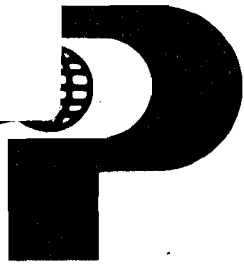


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CELADE'S RECENT EXPERIENCES WITH NATIONAL DEMOGRAPHIC
SURVEYS IN LATIN AMERICA. THE CASE OF GUYANA

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**PART A. NOTES ON CELADE'S RECENT EXPERIENCES WITH NATIONAL
DEMOGRAPHIC SURVEYS IN LATIN AMERICA**

Dirk Jaspers-Faijer

I. INTRODUCTION

1. The Latin American Demographic Centre (CELADE) has a long tradition in the implementation, testing and application of demographic surveys in Latin America, aimed mainly at measuring the demographic components: fertility, mortality and migration, without, however, omitting to study variables which may explain the evolution of these phenomena in time and space.

2. Given the supposed high rate of undercoverage in the vital registration systems which was almost universal in Latin American countries, CELADE searched, almost since its creation, for adequate survey methodology which would permit to know with relative precision the population dynamics of the countries. Since in the early sixties, when the need was felt to have more precise data on population, the use of indirect retrospective estimation techniques was not yet known, the first demographic surveys were a kind of multiple round surveys, also referred to as "prospective" surveys (Somoza, 1976), in which one makes repeated visits to the households selected in the sample, registering the possible changes (vital events) over the period between different interviews.

3. The first experiences, carried out with great dedication and commitment by all the personnel of CELADE, took place in the experimental "prospective" surveys in Guanabara (Brazil)(CELADE, 1964) and Cauquenes (Chile)(CELADE, 1968).

4. The very positive results of those experiments led to the organization of the first prospective survey at a national level: The National Demographic Survey of Honduras (EDENH), carried out in the years 1971-72 (DGEC, January 1975).

5. By that time new methodologies to estimate mortality and fertility became available using information derived from retrospective questions, so advantage was taken of this survey by including an additional questionnaire (with basic demographic information and retrospective questions on mortality and fertility) during the fourth round of visits to the selected households (DGEC, April 1976).

6. The results of this survey, by comparing the estimates derived from the prospective as well as the retrospective part, showed the robustness of the new indirect techniques. Taking in mind moreover that the organization of a single round retrospective survey is much simpler and less costly, CELADE recommended the realization of further retrospective surveys (DGEC, April 1976 and Arretx, 1983).

7. Since the Honduras survey (EDENH I) was very successful, other countries repeated this kind of survey (including the retrospective part) during the seventies in Peru, Panamá and Nicaragua, although experience already had shown the advantages of the single round retrospective surveys (INE, Peru, August 1977; Dirección de Estadística y Censo, Panamá, May 1979 and Jaspers, 1982).

8. The first national demographic survey of Bolivia (EDENB I), carried out in 1975, is a reflection of the new demographic survey methodology proposed by CELADE in the seventies after the Honduras survey experience (Somoza, June 1976). This survey was a single round one with a very simple questionnaire asking only some demographic characteristics and some questions on the survival of relatives and on fertility. This survey confirmed that a simple retrospective survey could lead to reliable estimates of the demographic components. Moreover this survey together with the Census of 1976, is still one of the major reliable sources on which the current demographic estimations and projections are based.

9. In the period between this EDEN I survey and the most recent ones two other similar experiences were undertaken, although with more complete (including questions on migration and socio-economic characteristics) and updated (according to new methodological developments) questionnaires (Paraguay -EDENPAR in 1977 (CELADE, 1981) and the EDENB II in 1980 (INE Bolivia, 1981)).

10. The most recent demographic surveys are the ones held in Honduras (EDENH II in 1983), Nicaragua (ESDENIC in 1985) and Guyana (GUYREDEM in 1986). To the first two some reference will be made in the next section of this part A, while the GUYREDEM survey of 1986 will be dealt with in some detail in part B of this paper.

11. Although the main objective of this paper is to discuss demographic surveys aimed principally at the estimation of the components of population change, it is worthwhile mentioning some experiences of surveys aimed at the improvement of knowledge on specific components and the determination of some intervening variables.

12. In the 1960s, CELADE developed the Programme of Comparative Fertility Surveys in Latin America (Urban PECFAL), which was carried out in the capital cities of seven Latin American countries (CELADE, 1963).

13. After the successful application of the Urban PECFAL project, CELADE received requests from various countries for assistance in developing surveys which would allow to determine the incidence and characteristics of abortion and the use of contraceptives on the levels of fertility, as well as to determine the socio-economic and cultural characteristics of the women and their attitudes towards abortion. Thus the Programme of Comparative Studies on Induced Abortion and Contraceptive Use (PEAL) was initiated, and carried out during 1966 in the following capital cities: Bogotá, Buenos Aires, Lima and Panama City.

14. Subsequently and always within this same programme, a survey was carried out in Santiago, Chile between the years 1969 and 1971, which permitted the comparison of two types of research methodology: retrospective (as used in the previous PEAL studies) and prospective, investigating abortion by way of follow-ups of the surveyed women (Gaslonde, 1973).

15. Following its tradition, CELADE developed technical assistance projects for the study of Fertility and Family Planning. Within this framework two national surveys were taken, the Fertility and Abortion Survey in Paraguay (FEPA), which included four Paraguayan cities, and the National Fertility

Survey of El Salvador (FESAL), carried out (in El Salvador) in 1973. The basic objectives of these two surveys were to define levels and trends of fertility, the relative importance of certain socio-economic and socio-demographic variables with respect to fertility, the influence of nuptiality and the use of contraception on fertility levels, the degree of knowledge, attitudes and practices concerning contraception, efficiency of the methods used, attitude of the woman towards the use of contraceptives, etc.

II. SOME NOTES ON RECENT EXPERIENCES WITH DEMOGRAPHIC SURVEYS.

16. The demographic surveys in which CELADE has been involved were always carried out by national public institutions (generally the statistical offices) using the existing infrastructure as much as possible, thus keeping the costs relatively low, and reinforcing national capabilities for carrying out surveys. CELADE's participation consists of technical assistance mainly through missions and visits of local personal to the CELADE's offices. Financial support was also provided by CELADE using funds specially assigned to CELADE for that purpose (the three most recent surveys were financially supported with funds from the CELADE/Canada exchange and cooperation programme (CCII), apart from funds from the UNFPA, which in the case of the ESDENIC survey was the principal funding agency, with additional support from CCII, while in the Honduras survey the CCII programme was the principal source) (CONSUPLANE, DGEC and CELADE, Vol.2, 1985).

17. Since technical assistance to EDENH-II was provided only by CELADE, this survey reflects more precisely the current ideas of CELADE with respect to the most appropriate methodology for demographic surveys. The main objectives of the Honduras survey, as well as ESDENIC, were to estimate the most recent demographic evolution at the national level. In the case of Nicaragua special attention was moreover given to internal migration.

18. The questionnaires used were therefore quite similar to the ones used in the previous surveys in Bolivia and Paraguay, but included questions referring to the year of death of mother (in order to improve the time location of female

adult mortality and to obtain more recent estimates of this mortality) as well as to the indirect estimation of (international) emigration.

19. Since requirements for demographic and related data are increasing, the recent surveys were also used to investigate some particular topic of interest. In the Honduras survey, the selected topic was to explore the economic activities of women who declared themselves as inactive in the normal census questions in the general (personal characteristics) part of the questionnaire, while in ESDENIC special attention was given to investigating the economic characteristics of the population. Adding to the basic ("demographic") questionnaire an additional section on specific topics was carried out without losing sight of the main objectives of the survey. That is to say, the specific topics were dealt with after finishing the basic part of the questionnaire. The Honduras survey showed that the additional section on economic activity of the "non-active" female population did not affect the data quality of its main section.

20. In order to verify all basic elements of the surveys, and especially to verify all new elements of the survey (like the additional section in the questionnaire and data processing aspect), in the planning of the EDENH-II and ESDENIC surveys, pilot surveys were foreseen and actually undertaken and analysed. A good and complete pilot survey, including all stages, is highly necessary in order to assure a successful national survey. The Honduras pilot survey was carried out in a difficult region in the south, near the Nicaraguan border, with the purpose of seeing the attitude of the people towards the survey. The pilot experience led among other things to changes in the questionnaire (its format, wording and especially to changes in the questions of the experimental section on the female economic activities).

21. The sample design is also considered as very essential part of a survey since it is directly related to the operational part of the exercise. Since non-sampling errors generally have a major impact in the final results, a simple design (meaning here a design which does not lead to complications in the field work) is often preferable to a more sophisticated one. The sample segment boundaries should be clearly defined and normally all households in that territory should be enumerated, even if up-to-dated cartography (and/or

listings of households) is available. Leaving responsibilities of selection (or giving the opportunity to intervene in the household selection) to the interviewers might lead to problems as different experiences have shown (for example in the Brazilian Censur which had a basic and an expanded questionnaire, the first one led to a much higher household density than the other one: most probably the result of the fact that enumerators used the smaller households to fill out the expanded questionnaire and vice-versa).

It is true that some of these possible problems might be overcome in a survey, working with a small number of interviewers, and with a very close and strict supervision. However, it is recommended to use, in principle, a simple sample design in order to avoid difficulties during the field work. If for one reason or another a more complex design is required the organizational consequences should be carefully evaluated. The Honduras survey EDENH-II had a simple design (although much more diversified than the EDENH-I) without leading to problems or doubts, even though the sampling frame was well out of date (CONSUPLANE, DGEC and CELADE, Vol.II, 1985).

22. As mentioned the sample design is closely related to the organization of the field work activities. The simpler the design the better the possible coordination and supervision of the interviewers. If the design is complicated (involving for example very small segments), supervision is very difficult and interviewers therefore will have to make their own decisions while in the field. The EDENH-II was a good example of close supervision: 6 teams (of 2 enumerators, 1 supervisor and 1 driver each) went into the field together to certain previously determined areas. Each team had the responsibility of one segment in which every household had to be enumerated (each rural segment had 46 dwellings, while urban segments had 18 dwellings), allowing a very close supervision. Moreover the teams stayed the night together whenever possible and therefore exchanges of ideas/problems/situations between the teams together with the field director were intensive, avoiding that enumerators or teams develop divergent ideas on certain topics to be dealt with. Other survey experiences where groups of enumerators worked independently throughout the country have shown regional discrepancies in the data quality, since general control (through the field work coordinator/director) was impossible. The closer the contacts the better the data.

23. The recent surveys also showed the importance of the capacity and dedication of the national director of the survey, since he is the first person responsible for all the stages of the survey. Concentrating the main responsibilities in one person has the advantage of coherence between the different actions to be taken, although at the same time it should be mentioned that this means a risk, since for one reason or another the director can or may have to cut off his activities.

24. No single activity of a survey enterprise can be taken apart from the rest. Although sometimes data processing is treated in isolation, it should not be. Already in the questionnaire design the data processing sector (or specialist) should be involved, to avoid problems of coding and data entry afterwards. Sometimes it is said that data processing topics could be dealt with after the field work activities since interviews can not be repeated while data processing is an office job and errors can be corrected. On the one hand this means that no problems (errors) should occur in the data processing stage (which is theoretically correct although practice shows otherwise, for example much of the delay in the presentation of results, as with ESDENIC, was due to problems with data processing), but on the other hand, it ignores the role data processing could play during the field work stage in order to assure data quality. In the EDENH-II the data processing helped to evaluate the data quality while the field work was on going (Note: this survey was carried out before microcomputers became widely known in the region). After the collection of the data in a certain region, data were immediately entered in the computer (two times, independently, to control data entry errors), and consistency checks were carried out (coding was previously done in the field by the enumerators and supervisors). Mechanically found inconsistencies (which were tabulated by team) were discussed with the whole group and in particular with the responsible enumerators and supervisors. In this way the quality of the work carried out by the field staff was controlled frequently. Moreover, after collection of a sufficient quantity of data, brief analysis were carried out showing in turn other possible sources of errors, which could be taken into account during the further field work. In addition, presenting the results (in a global way) to the enumerators and supervisors was very stimulating to them since they became aware what their job was good for and that the data they were collecting would really be used.

25. Timely presentation is always the aim of any survey. In the case of the EDENH-II this was only partly accomplished. Although preliminary, results became available quite soon after the end of the field work, the publication of final results took more time. Analysis was to be carried out by national professionals. However, for a variety of reasons, originally assigned persons could not participate in the analysis and new counterparts had to be looked for, delaying the presentation of final results. Moreover, a change in the number of publications originally planned led also to postponement. More publications resulted since data allowed for more detailed analysis than thought. Up to now 5 volumes have been published, starting with one with general tables, another on general demographic estimates and three studies on each of the demographic components according to different socio-economic variables (CONSUPLANE, DGECE and CELADE, Vol.I-V, 1985/1988). One volume is still being published: the one on new methodological contributions of the EDENH-II. Publications of the results of the ESDENIC are still underway, since this survey had a lot of problems with the originally designed sample and with the data processing.

26. In the foregoing points reference has been made to different aspects of the organization and execution of national demographic surveys recently carried out with the assistance of CELADE. The aspects which led to the success of the EDENH-II could be summarized as follows: the efficient work of the staff of the Statistical Bureau of Honduras and especially of the national director, working with a small group of enumerators and supervisors, the close supervision and exchange of information between the members of the field work team (which was possible partly because of the sample design), continuous technical assistance in all stages of the survey, effective data processing during the field work stage.

27. The accumulated experience of CELADE of which some aspects were discussed in the foregoing points, was taken into account when organizing the most recent demographic survey, the GUYREDEM, which will be dealt with in the next part B.

PART B. NATIONAL DEMOGRAPHIC SURVEY OF GUYANA - GUYREDEM

Wally Boxhill

I. INTRODUCTION

1. The Statistical Bureau of Guyana in conjunction with CELADE recently conducted a demographic survey of Guyana (GUYREDEM),^{1/} with the aim of improving knowledge and providing much-needed, up-to-date information on the country's current and prospective socio-demographic situation. The data needs specifically identified were estimates of:

- (a) National and regional population size and characteristics;
- (b) fertility levels for all women and specific sub-groups;
- (c) mortality levels at the national and regional levels and for specific sub-groups;
- (d) intra-regional migration rates;
- (e) levels and nature of international migration.

2. The last census in Guyana was conducted only 5 years prior to GUYREDEM. However, in light of a defective vital registration system, it was felt that supplemental information on the components of population change would be beneficial to the country's planning authorities. Annual data on births and deaths were not available after 1976 and 1979 respectively. Migration tabulations ceased at 1976 and the estimates available after that date were crude in every sense of the word. Even when data were available, their reliability could be called into question. This severely constrained attempts at upgrading the country's demographic data base, revitalising demographic studies, and integrating demographic information into decision-making, socio-economic development planning and administration.

^{1/} Work on the survey commenced in July 1985 and reports on administration and data results were released at a seminar held in Georgetown, Guyana in July 1987. Use of an acronym to describe the survey had positive spin-offs in terms of convenience to staff, respondents and authorities in Guyana. It also provided a sense of familiarity and ease of reference.

3. GUYREDEM was conceived to address these issues. Just over 8,500 households drawn from Guyana's 10 administrative regions were interviewed in a single round of visits. The approach at the sample design stage was to select adequate numbers from each of Guyana's ten administrative regions for the generation of meaningful regional data. In a few cases, small population size and wide dispersion associated with transportation difficulties and high enumeration costs militated against the coverage calculated as necessary for reliable demographic estimates for each region individually. Some regions were therefore grouped together - on the basis of demographic similarity and geographic contiguity - to produce data sets of appropriate size.

4. The sample size was calculated to be approximately 9 000 households, or 6% of the total number of households in the 1980 Census. A minimum of 200 households were calculated per region, 500 for paired remote regions, with the maximum being 3 300 in Region 4, which included the country's capital. Another 350 households were selected separately as a sample for the pilot project.

II. PLANNING GUYREDEM

5. The GUYREDEM schedule of activities covered seven broad phases of work:
(a) Pre-project phase; (b) preparatory phase;
(c) pilot project; (d) fieldwork and execution of the full national survey;
(e) data processing and evaluation; (f) data analysis; (g) reports, seminars and workshops. Household interviews commenced at the end of August 1986 and concluded 5 months later. Information was collected on all persons who were considered usual members of the households visited.

Despite considerable review of potentially problematic situations and the devising of strategies to counteract them, extraneously generated setbacks, particularly in the fieldwork and data processing phases, at times frustrated and threatened to undermine activities. Nonetheless, all major activities were completed only slightly beyond schedule.

Pre-project phase:

6. This pre-project or exploratory phase saw discussions between CELADE and a number of government bodies in Guyana, regarding the rationale, feasibility

and general logistics of GUYREDEM. Background documents were obtained, studied and shared between CELADE and the Statistical Bureau. Resource requirements were also determined, responsibilities of the various agencies clarified, and a project timetable and programme of activities prepared, all with flexibility in mind. Over this period, as well, decisions on staff recruitment were made, options for data processing were evaluated, the project budget was established, and the most effective process for transferring CELADE funds to the project was determined. The administrative support of the United Nations Development Programme in Guyana - which turned out to be critical to the success of GUYREDEM - was also obtained during the pre-project phase.

Preparatory Phase:

7. This period witnessed a joint, detailed review - by CELADE and the Guyana Statistical Bureau - of information, capabilities and probable technical assistance requirements. During the review, specific attention was paid to ways of avoiding delays which so often lead to the production of archival data. Because of an extremely tight budget situation, efforts were also directed at preventing an escalation of costs, while still focussing on the overall objectives of GUYREDEM and the specific needs of Guyanese authorities. Concern in Guyana about emigration led to the inclusion of an international migration module in the questionnaire, in an effort to give an indication of the volume and some of the major socio-economic characteristics of recent emigrants. Similarly, at the request of the Guyanese authorities, data were obtained for all 10 regions of Guyana and the Amerindian population as a distinct subset, despite their relative inaccessibility.

8. CELADE and the Statistical Bureau were in regular contact during the planning and execution of GUYREDEM. Though CELADE played a major role, both in technical assistance and funding, national counterparts were very much involved in all phases of GUYREDEM. There were significant responsibilities for the Statistical Bureau, a move in accordance with the Guyana government's philosophical thrust towards self-reliance in all spheres of socio-economic life in the country.

Staffing and Training

9. The survey field staff was hired after a screening, short-listing and interview process involving the Project Co-ordinator, Chief Statistician of Guyana and two other Statistical Bureau officers. One noteworthy omission from the selection process was a written test for prospective enumerators. This is highly recommended, since it permits a more complete evaluation of the enumerators (for example, their abilities to do quick and accurate calculations during fieldwork.

10. There were 2 formal training sessions, both conducted by CELADE staff and professionals from the Statistical Bureau. However, if training is viewed as a process for improving data collection techniques and increasing the knowledge of survey staff, then it is accurate to say that training continued throughout the survey. The objective was always to ensure that GUYREDEM staff functioned proficiently and collected high quality data. All persons were trained together, with discussions covering both the general and specific aspects of GUYREDEM, including its purpose, methodology, organisational elements and uses to which the data would be put.

11. The first of the formal training sessions was to prepare survey staff for the pilot project; the second (aptly described as a refresher course and again involving all survey staff), was conducted just before the beginning of the full national survey. During the training sessions, each and every aspect of the several manuals was reviewed and discussed in detail. Trainees were also instructed in procedural aspects of GUYREDEM and methods of presenting themselves to households. At the end of pilot project training, enumerators conducted real-life interviews, during which they were observed and assessed by the trainers as a prelude to final selection of staff.

12. In-house training on procedures was given to clerical staff of the Bureau who would be directly involved in GUYREDEM. These included two clerks who coded "Occupation" and assisted in the review of comments in the Observations section of the questionnaire. Training also extended to the regular data entry staff of the Bureau who were instructed in use of the data entry and verification routines for the micro-computers.

Pilot Project

13. The GUYREDEM pilot project was not a full-fledged mini-survey. Still, it was intended to address and evaluate numerous technical, organisational and operational issues, such as testing the questionnaire design, format and workability; testing topics, concepts, sequencing and whether the choice of words was appropriate to both enumerators and respondents; assessing the attitudes and responses of householders; and using the completed pilot questionnaires to test the CELADE-designed data entry and verification routines for the micro-computer.

14. In planning for the pilot project, CELADE's experiences (both satisfactory and unsatisfactory) in undertaking retrospective demographic surveys in South and Central America over the last decade were considered instructive and reduced the need for a complete, detailed, and repetitive testing of procedures and alternatives. Given the tight budget situation and costs of a mini-survey under difficult infrastructural conditions, a full-fledged dress rehearsal was not practical. However, steps were necessary to ensure that the approaches planned were appropriate to the local situation. There was also a non-rigorous evaluation of topics and procedures which it was felt did not require detailed testing, since they had been satisfactorily implemented in recent censuses and other surveys in Guyana.

15. All trainees were monitored closely during the pilot exercise and performance on some interviews was observed. Field staff were either accompanied or visited by the Project Co-ordinator, Survey National Director, or other CELADE/Statistical Bureau staff. The questionnaires were reviewed in the field by these observers/monitors and where necessary, suggestions were made for improving the data collection process.

16. At the end of each day, there was a de-briefing session involving all enumerators and the CELADE/Statistical Bureau monitoring and instruction team. This exercise involved a review of problems encountered and the identification of possible solutions.

Questionnaire Design, Development and Use

17. Several questions used in previous censuses in Guyana were included in the GUYREDEM questionnaire (see Appendix A). Others previously used by CELADE in its Latin American surveys were modified to suit the Guyanese context. Considerable attention was directed at possible refinements in the location and wording of questions. For example, the mortality and international migration modules were located at the end of the questionnaire even though they required information from the head of household. This was to negate, as far as possible, any withdrawal or negative feelings which could have been created by asking the questions too early in the interview. Because of the importance of mortality information, previous CELADE surveys had placed this topic on the first page of the questionnaire.

18. An 8 1/2" x 14" format (34.5 cms vertical x 44 cms horizontal), with black lettering on white bond paper^{2/}, was used for questionnaires in both the pilot project and the full national survey^{3/}. Clipboards of similar dimensions were issued to enumerators.

19. The design and format of the GUYREDEM questionnaire were carefully evaluated in light of 3 principal concerns: (1) workability and handling under the tough field conditions of non-urban and interior areas; (2) the ability of enumerators and supervisors to manually perform consistency checks among the responses for various household members; and (3) the possible obstacles to data capture which could be posed by the layout. No significant problems were encountered regarding any of these.

20. The GUYREDEM questionnaire was enumerator-administered and comprised 5 sections occupying 4 pages. These sections were:

^{2/} This was more for convenience, cost and ease of preparation, rather than as a result of any technical consideration, such as visual impact.

^{3/} The questionnaire used in the pilot project was modified slightly for the full national survey. Only the document used in the latter is discussed here.

1. Identification (survey title, geography and household information)
2. Observations (this section was completed by the enumerator)
3. Characteristics of Respondents (person level information which constituted the "meat" of the questionnaire)
4. Mortality (household level information)
5. International Migration (also for the household)

Several aspects of the questionnaire merit highlighting, particularly since some were viewed by the national counterparts as important contributions to their survey experience.

21. The "Observations" area of the questionnaire was used for recording information on the household and/or its members, when it was felt that this would be relevant and assist in clarifying perplexing situations. Its use was largely at the enumerator's discretion and was mainly for such matters as the incorrect order of listing household members, perceptions of information accuracy, or issues which the enumerators wanted to discuss and clarify with their supervisors. All observations were reviewed by supervisory staff in the field and again by office staff prior to data entry. Adjustments, e.g. changes in the order of listing, or correction of errors in the identification of relationship, were made on the basis of this review.

22. Seventeen topics were included in the section for recording the characteristics of household members. Some were pertinent for all persons, while others were to be answered only for persons of a certain age, or sex. Each group of questions was appropriately demarcated by a very distinct, horizontal, shaded band, running right across pages 2 and 3 and through the inserts included for the information on each household member. During pilot project fieldwork, it was discovered that a few enumerators could not do age calculations quickly, nor necessarily correctly. In an effort to address these problems, each band contained a section geared to eliminating the need for performing these calculations. Enumerators were simply required to enter the interview date in the area FOR ALL PERSONS BORN BEFORE |__|__ |__|__ and check the person's date of birth against the information entered. For example,

if the enumerator was conducting the interview on 25 May, then 25, 05 would be entered. In the case of the first band, any person born after |__|__| |__|__|81 would not yet be 5 years old, hence the interview would end for that person.

23. Adjacent to the area for recording the name of the respondent were 2 pre-coded boxes for capturing information on whether the responses were provided directly by the person to whom they pertained, or whether they were provided by some other household member. Based on the premise that information is likely to be more accurate if provided directly by the person affected, these boxes were included to give a rough indication of reliability, particularly in connection with the fertility questions.

24. Seven types of relationships or family ties other than head of household were specified as pre-coded options. Household relationships were recorded according to a pre-set pattern which would facilitate subsequent determination of family patterns within the household. The spouse of household head (if such a person was a usual resident and thus member of the household) occupied position 2 (second person), followed by the eldest child of the couple (again, if the couple had children) and his/her family. This attention to order of listing facilitates the identification of primary, secondary, and extended family units.

25. Results of the pilot project had not been persuasive in indicating the route to be taken regarding a question on date of birth or age. Though the use of date of birth in conjunction with a question on completed years would have enabled the enumerator to do a quick check on the consistency of age reporting, there was the counter contention that these calculations would slow up the interview process considerably, apart from increasing the questionnaire length. In addition, the view was expressed that this double-barrelled approach constituted an excessive demand, precisely because it amounted to a direct check on the previous answer.

26. A question on date of birth was used instead of a direct question on age. It affords an opportunity to verify the information given, by referring to documents such as National Registration I.D. cards or birth certificates. It

also reduced tendencies towards age rounding and digital preference and eliminated the need for either or both the enumerator and respondent to perform age calculations. In several parts of Guyana and in particular among the Amerindian population, the reference to I.D. cards, especially for household members who were not at home during the interview, was the principal and sometimes the only means of obtaining information regarding age.

27. While providing a satisfactory solution, the date of birth approach was not completely problem-free. To be sure, the overwhelming majority of the population was able to provide precise information on date of birth, albeit in several cases through reference to documents such as I.D. cards, birth or baptismal certificates, passports, information written in exercise books or on the back cover of Bibles, and so on. However, on occasion, particularly among the Amerindian population, where neither the day nor month of birth could be obtained by any means - the respondent simply did not know and the I.D. card or other document gave only an estimated year. In all such situations, the day and month were imputed during data processing.

28. Race was judged to be an essential topic in any socio-demographic survey in Guyana, particularly in the context of its relationship to household composition and fertility behaviour. Since the information was collected by enumerators canvassing individual households, there were adequate opportunities for visually determining the race of respondents. While the total reliance on visual impressions was discouraged, some respondents would ask the enumerators to decide what they were.

29. Several questions contained a pre-coded answer box for recording the response "Don't know". This allowed obtaining a clear record of lack of knowledge, as opposed to lack of information; the latter is equivalent to a blank or non-response.

30. The survey administration was very cognisant of problems of recall, particularly among the older population. In many areas of the country, these were the only persons at home during the enumeration visits. A series of judicious probes were instituted to elicit the desired information and enumerators were thoroughly trained in use of these probes for questions such

as fertility and year of death of mother. Likewise, a number of follow-up techniques were used by field staff to verify information provided by the respondent.

31. Since the regional administrative system in Guyana was only recently established, it was necessary to orient both enumerators and respondents to the country's 10 regions. To this end, enumerator's manuals contained a map identifying the regions and indicating some of the main settlements within each. If there was doubt as to which region was to be coded, enumerators made a note of the locality name and/or nearest larger settlement for subsequent office verification or assignment of the appropriate code.

32. Despite considerable elaboration of the concepts of current marital/union status in the enumerator's manual and during training, several enumerators found that common-law relationships and visiting unions generated problems in the field. The concept of visiting unions, in particular, was confusing to respondents engaged in extra-marital relationships. Likewise, persons who were legally married but living apart from their spouses (e.g. spouse emigrated; respondent awaiting his/her papers before doing same) were unsure of the appropriate response.

33. It is remarkable that there were only few instances where probes and efforts by enumerators to obtain clarification encountered opposition from respondents. Likewise, it is noteworthy that in some cases, respondents volunteered information on pregnancies as a means of clarifying responses given in relation to fertility.

34. The international migration module was prepared and included as a separate experimental section to address the Statistical Bureau's concern about emigration and loss of skills and talents. Contrary to a priori concerns regarding the willingness of respondents to provide the required information, this module encountered few significant problems.

35. Finally, the flexibility of the GUYREDEM questionnaire must be mentioned. In remote locations where additional questionnaires were required, - for

whatever reason - the documents completed for small households^{4/} were dismembered (by removing the staples) and the unused inserts removed. The questionnaires, now containing only the number of pages/inserts with information on respondents, were re-stapled and the unused pages/inserts were stapled to construct "information booklets". These documents were used in lieu of full questionnaires. Information collected using "information booklets" was subsequently transcribed on to proper questionnaires in the Project Control Centre, at which time the Identification Section was completed fully.

Administrative Forms and Document Control

36. Three manuals (Enumerator's, Supervisor's and Listing) were used by the enumeration staff. These documents detailed the concepts and procedures to be followed in the field. A number of other documents and forms (e.g. call-back cards, Appointment control sheets, supplies record and weekly listing records) were designed to ensure on-going control of the entire survey process, to monitor progress on the various activities, and to provide information rapidly. Despite the proven utility of control documents, a shortage of office staff to undertake many of the recording functions militated against their use throughout the survey. Instead, the GUYREDEM senior staff closely and directly monitored the work of the relatively small (and therefore manageable) survey crew. In addition, note pads issued to supervisors were well used for their intended purpose and obviated the need for completion of the several forms.

Fieldwork

37. Fieldwork was undertaken in a number of stages, commencing in the regions where enumerators resided and enumeration teams were based. These were also the relatively easy-access regions. Upon completion of work in these regions, the teams were re-deployed to other more difficult areas. As opposed to the coastal areas where enumerators were assigned work individually, assignments in the hinterland regions were undertaken on a team basis, with teams of varying sizes working under the supervision of a senior member of the GUYREDEM team.

38. Listing was the first phase of field operations and was undertaken at the same time as evaluation of the pilot project and other preparations for the

^{4/} A negligible number of households contained more than 8 persons.

full national survey. Lists were compiled of all households in the selected enumeration districts (EDs). Sample households were selected from these lists. An important aspect of the listing phase of fieldwork was the location of ED boundaries and ensuring that the enumerators and supervisors were not only familiar with the territory but comfortable with their assignment. Due to access and internal transportation difficulties in some regions, no pre-listing operation was undertaken. Rather, the selection and enumeration of sample households were undertaken during the same visit. This approach was economical in travel, subsistence and overall field costs.^{5/}

39. Notwithstanding some inadequate area maps, no cartographic updates were undertaken because costs were prohibitive and could not be accommodated within the project budget. Instead, the Bureau's cartographic staff and GUYREDEM senior personnel accompanied enumerators into all EDs where it was likely that difficulties would be experienced in orientation and identification of outdated and vague boundaries, such as watersheds.

40. During listing, interviewers were required to notify householders of the possibility of a return visit to conduct more detailed interviews. This action prepared householders for possible enumeration during the full national survey and provided a natural entrée for the enumerator, if in fact the household was selected for GUYREDEM interviews.

Interviews:

41. Confidentiality was an important consideration in the collection of information and there was always a preference for conducting interviews one-on-one (interviewer and respondent), particularly among females over 14. However, this was only a preference and not a rigorous requirement as has occasionally been argued as a strategy for ensuring confidentiality and honesty in responses to fertility questions. Particularly in interior areas and among other rural households, some interviews were "family gatherings", in which the head of household would provide information with the assistance of his/her spouse and occasional reference to their offspring for help in recalling events. Thus even in respect of something as critical as confidentiality, there was need to be

^{5/} This strategy was also implemented in a few difficult-access areas of the regions where listing was done.

flexible and practical in the adoption of field measures to facilitate the collection of the required information.^{6/}

Quality Control

42. Field checks (performed before enumerators left the household), clerical checks (implemented at the office review stage) and machine checks (undertaken at the data capture stage) were put in place in an effort to ensure high quality data. The field or primary checks, were undoubtedly the most important, since they were designed to avoid the inconvenience of having enumerators return to households to obtain missing information, or clarify apparent inconsistencies. These checks were detailed in the Enumerator's Manual and stressed during training and observation in the pilot and early stages of the full national survey.

43. After three weeks of GUYREDEM interviews, the entire enumeration team met for a one-day review session at which time errors were pointed out in their work, problems were discussed and suggestions for improving quality were made. Supplementary written guidelines for efficiently undertaking the tasks were also issued to each member of the field team.

44. As a further measure towards quality control, enumerators were visited regularly and their work monitored in the field by team supervisors, as well as CELADE and Statistical Bureau staff. Any errors detected were immediately brought to the attention of the enumerator.

45. Once questionnaires were completed to the satisfaction of field supervisors, they were returned to the Statistical Bureau where transmittal/receipt records were kept and additional quality control checks were put in place. As far as practicable, documents containing major errors and omissions were sent back into the field for completion. However, the need for this was negligible because of detailed secondary scrutiny of documents in the field and the involvement of GUYREDEM senior staff in quality control

^{6/} It appears conflicting to insist on one-on-one interviews while permitting the provision of information (in the case of absent householders) by persons other than those to whom the information was pertinent.

operations. In a few cases, after reference to other information on the document indicated that remedial action was straightforward and presented no problems, the resolution of errors was done by senior Bureau staff at the machine editing stage. For example, if the sex of a person had been omitted, then reference to name or fertility information gave a reasonable indication of the sex of the relevant party. Apparent or even indisputable errors in the information were not corrected by coders. Their only actions regarding data was for coding Occupation.

Data Processing

46. As a result of its recollection of a number of unfavourable experiences, with data processing for its surveys and censuses, the Statistical Bureau sought CELADE's advice on ways of getting the survey data ready for output in a timely fashion. The most attractive option and the one implemented, was the purchase of micro-computers to enable the Bureau to do the processing, with assistance, if necessary, from CELADE. A major factor in favour of this decision was the provision for Bureau ownership of the machines upon completion of GUYREDEM. They would then be available for further demographic work (particularly in the area of vital statistics and migration). This action eases the dependence of the Bureau on other agencies in or outside Guyana for the production and timely release of data. Further, it enhances the Bureau's capacity to respond to specific data requests of users.

47. All data processing operations were undertaken by the Statistical Bureau staff, with technical advice from CELADE and experts from the Guyana State Planning Commission. The inclusion of data-capture codes directly on the questionnaire (for all questions but Occupation) considerably reduced the need for clerical coding operations.

48. Several machine edits were carried out to verify completeness, accuracy, consistency and internal logic. Most of these edits and ranges of data acceptability were based on common-sense and were designed as an automated complement to the manual edits and consistency checks performed in the field and at Head Office. There was no automatic correction or imputation action based on matching records or pre-determined input values. Every situation requiring corrective action was reviewed individually. No record was maintained

of the types of errors encountered, either in the field or in data processing. This, however, is a procedure which is highly recommended, since it provides a thorough and complete audit trail on the various phases of data collection and the generation of survey information.

49. Despite recurring power outages in Guyana, all survey data were key-entered and edited within 1 month of the completion of fieldwork. However, the generation of a complete set of pre-planned tables was accomplished several months later and had to be undertaken at CELADE headquarters. These tables provided the first insights into the results of GUYREDEM and were presented to the government of Guyana and discussed at a seminar/workshop in Guyana in July 1987.

50. Publicity for GUYREDEM was actively sought by the GUYREDEM administration and provided by the print and broadcast media. Enumerators kept news-clippings as part of their enumeration kits for use in indicating that the survey was a bona fide operation. All field staff as well as GUYREDEM administration personnel were also issued with identification cards bearing their photographs and confirming their authority to collect the relevant information. They were all required to have their I.D. cards visible at all times during enumeration. Apart from its effect in reducing refusals, this had a positive impact on public relations and wider information about the survey and undoubtedly contributed to minimising the number of refusals.

51. The GUYREDEM field staff received tremendous support and encouragement in the discharge of their duties in all regions of the country. The fact that in the initial stages, enumerators were based in their home regions played a significant role in this. Their training and the news coverage of GUYREDEM, however, were also contributory factors. The low household non-interview rate (7.8%) is testimony to the positive interaction and communication between enumerators and respondents and reflects both the receptivity of the public and the abilities of the enumerators to perform their tasks adequately.

Budget

52. The sum of \$70,000 US (\$GY 301,000)^{L/} was allocated by CELADE for funding various aspects of GUYREDEM, including the travel of the Project Co-ordinator between Trinidad and Tobago and Guyana. Though no CELADE staff-member was based in Guyana during GUYREDEM, this did not have a major impact on overall project costs.

53. To attract suitable candidates and to provide motivation for employees to work for the anticipated (8 month) duration of GUYREDEM, the field staff was paid approximately 30% more than the minimum wage for work at equivalent levels in the public sector. It was felt that this would compensate for longer working hours and the lack of benefits, such as annual or sick leave.

54. In addition to their basic salaries, field staff received a supplemental monthly stipend to cover costs such as travel and living expenses associated with assignments outside their home districts. Finally, during fieldwork in remote locations, all expenses for the travel and subsistence of the various teams were covered from project funds.

55. The Guyana government contributed \$GY 25,000 (\$6,500 US) for 1986 GUYREDEM fieldwork activities, particularly to defray travel costs associated with enumeration of difficult-access areas which fell in the sample. An additional \$GY 40,000 (\$4,000 US) was budgetted for project activities in 1987. Major and invaluable indirect contributions were also made by the Guyana government, particularly in the area of staff secondment to GUYREDEM.

^{L/} \$1 US - \$4.3 Guyana in 1985 and 1986 and \$10 following a currency devaluation in January 1987.

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RESUME

A: La première partie de cet article donne un bref aperçu historique des enquêtes démographiques auxquelles le CELADE a participé. Les enquêtes prospectives et retrospectives sont mentionnées, ainsi que des enquêtes ponctuelles réalisées en Amérique Latine sur la fécondité. En fonction de deux des expériences les plus récentes avec des enquêtes démographiques nationales (Honduras 1983 et Nicaragua 1985), s'imposent un certain nombre d'éléments de réflexion portant sur divers points relatifs à la méthodologie d'enquête. On met l'accent sur l'importance des responsabilités nationales, des enquêtes pilotes, du plan d'échantillonnage, de l'organisation du travail de terrain, d'une direction étroite du personnel, du traitement des données et de la publication selon les délais. Ces considérations générales ont été respectées dans la mise en place de la dernière enquête, celle de Guyana (voir B).

B: En 1986 le Bureau de la Statistique de Guyana et le CELADE ont réalisé une enquête démographique de Guyana (GUYREDEM), afin de mettre à jour les estimations de population nationale et régionale, ses caractéristiques, les niveaux de fécondité et de mortalité et les taux de migration interne et internationale. Les entrevues ont eu lieu entre août et décembre, 1986, en vue d'obtenir des données sur tous les membres des ménages échantillonnés.

Etant donné que le dernier recensement de Guyana a été relevé en 1980, et que les registres de naissances, décès et migration ne sont plus disponibles à partir de la fin des années 1970, l'incorporation de données démographiques dans la planification a été sévèrement restreinte. Dans cet état de causes, GUYREDEM a obtenu des données d'un échantillon de presque 9 000 ménages choisis dans toutes les régions de Guyana.

L'opération comprend sept phases: avant-projet, préparatoire, pilote, travail de terrain national, traitement de données, analyse, et rapports et

séminaires. Le CELADE et le Bureau ont collaboré tout le long du projet. Une aide incommensurable a été fournie par le gouvernement de Guyana sous forme de personnel détaché, et par le PNUD.

La formation du personnel a couvert tous les aspects de GUYREDEM, de la méthodologie à l'utilisation des données. Les manuels traitaient de tous les procédés, et les candidats aux postes d'intervieweur ont fait de vraies entrevues. Les responsables de la codification ont également été formés, et le personnel de saisie de données a fait un stage sommaire d'utilisation des routines de micro-ordinateur. L'enquête pilote a testé le questionnaire et le traitement des données et vérifié les réactions des répondants. Les candidats ont été suivis et tenu à des réunions de travail quotidiennes.

Le questionnaire a été évalué selon 3 axes: sa maniabilité dans des conditions de travail difficiles, la capacité du personnel à vérifier la cohérence des réponses, et des obstacles éventuels à la saisie des données. Le questionnaire se divise en 5 parties: Identification, Observations de l'intervieweur, Caractéristiques des répondants, Mortalité et Migration internationale. Il y avait dix-sept questions concernant les caractéristiques des répondants. Des préoccupations portant sur la perte d'éléments qualifiés ont conduit à introduire un module expérimental sur la migration, pour étudier le volume et les principales caractéristiques des émigrants récents.

Pour l'enquête nationale, on a établi une liste de tous les ménages dans les districts d'énumération (DE) sélectionnés, et à l'intérieur de celle-ci, l'échantillon de ménages choisi. On n'a mené à terme aucune mise-à-jour de cartes inadéquates, vu le coût. Les cartographes du Bureau et les responsables de GUYREDEM ont accompagné les intervieweurs dans tous les DE où l'orientation ou l'identification des limites présentaient des difficultés.

Afin d'assurer la qualité des données les questionnaires ont été contrôlés par les intervieweurs, au bureau central, et, au moment de la saisie. La vérification sur le terrain a évité que les intervieweurs aient à retourner dans les ménages. On a insisté sur ce point dans les manuels et lors de la formation du personnel. Au bout de trois semaines d'entrevues, l'équipe s'est réunie pour étudier les problèmes et suggérer des améliorations. Des lignes

directrices corollaires ont été tracées et les intervieweurs régulièrement surveillés.

L'achat de micro-ordinateurs a permis d'assurer la totalité du traitement des données au Bureau, qui a conservé la propriété des appareils. Cela ouvre la possibilité d'un travail futur sur les statistiques vitales et les migrations, allège la dépendance du Bureau vis-à-vis d'autres agences pour la production et la publication en temps voulu des données, et renforce sa capacité à remplir ses engagements en ce domaine.

Les contrôles sur écran portaient sur la cohérence et la logique interne et renforçaient les révisions sur le terrain et celles effectuées par les responsables. Les cas exigeant une correction ont été étudiés un par un. La saisie et contrôle des données ont été terminés un mois après le travail de terrain. Les résultats en ont été présentés lors d'un séminaire en Guyana en juillet 1987.