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**Report on the Assessment of  
The 2000 Round of Population and Housing Censuses  
And Proposed Strategy for the  
2010 Round of Population and Housing Censuses  
in the CARICOM Region**

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# **Report on The Assessment of the 2000 Round of Population and Housing Censuses and Proposed Strategy for The 2010 Round of Population and Housing Censuses in the CARICOM Region**

## **1. Introduction**

### **1.1 Background**

1. The Caribbean Community (CARICOM) is the major inter-governmental regional organisation linking countries in the region that have common concerns and interest. The membership of CARICOM comprises fifteen (15) countries, namely, Antigua and Barbuda, The Bahamas, Barbados, Belize, Dominica, Grenada, Guyana, Haiti, Jamaica, Montserrat, St. Kitts and Nevis, Saint Lucia, St. Vincent and the Grenadines, Suriname and Trinidad and Tobago. Suriname became a member in 1995, and Haiti became a member in 2002; at present these are the only two non-English speaking members of CARICOM. In addition, there are five associate members; these are: Anguilla, Bermuda, British Virgin Islands, Cayman Islands, and Turks and Caicos.

2. The Member States of CARICOM have a long history of population census taking dating from the middle of the 1800s. There has been appreciable regional collaboration and coordination in conducting the post World War II population censuses. In 1946, all Member States taking a census at the time used a common approach. In 1960, there were two sub-regions, one centered in Jamaica and the other in Trinidad and Tobago, each using a common approach. In 1970, 1980 and 1990, a regional census organisation planned and coordinated the regional census programmes for the CARICOM Member States and gave considerable assistance to the participating countries.<sup>1</sup>

3. For the preparation of the 2000 Round of Censuses, CARICOM Secretariat organized a series of meetings of the Regional Census Coordinating Committee (RCCC). The first of these meetings was held in Tortola, British Virgin Island on 23-24 October 2000. The Director of Information & Communication of the CARICOM Secretariat stated that this was the Seventh Meeting of the RCCC, but it was the first meeting of the RCCC

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<sup>1</sup> See Project document of 2000 Round of Population Censuses

organized by the CARICOM Secretariat to assist Member States to prepare for the 2000 Round of Population and Housing Censuses in the region.<sup>2</sup> The Director also stated that there was a lot of ground to cover in such a short time, and she questioned how they could make up time and guarantee a successful and meaningful process.

4. At the Fifth Meeting of the CARICOM Community Council of Ministers held in Guyana in February, 2000, acting on the advice and recommendations of the Standing Committee of Caribbean Statisticians (SCCS), approval was given for a budget of approximately US\$1.4 million for the 2000 Round of Regionally Coordinated Censuses. Member States agreed to contribute about US\$300,000, and the rest of the funds would be raised through assistance from international donor agencies. However, except for the Canadian International Development Agency (CIDA), the Caribbean Development Bank and UNECLAC technical assistance, donor funds to support a regional project were not forthcoming as they had been in the previous Round of Censuses in the 1990s, and thus the implementation of the regional strategy for the 2000 Round of Censuses proved to be a tremendous challenge for CARICOM and the Member States. In this connection, it should be noted, however, that some Member States may have received funding assistance from international donor agencies for their respective census project. For example, due to the unfortunate incident in Suriname in which the 2003 census documents were destroyed by arson before they were captured, the Inter American Development Bank (IDB) agreed to provide both technical assistance and a loan to the Suriname Government to finance eighty percent of the 2004 Population and Housing Census. It was also reported that Guyana received technical assistance from Statistics Sweden (it was not clear whether the funds were provided by the Swedish International Development Cooperation Agency (SIDA) or other donor) to support the 2002 Guyana Population and Housing Census data capture.

5. The United Nations Statistical Commission declared the World Programme on the 2000 Round of Population and Housing Censuses which began 1 January 1995 and ended 31 December 2004. It is well known that conducting a census operation is a very large undertaking for any country regardless of the size of the population. The United Nations recommendations stated that the preparatory work for a census is necessarily long in

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<sup>2</sup> See "Statement by the Director, Information & Communication, CARICOM Secretariat, on the Official Opening of the Regional Census Coordination Mechanism" in the Annex of "Report of the Seventh Meeting of the Regional Census Coordinating Committee," Tortola, British Virgin Island, 23-24 October, 2000.

duration and involves many activities.<sup>3</sup> There are many countries which have continuous census activities with an overlapping period between completion of the last census and the planning for the next census. The late start of the preparatory activities for the 2000 Round of Censuses may have impacted some Member States, particularly those which were badly in need of technical assistance.

6. The 2010 World Programme on Population and Housing Censuses began on 1 January 2005 and will continue through 31 December 2014 as approved by the United Nations Statistical Commission at its Thirty-sixth Session in March 2005. To avoid some of the difficulties experienced in the 2000 Round of Censuses, to effectively contribute to the global process and to provide the support needed by Member States, the CARICOM Secretariat embarked on planning for the 2010 Round of Censuses as early as possible. The first effort was to organize a CARICOM Population and Housing Census Symposium held 16-17 September 2005 in the Bahamas. Among the main objectives of the Symposium was to provide a forum to discuss the experiences of the 2000 Round of Population and Housing Censuses, with regard to problems, challenges and best practices encountered. It was also expected that the discussions would lead to the early addressing of issues with respect to the planning for the 2010 Census decade by institutionalizing effective regional support and a continuous programme of population research and analysis. The CARICOM Population and Housing Census Symposium provided the basic important framework in the formulation of a strategy for the 2010 Population and Housing Censuses in the CARICOM Region elaborated in this report.

## **1.2 Objective**

7. The objective of this study as mentioned in the Terms of Reference is as follows: “The objective of this activity is to conduct a Project Identification and Feasibility Study to inform a regional Census Strategy. That Strategy will provide effective support for improvement in the approach to the execution of the 2010 Round of Population and

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<sup>3</sup> Principles and Recommendations for Population and Housing Censuses, Revision 1, U.N. Publication ST/ESA/STAT/SER.M/67/Rev.1. New York 1998.

Housing Censuses in the CARICOM Region in order to facilitate sustained improvement and development in the regional and national statistical systems.”<sup>4</sup>

## **2. Cooperation in the CARICOM Region**

8. As mentioned earlier, there has been cooperation among the Member States in the CARICOM Region in conducting population and housing censuses for the past several decades. The regionally-coordinated approach is a well-established and proven strategy to census taking in the Region. The strategy provides for the use of uniform concepts and definitions and a common core of questions on the census questionnaires by all Member States and thereby supports the collection of high-quality comparable data. The strategy promotes technical cooperation and the sharing of census expertise and facilities among Member States and in so doing seeks to achieve the census results in a cost-effective manner. A good deal of “back-stopping” is provided to those countries which do not have sufficient census experience to enable them to achieve credible census results.

9. For the success of the 2010 Population and Housing Censuses, the CARICOM Secretariat and Member States emphasize the importance of continued regionally-coordinated efforts in supporting Member States to plan and conduct the population census project and to maximize the use of scarce census expertise in the region. In addition, CARICOM is also actively seeking technical assistance from international donor agencies and is beginning to plan for the 2010 Round of Population and Housing Census programme. The process began in 2005 with the support of the United Nations Population Fund (UNFPA) to implement activities aimed at project identification and a feasibility study of a CARICOM Regional Strategy for the 2010 Round of Population and Housing Censuses.

10. A detailed Terms of Reference was prepared as shown in Annex 1, and a Consultant was recruited in January 2006. The activity began with the briefing of the Consultant at the CARICOM Secretariat in mid February followed by visits to five Member States, Guyana, St. Lucia, St. Vincent and the Grenadines, Trinidad and Tobago

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<sup>4</sup>Terms of Reference: “Execution of Activity Aimed at Project Identification and Feasibility of a CARICOM Regional Strategy for the 2010 Round of Population and Housing Censuses: Evaluation of the 2000 Round of Population and Housing Censuses in the CARICOM Region- Challenges and Best Practices to Improve the 2010 Round of Censuses”, CARICOM Secretariat, 2005.

and Barbados, aimed at collecting relevant information pertaining to challenges and best practices experienced in the 2000 Round of Censuses. The Consultant reviewed many documents and reports from the past meetings of the Regional Census Coordinating Committees (RCCC), in particular those following the seventh meeting of the RCCC in October 2000, where for the first time support for the 2000 round of censuses was discussed. Unfortunately several reports relating to the RCCC meetings needed for this report were not available. The Report of the CARICOM Population and Housing Census Symposium was also made available. Discussions were held with statisticians at the CARICOM Secretariat and the National Statistical Office (NSO) of the Member States visited. In addition, a questionnaire was administered through the CARICOM Secretariat to the NSO of each Member State; six Member States returned the completed questionnaire, and four others provided relevant documents. The assessment in this report, therefore, has been made based on the available information at hand, and the analysis has been made as objectively as possible.

### **3. Assessment of the 2000 Round of Population and Housing Censuses**

11. The assessment of the experiences in conducting the 2000 Round of Censuses is organized based on the three phases of census operations: preparatory activities, field operations, and post enumeration activities. Within each phase chronological stages of census operations will be followed. In the preparatory activity phase, the following stages will be reviewed: initial census planning and management, consultation with stakeholders, census topics and questionnaire design, census pre-tests and pilot census, and census mapping. During the field operation phase, the stages to be reviewed are: census publicity, personnel recruitment and training, documents distribution and control, and field enumeration and supervision. Finally, for the post-enumeration activities the stages include: document storage and preliminary checking, data capture, data editing, census evaluation, census tabulation, preparation of an administrative report, data analysis, and data dissemination.

## 3.1 Preparatory activities

### 3.1.1 Initial census planning and management

12. The United Nations' Principles and Recommendations for Population and Housing Censuses, Revision 1 states that “a population and housing census is perhaps the single most extensive, complicated and expensive statistical operation, consisting of a complex series of interrelated steps that a country undertakes”.<sup>5</sup> It is further stated that some of the operations may be massive in scale; others require a simultaneous operation throughout the country, and still other operations must be carried out simultaneously and on a massive scale. In view of the complexity of the operations many countries use a minimum of three years before the census date as a general guideline to start the initial planning of the census. Member States which have staff who have been actively involved and have experience in past censuses will definitely have a great advantage over Member States which do not have experienced census planners on their staff.

13. Member States of CARICOM are varied in population size and in the capacity of human and financial resources of their NSOs. The number of staff of the NSO in general is related to the size of the population of the country. Quite a few Statistical Offices in the region are experiencing a high rate of staff turnover; therefore for some smaller countries the number of experienced staff who can be assigned to plan and manage census operations tends to be very limited indeed. Staff without adequate experience will find managing such a large and complex census operation a tremendous challenge which could lead to serious mistakes or overlooked steps in the initial census planning which could have costly consequences, bring about lengthy delays, or ultimately have a disastrous impact on the overall census project. The suggestion has been made that the Secretariat should prepare guidelines on the qualifications of a census director that Member States can adopt.

14. For various reasons, primarily financial resources, the Secretariat efforts in providing assistance to Member States to prepare for the 2000 Round of Censuses were rather late. As mentioned earlier, the seventh meeting of the RCCC held in October 2000 was the first time that CARICOM addressed the assistance for the 2000 Round of

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<sup>5</sup> Principles and Recommendations for Population and Housing Censuses, Revision 1, U.N. Publication ST/ESA/STAT/SER.M/67/Rev.1. New York 1998.

Population and Housing Censuses in the region; at that time many Member States were already making their own plans while five countries had already completed their census enumeration. UNSD records show that CARICOM's experience in implementing the 2000 Round of Censuses is not unique and a number of developing countries, particularly in Africa, were not able to conduct their censuses in the 2000 Round, primarily due to limited availability of international technical assistance.<sup>6</sup> Despite the lack of regional support at the beginning of the 2000 Round of Censuses, it is commendable that all Member States were able to carry out the censuses with relative success.

15. For the overall management in carrying out census operations, Member States have always looked to the CARICOM Secretariat for support and assistance in coordinating the cooperation among Member States. Some Member States do have expertise and experienced staff in census taking as a result of the long history of census taking in the region. This is apparent from some excellent papers presented at the 2005 CARICOM Census Symposium. At this Symposium the participants endorsed a proposal that the CARICOM Secretariat should develop a pool of expertise that various Member States can draw upon for training in an effort to strengthen their national capacity in all aspects of census activities. Valuable lessons can be learnt from the experience of Jamaica's STATIN in overall management planning and the decision making process. The involvement of the private sector in chairing the steering committee and the engagement of a management consultant company to provide assistance and support in various management decisions in census activities were a rather unusual approach but a refreshing one. In view of the change in management and the shortage of time to build up in-house capacity both in hardware and expertise, STATIN decided to outsource several census stages including publicity, printing of questionnaires and data capture. Jamaica's use of private companies in some aspects of the census project is not new, but their execution of proper steps in the bidding process and the selection of appropriate vendors with sufficient transparency and carefully-designed oversights on the part of the Government are excellent examples from which other Member States can learn.

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<sup>6</sup> United Nations Statistics Division (UNSD): "Overview of Population Censuses in Africa 1990 and 2000 Rounds", Paper presented at the Interagency Census Coordination Committee Meeting on Sub-Saharan Africa, New York, 14 September 2004.

16. During the 2000 Round of Censuses CARICOM Member States benefited from assistance provided by the Secretariat, including: a) assessment of the status of the Census maps including GIS capability and actual assistance in the preparation of maps; b) organization by the regional office of the loan of Optical Mark Reader (OMR) equipment and personnel by the Central Statistical Office of Belize to other Member States to assist in data capture; c) utilization of an expert from the Saint Lucia office to give IT advice and support relative to the use of Optical Character Recognition (OCR) scanning process used by some Member States for data capture and editing; and d) assistance from United Nations Economic Commission for Latin America and the Caribbean (UNECLAC) Santiago, Chile of a data processing expert to assist countries in organizing and editing their Census data files. Despite the delayed start, CARICOM was able to provide substantial assistance with limited resources.<sup>7</sup>

### **3.1.2 Consultation with stakeholders**

17. From the discussions held with statisticians in various Member States visited, it is apparent that all NSOs carried out a comprehensive programme for communication and consultation with stakeholders including major users of census data and other institutions or individuals directly involved in census operations. There are two groups of stakeholders which should be consulted. The first group consists mainly of major data users who provide input to NSO on particular census topics; the majority of the members of this group are representatives of government ministries, research institutions and academia as well as private sectors. It appears that Member States established census advisory committees during the planning stage of the 2000 Round of Censuses; generally, these committees were composed of representatives of this group of stakeholders.

18. The second group of stakeholders includes government ministers, members of the legislature, community leaders, representatives of international organizations as well as some private organizations which can become valuable advocates to foster a deeper understanding and support for census plans and activities. This group of stakeholders

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<sup>7</sup> Terms of Reference: "Execution of Activity Aimed at Project Identification and Feasibility of a CARICOM Regional Strategy for the 2010 Round of Population and Housing Censuses: Evaluation of the 2000 Round of Population and Housing Censuses in the CARICOM Region- Challenges and Best Practices to Improve the 2010 Round of Censuses", CARICOM Secretariat, 2005.

includes those who directly or indirectly can affect the successful implementation of the census operations because they have the authority to facilitate various aspects of the census operations, such as funds mobilization through Government budget or technical assistance, legal basis requirements, public education, logistics for census materials, field operations, etc. This second group of stakeholders can also be extended to include all staff within the NSO, as well as members of the mass media and eventually the general public. The better the understanding these individuals and institutions have of the importance of census plans and activities, the stronger their support will be. It is not clear whether advocacy to this group of stakeholders were formally carried out in any of the Member States. However, it is suspected that informal communications with various key stakeholders belonging to the second group were made.

19. It is particularly important that the NSOs emphasize to all stakeholders that confidentiality will be maintained and individual privacy will be safeguarded throughout the census process. Confidentiality has become an increasing concern by many Member States, especially in countries with small populations, where census micro data records might be disseminated or census tables published with cells containing very small frequencies such that the unique characteristics of individual respondents may be identified. The NSOs should make clear to all stakeholders including the general public that not only are all census workers sworn to protect the confidentiality of individual information but also no individual information can be identified through disseminated census results.

### **3.1.3 Census topics and questionnaire design**

20. There have been discussions in the RCCC meetings about questionnaire length, and it was noted at the Symposium that the census questionnaires have been getting longer every decade. Based on the consultant's experience in reviewing many census questionnaires from various countries of the world, it is obvious that many of the 2000 census questionnaires used in the region are longer than average. The main reason for this according to the NSOs is that many smaller countries in the region do not have periodic household surveys, and the population census is, therefore, almost the only instrument which can provide the needed information on a number of topics. In addition, the

Consultant notes that there are many detailed data collected in the census and stored in the database that are not fully utilized. Collecting data on topics which have few users is very expensive indeed, as the questions required will lengthen the questionnaire, which may in turn cause respondent fatigue, and will certainly increase the time and cost to process the data. It will be a challenge to reduce the number of topics in future census questionnaires, but concerted efforts must be made so that the census results can be published much sooner than in the past.

21. From a review of the questionnaires from Member States it is clear that there are a lot more similarities than differences, which may reflect the long-standing cooperation among NSOs in the past. The OECS Member States reached a consensus to utilize a common questionnaire. The cooperation was initiated by the OECS Secretariat, and the St. Lucia Department of Statistics facilitated the process. In early 2000 once a draft questionnaire was developed, it was pre-tested several times in St. Lucia with participation by representatives of some OECS Member States. Achieving a standard questionnaire design was a first priority, and a number of techniques were used to do this. The final format used a personal questionnaire for each individual within the household and a separate household questionnaire. In each country the questionnaire was pre-tested and was submitted to the national advisory committee for their comments. All comments were brought back to the meeting of NSOs of the OECS Member States so that the questionnaire could be finalized. The plan was supported by the CARICOM Secretariat through its representative at that meeting.

22. The other CARICOM Member States, not members of the OECS, each developed its own questionnaire; some used one similar to that used in the 1990 census and others designed a new questionnaire. It appears that the design of many of the questionnaires was more influenced by the type of data capture method that would be adopted than by the requirements for ease of use in the field enumeration and data preparation stages. The data capture method must be considered at the time of the questionnaire design, but unless the field enumerators can easily record the data and properly handle the questionnaires, it is likely that many errors will be generated in the stages prior to the data capture.

### 3.1.4 Census pretests and pilot census

23. It is likely that a census questionnaire will undergo several changes before it is finalized as a result of the outcome of pretests. The pretest of a census questionnaire is essential, particularly when topics or questions are introduced for the first time. While Member States have had the experience of the previous censuses, it is still necessary to test the questionnaire, particularly if there are any changes in the format of the forms or the questions from the previous census. Questionnaire testing does not need to be done on a large scale, but it is important that the testing cover as many of the varied groups of population in the country as possible. The census pretest is generally implemented to provide feed back for specific objectives such as suitability of the intended questions or the formulation of instructions provided to enumerators, etc. In particular, if the language written on the form is different from the language used by the enumerators at the time of the interview, testing of the questionnaire is even more important. Such tests are relatively inexpensive and can be carried out several times before the questionnaire is finalized. Jamaica's STATIN carried out two pretests; the first tested the initial design of the questionnaire, and the second tested the revised questionnaire and the manual instructions. Most Member States tested their census questionnaire; the testing of the common questionnaire used by the OECS members was done collectively.

24. In addition to testing the questionnaire, all aspects of census procedures should also be tested. A comprehensive census test is often called a pilot census. Ideally it should be carried out completely in one or more sizable administrative divisions and should cover the preparatory, enumeration and processing stages of a census. Whenever possible the timing of the pilot census should be in the same month as the planned census enumeration so that the weather and any seasonal factors will be the same or similar as those during the time of the enumeration period. Thus, many countries carry out the pilot census exactly one year before the planned census enumeration. However, some countries in the region may not have such seasonal affects, and therefore they may let other factors determine the timing of the pilot census. The CARICOM Symposium recommended that all aspects of census procedures and instruments should be tested. The results of pilot censuses must be thoroughly evaluated and the lessons learnt from the exercise should be incorporated in the instruction manuals to improve the implementation of the census operation. The report of

the pilot census and its evaluation should be provided to the CARICOM Secretariat and shared with all the other Member States.

### **3.1.5 Census mapping**

25. The importance of census mapping cannot be overemphasized. While all Member States already have census maps from the 1990 Round, these maps need to be updated reflecting any physical changes and developments in the area during the last ten years. Census cartographic fieldwork is a time-consuming operation; some countries may need to begin one or two years before the census enumeration. Updating hand-drawn maps can also take considerable time. It is necessary that the updated ED maps be available three or four months before the census enumeration so that the maps can be copied and distributed to the field and will be available at the training sessions held for supervisors and enumerators. Census mapping activities undertaken too late or with insufficient planning will almost surely result in inadequate map availability for the enumeration. In other regions many NSOs have established on-going activities of updating their maps, particularly in conjunction with other data collection activities, such as household surveys, agriculture census, etc.; this will reduce the amount of work to be done during the population census preparation stage.

26. From various meeting records it is apparent that during the 2000 Round of Censuses some Member States fell behind in their census mapping preparation. Because the mapping fieldwork started too late, some Member States had to resort to using ED maps from the 1990 census without proper updating. This could pose serious problems in the field during enumeration where some EDs could have become extremely large because of new housing developments or may have vanished into non-residential areas. CARICOM should make efforts to assist Member States for the 2010 Census to begin early planning of the cartographic work.

27. Some Member States have embarked on developing digital mapping and applying Geographic Information System (GIS) technology. This should be the goal of all NSOs in the region for future censuses. Those Member States reporting that they acquired the technology and used it in the 2000 Round of Censuses began their GIS development very

early in the census decade. St. Lucia, for example, began their GIS project in 1998. The most important step to begin a GIS and digital census mapping project is to have a qualified key staff member who can manage the project; the project must be supported by the top management with personnel and funding resources. Very detailed guidelines for embarking on such a project are described in the United Nations' Handbook on Geographic Information System and Digital Mapping<sup>8</sup>. Member States should begin collecting both analog and digitized maps as well as the most recent aerial photographs of the country. It was noted that Anguilla, Guyana, Jamaica, St. Lucia, Trinidad and Tobago and perhaps some other States have an on-going project on GIS in preparation for the 2010 Population and Housing Censuses.

## **3.2 Field operations**

### **3.2.1 Census publicity**

28. Census publicity is essential because it contributes to the overall success of the census. The main objective is to create public awareness of the vital importance of the census and to elicit the cooperation of the public in order to facilitate a smooth enumeration period. By increasing public understanding of the purpose of the census, response rates will be improved and higher quality results will be achieved. Publicity strategies should not only be used to dispel any anxiety regarding the purpose of the census, but should also explain the reasons for the various questions in the questionnaires and offer some guidance as to the manner in which these questions should be answered. Key stakeholders, including mass media, which have been sensitized in advance, can assist NSO in these efforts. From the questionnaires sent Member States on the 2000 Round of Censuses which were returned by the NSOs, it appears that all Member States implemented a census publicity campaign using various means and media channels including television, radio, newspapers, posters and stickers, street banners, etc.

29. Some Member States engaged public relation firms to design and produce the advertising and promotional campaign. Many Member States also took advantage of the various census stakeholders such as the national information services, Chambers of

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<sup>8</sup> United Nations: Handbook on Geographic Information Systems and Digital Mapping, United Nations Publication ST/ESA/STAT/Ser.F/79, New York 2000.

Commerce, religious and business organizations such as Rotary Club and Lions Club, schools and many other government and non-governmental organizations to assist in publicizing the census. Some of these stakeholders can play an important role in reaching members of their groups to facilitate census enumeration. For example, there were numerous reports by some Member States regarding refusals or lack of cooperation on the part of the public, particularly in high income areas; many members of the high income group belong to these organizations and therefore these stakeholders can assist in the census operation by organizing publicity programmes specifically designed for the members of their group. By holding frank and open discussions regarding the vital objectives of the census and the assurance by law of the protection of confidentiality of information collected as well as by providing their members with answers for any unsettled questions, these stakeholders may be able to help in reducing the number of refusals.

30. The length of the publicity programmes varied among Member States from one to five months before the enumeration. One Member State organized its publicity campaign after the enumeration to facilitate the counting of those who had been missed during enumeration. Unfortunately, the success of these publicity campaigns is not known since no report was made available regarding the impact of these campaigns; it is recommended that a study be made to determine the impact of the publicity campaigns during the 2010 censuses so that better strategies can be formulated for future censuses.

### **3.2.2 Personnel recruitment and training**

31. During the year when census operations are being implemented, the NSO concentrates its work on the census while maintaining other activities at a lower level. In addition to the core members of the census team, many other staff from various parts of the NSO are assigned to work on the census, particularly near the time of enumeration. Some Member States include retired NSO staff, particularly those who were involved in past censuses. Although many of these personnel are from the internal NSO office, they would still need to be trained in census operations. These staff and the census team could become the master trainers and could assume the role of sub-national coordinators (crew leaders or zone coordinators, etc) in various parts of the country.

32. During the census operation the NSOs needed a lot more additional staff particularly for field enumeration and supervision and sometimes for coding and editing as well. All NSOs in the region are fully aware of the need for good, qualified field staff to be recruited and trained to help carry out the different types of census work. The quality of the personnel recruited will directly affect the quality of data collected. The CARICOM Census Symposium noted that recruitment methods must be as transparent as possible and an adequate level of remuneration must be provided and clearly stated at the time of recruitment. Maximum efforts were made to recruit the most qualified persons for the jobs, but in some Member States a sufficient number of applicants were not always available. Representatives from the ministry of education in one country suggested that school teachers could be excellent census enumerators since they are normally known in the area, may even be the teachers of the children in the households visited, and are very much respected in the community. One other country stated that they used young unemployed workers, as enumerators, but when young male enumerators were assigned to high crime areas, they often gave the wrong impression to respondents when they approached the house. This situation could be remedied somewhat by having each enumerator wear or carry an insignia which clearly identifies the person, even from a distance, as an enumerator. Census badges, census T-shirts or census bags, etc, with the census logo prominently displayed, are some of the items that could be used for this purpose.

33. The majority of Member States indicated that the training programmes consisted of three stages: training of trainers, training of supervisors and training of enumerators. As mentioned earlier these trainers were persons either from within the NSO, former staff or others considered qualified to be trainers. In the OECS States the training of trainers was conducted centrally. The training covered all aspects of census operations including the aims and objectives of censuses, definitions and concepts of the topics and questions in all questionnaires, instructions on fieldwork procedures, mapping and enumeration, supervising procedures, interviewing techniques, etc. It was reported at one of the RCCC's meetings that there were a lot of problems during fieldwork in some Member States where interviewers dropped out of the census exercise when there was heavy dependence on them and a poor working relationship between the interviewers and their supervisors resulted in a negative effect on achieving set targets. The CARICOM Census Symposium noted that the length of the questionnaire and the collection of data that are not always tangibly and

visibly used in the interest of the people providing the information may cause an undue burden on the enumerators. To ensure a smoother enumeration period it is recommended that NSOs recruit and train additional reserved candidates to safeguard the operation from drop outs or under-performing enumerators.

### **3.2.3 Document distribution and control**

34. The volume of census materials to be distributed and returned, in many countries, represents the largest peace-time movement of materials for any single exercise. This includes the materials the NSO received from manufacturers such as printed documents from printers, writing materials, census bags, packaging materials, and many others. These materials need to be repacked in accordance with the size of the field operations in each area or region of the country. Once the enumeration exercise is completed, some of these materials, particularly the census documents, must be returned to the central receiving storage unit of the NSO for further storage and processing. The larger the population and land area of the country, the larger the logistics operation. In some countries the transportation of boxes of census materials were carried out by private contractors or with the cooperation of other agencies. For example, in Trinidad and Tobago the Defense Force's vehicles and officers, together with the technical area supervisors, zone coordinators and field staff, were responsible for transporting and safe keeping the materials prior to the enumeration.

35. There were problems reported during the enumeration period of shortages of census materials in one area and an excess of materials in another part of the country. If there is a shortage, it may not be immediately clear if there is an excess in another area that can be quickly transferred. Estimating quantities of census materials needed not only establishes the volume of materials to be packed and transported, but also provides a key input into the procurement and printing processes. A lack of materials during the enumeration period can have serious consequences as there will not be enough time to print or order additional materials. However, a cost-effective census requires that excessive amounts of materials are not left over, and therefore, estimates should also provide for a reasonable level of contingency. It is therefore necessary to establish the number of items that each census field worker requires to complete his or her tasks, plus a reserve factor. This number will

then be multiplied by the number of census field staff. These estimates may be obtained for each area down to the lowest level of administrative unit or ED from the mapping operation and household listing. Developing such estimates on a spreadsheet will help in varying the requirements so that the quantities can be recalculated quickly. The results will also be useful for packing the materials to be sent to different parts of the country.

36. To keep track of the correct number of the multitude of items needed for a particular area and to ensure that these materials are received on time for the field enumeration require a detailed plan and implementation schedule. In addition, appropriate administrative procedures also need to be devised and followed very closely. These include instructions on the specifications for packing and labeling, dispatch procedures, return shipments, receiving, recording/reporting, as well as various control forms which need to be filled out and signed by the appropriate staff. In some countries different colored markers were used to distinguish the area or zone (e.g. Trinidad and Tobago).

#### **3.2.4 Field enumeration and supervision**

37. Reports submitted by Member States representatives at the RCCC meetings showed that there were many problems during the enumeration phase. These problems included: delayed start of enumeration due to late arrival of questionnaires; relatively large number of call backs and refusals; enumerators' fatigue resulting in a high number of drop outs; respondents' burden; poor working relationships between enumerators and supervisors; difficulties in entering gated communities and other inaccessible homes; refusal by diplomatic community and some missionaries to provide information to enumerators; and finally, problems of enumerating illegal immigrants. These difficulties point out the importance of conducting census pretests and a pilot census, recruitment and proper training of qualified personnel, an effective publicity campaign targeted to various segments of the population, careful consideration of the length of the questionnaire, and effective management of the census materials. In addition, some type of management reporting system should be instituted to quickly resolve any problems that occur in the field.

38. There were major complaints from some census enumerators about threats, abuses, political accusations and point blank refusals which caused some enumerators to withdraw; other enumerators remained but did not display the level of commitment and dedication required under such difficult circumstances. It is hoped that refusals to be enumerated could be overcome by having better communications and consultations and more pro-active publicity by the country's leadership and other major stakeholders as mentioned earlier, e.g. at the level of prime minister or minister, religious leaders and other respected individuals. In many countries foreign military, naval and diplomatic personnel and their family are exempted from detailed interviews for the census, but, if possible, the number of persons in this group should be obtained. For this purpose NSOs need to approach the Foreign Ministry Office to request that they send letters to all diplomatic missions in the country and include a simple form to collect basic information on their personnel and families. There are still other groups which might not be covered in the census for various reasons, such as persons who are living in areas where access is difficult; hopefully the number is very small with little or no impact on the census results.

39. It was also reported by some Member States that the timing of the census turned out to be less than ideal for census enumeration although in some cases it was impossible to anticipate the conflicts that occurred. Some of the problems that arose were the enumeration period coinciding with the general election, violent crime in some areas of the country (in some inner-city community in Jamaica and a jail break in Guyana), weather-related problems such as rain and flooding or threat of hurricane, etc. Some Member States had to extend the enumeration period by several weeks and establish a cut-off point in order to move forward in their census exercise. It would normally seem possible to set the enumeration period so that it does not coincide with a general election period, but in one country the Government kept postponing the election dates until very close to the time of the census enumeration, and it was not possible to reschedule the enumeration period without incurring high costs. Some of the problems described above could be overcome if anticipated in advance, but others cannot easily be solved by the NSO alone.

### **3.3 Post enumeration activities**

#### **3.3.1 Document storage and preliminary checking**

40. In general, Member States followed some of the procedures below with some variations. After completion of the enumeration the census documents were sent back to the census headquarters and documents storage would have been prepared for the processing of the data. In many Member States it is likely that the NSO's present accommodations would not have been sufficient for the extra space needed to accommodate the staff and the subsequent work to process the census. Documents sent from the field and received at document storage would be accompanied by the control forms designed to expedite the checking of the documents. One country reported that although the procedures were clearly in place, the control forms were not properly used to accompany the documents from the field and stop-gap measures had to be instituted. In many cases specially designed boxes with a clearly marked geographic code for each ED were used to store census documents; these boxes were placed on the appropriate shelf based on the geographical coding indicated on the boxes. The document storage should have a master register that records the receipt of the documents from each ED and the movement of the documents during the data preparation and processing stages.

41. The first step is the preliminary checking of the content of the box to make sure that all forms are complete and the ED geographical code on each form is correct, etc. In some Member States this process was also used to tally the number of population from the Visitation Records and the Institutional Household forms to obtain the preliminary population count for early release. Coding and manual editing will follow in the process. Some fields on the form should be checked manually, for example household number, person number and sex of individuals. The most important coding fields are occupation and industries. Some Member States still relied on hiring semi-skilled editors to edit individual questionnaires. The more items collected in the census, the more complicated the editing becomes. Owing to the complexity of the relationships between even a small number of items in the questionnaire, simple checks could not begin to cover all of the likely inconsistencies in the data. Different editors may interpret the rules in different ways, and even the same editor could be inconsistent. The better approach would be to design a set of comprehensive editing rules and do computers editing without erasing the original data on the questionnaires.

### 3.3.2 Data capture

42. The 2000 Round of Censuses was marked by the introduction of a new data capture technology which was image scanning with the use of intelligent character recognition (ICR). At the beginning of the 2000 Round of Censuses many developed countries planned to use scanning devices with ICR software technology for their census; a large number of developing countries in all regions of the world jumped at the opportunity to also use this new technology. Unfortunately, in the CARICOM Region and in many developing countries, there were not many people available who had the expertise in this technology to provide the needed technical support. In addition, since it was a new technology, many errors and deficiencies were encountered; the manufacturer tried to correct the errors and provide updates as the technology was being used. Countries which have sufficient capacity and resources were able absorb these deficiencies without being too affected, but, for some developing countries these problems meant long and costly delays.

43. In the 1990 Round of Censuses, Pearson NCS products like the OMR scanner OPSCAN were used in the CARICOM Region; these scanners had their own proprietary software and had strict specifications for paper quality, color and printing precision. NCS only guaranteed successful reading if the NSO used NCS' printed census form. Software used in the 2000 Round of Censuses were produced by companies like Cardiff's TELEform and ReadSoft's Eyes & Hands and can be used with any digital image scanner available in the market such as Canon, Fujitsu, Kodak, Xerox, etc. The advantage of the new technology is that the scanners do not have the strict specifications like those of the OPSCAN scanner.

44. In the 2000 Round of Censuses two different data capture technologies were used by Member States; these were keyboard data entry and scanning. The majority of Member States used the scanning technology, while The Bahamas, Montserrat, Suriname and Trinidad and Tobago used keyboard data entry. As mentioned earlier two different scanning technologies were used: the NCS OPSCAN system with OMR was used by the Antigua and Barbuda, Barbados, Bermuda, Belize, and Dominica; while digital image scanning with ICR was used by the remaining Member States. Each system has its own advantages, costs, and impact on hardware and software requirements. The CARICOM

Secretariat assisted Antigua and Barbuda in using Belize's OPSCSAN 650 OMR scanning equipment. The equipment was shipped to Antigua and Barbuda then to Dominica to process its census. The CARICOM Secretariat should be commended for successfully securing the agreement of the Government of Belize for the loan of its OPSCAN 650 OMR to be used in reading the census data of Antigua and Barbuda and Dominica. This was an excellent demonstration of cooperation among Member States towards a successful census programme. The efforts and coordination by the Secretariat in promoting cooperation in the region was applauded by the Member States and will be expanded in the 2010 Round of Censuses.

45. The experience in using the image scanning varied among Member States. Many Member States seemed to be able to manage the new technology even though there were some difficulties. For example, one country faced a lot of difficulties in implementing the data capture despite assistance provided by a CARICOM consultant. The Government thought that the cost of the equipment and the software was very expensive and the process was not as efficient as they had originally thought. The NSO procured one Fujitsu 4099D scanners and Cardiff TELEform Enterprise version 7.1 with the licenses for 1 Designer, 1 Reader, 2 Verifiers, and 1 Scan Station. After the visit of the consultant in March 2002 it was recommended that two more TELEform verifier licenses should be acquired if it was intended to complete the census processing by the end of the year. In addition, having only one scanner seemed very risky since any breakdown would stop the work. On the second visit in May 2003, the consultant installed an additional scanner (Fujitsu 4950) and the software TELEform ver.8.0 with two additional verifiers as well as provided further training to the NSO staff including linking of individual and household files. The data capture progressed smoothly from that point. Experiences in using image scanning and intelligent character recognition software were discussed and reported at various meetings of RCCC and at the Census Symposium.

46. CARICOM and Member States were quite fortunate in having the services of Mr. Edwin St. Catherine as an expert in the new data capture technology. Mr. St. Catherine acquired expertise in Cardiff's TELEform by attending the company's training programme and by hands-on application in processing St. Lucia's 2001 Census and the censuses of several Member States as well as by assisting other Member States with their processing.

He has become CARICOM's most knowledgeable resource person in data capture technology and has traveled to many Member States to provide technical support. Mr. St Catherine's reports showed that while some Member States were able to use the new technology after overcoming some initial problems, others were still unable to manage the data capture and faced some difficulties. For example some Member States needed assistance even for upgrading the software or installing the hardware. Those Member States which used the device after the census, for example, to capture household surveys data, gained more experience, and they may be inclined to use the same method in the 2010 Round of Censuses. Those which did not use the device for other purposes after the census because of the lack of qualified personnel in the NSO will need to evaluate which data capture technology they will use for the next census.

47. From the experience of the 2000 Round of Censuses in the region, it appears that the use of image scanners can be cost effective if: 1) there are IT personnel in the NSO who can be trained to be fully independent in designing, operating and maintaining the software and hardware; and 2) there are sufficient needs to use the technology during the intercensal years to capture data for household surveys, agriculture censuses or other data collection activities. If the above conditions cannot be satisfied, the expense of procuring the scanners and the license of the software may not be justifiable. The procurement of scanners and the software can be considered a capital investment, and the cost-saving benefit will come over time when the equipment and software are being used frequently. Member States, particularly those with a smaller number of population, which cannot meet the requirements mentioned above, may either outsource the services to other Member States or private companies or use keyboard data entry for capturing the data.

48. The introduction of new technology in data capture in CARICOM Member States for the 2000 Round of Censuses indicated that the traditional regional cooperation was continuing. The lack of resources at the CARICOM secretariat prevented the Secretariat from doing more to assist Member States particularly during the planning stage and at the data capture and processing stages. Training in data processing held in St. Lucia and the availability of a consultant to visit countries and assist in solving problems were very helpful. On the other hand CARICOM could not provide continuous backstopping of the work for some Member States that needed it the most and which sometimes required a

quick solution. Ideally, at the critical period of data capture and processing, the CARICOM Secretariat should have a full-time census data processing adviser who could troubleshoot problems without waiting for the availability of an outside consultant. The cooperation provided by St. Lucia with other countries, including British Virgin Islands, St. Vincent and the Grenadines, Grenada, St. Kitts and Nevis, Turks and Caicos and Guyana, helped Member States successfully complete their data capture; nevertheless, some Member States were not able to completely clean their data until 2005.

### **3.3.3 Data editing**

49. During the 2000 Round of Censuses many Member States did not have a comprehensive data-editing procedure in place. There were a number of Member States which thought they had clean data files, and yet the census tables still showed the presence of inconsistencies and errors. Efforts to fix these errors in a piece-meal way did not produce satisfactory results. The assistance of Mr. Carlos Ellis of the UNFPA Country Support Team for Latin America and the Caribbean was invaluable in assisting countries to re-edit the data and produce a clean data file. Editing procedures should be developed from the beginning of the census questionnaire design phase and should be a by-product of the cooperation between the subject matter specialists and data processors. During the development phase, editing rules should be tested many times by using data from a pilot census before applying the editing rules to the entire census data file. This was done by The Bahamas and Bermuda data processing personnel when they attended a custom-made data processing workshop at the IPC in Washington; both countries were able to successfully clean their data files.

50. In his presentation at the Tenth RCCC Meeting in 2002 Mr. Carlos Ellis elaborated the nature of CONCOR (Consistency and Correction) programme and IMPS (Integrated Microcomputer Processing Systems)<sup>9</sup>. In his visits to various Member States, Mr. Ellis found that in some countries no editing programme was available. Many Member States were not familiar with computer editing, and in some Member States there was no one familiar with IMPS or CSPro (Census and Survey Processing), the most popular software used to process population and housing censuses. CSPro is a much more expanded

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<sup>9</sup> Report of the Tenth Meeting of Regional Census Coordinating Committee, Grenada, 14-15 November 2002.

Windows-version of IMPS, and while it is still considered to be a work-in progress, the present release of CSPro has a very good census editing component. It is important that all Member States have capacity to use CSPro software.

51. The efforts of the Secretariat in assisting Member States in census editing as a prelude to the data analysis stage is to be commended. As mentioned above, many of the data files which were used as the basis for producing analytical tables had not been satisfactorily cleaned. In some cases the file was not in a format where dynamic editing could be applied and in order to reedit the data, the file had to be converted which required additional time. Further, the development of editing specifications, programming and testing would normally require several man-months of work. The delay in obtaining the final clean census data file in some Member States, in large part, was due to the lack of capacity in data editing.

#### **3.3.4 Census evaluation**

52. Recognizing the importance of census evaluation several Member States carried out various evaluation methods for their censuses. There are two important census evaluations that need to be carried out; the first is the evaluation of various stages of census activities and the second is the evaluation of the census results. Because of the complexities of the census operations, errors of one kind or another can occur in every stage and can have a serious impact on the quality of the census results. Ideally, evaluation of census activities should be established at every stage of activities and should be a part of a quality control and improvement system. The system should include evaluation procedures for the performance of enumerators and supervisors as well as for coders, editors and data entry operators. The procedures should be instituted as an important component of the overall census programme. All of these evaluations and corrections that follow in various stages of census operations will contribute to the improvement of the quality of the census results. Presentations on this subject were made by Grenada and The Bahamas at the CARICOM Census Symposium in 2005 and supported by those Member States present. Experience from the evaluation of census activities will normally become valuable lessons as input to future census planning. Some Member States mentioned in their Administrative Report

various corrective measures that they needed to pay attention to in different stages of census operations for the next census.

53. It is widely recognized that there is no perfect census and that census results contain errors of some sort; therefore, it is important to understand how much error has occurred in a census. There are two different types of errors which need to be evaluated; one is coverage errors and the other is content errors. Three different evaluation techniques were reported at the CARICOM Census Symposium by Suriname; the techniques used were comparison with other independent administrative records, carrying out demographic analysis, and conducting a post enumeration survey. One or more of these methods were implemented by Member States. In particular, with the Secretariat support and coordination, data analysis is being carried out in almost all Member States. Demographic analysis offers a very powerful method, which can explain many issues in both the structure of the population distribution as well as the possibility of under coverage. A wide variety of demographic techniques has been developed and used for census evaluation. Several Member States reported using various independent records and registers to check the completeness of the census enumeration.

54. Several Member States also reported conducting post enumeration surveys in an effort to provide a measure of completeness and to evaluate the quality of the census contents. At the CARICOM Census Symposium, Member States noted the high cost of conducting a PES and the limited value that can be accrued from it. At the Symposium it was recommended that serious consideration be given to doing a PES, but alternative forms of evaluation should be explored before deciding to conduct a PES. Conducting a sound PES is a complex operation which is costly and demands certain technical requirements. Member States should carry out a PES only if it can meet all of the technical requirements and implement the PES according to a set of guidelines, including: a) an appropriate sampling frame and probability sample design must be available; b) appropriate census maps with clear boundaries must be used by both census and PES operation; c) if matching of records will be made, independency between census and PES operations must be maintained; d) for unmatched records, reconciliation visits to respondents must be carried out to see which records are in error. In view of these requirements, Member States which

have not had experience in conducting a PES should not embark on it unless supported by both technical and financial resources.

### **3.3.5 Census tabulation**

55. For the 2000 Round of Censuses the RCCC established a working group on Census Tabulation. The working group was mandated to consider a draft Tabulation Plan submitted by some Member States; this draft was circulated to all Member States to make suggestions for improvement (the Tabulation Plan was shown as Annex III of the Tenth RCCC Meeting Report held in 2002). It is, however, uncertain whether this Tabulation Plan was the final recommendation since it contained some errors and was somewhat confusing. For example, under the heading of institutional population there were tables dealing with non-institutional population. Many Member States produced tables using SPSS software from Access database files. For the purposes of census data dissemination and data analysis UNECLAC set up REDATAM database software in almost all Member States. It was apparent in many situations that the database files used to produce the SPSS tables were not the same version as the files used to produce tables from the REDATAM database. This created difficulties for the analysts.

56. Many of the CARICOM Member States have small populations; it is therefore necessary that each census table prepared be carefully reviewed to insure that confidentiality and individual privacy are maintained. Tables containing cells with small frequencies should not be produced since it might be possible to identify individuals. Efforts should be made either to collapse the categories or remove the unique characteristics that permit the possible identification of individual respondents. In this connection, RCCC at its thirtieth meeting in 2005 discussed the need for a regional guideline in this area.

### **3.3.6 Preparation of Administrative Report**

57. Many Member States prepared an Administrative Report. Unfortunately these reports were not available at the CARICOM Secretariat to be reviewed and studied. The consultant was provided with a pre-publication of the Administrative Report of Trinidad

and Tobago which was very useful in assessing the census operation of that Member State. The Administrative Report of Trinidad and Tobago covered all aspects of the census implementation although each aspect of the census was only briefly described. The focus of such a report should be more on the census work programme and activities particularly those which dealt with issues and challenges during implementation of the project and how such issues and challenges were overcome and less on the technical and methodological aspects which can be documented in a separate volume. Administrative Reports are a very important output of any census programme, and their importance and usefulness cannot be over emphasized.

58. While NSOs are fully aware of the importance of preparing the Census Administrative Report, however, due to the pressure of day-to-day activities which require immediate attention, some NSOs did not give as much attention to this report as they should have. Preparation of the Administrative Report should be assigned to particular staff member or a group of staff members from the beginning of the census operation. In this manner throughout the operation concerted efforts can be made to collect any materials that would be needed to prepare the report. It is often the case that only at the end of the project that a staff member or a team of staff members is assigned to prepare the Administrative Report. Unfortunately, by this time many of the materials needed to prepare the report may not be available and often there is no recollection of what really happened. Member States were urged at the RCCC meeting to accord the appropriate priority to the preparation of their census administrative reports. In the case of the Trinidad and Tobago's administrative report there is a chapter entitled "Recommendations for Future Censuses Emerging Out of the Census 2000 Experience" which describes candidly various issues and challenges that occurred in their 2000 Population and Housing Census and makes recommendations on how to avoid and overcome some of these problems.<sup>10</sup> The recommendations are very valuable for the country as the basis for planning its 2010 Population and Housing Census.

59. If the Administrative Report of Trinidad and Tobago represents the type of report prepared by the Member States for their censuses, then the Member States have met the

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<sup>10</sup> Central Statistical Office of the Ministry of Planning and Development, Trinidad and Tobago: "Administrative and Methodology Report" (Preliminary publication), Port of Spain, 2006

objective of preparing a useful report, although there is still room for improvement. In one of the RCCC Meetings it was recommended that the CARICOM Secretariat prepare regional guidelines including the format, content and the description of what should be included in each chapter of the report. One Member State indicated that at present a CARICOM format for preparing a census administrative report is already available. The CARICOM Secretariat should receive a copy of the administrative report of each Member State and this report should be part of the census collection in the Secretariat Library.

### **3.3.7 Data analysis**

60. A Census Data Analysis Project was initiated by CARICOM Secretariat in 2002 with funds provided by the Canadian International Development Agency (CIDA). The objectives of the project were: a) to strengthen the capacity of CARICOM Member States to undertake demographic analysis of census data; b) to prepare and publish, for users' reference, some identified basic census data; and c) as a result of this data being published, to facilitate more comprehensive discussions on demographic changes occurring in the decade of the 90's so that the impact of these changes can be taken into account in planning for the future<sup>11</sup>. The project would enhance the planning process and stimulate public awareness of demographic issues in the CARICOM Region. The components of the project included: a) support for conducting a regionally-coordinated Demographic Analysis Training Workshop; b) the analyses of the census data which entails preparation and publication of a basic table volume (BTV); c) an analytical National Census Report (NCR); d) preparation of eight (8) Regional Special Topic Monographs (RSTMs); and e) support for holding dissemination seminars at the national level to share the outputs of the Census with key users.

61. To implement this project the Secretariat and RCCC established an Advisory Group on Data Analysis which included representatives from the University of the West Indies (UWI). From the report of the Advisory group to the Tenth RCCC Meeting it was

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<sup>11</sup> CARICOM Secretariat: "Support for analysis of the data from the 2000 round of population and housing censuses in the Caribbean", : Project Document, Georgetown, Guyana, 2002

concluded that the Group made a great start. The work on preparing various analytical reports is still going on as this report is being prepared, and therefore assessment cannot be made at this stage. However, from various discussions during the visits to CARICOM and various Member States, it is understood that the consultants contracted to prepare these various analytical reports will complete them by June 2006. The Secretariat assistance in this area is very important and very helpful as part of the capacity building needed in all Member States. The experience gained through this project should be the basis that can be built upon for the 2010 Round of Censuses.

### **3.3.8 Data dissemination**

62. Until recently, the only method of dissemination involved the use of paper. Because of the variety of media now available, statistical agencies increasingly face a problem deciding which medium to use for various types of data dissemination. Some Member States may no longer be able to afford the costs of producing a large numbers of tables on paper, and some others may not be able to afford the storage cost of printed reports or special tabulations on paper. Increasingly, statistical offices should select their most requested tables for inclusion in printed reports, and relegate other tables to compact disk (CD), digital video disk (DVD) or the internet. Printed publications may show only tables for the whole country, or for the country and its major civil division only. Some tables for major civil divisions might be available only in other media, as would all tables for minor civil divisions.

63. Application of information technology in data dissemination is a very important factor that the CARICOM Secretariat and the RCCC need to give some attention to. This topic had been put on the agenda of the RCCC Meetings in the past, and there have been many discussions on this issue. All Member States have internet sites for dissemination of general and statistical product information. The websites have been very useful to inform the general public regarding their census programme and activities. It is only natural that this media should also be used to disseminate census results. Many discussions were held on improving the presentation of census results through this media, including how to provide services so that data users can directly extract census tables using interactive online queries from the website and how to incorporate digital maps with layers of various

characteristics of the population or housing from the census. This development obviously requires certain capability which needs to be built up in the NSOs. The same care must be taken in disseminating census data electronically as that taken in preparing printed tables to ensure that confidentiality and individual privacy are maintained with no exceptions authorized. Support for holding dissemination seminars at the national level to share the outputs of the Census with key users has been included in the Data Analysis Project.

64. NSOs should make special efforts in publicizing the availability of census results through the same media used in the pre-enumeration and enumeration stages. In addition to disseminating the census results through the internet sites, some Member States also reported having radio and TV programmes, distributing flyers as well as face to face meetings with stakeholders and potential data users. These efforts will be paying off in the long run and particularly for preparation of the 2010 Round of Censuses.

## **4. Proposed Regional Strategy for The 2010 Population and Housing Censuses**

### **4.1 National census planning and management**

65. From the discussions with data users in various Member States visited, in particular with representatives from Governments agencies and ministries, Women's Organizations and Non-Governmental Organizations (NGOs), censuses are still considered the most important source of information to guide them in formulating their policy, and the planning and management of programmes in various social and economic areas. The principal population and population-related problems in the Region which were highlighted in the project document prepared for the 2000 Round of Censuses are still relevant for the 2010 Round of Censuses;<sup>12</sup> these are:

- a. A high and still-rising level of unemployment, particularly among youths, and underemployment;
- b. Inadequate and poor quality of housing, particularly in urban areas;

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<sup>12</sup> CARICOM, Project Document, "Regional Support for the 2000 Round of Population and Housing Censuses". CARICOM Secretariat, Guyana, 2002.

- c. Inability to meet the population's aspirations for educational opportunities, particularly at the secondary and tertiary levels;
- d. Continuing high levels of emigration of skilled and highly trained workers and the repatriation of illegal emigrants;
- e. Inadequate nutrition, particularly among children of school and pre-school ages, a problem aggravated by the severe shortage of foreign currency in many of the countries;
- f. Deteriorating public health services in a number of the countries because of economic and management constraints;
- g. The rapidly increasing incidence of HIV/AIDS transmission, its high prevalence among youths and the associated high mortality among the 15-25 years age group; and
- h. Especially high and increasing mortality from certain other diseases such as diabetes, hypertension and a number of occupation-related diseases. Deaths from vehicular accidents are also high and on the rise.

66. The commitment of CARICOM Member States to achieve the United Nations Millennium Development Goals (MDG), declared at the Millennium Summit in 2000, requires the close monitoring of the progress being made. All of the above-mentioned population issues are included in the MDG. At its Thirty-seventh Session of the Statistical Commission held in New York in March 2006, it was recognized that the 2010 Round of Population and Housing Censuses is one of the very important initiatives that must be successfully implemented to improve the production of MDG indicators.<sup>13</sup> It is therefore vital that the 2010 Round of Censuses in the CARICOM Region be planned and implemented with extreme care so that reliable data needed for indicators on the progress toward the achievement of the MDG by each Member State can be made available in a timely manner. Member States will again look for support and coordination by the CARICOM Secretariat to successfully plan and implement the 2010 Round of Censuses.

67. For the 2010 Population and Housing Censuses in the Region all Member States should be urged to start their planning as early as possible. It is recommended that Member

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<sup>13</sup> United Nations Economic and Social Council: "Report of the friend of the Chair on Millennium Development Goals Indicators", Statistical Commission, thirty-seventh session, E/CN.3/2006/15. United Nations, New York 7-10 March 2006.

States which are planning to conduct their Census in 2010 begin their planning in 2006. As soon as possible each NSO should appoint a Census Officer to be assisted by a few support staff. The Census team should prepare the National Census Project Proposal containing resource requirements for the census including personnel, materials, office space, budget, legislations, etc. The project proposal should include a preliminary time schedule which should include the timing of some major events (miles stones) such as, formation of advisory and technical committees, census mapping operation, when and how long consultations with stakeholders should be conducted, when the census questionnaire should be ready, training period, enumeration period, period for data processing, and the dates when various census results should be published. This broad time table can be refined as the project is intensified, more activities are to be implemented, and more personnel are added.

68. Member States which have IT and management information system capacity could develop and apply a project management system to monitor and manage census operations, which can be considered a single project. However, due to the complexity of the operations, census operations can be broken down into a series of interrelated projects that are dependent on one another, e.g. planning, preparation, field operations, data processing, dissemination and evaluation. Each of these projects will have a goal that needs to be achieved, and each project will have phases, and each phase will consist of various activities. From the beginning it is important to note the relationships between phases as well as between activities within the various phases. There are certain phases or activities which can only be started after other phases or activities have been completed. An activity will be completed when all the tasks of that activity have been finished and delivered. The framework should be hierarchical and similar to applications that can be found in most project management text or software. While this application may not be suitable for all Member States, for those which are interested, willing to commit resources, and willing to follow through on the required project monitoring, there will be invaluable benefits. The Australian Bureau of Statistics applied such a management system during their past census and an example of their census project time table which details all relevant steps is shown

in Annex II of the Handbook on Census Management for Population and Housing Censuses (United Nations, 2000).<sup>14</sup>

69. To strengthen the management capacity in carrying out the next census in Member States, there is a need for census management training. This training should be directed to senior staff of the census office who will be either directly or indirectly responsible for making decisions on issues related to the census planning and operation. Such training will also be needed by NSOs which may be experiencing management transition in the near future and are interested in providing training to one of the most senior staff. The training should include all aspects of census planning, management and implementation. The United Nations' Handbook on Census Management for Population and Housing Censuses can be used as one of the training materials. The duration of the training is two weeks, provided resources are available. The training can be conducted by a regional advisor on census and demographic statistics, as proposed in this document, assisted by one or two consultants.

## **4.2 Census mapping**

70. Many Member States experienced delays in preparing the maps for the 2000 Round of Censuses. A detailed assessment of the status and need for assistance in census mapping of Member States should be carried out as early as possible. Because of staff changes, some Member States may need assistance in basic census mapping operations from collecting basic topographic maps, forming and mapping census enumeration districts, drafting and updating ED maps, to using ED maps in the field. Some other States may be ready for the development of digital mapping and the application of geographic information systems technology. Whatever level of assistance a Member State will need, technical backstopping and advisory services will be required. It is envisioned that a census mapping advisor will be required for at least 12 months. This advisor, once recruited, will be able to carry out missions to countries that need the most assistance in this area at the beginning of the census planning stage.

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<sup>14</sup> United Nations: Handbook on Census Management for Population and Housing Censuses, United Nations Publication ST/ESA/STAT/SER.F/83, New York, 2000

71. Member States will start their census mapping efforts on the basis of the existing status of available maps, staff capacity, budget, and amount of time remaining before the census enumeration begins. The assessment of census mapping proposed above will help in deciding whether an organized training programme in basic census cartographic mapping will be needed or whether it would be more effective to assist the Member States by in-country training through advisory missions. However, training workshops on digital census mapping and development of GIS databases should be organized, and for many of the Member States, this will mark the beginning of a long term investment for future censuses. The participants of this training should be staff members who already have a background in census cartography from the past censuses. The training should include hardware and software requirements, conversion of map information to digital database format, digitizing, scanning, editing of GIS databases, map product design (e.g. ED maps, supervisory maps, community maps, thematic maps), etc. A detailed course outline will be prepared by the Census Mapping Advisor who will be the primary trainer assisted by a consultant.

#### **4.3 Harmonization of census topics**

72. As discussed in the assessment of the 2000 Round of Censuses, the census questionnaires used by most Member States are extremely long; the length of these questionnaires impacts the collection of information in the field and the editing and cleaning phase of the data processing stage. A serious review of the topics to be collected in the census should be conducted as soon as possible. Moreover, a consensus was reached at the RCCC Meetings that there should be harmonization of either the questionnaire or core questions among Member States for the 2010 Round of Censuses. Harmonization in these areas will definitely help Member States both in terms of saving in financial and technical staff resources as well as in preparatory time. In order to achieve harmonization in census topics, it is recommended that the RCCC establish a working group consisting of 4 or 5 experts representing Member States with the coordination of the CARICOM Secretariat. This working group will be assigned to draft a Proposal for Census Harmonization in the CARICOM Region. The Group can do much of the work electronically, but should probably meet in person twice to finalize the proposal. The proposal will then be submitted to RCCC at its next meeting.

73. While it will be the responsibility of the working group to decide what is best for the region, one possibility might be to propose a series of coordinated adoptable options:

- a) Agree on a set of common census topics that all Member States must adopt. Each Member State can add additional topics specific for its country on its questionnaire.
- b) Agree on common questions for the common topics mentioned in a), which include the precoded answers under each question.
- c) Agree on a common questionnaire covering only the agreed common topics. It will be necessary to leave some space in the common questionnaire for each country to add additional questions.

Some Member States may adopt the recommended common questionnaire; this will reduce the time needed to prepare the questionnaire as the design will be complete and only the printing will need to be done. Other Member States may only agree to accept the common questions but would prefer to design their own questionnaire. A third group may agree to accept only the common topics and will design their own questionnaire; the questions in each topic may be different from those in the common questionnaire. All Member States should agree on the concepts and the definitions of each item within each topic. Once the common questionnaire and common questions are agreed upon by the RCCC, the CARICOM Secretariat will also coordinate the work on preparing common concepts and definitions, instruction manuals for enumerators and supervisors, etc. In addition, it will also be necessary to prepare regional standard classifications of various variables including occupation, industry, education, etc.

74. From the census questionnaires available for review for this report, the common topics collected by CARICOM Member States during the 2000 Round of Censuses were as follows:

### **I. Population topics**

#### Demographic, social and fertility characteristics

- 1 Relationship with the head of household
- 2 Sex
- 3 Age
- 4 Ethnic group
- 5 Religion

- 6 Marital /Union Status
- 7 Age at first marriage/started living in union
- 8 Number of live births
- 9 Age of first live birth
- 10 Number of children still living
- 11 Number of live/still births past twelve months

#### Disability characteristics

- 12 Type of disability
- 13 Impairment and handicap in doing certain activities
- 14 Causes of disability

#### Residence and migration characteristics

- 15 Place of birth
- 16 Locality/country of birth
- 17 Previous residence in another country
- 18 Country of last residence
- 19 Commencement of present residence in country
- 20 Locality of last residence in country
- 21 Year of commencement of residence at present location

#### Educational and training characteristics

- 22 Attendance at school/university
- 23 What type of school/university attended
- 24 Highest level of education attained
- 25 Training received for specific occupation
- 26 For which occupation was training received
- 27 Length of training

#### Economic characteristics

- 28 Economic activity during past week
- 29 Employment status during past week
- 30 Main occupation and job title
- 31 Industry and type of business during past week
- 32 Office address
- 33 Hours worked during the past week
- 34 Main activity during past twelve months
- 35 Main occupation during past twelve months
- 36 Main industry during past twelve months
- 37 Number of months worked
- 38 Gross Income

## **II. Housing topics**

- 39 Type of building

- 40 Material of outer-walls
- 41 Materials of roofing
- 42 Year built
- 43 Type of dwelling unit- (undivided private house, part of private house, flat, barracks, etc.)
- 44 Type of tenancy - (owned, rented, leased, squatted, etc)
- 45 Land tenancy status
- 46 Water supply
- 47 Toilet facilities
- 48 Lighting
- 49 Fuel used for cooking
- 50 Disposal of waste/garbage
- 51 Number of rooms
- 52 Number of bedrooms
- 53 Ownership of appliances including a computer/access to Internet

Since not all of the questionnaires of Member States are available for review, there may be some topics listed above that one or more Member States did not have in their questionnaire.<sup>15</sup>

75. Before reviewing the above mentioned topics for suitability to be included as the common topics for all Member States for the 2010 Round of Censuses, it will be necessary for the RCCC working group on harmonization to develop a set of rules and guidelines which may include:

- a) Is the topic of major national importance, e.g. for policy, administration, research, etc;
- b) Is there a need to present the topic at the lowest geographical level (e.g. ED); otherwise, can a household survey provide the same information and, therefore, not burden the census;
- c) Is the topic suitable for collection through the census; for example, can the data on disability provide reliable information to serve the needs of national programmes for disabled population in the country; how reliable is the income data collected from the census as compared to data collected through an income and expenditure survey;
- d) Are there sufficient resources available to collect such topics; and
- e) Do the data allow for regional and international comparability.

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<sup>15</sup> During the initial review of this report a comment was received from Suriname noting that 22 out of the 53 items listed above were not included in the 2004 Suriname Population and Housing Census. These are items numbered: 7, 11, 12, 13, 14, 17, 18, 19, 21, 25, 26, 27, 33, 34, 35, 36, 37, 40, 41, 42, 45, and 53.

The above guidelines may also help in the effort to reduce the length of the questionnaire as mentioned earlier.

76. As has been emphasized in the assessment of the 2000 Round of Censuses, it is recommended that all census questionnaires should be pre-tested before being finalized. Any issues related to the design of the questionnaires, sequence of the questions or the way a question is asked to the respondents should be carefully evaluated. The results of census pretests will become invaluable input into the final design of the questionnaire and the development of instruction manuals for enumerators and supervisors.

#### **4.4 Printing of census documents**

77. The printing of questionnaires and other census documents can be a daunting task. In the 2000 Round of Censuses there were varied means of printing the questionnaires among Member States from printing in house, to outsourcing to a printing company in the country to outsourcing to a printing company out side the Region. As mentioned earlier, in certain situations the required printing quality depends on the type of data capture that will be used to transfer the data to digital form. For the 2010 Round of Censuses it will be necessary to investigate the different printing needs of Member States, and it is recommended that CARICOM Secretariat coordinate, if possible, the negotiation of an agreement with regional or international printing company or companies on behalf of all Member States. There are excellent printing companies in the region e.g. in Jamaica and in Trinidad (such as Moore in Jamaica which was used by STATIN). In the 2000 Round of Censuses OECS Member States printed their questionnaire in the US and Guyana printed its questionnaire in Brazil. If harmonization of the questionnaire can be agreed upon, it is possible that the questionnaires can be printed by the same company for multiple Member States and that the resulting high volume may bring about reduced costs for each Member State.

#### **4.5 Field operations**

78. As in the case of the 2000 Round of Censuses, in the 2010 Round each Member State should carry out a well-designed and well-executed publicity campaign on the

objectives of the census to clarify any misunderstanding that may exist and to obtain cooperation from the general public during the enumeration stage. All the existing channels of communication should be utilized to reach everyone in the country with the primary goal being that every household should be expecting a visit from a census enumerator during the enumeration period. During the census enumeration an evaluation survey may be conducted with a sample of respondents using a simple questionnaire to measure the effectiveness of the publicity campaign. The results of such an evaluation survey may be used as input for the design of future census publicity campaigns.

79. There are many lessons that can be learnt from the problems faced by many Member States during the field operation in the 2000 Round of Censuses. It is recommended that during the planning and preparation stage of the 2010 Round of Censuses the management team of Member States compile a list of all possible problems that could arise during the census enumeration including those faced in the past censuses (see e.g. paragraph 37). First of all, it is recommended that each Member State carry out a pilot census to test the overall elements of the census operation, including recruitment of personnel; field organization at various levels; enumeration, supervision and quality control procedures; technical and administrative problems that may arise during enumeration; logistics and document control; data preparation, coding and editing; data capture; computer editing; and tabulation. Secondly, the pilot census results should be thoroughly evaluated and the findings should be incorporated into the instruction manuals for all census personnel before the census enumeration begins. Once the census enumeration has begun, generally it is almost impossible to modify existing procedures or introduce new procedures that can be uniformly implemented throughout the operation.

80. The culmination of the long and meticulous planning takes place at the enumeration stage. Prior to enumeration, all field personnel should meet with the area census coordinator in a designated place to receive census materials and to discuss the field operation plans for that day and subsequent days. They should also agree on the place and time for each supervisor to meet with enumerators under his/her supervision for discussions of issues, if any, and submission of progress reports. The supervisors are expected to canvas all EDs with enumerators under his or her supervision following the

maps provided. Once all EDs have been canvassed, and it is clear that each enumerator understands the boundaries of his/her ED, and the supervisor has verified that there are no overlapping or omitted areas, the enumeration will commence, and the supervisors are required to monitor and carry out their duties in accordance with the instructions given in the manual. This monitoring is critical during the first few days of the enumeration so that any misunderstanding can be quickly clarified and any errors made during enumeration can be corrected before becoming too serious.

#### **4.6 Data capture**

81. Data capture is one of the most important stages where assistance from the CARICOM Secretariat is needed by Member States in making their decision on which technology they will use. Member States which successfully used the image scanning and ICR technology in the 2000 Round of Censuses will most likely utilize these again for the 2010 Round. During the 2000 Round of Censuses the technology underwent very serious testing in processing the census and the upgraded version of the technology will surely be available soon which will make it a mature and stable technology for use in the 2010 Round of Censuses. All OECS member States used this method in the 2000 Round of Censuses although with different degrees of success. There were also Member States which successfully used this method by outsourcing their data capture (e.g. Jamaica, Turks and Caicos). Based on the RCCC report and discussions with Member States, it is still quite possible that this technology can be used beneficially by Member States in the 2010 Round.

82. Another data capture option for Member States, particularly those with smaller populations, is the use of keyboard data entry. This traditional method could still be a viable option since the cost of the personal computers (PC) has become less and less expensive in the past 10 years or so, and in countries where the unemployment rate is relatively high, labor costs will be low; these factors could reduce the overall data capture cost. If this option is selected, it is recommended that CSEntry, which is a data entry module of CSPro, be used as the software for entering the data. CSPro is a free software package which can be downloaded or obtained from the US Bureau of the Census. CSEntry is considered a relatively easy-to-learn module that does not necessitate a formal training course. Another option for data capture is a hand-held device; the use of this device is not

cost effective and the technology has not yet been proven for use in large-scale data collection and in all types of environments such as census operations. It has been shown to be effective for much smaller scale operations like household surveys.

83. The cost of using image scanning technology could still be relatively high for Member States with smaller populations, e.g. less than 150,000, and in particular, if they do not have other applications in which to use the device during the Intercensal period. For any Member State to use this technology, it should procure at least two scanners and two licenses for the software Verifiers in order to have backup equipment should there be a break down. In addition, the NSO must have qualified technical staff who can be trained to manage the process. Member States which do not have qualified staff but have the financial resources to outsource the data capture may still use this option, but, these States will not gain any capacity building from the exercise. A cost and benefit study could be undertaken in order to assist Member States in their decision making process. One such study was made by Mr. Harold Wall specifically for Trinidad and Tobago<sup>16</sup> in 2002, when the technology was still at an infancy stage. A consultant on data processing can be requested to prepare a comprehensive study to be reported to the RCCC and CARICOM as early as possible.

84. Since it is likely that a sufficient number of Member States are going to use the image scanning for their data capture in the 2010 Round of Censuses, special training in this technology should be organized. This training should also be in the form of a workshop for the application of TELEform (or in certain cases Eyes & Hands) software and would require about two weeks. The objective of the training is to train qualified participants from Member States to become confident in many important applications of TELEform (or Eyes & hands). The training will cover questionnaire design; printing; scanning; advance linking of different types of forms, e.g. person and household forms, etc.; merging databases; multi-user systems; TELEform programme related issues such as building edit checks, etc. The training could be provided by a data processing advisor whose recruitment is proposed later in this document; for this training he/she should be assisted by one or two consultants.

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<sup>16</sup> Wall, Harold: Reengineering of census data collection and processing methods. Scan-base information system technology. July, 2002.

85. The CARICOM Secretariat can also assist Member States in dealing with both the hardware and the software companies with the hope that it may be able to gain a favorable price or services due to a higher volume. To provide backup support to Member States it is recommended that CARICOM procure two scanners and a small TELEform system with one license. This equipment can be used to backup Member States which have only one scanner, to process the census for Member States with smaller populations, and to facilitate training sessions. The coordinated efforts will strengthen the position of the group and alleviate the pressure on the Member States.

#### **4.7 Census editing and tabulation**

86. Building capacity in editing and tabulation is also necessary for all Member States. The purpose of editing in censuses is to discover omissions and inconsistencies in the data records, and to use logical imputation to correct them. Computers can detect many more inconsistencies than manual editing can. Census publications are likely to contain a certain amount of meaningless data if the data are not edited properly. The product of the exercise is a clean micro data file for tabulation, containing acceptable and consistent entries for all applicable items, for each housing unit and person enumerated. It is however necessary to keep in mind that the edited data should be as nearly representative of the real situation as possible. Editing or cleaning of data will therefore reduce distorted estimates, facilitate data processing and increase user confidence<sup>17</sup>.

87. From the experience of the 2000 Round of Censuses there have been many Member States which expressed interest in having their staff trained in census editing. It is highly recommended that a regional training workshop in census editing and tabulation be organized for the Member States. The duration of this training would be about two weeks and would include the following topics: the logic of census editing, manual vs. computer edits, dynamic editing, structure edits, editing of population topics, editing of housing topics, and census tabulation. In this course relevant applications of CSPro software to census editing and tabulation should also be presented. The course should be given by an

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<sup>17</sup> United Nations: Handbook on Population and Housing Census Editing, United Nations Publication, ST/ESA/STAT/SER.F/82, New York, 2001.

expert who is proficient in both data processing and the subject matter. The participants of this training course are encouraged to use their own sample of micro data from pilot census from their own country. Ideally, the course should be conducted at the early stage of census planning as soon as the questionnaire is nearly finalized and has been tested in a census pretest or pilot.

#### **4.8 Data analysis**

88. The experience in the coordinated efforts of data analysis by the Secretariat for the 2000 Round of Censuses can be used as the basis for developing a similar project for the 2010 Round of Censuses. The training carried out in the 2000 Round of Censuses has undoubtedly increased the capacity of Member States and hopefully will enhance the ability of Member States in preparing many aspects of analytical Census Reports. It is envisaged, however, that even though Member States will have better national capacity than in the past, the assistance of a team of regional experts on data analysis will still be required. It is also recommended that regional training sessions on census data analysis again be carried out for the 2010 Population and Housing Censuses in the Region. In addition, a dissemination seminar should also be conducted in each Member State at the end of the data analysis project and after the National Census Report is available.

#### **4.9 Coordination mechanism**

89. In the 2000 Round of Population and Housing Censuses, the CARICOM Secretariat played a very active and important role in supporting Member States, even though its start was a bit late. Population and Housing Censuses are the most important source of statistical information on the social and economic condition of the population which is vital for national development as well as for support of regional programmes including the Caribbean Single Market Economy (CSME) which was recently launched. The role of the Secretariat in an effort to provide support for regional activities has been carried out by the Statistics Sub-Programme and represented by the Programme Manager and the Regional Census Coordinator. In carrying out the regional population and housing census programme the Secretariat is assisted by the Regional Census Coordinating Committee (RCCC) which was established during the 1990 Round of Censuses. The RCCC

membership consists of representatives from Member States, who normally are either the Census Officers or Census Directors and representatives from other relevant regional or international organizations. The Regional Census Coordinator is the Chair of the RCCC.

90. The arrangement above seems to have worked thus far. To face the 2010 Round of Censuses, RCCC roles should be strengthened. It is recommended that RCCC be given more responsibility in assisting the CARICOM Secretariat in shouldering some of the burden in terms of providing continuous consultations with the Regional Census Coordinator. Under this proposal the Regional Census Coordinator should not be the ex-officio Chair of the RCCC but should become an equal partner in implementing a regional census project. It is proposed that RCCC be led by a Chairperson and two Vice Chairpersons elected from Member States. The terms of office of the RCCC leadership can either be one or two years depending on the consensus of the members, and if necessary a person can be reelected. The CARICOM Secretariat, i.e. the Statistics Sub-Programme Manager and the Regional Census Coordinator, will act as the secretariat of the RCCC as is now the case. It has been mentioned that a Project Implementation Unit (PIU) will be established in the Secretariat supported by a reasonable number of staff. It is proposed further that the Regional Census Coordinator be the Project Manager of the Unit under the direction of the Statistics Sub-Programme Manager. RCCC leadership will have an advisory and oversight role in the implementation of the project, so that the burden of responsibility for the success of the project is not totally that of the Secretariat but will be shared by the RCCC leadership representing the Member States. It is recommended that the RCCC leadership and CARICOM Secretariat meet annually to review the regional project implementation and, if necessary, take corrective action.

91. During the initial review of this document, one reviewer noted that there has been an agreement at a RCCC meeting that the Regional Coordinator should be more centrally located in the Region (Unfortunately, the RCCC meeting report noting this agreement was not made available to the Consultant). Naturally, there are advantages in centrally locating the Coordinator, such as travel time and transportation cost. However, some additional overhead costs will be incurred, which have not been provided for in this proposal, such as office space, office equipment, support staff, etc. These overhead costs are normally borne by the implementing agency, in this case CARICOM Secretariat.

#### **4.10 Project personnel**

92. To implement the project, it is recommended that the Project Manager be assisted by one administrative and one technical support staff. These staff can either be drawn from the existing Secretariat personnel or recruited with the cost built into the project. In addition, the Unit will be assisted by one or two regional advisors at a time depending on the stage of the census operations in the majority of the Member States and the type of expertise needed.

93. At the beginning of the project an Advisor on Censuses and Demographic Statistics (CDS) will be needed. It is proposed that the CDS advisor be recruited for a period of 18 months. One of the advisor's primary functions will be to assist the project in census planning in all Member States. The CDS advisor will be responsible for working on the harmonization of census topics on behalf of the Secretariat and consulting with the RCCC leadership and the Working Group on Census Harmonization to help prepare the draft Proposal for Census Harmonization in the CARICOM Region. The CDS advisor will also be responsible for drafting the common questionnaire and instruction manuals as well as working on the harmonization of the regional classifications. The advisor may also be requested to visit Member States to assist in their census planning.

94. Advisor on Census Mapping and GIS (CMG) will be needed to overlap with the CDS advisor. The CMG advisor will be needed for about 12 months and will be assigned to assist Member States in the planning of census mapping activities. At the beginning of the assignment the advisor should make a needs assessment study for all Member States and prepare a training programme. The advisor will also be responsible for the organization of training in digital mapping and GIS so that Member States which have not had the opportunity to implement digital mapping and GIS activities will be able to begin this project. A short term consultant may be needed to assist the advisor in this training. Among this advisor's other responsibilities will be to train census cartographers of the requesting Member States and to prepare a CARICOM census mapping guideline or manual. This manual will be very useful for future censuses as well.

95. In the area of data processing, short term consultancies will be needed early in the census planning stage to provide inputs in questionnaire design, planning for data capture, and other related planning activities. After the census enumeration an Advisor on Data Processing (DP) will be required for a 24 month period. The DP advisor will be primarily responsible for assisting Member States in data capture, editing, cleaning and tabulation for both publication and analysis purposes. The DP advisor will be responsible for maintaining the data processing equipment at the Secretariat and providing backstopping and back up support to any Member State which requests the assistance. The DP advisor will also be responsible for organizing training on data capture and on census editing and tabulation. For both of these training sessions, short-terms consultants will need to be recruited to assist in lecturing on specific topics. In addition the services of consultants on various aspects of IT, such as census data bases, internet development, and data dissemination etc. will also be needed. Some of these services can also be provided by UNECLAC and the UNFPA Country Support Team for Latin America and the Caribbean.

96. While data processing is being carried out in the majority of the Member States, preparation for writing the census reports and data analysis should begin. The 2000 Round of Censuses model of the data analysis project should be evaluated, and if Member States are satisfied with the majority of the aspects of the project, similar arrangements could be followed with some necessary improvements. The project staff, the advisors and consultants will form the core of the Secretariat team in support of the census operations in the Member States.

#### **4.11 Regional training programme**

97. In some NSOs it is a reality that senior or technical staff have retired, been promoted or moved to other carrier paths which leaves the office with a very limited number of less-experienced personnel. With the high rate of staff turn over in some NSOs of some Member States, there will be a need for continuous training in almost all aspects of census operations, while for some other Member States the need will be mainly for specialized training in certain aspects of the census operation. While it is true that the CARICOM Secretariat cannot fulfill every need of Member States, a balance should be found with the available resources to provide the most appropriate support. As described

earlier, from the experience of the 2000 Round of Censuses, there are urgent needs for training in the following areas: a) census management, b) census mapping and GIS, c) data capture with image scanning, d) census data editing and tabulation, and e) data analysis; in addition data dissemination seminars should be organized in each Member State. The training methods and detailed contents of these training programmes will depend on the requirements of Member States. Workshop-type training programmes could be more effective for many of the above topics. The training should also be conducted at the most appropriate time in line with the timing of census activities of the majority of the Member States.

98. There has been feed back that some of the regional training sessions organized in the past may not have achieved their objectives. Several reasons were given for this; below are some of them:

- a) The training objectives may not have been clear and/or the material may not have been well prepared.
- b) The instructors may not have been as familiar with either the situation in the region or the background of the participants as they should have been.
- c) Some of the trainees may not have been qualified or were not the responsible persons in the subject area of the training. Often when the right person was not available Member States sent anyone available in the office.
- d) Screening of the participants in advance of the training was not properly done.

It is very important that training be prepared well in advance, and the qualifications of the participants be clearly stated in the announcement of the training session. Participants should be asked to submit information regarding their background qualifications, present job, responsibilities, prior experience, etc. in advance of the training so that selection of appropriate participants can be made. While training is very important for Member States, it is also very expensive. Therefore, it is vital that proper planning, preparation, and implementation be made for all training programmes.

## 4.12 Summary of Recommendations

99. Numerous recommendations are given above in the proposed Regional Strategy for the 2010 Population and Housing Censuses. For ease of reference a summary of these recommendations is given below including the relevant paragraph:

### Census planning and management

- a) All Member States should be urged to start their planning as early as possible. Member States which are planning to conduct their Census in 2010 should begin their planning in 2006 (para. 67).
- b) The Census team should prepare the National Census Project Proposal containing resource requirements for the census including personnel, materials, office space, budget, legislations, timing of major events, etc. (para. 67).
- c) Development and application of a project management system to monitor and manage census operations could be considered by Member States which have capacity in IT and management information system (para. 68).

### Census mapping

- d) A detailed assessment of the status and need for assistance in census mapping of Member States should be carried out as early as possible (para. 70).

### Harmonization of census topics

- e) In order to achieve harmonization in census topics, RCCC should establish a working group consisting of 4 or 5 experts representing Member States to draft a Proposal for Census Harmonization in the CARICOM Region (para. 72).
- f) All questionnaires should be pre-tested before being finalized (para 76).

### Printing of census document

- g) CARICOM Secretariat should lead and coordinate the negotiation with regional or international printing company or companies on behalf of all Member States to print the census questionnaires and other forms (para 77).

### Field operations

- h) Each Member State should carry out a well-designed and well-executed publicity campaign (para. 78).
- i) An evaluation survey should be conducted to measure the effectiveness of the publicity campaign (para. 78).
- j) During the planning and preparation stage of the 2010 Round of Censuses the management team should compile a list of all possible problems that could

arise during the census enumeration including those faced in the past censuses e.g. those mentioned in paragraph 37 (para. 79).

k) Each Member State should carry out a pilot census to test the overall elements of the census operation (para. 79).

l) The pilot census results should be thoroughly evaluated and the findings should be incorporated into the instruction manuals for all census personnel before the census enumeration begins (para. 79).

m) On the first day of enumeration the area census coordinator should meet with all field personnel in his/her area to discuss the field operation plans, enumeration area assignments, reporting and monitoring procedures (para. 80).

#### Data Capture

n) Image scanning technology should be used for capturing the 2010 census data in some Member States, and keyboard data entry should be considered as a viable option for some other Member States, particularly those with smaller populations (paras. 81 & 82).

o) The CARICOM Secretariat should assist Member States in dealing with both the hardware and the software companies with the hope that it may be able to gain a favorable price or services due to a higher volume (para. 85).

p) The CARICOM Secretariat should procure two scanners and a small TELEform system with one license to provide backup support (para. 85).

#### Census editing and tabulation

q) All member States should develop in-house capacity in census editing and tabulation (para. 86).

#### Data analysis

r) Experience in implementing the 2000 Round of Censuses data analysis should be evaluated and used as the basis for developing a similar project for the 2010 Round of Censuses (para. 88).

#### Coordination mechanism

s) RCCC leadership should have an advisory and oversight role for the implementation of the regional census project (para. 90).

t) The RCCC leadership and CARICOM Secretariat should meet annually to review the implementation of the regional project and, if necessary, take corrective action (para. 90).

### Project personnel

- u) The Project Implementation Unit should be chaired by a Project Manager assisted by one administrative and one technical support staff (para. 92).
- v) For the duration of the project, the Unit should be assisted by three long-term advisors in the following areas: census and demographic statistics, census mapping and GIS, and data processing as well as short-term consultants in various fields as the needs arise (paras. 93, 94, & 95).

### Regional training programme

- w) Five regional training programmes should be organized in the following areas: (1) census management, (2) census mapping and GIS, (3) data capture with image scanning, (4) census data editing and tabulation, and (5) data analysis (para. 97).
- x) Seminars on data dissemination should also be organized in each Member State at the end of the data analysis project and after the National Census Report is available (para. 97).

## **5. Estimated Project Inputs**

100. For the successful implementation of the 2010 Round of Censuses in the CARICOM region, it is necessary to provide input in the following activities: a) strengthening the Regional Census Coordinating Committee; b) strengthening CARICOM's coordinating capacity; c) providing advisory services and technical backstopping by the CARICOM Secretariat; and d) organizing training in vital areas of census operations. The strategy described above requires that the majority of the input be allocated for international personnel costs. The services of a long-term advisor, if it is justified, on the average will be less costly than short-term consultancies for the same amount of time. However, there are areas where short-term consultants are needed and justifiable, and therefore need to be budgeted. In this estimate the cost of a Regional Census Coordinator and two support staff, who will be designated as the management team responsible for implementing the Regional Project to Support Population and Housing Censuses in the CARICOM Region, were not included and are considered to be the contribution of the Secretariat. It is necessary to note that the strategy described above

covers the duration from the planning stage to the dissemination of the results or about 7 to 8 years of project activities.

## **5.1 International personnel component**

101. There are three long-term advisors proposed in this strategy consisting of 18 months for the services of an advisor on censuses and demographic statistics (CDS), 12 months for an advisor on census mapping and GIS (CMG), and 24 months for the services of a data processing (DP) advisor for a total of 4.5 person years. An average cost of US\$150,000 per annum is used for this estimate, giving a total of US\$675,000. In addition, various consultants and resource persons, including the services for data analysis, will require a total of 300 person days at an average cost of US\$500 per day, for a total of US\$150,000. Other project personnel to assist in the training are budgeted at US\$15,000 per year for 7 years for a total of US\$105,000. Total personnel cost are estimated to be US\$930,000.

102. Travel and per diem costs for all project personnel are crudely estimated using the following guidelines. For travel within the region the airfare is estimated at US\$1,000 per trip, and a per diem figure of US\$300 is used. Each advisor will make 20 trips per year (approximately once to each Member State) and will spend about 4 days in each country. Therefore, the cost of airfare will be 4.5 years x 20 trips/year x US\$1,000 = US\$90,000 and per diem will be 4.5 years x 20 trips/year x 4 days/trip x \$300/day = US\$108,000 for a total of US\$198,000.

103. There are a variety of short-term consultants that will be recruited for various purposes. Since these consultants may come from outside the region, the airfare cost is estimated at US\$1,500 per trip. For the duration of the project it is estimated that there will be 20 trips of consultants' travel and the duration of each trip will be 13 days (e.g. for assisting training programme, etc.); thus, the cost of the airfare will be US\$ 30,000, and per diem will be 20 trips x 13 days x \$300/day = US\$78,000. The total cost for consultant travel and per diem will be US\$108,000.

104. The CARICOM project personnel for implementation of the project will require 40 trips for the duration of the project and will spend on the average 5 days in each place.

Therefore, the airfare cost will be US\$40,000 and per diem equivalent to 40 trips x 5 days x \$300/day = US\$60,000. The total travel and per diem cost for CARICOM personnel is estimated to be US\$100,000.

## 5.2 Training and meetings component

105. The second major expense will be the costs for technical meetings and training; the primarily components are the cost of travels and accommodations for the participants and resource persons as well as materials needed for the training sessions. Two types of technical meetings will be needed; the first will be the meetings of the working group for the census harmonization, and the second will be consultation meetings between the RCCC leadership and the CARICOM Project Manager and Staff. Two three-day meetings of the Census Harmonization Working Group are proposed; these meetings will be attended by five members of the Working Group and the CDS advisor. The airfare cost will be US\$10,000, and per diem cost will be 2 meetings x 5 members x 3 days x US\$300/day = US\$ 9,000. Therefore the total cost for these two meetings will be US\$19,000.

106. It is proposed that the three-member leadership of RCCC should attend a two-day consultation meeting once a year at the CARICOM Secretariat. Airfare costs will be 3 members x 7 meetings x US\$1,000 = US\$21,000, and the per diem will be 3 members x 2 days x 7 meetings x US\$300/day = US\$12,600. Therefore the total cost for these meetings will be US\$33,600 to be rounded to US\$35,000. In addition, as in the case of the 2000 Round of Censuses, it is proposed that a sum of US\$128,000 will be needed to organize a data dissemination seminar in each Member State.

107. There will be five two-week regional training programmes proposed in this strategy; these are: a) census management, b) census mapping, c) data capture with image scanning, d) census data editing, and e) data analysis. Each of the five regional training programmes will have about 20 participants including resource persons. The cost for each training session will be: airfare cost for 20 participants x US\$1,000 = US\$20,000, and the per diem cost for 20 participants x 13 days x US\$300 = US\$78,000 for a total of US\$98,000. Therefore, for 5 training sessions the total cost will be US\$490,000.

### **5.3 Equipment component**

108. The equipment component consists of non-expendable and expendable equipment. The cost for non-expendable equipment includes the procurement of two scanners at US\$8,000 each for a total of US\$16,000, and the procurement of a small TELEform system with one license at a cost of US\$14,000 which includes US\$8,000 for the system and US\$1,500 per year for 4 years for maintaining the license. Another US\$20,000 is budgeted to procure PCs and other supporting non-expendable equipment to run the scanners and the software. Training equipment, such as lap top computers, projectors and other accessories will require an additional US\$10,000. The total cost for non-expendable equipment is estimated to be US\$60,000 and the expendable equipment is estimated at US\$40,000 for the duration of the project. The total cost for the equipment component will therefore be US\$100,000.

### **5.4 Miscellaneous component**

109. The remaining funds required will be for the miscellaneous component which will include provision for printing of National Census Reports, Regional Special Topic Monographs and Basic Table Volume which is estimated to be US\$160,000 and sundry expenses which are estimated at US\$10,000 per year or US\$80,000.

110. The CARICOM Regional Strategy for the 2010 Population and Housing Censuses as described in this proposal will require project inputs in the amount of US\$2,348,000. Table 1 shows the summary of the estimated project inputs and Table 2 shows the estimated annual project inputs requirement. The strategy has been designed so that one training session will be organized each year from 2008 to 2012, so that the implementation of the project activities can be spread as evenly as possible, particularly during the peak period of project activities.

### **5.5 Project funding approach and strategy**

111. The project requirement of US\$2,348,000 to support 20 CARICOM Member States will average about US\$117,400 per country for 8 years duration or only about US\$15,000 per country per annum. At the conclusion of the project, on the average, five technical staff from each Member State will have been trained in various aspects of census operations and each Member State will have received technical advisory services during the planning, preparation, processing and analysis for the successful conduct of the 2010 Round of Censuses. Member States can still request technical and advisory services from the UNFPA Country Support Team, UNECLAC, UNSD and others in their area of expertise.

112. Request for funding assistance should be made to all possible international donor agencies including UNFPA, UNDP, IDB, the World Bank, CIDA, SIDA, DFID, etc. If necessary, the project proposal can be revised into two or three different phases. If two project proposals will be prepared, one can cover census planning and preparation and the other can cover census processing, analysis and dissemination. If three project proposals will be prepared, the first can cover census planning and preparation, the second can cover data processing and tabulation, and the third can cover data analysis and dissemination. Each proposal should include input for the advisory services and training in the respective areas. The CARICOM Secretariat should also prepare the necessary contribution from each Government including the commitment to provide local funds to conduct the census and personnel to manage the operations as well as funds to procure the required equipment and supplies, etc.

**Table 1. Summary of Project Inputs**

| <b>BL</b> | <b>Description</b>                           | <b>PM/PD</b> | <b>Costs</b> | <b>Total</b>     |
|-----------|--|--------------|--------------|------------------|
|           | <b>Personnel component</b>                   |              |              |                  |
| 11.01     | Census and Demographic Statistics Advisor    | 18 PM        | 225,000      |                  |
| 11.02     | Census Mapping and GIS Advisor               | 12 PM        | 150,000      |                  |
| 11.03     | Data Processing Advisor                      | 24 PM        | 300,000      |                  |
| 11.51     | Consultants (various expertise)              | 300 PD       | 150,000      |                  |
| 13        | Other Project Personnel                      |              | 105,000      |                  |
| 11.99     | <i>Sub-total</i>                             |              |              | <i>930,000</i>   |
| <b>16</b> | <b>Travel and per diem</b>                   |              |              |                  |
| 16.01     | Long term Advisors                           |              | 198,000      |                  |
| 16.02     | Short term Consultants                       |              | 108,000      |                  |
| 16.03     | CARICOM staff                                |              | 100,000      |                  |
| 16.99     | <i>Sub-total</i>                             |              |              | <i>406,000</i>   |
| <b>19</b> | <b>Component total</b>                       |              |              | <b>1,336,000</b> |
|           |  |              |              |                  |
| <b>30</b> | <b>Training and meetings</b>                 |              |              |                  |
| 32.01     | Meetings of Working Group                    |              | 19,000       |                  |
| 32.02     | Meetings of the RCCC-CARICOM Leaders         |              | 35,000       |                  |
| 32.03     | Seminars on Data Dissemination               |              | 128,000      |                  |
| 33.01     | Training workshop on Census management       |              | 98,000       |                  |
| 33.02     | Training workshop on Census mapping          |              | 98,000       |                  |
| 33.03     | Training workshop on Data Capture            |              | 98,000       |                  |
| 33.04     | Training workshop on Census editing and tab. |              | 98,000       |                  |
| 33.05     | Training workshop on Census data analysis    |              | 98,000       |                  |
| <b>39</b> | <b>Component total</b>                       |              |              | <b>672,000</b>   |
|           |  |              |              |                  |
| <b>40</b> | <b>Equipment</b>                             |              |              |                  |
| 45.01     | Non expendable equipment                     |              | 60,000       |                  |
| 45.02     | Expendable equipment                         |              | 40,000       |                  |
| <b>49</b> | <b>Component total</b>                       |              |              | <b>100,000</b>   |
|           |  |              |              |                  |
| <b>50</b> | <b>Miscellaneous</b>                         |              |              |                  |
| 52.01     | Report production                            |              | 160,000      |                  |
| 53.01     | Sundry                                       |              | 80,000       |                  |
| <b>59</b> | <b>Component total</b>                       |              |              | <b>240,000</b>   |
|           |  |              |              |                  |
| <b>99</b> | <b>Grand Total</b>                           |              |              | <b>2,348,000</b> |

**Table 2. Annual Project Inputs**

| <b>BL</b> | <b>Description</b>           | <b>2007</b>   | <b>2008</b>    | <b>2009</b>    | <b>2010</b>    | <b>2011</b>    | <b>2012</b>    | <b>2013</b>    | <b>2014</b>    | <b>Total</b>     |
|-----------|------------------------------|---------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|------------------|
|           | <b>Personnel component</b>   |               |                |                |                |                |                |                |                |                  |
| 11.01     | Dem. Sta. Advisor (18M)      |               | 75,000         | 150,000        |                |                |                |                |                | 225,000          |
| 11.02     | Mapping. & GIS Ad.. (12M)    |               | 75,000         | 75,000         |                |                |                |                |                | 150,000          |
| 11.03     | Data Proc. Advisor (24M)     |               | 0              |                | 75,000         | 150,000        | 75,000         |                |                | 300,000          |
| 11.51     | Consultants. (300 D)         |               | 25,000         | 15,000         | 15,000         | 15,000         | 40,000         | 30,000         | 10,000         | 150,000          |
| 13        | Other Project Personnel      | 10,000        | 15,000         | 15,000         | 15,000         | 15,000         | 15,000         | 15,000         | 5,000          | 105,000          |
| 11.99     | <i>Sub-total</i>             | <i>10,000</i> | <i>190,000</i> | <i>255,000</i> | <i>105,000</i> | <i>180,000</i> | <i>130,000</i> | <i>45,000</i>  | <i>15,000</i>  | <i>930,000</i>   |
| <b>16</b> | <b>Travel and per diem</b>   |               |                |                |                |                |                |                |                |                  |
| 16.01     | Long term Advisors           |               | 44,000         | 66,000         | 22,000         | 44,000         | 22,000         |                |                | 198,000          |
| 16.02     | Short term Cons.             |               | 18,000         | 12,000         | 12,000         | 12,000         | 12,000         | 22,000         | 20,000         | 108,000          |
| 16.03     | CARICOM staff                | 10,000        | 10,000         | 15,000         | 15,000         | 15,000         | 15,000         | 10,000         | 10,000         | 100,000          |
| 16.99     | <i>Sub-total</i>             | <i>10,000</i> | <i>72,000</i>  | <i>93,000</i>  | <i>49,000</i>  | <i>71,000</i>  | <i>49,000</i>  | <i>32,000</i>  | <i>30,000</i>  | <i>406,000</i>   |
| <b>19</b> | <b>Component total</b>       | <b>20,000</b> | <b>262,000</b> | <b>348,000</b> | <b>154,000</b> | <b>251,000</b> | <b>179,000</b> | <b>77,000</b>  | <b>45,000</b>  | <b>1,336,000</b> |
|           |                              |               |                |                |                |                |                |                |                |                  |
| <b>30</b> | <b>Training and meetings</b> |               |                |                |                |                |                |                |                |                  |
| 32.01     | Working Group Meetings.      |               | 9,000          | 10,000         |                |                |                |                |                | 19,000           |
| 32.02     | RCCC-CARICOM Meetings        | 5,000         | 5,000          | 5,000          | 5,000          | 5,000          | 5,000          | 5,000          |                | 35,000           |
| 32.03     | Sem. Data Dissemination      |               |                |                |                |                |                | 40,000         | 88,000         | 128,000          |
| 33.01     | Trng. Census Management      |               | 98,000         |                |                |                |                |                |                | 98,000           |
| 33.02     | Trng. Census Mapping.        |               |                | 98,000         |                |                |                |                |                | 98,000           |
| 33.03     | Trng. Data Capture           |               |                |                | 98,000         |                |                |                |                | 98,000           |
| 33.04     | Trng. Census Edit & Tab.     |               |                |                |                | 98,000         |                |                |                | 98,000           |
| 33.05     | Trng. Data Analysis          |               |                |                |                |                | 98,000         |                |                | 98,000           |
| <b>39</b> | <b>Component total</b>       | <b>5,000</b>  | <b>112,000</b> | <b>113,000</b> | <b>103,000</b> | <b>103,000</b> | <b>103,000</b> | <b>45,000</b>  | <b>88,000</b>  | <b>672,000</b>   |
|           |                              |               |                |                |                |                |                |                |                |                  |
| <b>40</b> | <b>Equipment</b>             |               |                |                |                |                |                |                |                |                  |
| 45.01     | Non exp. Eq.                 |               | 10,000         | 5,000          | 25,000         | 10,000         | 5,000          | 5,000          |                | 60,000           |
| 45.02     | Exp. Eq                      |               | 5,000          | 5,000          | 5,000          | 10,000         | 5,000          | 5,000          | 5,000          | 40,000           |
| <b>49</b> | <b>Component total</b>       |               | <b>15,000</b>  | <b>10,000</b>  | <b>30,000</b>  | <b>20,000</b>  | <b>10,000</b>  | <b>10,000</b>  | <b>5,000</b>   | <b>100,000</b>   |
|           |                              |               |                |                |                |                |                |                |                |                  |
| <b>50</b> | <b>Miscellaneous</b>         |               |                |                |                |                |                |                |                |                  |
| 52.01     | Report production            |               |                |                |                |                | 40,000         | 60,000         | 60,000         | 160,000          |
| 53.01     | Sundry                       | 4,000         | 10,000         | 15,000         | 15,000         | 10,000         | 10,000         | 10,000         | 6,000          | 80,000           |
| <b>59</b> | <b>Component total</b>       | <b>4,000</b>  | <b>10,000</b>  | <b>15,000</b>  | <b>15,000</b>  | <b>10,000</b>  | <b>50,000</b>  | <b>70,000</b>  | <b>66,000</b>  | <b>240,000</b>   |
|           |                              |               |                |                |                |                |                |                |                |                  |
| <b>99</b> | <b>Grand Total</b>           | <b>29,000</b> | <b>399,000</b> | <b>486,000</b> | <b>302,000</b> | <b>384,000</b> | <b>342,000</b> | <b>202,000</b> | <b>204,000</b> | <b>2,348,000</b> |

# Annex I

## Terms of Reference

### **Execution of Activity Aimed at Project Identification and Feasibility of a CARICOM Regional Strategy for the 2010 Round of Population and Housing Censuses: Evaluation of the 2000 Round of Population and Housing Censuses in the CARICOM Region- Challenges and Best Practices to Improve the 2010 Round of Censuses**

#### **1. Background**

##### **1.1 International Context**

The Caribbean Community (CARICOM) Secretariat has received support from the United Nations Population Fund (UNFPA) to commence the preparation of a cost- effective regional strategy for the 2010 decade Round of the Population and Housing Census which can realise the objective of supporting Member States with the conduct of the 2010 Round of Population and Housing Censuses.

At the international level the United Nations Statistical Commission at its 36<sup>th</sup> session March 1-4, 2005, approved the 2010 World Programme on Population and Housing Censuses and also established an Expert Group for the 2010 Census. This Expert Group in turn formed three Working Groups and six technical subgroups to carry out its mandate in regard to the revision and update of the global *United Nations Principles and Recommendations for Population and Housing Censuses*. The CARICOM Secretariat participated in the Census Symposium and Expert Group Meeting convened by the UNSD during September 13-17 2004 that formed the backdrop of the process at the UN Statistical Commission.

Discussions have therefore commenced at the International level as well as in some regions of the world on identifying “critical issues and emerging concerns” as it relates to Censuses including areas such as methodology, planning and management; technology; content; harmonization of data collection; alternative designs and dissemination and use of Census results. In order to contribute effectively to the global process and to provide the support required by Member States, the CARICOM Region must commence planning for the 2010 Round even as it focuses on the wrapping up of the 2000 Round of Censuses relative to the analysis and dissemination of the data from this Round.

##### **1.2 Task Specific background**

The activity covered by this specification is aimed at Project Identification and Feasibility to:

- obtain feedback from Heads of Statistics Departments/ Census officers and regional and international organizations on the experience with the 2000 Round, and

- identify challenges and best practices that can ultimately enable the development of a more effective regional strategy that takes into consideration the technological changes, new and emerging issues and other similar concerns.

This strategy should take account of all stages of the Census process from the pre-Census planning activities such as identification of data requirements and testing of questionnaires through the actual enumeration and data processing to the crucial end phases of dissemination, analysis and use of the information in planning and decision-making activities.

The CARICOM Single Market and Economy (CSME) and the increasing demands and changes in the international arena brought about by globalisation undoubtedly require information on a wide range of issues to enable the development of the Region and particular the improvement in the conditions of women and men (boys and girls). It is imperative that the strategy for the 2010 Census Round be derived to improve on the regional strategy of the 1990 and 2000 Rounds and to enable the availability of sound, relevant and comparable data that are also timely.

### **1.3 Cooperation in the CARICOM Region**

In the CARICOM Region Population and Housing Censuses are conducted every ten years by most Member States. There has been appreciable regional collaboration, such as mapping, data processing and preparation of regional analytical reports on special topics of relevance to the Region. In the 2000 Round for example, Member States benefited from:

- assessment of the status of the Census maps including GIS capability and actual assistance in the preparation of maps;
- organization by the regional office of the loaning of Optical Mark Reader (OMR) equipment and personnel by the Central Statistical Office of Belize to other Member States to assist in data capture;
- the utilisation of an expert from the Saint Lucia office to give IT advice and support relative to the use of Optical Character Recognition (OCR) scanning process used by some Member States for data capture and editing; and
- assistance from United Nations Economic Commission for Latin America and the Caribbean (UNECLAC) Santiago, Chile of a data processing expert to assist countries in organizing and editing their Census data files.

In fact, through taking advantage of economies of scale Member States of the Region have in the past pooled financial resources as well as mobilized expertise to implement a regional approach in the 1990 and 2000 Round of supporting Census activities across Member States. As agreed to by the Community Council of Ministers Member States were required to contribute to the Regional Census Strategy for the 2000 Census Round to support some of the activities while the remaining activities were to be financed by donor contributions. Except for the Canadian International Development Assistance (CIDA), the Caribbean Development Bank and technical assistance provided by UNECLAC, Santiago Chile, donor funds were not as forthcoming as for the previous Round of Census in 1990. Given this situation implementing the regional strategy in the 2000 Round proved to be a tremendous challenge.

## **1.4 Advocacy**

Support from the private sector in increasing public awareness of the Census undertaking were articulated by a couple of Member States in the regional Census Meetings. Given the challenges faced in the past in obtaining response from households there would be need to develop innovative ways of establishing public-private partnerships to enable effective advocacy at the national level for the purposes of sensitising respondents relative to the importance of providing the information required and also the decision-makers relative to supplying adequate funds for the Census exercise.

## **1.5 The Development of a Cost-Effective Strategy in the 2010 Round of Censuses**

The experience of Member States in the 2000 Round and the accompanying regional strategy must therefore be evaluated to ensure a more cost effective operation and ultimately the availability of timely, reliable and cost effective outputs in the 2010 Round of Censuses in the Region. In order to realize improvement in the regional approach to the conduct of the 2010 Round of Population and Housing Censuses a continuous programme of capacity building over a period of years leading up to 2010 may be required.

As in the past, the strategy to be identified must be informed by recognizing and drawing on the positive aspects of the past experience as well as taking recognizing and not repeating the mistakes and drawbacks of the past in identifying a feasible approach. Improvement in the regional Census Strategy for the 2010 Round will, by making available timely and reliable Population, Demographic and Social Statistics, underpin the development of the CSME and inform policies and programming for decision-making thereby improving the conditions of women/men in Member States.

The identification/feasibility study that is the subject of this paper will provide the Statisticians in Member States and at the Secretariat with inputs to form the structure of a regional strategy to be elaborated in the future. In this regard particular attention should be given to the smaller Member States of the Organization of the Eastern Caribbean States (OECS) to see how further gains can be achieved through taking advantage of economies of scale with respect to Geographic Information Systems (GIS) capabilities in the mapping activity, data collection, capture and processing systems, inclusive of the use of scanning techniques and Global Positioning System (GPS) techniques and similar activities and technologies that can be implemented in a joint process of collaboration across these Member States.

## **2. Objective**

**The objective of this activity is to conduct a Project Identification and Feasibility Study to inform a regional Census Strategy. That Strategy will provide effective support for improvement in the approach to the execution of the 2010 Round of Population and Housing Censuses in the CARICOM Region, in order to facilitate sustained improvement and development in the regional and national statistical systems.**

## **3. Proposed Approach to Providing Support for the 2010 Round of Census in the Region**

In order to advance the regional strategy it is necessary to conduct an assessment of the past efforts and to arrive at elements to inform a strategy that is manageable and feasible. This will include an examination of critical issues pertaining to:

- 1.0 What strategies are used to consult users and other stakeholders about the content of the Census and the processes used in the Census?
- 1.1 How do we review the *content* of the Censuses in the Region to take into consideration the relevance to users, *new and emerging issues*, the length of the questionnaire and the burden on respondents?
- 2.0 What is the extent of *harmonization* in the Census inquiries as reflected in the Census topics/ questionnaire content, concepts and definitions, uniformity in the training process and in the enumeration procedures within and across Member States?
- 2.1 Can there be a *common questionnaire* or a core of questions that can be common for the CARICOM Region? How feasible is such an approach?
- 2.2 How can we incorporate the use of *alternative approaches and technologies* in conducting a Census e.g. the case of sampling of specific topics and implications for the rest of the region or the use of hand-held devices in Census enumeration?
- 3.0 What consideration could be given to improving the situation with respect to Census *administration/planning and management* and the need to strengthen capacity with respect to the existence of trained human resources in these areas including training in the use of Project Management techniques?
- 3.1 What is the experience with or the thinking on contract management and other aspects of outsourcing of specific aspects of the Census activities?
- 3.2 How can we have an effective public relations programme before, during and after the conduct of the Census?
- 4.0 What is the status of mapping and the Census *frames*, including the use of GIS, aerial photography and satellite imagery? What is the relationship between the Census office and the official mapping agency in each country?
- 5.0 What is the experience with Census pre-test operations? How useful are they in enabling improvement in the actual Census exercise?
- 6.0 What have been the challenges with the physical production of relevant Census *documents* including, questionnaires, control forms and training documents and with the flow and control of these documents?
- 7.0 What was the experience with *training* in Census *enumeration* and *supervision* relative to the effective conduct of such a massive and costly operation e.g. *training of trainers, supervisors and enumerators* and the use of modern technology in Census training?
- 8.0 What have been some of the problems with non-response as a *major challenge in census enumeration-such as non-respondents in high-income areas*? What have been some of the approaches to minimizing non-response?
- 9.0 What has been the process of *data capture and data processing* including experiences with hand-held devices and image scanning techniques, selection of technology in general and the ensuing outcomes in enabling timely delivery of results

- 9.1 How much emphasis was placed on the area of recruitment and training of the data processing workforce? What were the outcomes?
- 9.2 What was the experience with regard to the preparation of a Census tabulation plan and the production of the actual tabulations?
- 10.0 What process was used to validate the Census Results to ensure data reliability? Were there activities such as the Census *post-enumeration* surveys **and other approaches to evaluating Census data quality**?
- 10.1 The analysis, dissemination and use of the information including conduct of data dissemination seminars and training **of Statistical Office staff and data users** in Census data analysis, population and demographic research.

In the context of the above issues the following Scope of Work identifies the issues to be addressed in the Project Identification and Feasibility for the preparation of a strategy for the 2010 Round of Censuses.

#### 4. Scope of Work

Based on the proposed activities for the CARICOM Programme and Regional Census Strategy for 2010, the Mission will be required to undertake desk and field research to satisfy the objectives of the assignment as follows:

- (i) Engage in briefing sessions with the CARICOM Secretariat and the OECS, the UNFPA and other relevant agencies such as UNECLAC, UNDP, UNIFEM;
- (ii) Conduct an assessment of the 2000 Round of Census to be informed of the problem areas that occurred and the actions that were taken. This can be through administration of a questionnaire which will have to be designed or a structured discussion with stakeholders, and electronic discussions on a forum or all or otherwise. Review available documentation on the Conduct of the 2000 Round of Censuses;
- (iii) Consult with national and other regional and international organisations on the 2000 Census experiences and activities to be undertaken in preparation of the 2010 Round of Population and Housing Censuses.
- (iv) Attend a regional Census Symposium to obtain feedback from Heads of Statistical Offices/Census Officers relative to challenges and best practices in the 2000 Round as it can inform the 2010 strategy;
- (v) Conduct field visits to selected Member States to assess the outcomes of the 2000 Round of Population and Housing Census, the effectiveness of the regional strategy, the experiences of national statistical organizations in the execution of all their Census activities and to better inform the feasibility study and project identification;
- (vi) Assess the availability of household survey capabilities and administrative

data sources in the context of enabling continuity in capacity building for the conduct of Censuses;

- (vii) Undertake an preliminary inventory of the perceived statistical needs at the national and regional levels required to effectively support and/or execute Census activities and the feasibility of implementing Population registers;
- (viii) Assess the need for continued functioning of the Regional Census Coordinating Committee comprising Directors of Statistics/Heads of Census operations and other organizations;
- (ix) Consider the establishment of working groups of technical experts to meet mainly electronically, in selected areas to identify and document best practices and to start the preparatory technical considerations for the region in accordance with the Global Census Programme 2010.
- (x) Assess on the basis of the consultations the areas in which capacity and capabilities of the Regional and National Statistical Systems should be targeted to enable the efficient conduct of censuses and the production of timely, reliable, relevant and harmonized results from censuses and other sources of social statistics during inter-censal years and how the process can be sustained;
- (xi) Prepare on the basis of the activities in (i) – (ix) a feasibility and project identification report and proposal that can lead to an effective regional census strategy to support Censuses in Member States in 2010 and that takes into consideration the concerns and needs of the smaller Member States of the OECS and countries that were late in administering their Censuses in the 2000 Round. This feasibility and project identification report should:
  - a. Provide elements for a strategy for the 2010 Round of Census with regional and national components clearly identified, based on the assessment listed above and the considerations highlighted in the proposed approach in Section 3;
  - b. Make specific recommendations for promotion of the use, analysis and dissemination of Census results.
  - c. Identify appropriate capacity building measures to inform the 2010 Round of Censuses, specifying the areas that can be executed at the national level, the areas requiring back-up regional support;
  - d. Address the issue of possible sources of funding/technical assistance, at the regional, national and international levels and suggest an approach to raising these funds to enable the installation of a regionally coordinated Census Strategy to support Member States for the 2010 Census Round.

- e. Provide a rough estimate of the quantum of funds that may be required for the implementation of a strategy to build capabilities on a continuous basis over a period of years to conduct censuses and surveys. Statistical programming of the Census preparation operations including annual, multi-annual and cost estimates should be prepared;
- f. Recommend any required streamlining of the responsibilities and functions of the regional coordinating committee relative to the oversight of the regional strategy;

### 5. Qualification/experience of consultant

One Consultant is required with extensive experience in Statistics, in project identification/feasibility and assessment and specifically in Population and Housing Censuses conduct and evaluation. Experience in Statistics production and development at the regional level of CARICOM or at the international level will be a definite asset.

### **6. Logistics and timing**

The work is allocated as follows:

|       |   |         |
|-------|---|---------|
| (i)   | Preparatory work  | 12 days |
| (ii)  | Briefing meeting/consultation<br>at CARICOM Secretariat | 5 days  |
| (iii) | Attendance at Census Meeting                            | 2 days  |
| (iv)  | Field Visits and other contact<br>with Member States    | 21 days |
| (v)   | Report Preparation –Drafting and Revision -             | 12 days |
| (vi)  | Revised report preparation                              | 8 days  |

A total of **60 person-days** will be required.

Besides the visit to CARICOM Secretariat in Guyana the Member States to be visited should be:

- i. Guyana ( Bureau of Statistics)
- ii. Jamaica
- iii. Trinidad and Tobago
- iv. Saint Lucia
- v. St Vincent and the Grenadines

Each country visit will be of approximately 2-3 days duration. Personal contact, electronically or otherwise, should be made with all other Member States that are not visited in order to obtain full coverage of Member States' experiences.

## 7. Outputs

The Consultant shall prepare the following outputs:

- (i) A Draft Report according to a format to be defined. The Report shall in particular include the following information on the respective issues raised in the Scope of Work of these terms of reference and should include the following:
  - (a) Experience with aspects of Census taking at the national level in the 2000 Round from preparatory work through to questionnaire preparation/content, data processing etc to the publication of reports/dissemination. Identification of Major challenges should be given as well as how these were circumvented and best practices if any;
  - (b) An assessment of the Regional strategy as implemented in 2000 – national and regional perspectives of the strategy, main drawbacks and positive aspects/lessons learnt;
  - (c) An assessment of the capacity currently available for the Conduct of Censuses in the future Round 2010.
  - (d) An assessment of the future needs and how these should be addressed;
  - (e) Recommendations on elements that can inform a regional strategy and project including costs estimates, annual and multi year programming;
  - (f) Approaches to funding the regional strategy and a rough estimate of the quantum of funds required;
  - (g) Preferred solutions for eliminating identified problems/challenges;
  - (h) Project feasibility and measures ensuring sustainability.
  - (i) Other issues as specified in the Scope of Work.
  - (ii) A Final report after comments have been received from all stakeholders.