate and rural-urban)
7. Other characteristics of migration and discussion of migration differentials.

VI. Economic and social correlates of migration and urbanization
Multiple regression analysis using areal data on urbanization, migration, and socio-economic indices

VII. Summary discussion of general patterns of population redistribution, migration and urbanization and factors associated with them.

VIII. Projection of the urban population for the period 1970-2000
Several methods to be attempted

PART II

CROSS-SECTIONAL STUDIES

As mentioned above this part will deal with the region as a whole, or at least with groups of countries. Five chapter headings are given below, but more may be added depending on the availability of data.

- I. Levels, trends, and patterns of urbanization in Arab countries
- II. Patterns of urban-rural differentials in Arab countries
- III. Trends and characteristics of internal migration in Arab countries

- IV. Economic and social factors associated with migration and urbanization in Arab countries
- V. Future growth of urban population in Arab countries and its economic and social significance.

PART III

FIELD WORK

Data necessary for a comprehensive analysis of the patterns of migration and urbanization are not available for most of the countries covered by the course. Therefore, the Centre will try to use this opportunity to develop new data for at least a few of these countries. This will entail some 500/man/day of field work.