

6 JUN. 1975

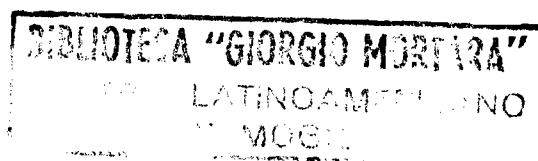
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LATIN AMERICA

to the
United Nations Development Programme (Special Fund)

LATIN AMERICAN DEMOGRAPHIC CENTRE

Semi-Annual Report for the Period
1 April - 30 September 1972



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6 JUN 1975

REGULAR TRAINING PROGRAMME

As a result of a new structure of the teaching programme, the Basic Course of CELADE is given, starting from this year, at our Subcentre in San José, Costa Rica. The period of formal classes will be concluded by the middle of October and, thereafter, until December, students will work in the preparation of monographs.

During one quarter (April-July), the 12 students of the Advanced Course in Santiago, Chile, were engaged in the preparation of a research project under the supervision of the Centre's teaching staff. The monographs prepared by these students covered the following general topics: Mortality (2), Fertility, Nuptiality and Family (4), Education (1), Employment and Unemployment (1), Population Growth and Demographic Projections (3), Induced Abortion (1). A second cycle of formal classes, initiated by the middle of July, is going on and will be concluded within the next month (October).

Four fellows were attending the Specialization Course at the beginning of this semester. One of them, an Uruguayan economist, concluded his training period of one year at the end of June.

A research fellow, from the University of Chile (Antofagasta), continues her activities initiated in March, under the supervision of the teaching and research staff of the Centre.

SPECIAL COURSES

In answer to requests from the Inter American Statistical Centre (CIESER) a member of CELADE staff delivered a course on "Elementary Demography" (12 hours) in the Second Inter American Course on Educational Statistics, and two other members of the staff delivered classes on "Demographic Indicators", "Manpower Supply", and "Interrelationships between Population and Socio-Economical Development (Model schemes)", in Course "B" on Economic and Social Statistics organized by CIESER.

At the request of the Department of Economics of the "Universidad Nacional del Sur, Bahía Blanca, República Argentina", one of CELADE professors delivered a course on "Theory on Internal Migrations" (19 hours of classes and seminars), in the Regional Economic and Planning Course organized by that Department.

As a collaboration with the Latin American Institute for Economic and Social Planning (ILPES) a member of CELADE staff delivered 6 hours of classes on "Human resources and migrations" in the Course on Regional Planning Development, organized by ILPES/ECLA.

As in previous years, CELADE continued collaborating in short courses on demography. Two courses for medical and paramedical personnel were organized within the Latin American Training Programme in Family Planning, sponsored by the "Asociación Chilena de Protección de la Familia". These courses were attended by 71 professionals, including 16 physicians, and 42 midwives, working in hospitals, universities and public health services. These courses were delivered one in Valparaiso and the other in Concepción. All the students were Chilean. Some 30 hours of demography were given.

RESEARCH AND TECHNICAL ASSISTANCE

The programme of studies on migration, urbanization and demographic aspects of economic and social development continued through its three main projects already described in previous reports: "economic-demographic model"; "internal migrations" and "growth of cities".

The main purpose for the preparation and improvement of CELADE's economic-demographic model was its application in the formulation and elaboration of government plans. In this connection and continuing the technical assistance initiated in 1971 to the "Instituto Nacional de Planificación" from Peru (Programming Area), a CELADE expert carried out a mission during the month of July during which the model was programmed and put into operation with data from that country. A technical report was prepared with suggestions on procedures to incorporate into the model the main aspects of the Peruvian National Plan, which contains a diagram of variables and interrelationships. 1/

Among the basic works initiated for the further improvement of the model at a more complex level, special mention should be made of a research project entitled "Economic and Social Development, Labour Force Participation and Fertility". This research, whose preparation has been partially initiated, will use data from the last censuses and employment surveys carried out in various countries during the last decade. This study is intended to be coordinated with the International Labour Office's "Population and Employment Project". Additional financial support has been requested through this organization for this purpose.

1/ "Sugerencias de un Modelo Económico-Demográfico para el Perú" (typewritten).

October / 1977

As foreseen in the work schedule, progress was made in the development of the research programme on the growth of cities (50 thousand inhabitants and over) in seven Latin American countries. In general, cartographic work, analysis of demographic data, studies on "centrality" of cities, studies on physical and density growth and related factors have been carried out. In this way, maps of distribution of cities in the countries under study and maps of density of some cities through various censuses were prepared. A preliminary report on "physical growth of the cities of Brazil and the environment" and another on "natural population growth of the cities in various countries" have been concluded. Information for a report on "the cities and the region" has been gathered, which will be mainly based on the variable "distance". In connection with this project, one of the researchers visited seven cities (Sao Paulo, Rio de Janeiro, Buenos Aires, Lima, Bogota, Caracas and Mexico) with the purpose of gathering information for the development of the study.

The first activities related to the comparative study of the principal migratory currents in all the countries of the region were described in the previous report. During the period under report alternative methodologies of population estimates and "survival" relations have been tested and data from Chile, Colombia and Mexico have been experimentally applied to estimate net inter-state migratory balances. A satisfactory programme for making estimates is expected to be obtained in a few more weeks which operated by means of the computer will allow the preparation of a considerable amount of work within a short period of time.

In connection with the research programme on internal migration and occupational mobility special attention was paid to two survey projects initiated during the previous semester in the metropolitan areas of Asunción (Paraguay) and San José (Costa Rica), respectively. 2/ The programme's main researcher carried out missions to Asunción and San José in order to discuss and coordinate the different stages of the research study. The interviews of the Asunción survey were initiated at the end of June and the first part of field work has already been completed.

In connection with the research project: Actors in the Formulation of Population Policy: A Study of Political Parties and Social Scientists in Chile, after considerable efforts a great part of the general characteristics of the production of social scientists in Chile between 1956 and 1972 has been coded. The tabulation and analysis of this information was initiated during the month of September.

2/ Projects developed respectively by the "Centro de Estudios Sociales y de Población", San José, Costa Rica, and the "Centro Paraguayo de Estudios Sociológicos", Asunción, Paraguay.

In the study of political parties, the main documents of a doctrinal and programming character from the Christian Democrats and Socialist and Communist parties were examined and reports were prepared on the ideology and political projects of each of them. The design of the interview and the sample has been prepared to interview the political leaders of the main parties. At the same time, information and basic documentation has been gathered regarding the attitude of the three last governments towards population. In addition, a visiting researchers carried out a study on the role played in Chile by foreign agencies in the field of population activities.

Toward the end of the report period the activities of the Fertility Sector began to change in orientation from data organization and documentation to investigation. As planned, this change coincided with and was fostered by the initiation of the First Seminar on Research and Training in Fertility (SIEF).

In mid August, the leader of the first two seminars arrived and began working with the data. Two of the three research associates invited for the first seminar, from Costa Rica and Mexico, arrived in the first week of September.

The seminar formally began on the 12th of September. As indicated above, the seminar was expanded to include the research staff of the Fertility Sector, so that an overall workplan can be developed out of the separate projects planned by each of the investigators. During the first weeks the focus has been on defining the theoretical orientation and the specific research problems and discussing research strategies. Attention was also directed towards increasing the methodological sophistication in survey analysis of the research associates.

The information contained in the first nine cards corresponding to the surveys undertaken in the four countries included in the programme of comparative fertility surveys in rural areas (PBCFAL-RURAL), i.e., Colombia, Costa Rica, Mexico and Peru, were placed on a Statistical Package for the Social Sciences (SPSS) file with a complete dictionary. Since this eliminates most of the time consuming aspects of writing control cards for the SPSS programme, individual researchers can make their own tabulations. Use has been made of the large SPSS programme so that individual countries could be set up as sub-files to permit convenient comparative analysis; any statistical operation may be applied automatically to each or any of the countries.

Using the SPSS file and special programmes written for this purpose, comparative marginal tabulations for all 4 countries were made for all women and those in unions.

The main researcher of the team began work on the preliminary report which should serve as the general description of the data from the comparative point of view (essentially a paper which announces the existence and importance of the data and states the most basic findings in a descriptive form). Another researcher of the group continued developing conceptual work for a paper on the relation of traditionalism and fertility variables, preparing also two working papers, one on methodological problems associated with the question on additional children desired and the other on the consistency and inconsistency of spacing ideals. 3/

In connection with activities related to health and population, the corresponding sector continued developing the programmes on induced abortion PEAL and PEAL/TRANSLONG and rendering assistance in connection with the evaluation of family planning programmes, mainly in the implementation of a system for service statistics. To this end manuals on statistics for the evaluation of family planning programmes have been prepared.

In order to meet its expanded activities the sector's personnel has been increased by the appointment of one sociologist and one demographer.

During the period under report activities related to the application of the system for service statistics within the programme of Maternal and Child Health and Family Planning of the National Medical Service for Employees in Valparaiso (Chile) continued, especially as regards data collection and elaboration. The follow-up survey of users of this programme is in the stage of processing.

The sector has concluded the analysis of results of the fertility, induced abortion and use of contraceptives survey undertaken in five cities of Paraguay.

Technical assistance activities have been initiated in connection with the evaluation of family planning programmes, particularly, to the National Health Service in Chile, to the Family Planning Programme of the Alajuela Province in Costa Rica and to the SEMFAM programme in Brazil.

Regarding the current revision of population estimates and projections, during the report period, activities were carried out in relation to the evaluation of census information and registration and to estimates of levels of mortality, fertility and international migrations of countries of the region with available data whether from their last censuses or from census

3/ A second year student wrote a paper utilizing the PECFAL-RURAL data from the three countries then available entitled "Incompatibilidad de roles y fecundidad. Utilización de datos de PECFAL-RURAL".

samples from CELADE's Data Bank: Chile, Brazil, Panama, Dominican Republic, Mexico and Nicaragua. Other estimates appear in CELADE's "Boletín Demográfico", N° 10, issued in July.

In connection with the 1970 census programme, technical assistance was rendered to the National Offices of Statistics of Costa Rica, Panama and Peru. Assistance was rendered to Costa Rica in procedures for data processing in the IBM 1401 equipment in connection with the next census. In order to evaluate the quality of the census results from Panama, especially to evaluate the effects of the automatic assignment of the codes and the information, a series of tabulations of a census sample were prepared in Santiago, as well as a report for the Statistical Office of Panama. Technical assistance was rendered to the National Statistics Office of Peru in the implementation of the Census Tabulations Systems (CENTS) programme and on the type of computer equipment to be used in connection with the census.

CELADE's Computer Service was very active during the report period. This is reflected in 452 hours of 360/40G computer time, and 147 hours of terminal time. The Library of Programmes has been enriched with the implementation of new programmes (SPSS, OSIRIS, CENTS, etc.).

Among the specific activities developed by the Computer Service, mention should be made of the analysis, programming and tabulation of the data from the experimental censuses undertaken in Nicaragua and Guatemala last year; a family register was established on the basis of data from the 1960 population census of Brazil and marginals were tabulated; as to the 1970 sampling census programme (OMDECE 70) copies of the census samples from Panama and Dominican Republic were obtained and special tabulations were prepared based on the analysis of the quality of the information. Finally, mention should also be made of the publication of the Data Bank Bulletin N° 5 and of the Informative Bulletin N° 1 of Computer Programmes used in CELADE. The latter contains information on some of the programmes or packages of programmes available to tabulate data of surveys and population censuses (SPSS, OSIRIS, APL and "MINI TAB" programmes).

OTHER ACTIVITIES

Activities related to the programme of social research on population problems relevant to the formulation of population policies in Latin America continued during the semester. A meeting was held in New York in April with agencies interested in rendering financial support to the programme. As a result of the meeting, five agencies agreed to contribute to the financing of the two first years of operation of the programme.

In the meantime, potential candidates for researchers for the Central Unit, in charge of the programme's coordination, have been approached.

At the request of the United Nations Population Division, a document on Development Measures Leading to a Decline in Fertility in Underdeveloped Countries of Latin America: The Cases of Brazil, Chile and Cuba was prepared for the Interregional Workshop on Population Action Programmes to be held in Manila in November this year.

Contacts were initiated in June with the International Council for the Study of Population Policies, whose Secretariat is located at the Carolina Population Center of the University of North Carolina. These contacts are important for the scientific development of the population policies sector since some research centres related to the Council both in the United States as well as in Yugoslavia are carrying out studies similar to the one mentioned elsewhere in this report: Actors in the Formulation of Population Policy: A study of Political Parties and Social Scientists in Chile.

Within the framework of the project of financial assistance granted by UNFPA to the Latin American School of Sociology (ELAS) the new programme of activities ELAS/CELADE was put into operation. The ELAS/CELADE agreement includes training exchange and collaboration in research studies which utilize, among other sources, the CELADE Data Bank. Among the research activities recently initiated mention should be made of three projects related to economic aspects of population. The main researcher in charge of these projects is one of the two demographers assigned to CELADE within the agreement.

As part of the course on Techniques of Social Investigation delivered to the Advanced Course, a research study was developed in a marginal community. The students from the course participated in the field work and in the processing of the data.

Two second year students used the data collected this year as well as that collected last year in other marginal communities for the preparation of two papers. 4/ Another second year student who had included a special question in the survey used the information and data from other sources to write a document. 5/

4/ "Análisis de la evolución de la fecundidad y la mortalidad panameña en el período 1950-1970" and "Aproximación al estudio de la marginalidad en una población del Gran Santiago, 1972".

5/ "Estudo da relação entre a incidência de viuvez na população feminina e a mortalidade masculina".

Based on the experience of the Institute of Economics of Havana University which carried out during 1971 a National Course on Demography with technical assistance from CELADE and financial support from UNFPA, the Institute of Economics of the University of Oriente (Santiago de Cuba) organized a similar course, especially addressed at professionals from the area. This course which also counts with CELADE's participation (2 professors from CELADE Headquarters and 2 from the Sub-Centre) and UNFPA's financial support was initiated on 7 August and will conclude on October 27.

One of the professors from CELADE Headquarters who participated in the Course on Demography in Oriente, developed in Havana a Seminar on Techniques to estimate fertility and mortality levels.

A member of CELADE staff delivered classes in May at the First International Course on Demography and Health, organized in Bogota by the "Federación Panamericana de Asociaciones de Facultades de Medicina" (FEPAFEM) and the "Pontificia Universidad Javeriana".

Members of CELADE staff participated in working groups set up by ECLA in connection with the following subjects: study of the census situation in the countries of the region; and preparation of a project regarding the establishment of a regional computation centre for the UN organizations in Chile.

V MEETING OF THE GOVERNING BOARD OF CELADE

The Fifth Meeting of CELADE's Governing Board was held in San José, Costa Rica, on 17-18 July, under the chairmanship of Mr. Enrique Iglesias, Executive Secretary of the Economic Commission for Latin America. The Board examined and approved CELADE's reports on activities and administration for the period 1971 and the work programme for 1972-1973. A set of the documents prepared in connection with this meeting is included with this report. The Board authorized CELADE's Director to formalize a new agreement with the University of Costa Rica in order to extend the University support to the Sub-Centre for an additional period of 5 years. The Board also recommended that the U.N. Office of Technical Cooperation be informed on its points of view regarding the terms of reference of the mission of evaluation which should assess CELADE's activities during the second year of UNDP's supplementary assistance, as foreseen in the three year Plan of Operation, in force since May 1971. 6/

6/ This was done by letter of 16 August to Mr. Stig Andersen, Acting Director, U.N. Office of Technical Cooperation.

PUBLICATIONS

Several publications have been issued by means of agreements with the Instituto Torcuato Di Tella and the Latin American School of Sociology (ELAS).

Three studies on different subjects related to Chile were published under the CELADE/ELAS agreement, and the following one under the agreement with the Di Tella Institute:

Mazchini, Z., "La población de Buenos Aires. Componentes demográficos del crecimiento entre 1955 y 1960".

Among the publications issued under CELADE's regular series mention should be made of:

"Chile: XI Censo de Población (1940)". (Compilation of figures published by the National Institute of Statistics).

Other publications include technical reports, students monographs, teaching material, translations and "Boletín Demográfico" N° 10, "Boletín del Banco de Datos" N° 5 and "Programas de Computación Usados en CELADE" (Series J, N° 1), which have already been mentioned elsewhere in this report.

Concluding the present summary of activities, mention should be made of the following conferences, seminars and technical meetings in which CELADE members have participated:

- Technical Seminar on Urbanization and Demographic Growth in Latin America, held in Rio de Janeiro from 3 to 7 April, sponsored by the Organization of American States, the Inter American Development Bank and the Brazilian Institute of Municipal Administration. A document was submitted. 1/
- IPPF International Conference for the Western Hemisphere, held in Ottawa, on 6-10 May.
- Meeting of Dominican Professionals, round table organized by IPPF in Santo Domingo on 4-8 June.

1/ "Algunas contribuciones al estudio de la urbanización en América Latina".

- Lectures Series sponsored by the International Institute for Environmental Affairs, held in Stockholm, concurrently with the United Nations Conference on the Human Environment (June 5-16). A document was submitted to this Lectures Series. 8/
- Brazilian Society for the Advancement of Science meeting, held in Sao Paulo on July 7. A paper was submitted to this meeting. 9/
- First Ad-Hoc Technical Meeting of the World Fertility Survey, organized by the International Statistical Institute in cooperation with the International Union for the Scientific Study of Population, held in The Hague in July.
- The Rio Symposium on Computer Education for Developing Countries, held in Rio de Janeiro on 6-12 August, sponsored by the International Federation for Information Processing IFIP Administrative Data Processing Group, OAS, United Nations and UNESCO.
- Seminar on the Preparation and Use of Population and Housing Census Tabulations, organized by the United Nations through ECLA and held in Santiago on 14-19 August. A document containing illustrative examples of census tabulations was prepared for that purpose. 10/
- Regional Conference of Non Governmental Organizations (United Nations Office of Public Information), held in Buenos Aires on 21-25 August. The subject "Problem of Urbanization, including Rural Migration, in Relation to Development" was presented.
- Symposium on Cartography, organized by the Military Geographical Institute of Chile, held in Santiago on 21-25 August. A document was submitted. 11/
- Consultation on Environment, Economic Growth and Social Justice, sponsored by the World Council on Churches and held in Cardiff, Wales, on September 2-8.
- International Congress of Americanists, held in Rome on 8-10 September. A document was prepared for the Congress' Symposium on Economic History within its Historical Demography Section. 12/

8/ "Environmental conservation, a new Malthusian argument?"

9/ "Encuestas Comparativas de Fecundidad en América Latina: Algunos aspectos metodológicos".

10/ "Ejemplos ilustrativos de análisis de tabulaciones censales".

11/ "La cartografía y los estudios urbanos".

12/ "Actividades del Centro Latinoamericano de Demografía en el campo de la demografía histórica".

SUB-CENTRE (SAN JOSE, COSTA RICA)

TRAINING

1972 Basic Course on Demography. The most important part of the programme was carried out during the semester under report with 234 hours of lectures and 236 devoted to laboratories and related activities. From this total, 293 hours correspond to substantive subjects (Mortality, Mortality Tables, Fertility, Theoretical Populations, Economically Active Population, Data Evaluation and Adjustment, Population Estimates and Projections, Spatial Distribution and Internal Migrations).

In addition to the Sub-Centre's teaching staff, three CELADE Headquarters professors, one visiting professor, from OAS in Santiago, and a professor from the University of Costa Rica also delivered classes. A FAO expert was in charge of the course on sampling.

The performance of each fellow was evaluated by the middle of the year. As a result of this evaluation two fellowships were discontinued and three students resigned. The group is now composed of 17 fellows from 10 countries.

Training in Demography at the University of Costa Rica. As in previous years, members of the Sub-Centre staff were in charge of the course on sociological aspects of demographic growth offered by the Human Sciences Department of the Faculty of Sciences and Letters.

At the request of the Institute of Economics of the Faculty of Economic and Social Sciences, a course on Demography for Economists was initiated during the first university semester (March-July), with the attendance of 18 students.

Classes on demography were delivered at the Centre for Social and Population Studies (CESPO) within the training programme in Population Dynamics and Family Planning, addressed at physicians, nurses, health inspectors and social workers.

Training in Demography at the University of San Carlos de Guatemala. At the request of the Faculty of Economic Sciences, a course on demography was initiated in July (academic period July-December) addressed at students in the last year of the career of economics.

International Course on Demography and Health (Colombia). A Sub-Centre expert was in charge of the classes on Fertility, Reproduction and Nuptiality (27 hours) within this course, organized by FEPAFEM in Bogotá.

RESEARCH

Honduras National Demographic Survey (EDENH). Tabulations up to the third round of visits related to fertility and mortality are now available. The fourth and last round of interviews was initiated during the first days of August, thus concluding the first stage of the field work. For this last round the basic questionnaire was complemented by an additional one which includes census questions of a traditional type and a set of other retrospective questions on orphanhood, survivalship and widowhood. Within the EDENH research programme Informative Bulletins N°s. 13 and 14 were published. The English version is at present being prepared.

Demonstrative Study of the System for Service Statistics in Family Planning in the Province of Alajuela (Costa Rica). This study is carried out jointly with the Population Department of the Ministry of Public Health of Costa Rica. A Manual for the Use of the Basic Documents utilized in the training of personnel of the Alajuela Health Units was prepared before initiating the recording stage. The prospective study is in its fourth month and numerous findings are already available, some of which have been published in an Informative Bulletin prepared for this purpose. Two Bulletins have appeared already.

Survey on Immigration to Metropolitan San Jose. The theoretical frame for this study was prepared and submitted and several meetings were held with members of CESPO's Research Unit in order to prepare a final work programme. CESPO, which is the national institution responsible for the study has requested financial support from the United Nations Fund for Population Activities.

Revision and elaboration of population projections. In order to prepare projections by sex and age until the year 2000 an analysis of the population enumerated by the census and the behaviour of the demographic variables is being carried out on the basis of recent results. The analysis is centered at present on the Dominican Republic (1970 Census) and Nicaragua (1971 Census).

National Population and Housing Censuses. At the request of the Government of Nicaragua the Census Sample was tabulated at departmental level. The programme of data validity and coherence as well as the programme of tabulations for the 1971 census was revised complying with a request from the Office of Statistics of the same country. A joint ECLA-CELADE mission was carried out at the request of the Office of Statistics of Guatemala in order to assist in several aspects related to the next census.

Sub-Centre staff members also complied with similar requests in El Salvador and Dominican Republic.

Panama Demographic Survey. The Office of Statistics has requested CELADE's collaboration to carry out this study as soon as possible. For this purpose, preliminary discussions have been held with the corresponding authorities regarding the overall work programme, the training of personnel, and financial support for the study.

National Units of Demographic Analysis. Nicaragua and Costa Rica have requested the Sub-Centre's technical assistance to establish such units.

OTHER ACTIVITIES

Sub-Centre members have participated in the following conferences, seminars and technical meetings:

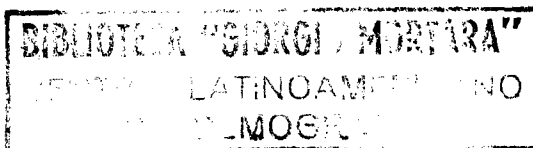
- First International Course on Demography and Health, organized by FEPAPEM, in Bogotá, 2-12 April.
- Symposium on the use of data from the 1970 Census. Organized by the National Statistics Office in Santo Domingo from 14 to 28 May. Three documents were submitted. 13/
- First National Seminar for Journalists on Demography and Health, organized by the "Asociación Hondureña Pro-Bienestar de la Familia", held in Tegucigalpa, Honduras from 21 to 23 July.
- IV Ordinary Meeting of the Central American Permanent Commission of Health Statistics. Organized by PAHO/WHO and the Ministry of Public Health of Panama. Held in Panama from 26 to 29 July. A document was submitted. 14/
- Symposium on Theories and Problems of Underdevelopment, organized by the Human Sciences Department and CUSCA's Programme of Social Sciences. Held at the University of Costa Rica, in San José, from 7 to 10 August.
- Seminar on the Preparation and Use of Population and Housing Census Tabulations. ECLA, Santiago, Chile, from 14 to 19 August.

13/ "Comments and suggestions for the evaluation of the fertility data from the 1970 population census".

"Methodological notes on the use of 1960 and 1970 census data for the study of internal migrations".

"Outline for a programme of demographic analysis".

14/ "Notes on the investigation in the census of children born alive and surviving children and its utility to estimate fertility and mortality".



PUBLICATIONS

The following publications were circulated:

Alberts, Joop, "Marco Teórico para la Encuesta de Migración - Área Metropolitana de San José". (Preliminary text).

Brass, William, "Crítica a los métodos para estimar el crecimiento de la población en los países con datos limitados". CELADE Sub-Centre, Series ES, N° 11.

"Informe Anual de Actividades (1971)". Spanish and English versions. CELADE Sub-Centre, Series GS, N° 4.

"Resumen de actividades de CELADE-Subsida en el período 1967-1972 con especial referencia a Costa Rica". CELADE Sub-Centre, Series GS, N° 5.

"Boletines Informativos de la Encuesta Demográfica Nacional de Honduras (EDENH)", Nos. 13 and 14.

"Boletines Informativos sobre Estadísticas de Servicio en Planificación Familiar", Nos. 1 and 2.

Azofeifa, Indá, "Apuntes de Matrices 1". (Preliminary version). CELADE Sub-Centre, Series ES, N° 5.

Ortega, Antonio, "Un modelo para estimar la mortalidad a través de preguntas censales sobre hijos nacidos vivos e hijos sobrevivientes". (Revised edition). CELADE Sub-Centre, Series AS, N° 15.