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 2010 World Population and Housing Census Programme

**Report of the Workshop on International standards, contemporary  
technologies and regional cooperation**

**Noumea, New Caledonia  
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## INTRODUCTION

### Objectives of the workshop

1. The purpose of the Workshop was to present international standards for conducting population and housing censuses. It was designed to provide an opportunity for exploring ways of strengthening regional cooperation in establishing joint ventures during various stages of population and housing censuses in the region. The workshop covered the use of Optical Character Recognition (OCR) for census and survey data capture, Geographical Information System (GIS) and other geospatial technologies in census mapping activities. More specifically, the Workshop: (1) Presented revised international standards for conducting population and housing censuses, focusing on recommended core topics as identified in the United Nations *Principles and Recommendations for Population and Housing Censuses, Revision 2*<sup>1</sup>; (2) Discussed ways of improving the capacity of national statistical offices to implement these revised recommendations by reviewing a proposed Pacific Islands' model census questionnaire and exploring possibilities for its coordinated implementation; (3) Presented and discussed new approaches in census geography, including the use of Geographical Information Systems and Global Positioning Systems in census mapping; data collection and dissemination; disaster management; and the use of optical character recognition solutions (OCR) for census and survey data capture in the Secretariat of Pacific Community region.

### Attendance

2. The workshop was attended by participants for ten countries and one territory (Australia, Cook Islands, Federated States of Micronesia, Fiji Islands, Kiribati, Nauru, Samoa, Solomon Islands, Tonga, Vanuatu, New Caledonia), and by four international /regional organizations: United Nations Fund for Population Activities (UNFPA), United Nations Children Fund (UNICEF), Secretariat of Pacific Community (Secretariat of the Pacific Community), and South Pacific Islands Applied Geosciences Commission (SOPAC), for a total number of 25 participants (not included in this number were 5-10 observers) .

## OPENING SESSION

3. Mr. Richard Mann, Deputy Director General, Secretariat of the Pacific Community, welcomed the participants and wished them a successful workshop. He reminded participants that population and housing censuses provide critical information for a number of purposes, including development, policy, and planning. Therefore, the improvement of population census data requires adherence to international statistical standards, good planning, a significant capacity building and accompanying infrastructure.

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<sup>1</sup> Available in full edited version at: <http://unstats.un.org/unsd/demographic/sources/census/census3.htm>.

4. Information technology (IT), including space-based and location-based applications, has evolved considerably. Furthermore, there has been a dramatic increase in the use of GIS technology and digital maps in the region. There has also been significant advancements in the field of data capture, allowing for quick retrieval of census information and rapid processing. Therefore, it was most appropriate that this Workshop was focusing on GIS and Data Capture.
5. Secretariat of the Pacific Community, together with its regional and national partners, is placing increasing importance on disaster preparedness and management. In this regard, the representative of Secretariat of the Pacific Community expressed his satisfaction to have in the programme a half day dedicated to using GIS and census data for disaster management.
6. Secretariat of the Pacific Community has attempted to discuss ways of improving the capacity of national statistical offices to implement the revised Principles and Recommendations by reviewing a proposed Pacific Islands' model census questionnaire and exploring possibilities for its coordinated implementation. Thus, dedicating a full day on establishing a draft uniform questionnaire for Pacific island countries is a welcome development.
7. On behalf of Dr. Paul Cheung, Director of the United Nations Statistics Division, Mr. Srdjan Mrkic, Chief of Social and Housing Statistics Section, United Nations Statistics Division welcomed the participants to the workshop. He outlined that this workshop is part of the 2010 World Programme for Population and Housing Censuses, as initiated by the United Nations Statistical Commission in March 2005 for the period 2005 to 2014. The three essential goals of the World Programme are: (i) to agree on a set of acceptable international principles and recommendations governing the conduct of a census; (ii) to facilitate countries in conducting censuses during the period 2005-2014; and (iii) to assist countries in their efforts to disseminate census results in a timely manner.
8. In the recent past, the United Nations Statistics Division conducted several workshops, in which participants expressed the necessity for countries to take into account the technological advances made since the previous round, especially in the area of Geographical Information Systems (GIS) and Global Positioning System (GPS). Participants in those workshops requested United Nations Statistics Division to prepare specific guidelines, including best practices and the strategies for evaluation of different contemporary practices.
9. Mapping is one the most critical activities of a population and housing census. Accurate delineation of enumeration areas and production of good quality maps ensure proper enumeration of population and housing units, without omission or duplication. Moreover, geographic information systems provide excellent vehicles for dissemination and analysis that give the full dimensions of the census data.
10. Furthermore, constituting detailed and constantly updated geographical databases is not only costly, but also time consuming and skill demanding. It is, therefore, necessary

that countries share experiences of the pre-conditions, in terms of financial and human capital and skills, for the launching as well as the sustainability of the projects they undertake in this domain.

11. Aside from the use of Geographical Information System for census mapping and dissemination of data, the workshop will also focus on contemporary instruments for optical data capture as this technology evolved considerably in the past period. Census takers in the region should be aware of these developments in order to evaluate its implementation in national circumstances.

12. The United Nations Statistics Division representative highlighted the collaboration between the United Nations Statistics Division and the Secretariat of the Pacific Community for the preparation of this workshop and expressed his appreciation to SPC colleagues for hosting the meeting and providing facilities. In his opinion, it exemplifies the way the United Nations Statistics Division and the statistics divisions of the Regional Commissions have to work together in supporting the implementation of the 2010 round of Population and Housing Censuses for the benefit of the countries.

## **PROCEEDINGS AND DISCUSSIONS**

### **Review of United Nations Principles and Recommendations for Population and Housing Censuses**

13. United Nations Statistics Division presented the Principles and Recommendations for the 2010 round of Population and Housing Censuses, Revision 2, with special emphasis and elaboration of major changes compared with the version prepared for the 2000 round of censuses.

14. The participants noted the introduction of new disability guidelines and suggested that changes regarding disability data collection be introduced slowly with the possibility of having an external survey. The discussion also focused on the new core topics, especially those related to dwellings, literacy, and Information and Communication Technology. It was emphasized that the new approach in the *Principles and Recommendations*, combining the core topics with recommended tabulations, presents a more consistent guideline while bringing the issues of the outputs up front. It was also noted that some countries in the region are moving from the de facto to the de jure approach and would be seeking guidance to ensure smooth transition and comparability between censuses.

15. Continuing the discussion on pertinent classifications, it was outlined that the current status of several international classifications needs further elaboration and support for implementation.

16. For example, the new International classification of Occupation (ISCO) was adopted in December 2007 and the International Labor Association is now working on the harmonization tables between ISCO-88 and ISCO-08 which are necessary tools for

undertaking national adaptation of this new standard. It is expected that by the end of 2008 this set of tools will become available, accompanied by a series of regional and sub-regional workshops.

17. The workshop took note of the changes in the classification of living quarters and housing units, as well as the expansion of the breakdown of collective living quarters.

### **Census Management and Planning**

18. The United Nations Statistics Division presented standards on census management and planning, with an emphasis on quality assurance and risk management. Quality management has been a raising issue during the 2000 Round of Population and Housing Censuses and countries are more and more incensed to introducing quality management strategies in the preparation of their next population and housing census. Furthermore, census mapping and data capture is a complex and resource demanding process and therefore requires particularly attention to quality assurance considerations and risk management.

19. The discussion pointed at the need to avoid respondent burden and to carefully plan surveys. Participants also expressed the need for ensuring support from the government and stakeholders for the census and stated that the government must provide legal framework and proper funding. It was concluded that holistic support from all corners of government is needed.

20. The participants expressed a concern over an ever increasing demand for inclusion of questions by domestic users, as well as to address international development reporting requirements, thus increasing the need for financial support. Also related to funding, was sporadic setbacks in the field such as hard to reach areas, which require more resources than anticipated, and the incorporation of the new expenses not taking away from planned activities.

21. There was an emerging consensus that quality assurance needs to be tackled in all the steps on the way to the population and housing census. To that end, it is necessary to develop comprehensive census plans, inclusive of risk assessments pertaining to all critical major activities, accompanied by contingency plans. The workshop was informed about SPC's intention to seek funding for a second phase (2009-2011) of its current successful Pacific Regional census technical assistance programme, with census planning representing a major component. The workshop also registered with appreciation the development of international guidelines in this area<sup>2</sup> that were elaborated and distributed during this workshop.

### **Review of Pacific Model Census Questionnaire**

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<sup>2</sup> *Handbook on Census Management for Population and Housing Censuses*, United Nations publication Sales No. E.00.XVII.15 Rev 1, United Nations, New York, 2001.

22. In an effort to implement international standards for population and housing census-taking in the region and to ensure comparison within region, as well as in an attempt to explore the possibility of introducing a uniform questionnaire that would enable sharing of other resources (data capture, processing, analysis) the workshop broke in groups to discuss the Pacific Model Census Questionnaire. It was developed by the Secretariat of the Pacific Community and distributed to participants prior to the workshop.

23. The work in groups identified a number of issues that were presented in the plenary and these proposals are clearly highlighted in the Appendix III. On the basis of these proposals, the Secretariat of the Pacific Community will finalize the draft Model Questionnaire, together with the elaboration of the issues as per the discussions. This separate product of this workshop will be disseminated at the later stage.

### **Census mapping using contemporary technologies in participating countries GIS Fundamentals/ GIS Database design**

24. The United Nations Statistics Division presented the Geographical Information Systems fundamentals and concepts, with a focus on the information cycle, the notion of projection and the difference between the two fundamental types of data: raster and vector. The conceptual model for a geographical database was also presented. The participants noted that the sharing of the technical know-how on the use of GIS is needed and that financial supports and collaboration is needed.

25. One of the major points for discussion related to institutional issues such as retention of skilled staff and maintenance of software (support, upgrades) in the wake of the use of contemporary technologies. In that context, the example of Fiji where the geo-referencing of each housing unit was conducted right after the census enumeration using UNFPA-provided hand-held GPS units was discussed in detail, as well as the possibility of sharing the equipment and experience with other countries in the region in the next years. UNFPA assured the workshop that the sharing of this equipment with other Pacific island countries was part of the agreement with Fiji.

### **Data Collection and Data Conversion**

26. United Nations Statistics Division made a presentation on the concepts and methods used for data collection, from existing maps, aerial photography, satellite images, and on methods used for data conversion (scanning, digitizing). The workshop conducted an exercise of manual digitizing, providing an opportunity to participants to acquire hands-on experience.

### **Spatial Statistics Applications and Issues and the use of Geospatial Technologies**

27. United Nations Statistics Division introduced the concepts of modeling geo-database and especially the duality between geographical objects and other data. The participants then undertook five hands-on exercises focused on heads-up digitizing; creating file geo-

databases; creating & splitting feature classes; integrating GPS data into a GIS; dissemination using GIS.

28. An overview of the software packages available was presented to the participants. It was noted that while there are quite a few commercial applications for census mapping purposes, just a few dominate the market. When deciding on the software to be used for census geography, a set of issues needs to be taken into consideration such as the cost, ease of installation, training needs, documentation provided, maintenance and vendor support.

29. United Nations Statistics Division presented the concepts and methods for geo-coding. It is of utmost importance that each develops a geographical coding scheme for the hierarchical structure of civil divisions as well as enumeration areas. Data collection may be realized through two main categories of methods, matching collection or direct collection. The principles of the Global Positioning System (GPS) and the advantages of this technology were also presented. GPS offers an easy way to capture data in the field, even if the signal may be obstructed in some dense urban or wooded area. Participants expressed interest in these techniques and exchanged experiences.

### **Spatial Statistics Applications**

30. Open source software can offer an alternative to vendor products and a presentation from United Nations Statistics Division gave an overview of the solutions currently available. It was emphasized that using open-source software requires considerable investment in-house in terms of acquiring knowledge and the lack of direct customer support may adversely affect the use of the applications for census purposes. On the other hand, the vast support provided by on-line informal groups is certainly beneficial to the process of learning and developing applications.

31. A major issue, when elaborating on the state of the art of implementation of GIS for census geography in the region, participants noted, was the lack of adequate, continuously supported and comprehensive software, hardware, and training. Participants expressed that while some national statistical authorities were able to ensure one or more of these critical components, these hurdles prevented the proper harnessing of the GIS technology.

32. SOPAC and the Secretariat of the Pacific Community extended their abilities to assist countries with their census mapping practices through training and the use of facilities for scanning and geo-registering existing maps. SOPAC expressed that they have data sets such as remotely sensed imagery and various resolutions that they can make available as long as countries emphasize specific need. Concerning training, Secretariat of the Pacific Community continues to offer training when possible and SOPAC offers wide geospatial data infrastructure support/user groups within countries of the existing GIS user groups containing experts and experiences, applied users of contemporary GIS technologies.



## **Country presentations**

### **Fiji**

33. Fiji conducted a census in 2007 and this process was described in detail during the presentation<sup>3</sup>. Assistance from UNFPA, training and hiring of enumeration staff, and the use of geospatial technologies were described. Also, there was a high degree of motivation for the country to participate. This was amplified by regular advertising in the paper and other media. A heavy reliance on the use of GPS and GIS technologies proved successful and it was outlined that the resultant GIS now has the capability to aid in development, disaster management, and specific user requests. The NSO census mapping of Fiji is now planning for the use of GIS for further analysis possibilities within other sections within the NSO.

### **Cook Islands**

34. Cook Island presentation<sup>4</sup> focused on the common pressures facing census mapping in the Pacific Community. The computing hardware and software currently being used for census mapping is not sufficient for complete independence of the census mapping process. Coordination between the Secretariat of the Pacific Community and Cook Islands has yielded important census mapping layers and products and the benefits of these activities was covered along with the urge for more collaboration and support in these activities, particularly giving the new geospatial tools and technologies which would greatly enhance ongoing as well as new projects. Interest in the use of OCR technologies was also emphasized

### **Australia**

35. The presentation by Australia<sup>5</sup> discussed the use of GIS in census mapping and focused on the overall operation of the census as well as specific details concerning the comprehensive collection of all addresses and associated issues such as address matching. EA boundary delineation was explained as well as how the NSO incorporates new boundary changes within smaller units or “mesh blocks”. Also noted was the use of Google Earth as a validation tool for checking for conflicts between boundaries and other features. Printing of enumeration maps was conducted in house, reducing the time of completion by close to half when compared to outsourcing.

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<sup>3</sup> The presentation is available at:

[http://unstats.un.org/unsd/demographic/meetings/wshops/New\\_Caledonia\\_4Feb08/default.htm](http://unstats.un.org/unsd/demographic/meetings/wshops/New_Caledonia_4Feb08/default.htm).

<sup>4</sup> The presentation is available at:

[http://unstats.un.org/unsd/demographic/meetings/wshops/New\\_Caledonia\\_4Feb08/default.htm](http://unstats.un.org/unsd/demographic/meetings/wshops/New_Caledonia_4Feb08/default.htm).

<sup>5</sup> The presentation is available at:

[http://unstats.un.org/unsd/demographic/meetings/wshops/New\\_Caledonia\\_4Feb08/default.htm](http://unstats.un.org/unsd/demographic/meetings/wshops/New_Caledonia_4Feb08/default.htm).

## **International Agency Presentations**

### **Secretariat of the Pacific Community**

36. The presentation by Secretariat of the Pacific Community emphasized that the geography of the Pacific holds unique challenges such as large distances, small scale scattered populations and demanding physical geographies in some countries. This combined with significant resource constraints (human and financial) can significantly complicate census activities in the region. The use of contemporary technologies such as GIS, GPS and Remote Sensing are being employed by Pacific Island Countries and Territories to overcome some of these obstacles.

37. Examples were presented displaying the Republic of the Marshall Islands use of handheld GPS units and high resolution satellite imagery in a recent 2006 community survey to identify the location of randomly selected households; in Samoa, Aerial Photography was used by the Department of Statistics to create digital map layers including EA boundaries, household locations, roads, rivers, contour lines and major buildings; Fiji's most recent Population and Household Census undertaken in September 2007, employed 200 handheld GPS units which were used to identify individual households and collate a household location database.

38. Secretariat of the Pacific Community population GIS software was developed for Pacific Island Countries and Territories to simplify, visualize and disseminate population data at scales of geography below the national level and examples from Vanuatu, Tonga and Samoa were presented. Also discussed was the use of SOPAC Mapservers that have been deployed throughout Pacific Island countries and Territories and made GIS data more readily available and accessible. During discussion, regional cooperation was also identified both at agencies level (Secretariat of the Pacific Community, SOPAC) as well as between countries and territories (south-south) and it has been identified as an area worthy of further strengthening.

### **UNFPA**

39. UNFPA presentation discussed census mapping projects currently in operation in the Secretariat of the Pacific Community region with specific examples from the Fiji census of 2007. Recruitment strategies, management assistance, hardware and software were provided to execute the census of Fiji. Post censal activities were discussed such as data analysis strategies and extending the hardware and software to other Secretariat of the Pacific Community countries in need of assistance. Equipment sharing was discussed widely among the participants.

### **Optical Data Capture**

40. United Nations Statistics Division presentation on data capture for the purposes of the census and surveys emphasized the prerequisites, costs, and national experiences. The presentation also emphasized the main differences between the Optical mark Recognition

(OMR) and Optical Character Recognition (OCR), with the former used for many different purposes, such as grading exams, lottery and so forth, and the former more in use for complex exercise, including the census.

41. The presentation by Australian Bureau of Statistics discussed the census data capture methods used from 1991 to 2006 covering three censuses. It discussed optical mark recognition and its use until 1996. It was explained that OMR was extremely effective and was improved over time as ABS Australia adjusted to its use. Emphasis was placed on the need for quality assurance and in-house expertise to yield sufficient results. The ABS introduced scanning and ICR in 2001 and the presentation covered the shift to these data capture methods and provided an overview of the tactics, quality assurance, costs, and future use of these methods.

42. The representative of Data and Research Services, a commercial supplier of optical recognition solutions and devices, provided an overview on automated data capture solutions for the census and cited the advantages and disadvantages of using such technologies. It covered the different capture technologies and the data capture process flow for each selected method with examples of the different technical stages involved in capture, processing, validation and correction. There was emphasis on good practice in selecting scanning techniques and supplier options and recognizing supplier achievements. The presentation concluded with an example of DocXP software capabilities. DocXP is the document storage, classification and retrieval system that allows documents to be scanned and electronically filed with all the data accessible online and instantly available. The presentation demonstrated the capture and processing of data from various types of forms in predefined areas or in different locations on the document.

43. The participants discussed various aspects of OCR, from training to ongoing system support in Pacific Island countries and possibilities of sharing the equipment in conjunction with the joint Secretariat of the Pacific Community census questionnaire, if one comes to realization for this or subsequent rounds of censuses.

### **The role of population and housing censuses in disaster management**

44. The issue of relationship between the population and housing census as a baseline data for mitigating consequences of disasters was elaborated through presentations from United Nations Statistics Division and the Secretariat of the Pacific Community.

45. The introductory presentation focused on basic concepts and definitions of disasters and population at risk, elaborating the prerequisites that a population and housing census must meet in order to generate data necessary for planning disaster management.

46. The presentations from Secretariat of the Pacific Community provided examples of how population and housing census data can assist in disaster management, with illustrations referring to the tsunami in the northern Solomon islands, of April 2, 2007. Presented was the use of baseline population and housing data for rapid assessment.

Special attention was given to the need for countries to use this data for quick mapping for disaster responders of affected areas and severity.

## **2010 World Population and Housing Census Programme: Activities and products**

47. Under this agenda item, the presentation of the United Nations Statistics Division focused on the components of the 2010 World Population and Housing Programme. Specifically, the background and the history of the Programme was laid out, as well as the major goals: (1) to agree on a set of acceptable international principles and recommendations governing the conduct of a census; (2) to facilitate countries in conducting censuses during the period 2005-2014; and (3) to assist countries in their efforts to disseminate census results in a timely manner.

48. Under the objectives of the Programme, monitoring the compliance with the major goals represents a specifically important part. In that context, the United Nations Statistics Division collects and disseminates information on various aspects of census-taking in the world, as well as building specific database containing the contents of national censuses that are then used as guidelines for other countries in developing their own methodological instruments.

49. Another objective refers to developing methodological guidelines and the workshop was briefed on the *Principles and Recommendations for Population and Housing censuses, Revision 2*, the major methodological guideline which is accompanied with a set of handbooks and manuals on the use of Geographical Information Systems, census planning and management, census documentation, data editing and so forth<sup>6</sup>.

50. Likewise, the workshop was briefed regarding the framework of future activities under the auspices of the 2010 World Programme on Population and Housing Censuses, which consists of the work on handbook on census results dissemination, outsourcing, evaluation and analysis, as well as workshops that will continue throughout the duration of the Programme.

51. Finally, a demonstration of the on-line 2010 World Programme Resource Center focused on the content of this facility, as well as options that are now available to all census-takers around the world, and invited comments and suggestions for the improvement of content and features of this application.

## **RECOMMENDATIONS AND CONCLUSIONS**

### **General**

52. Participants expressed their appreciation to the United Nations Statistics Division, Department of Economic and Social Affairs, and to the Statistics and Demography Programme of the Secretariat of the Pacific Community for organizing this workshop and

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<sup>6</sup> All are available at: [http://unstats.un.org/unsd/demographic/sources/census/2010\\_PHC/default.htm](http://unstats.un.org/unsd/demographic/sources/census/2010_PHC/default.htm).

outlined their expectations that it will be followed-up by similar workshops addressing related issues, such as dissemination of census data. It is of utmost importance to continue to focus on population and housing censuses and on increasing national capacities to conduct them as they are major sources of relevant demographic and social statistics for countries in the region. This is especially true to support national informed decision making and given the needs to monitor and report on the Millennium Development Goals in a reliable and accurate manner.

53. The workshop concluded that the importance of the population and housing census is amplified by the fact that other sources of demographic data are not readily available in the region. It was noted that, for example, civil registration and vital statistics systems in the South Pacific region do not have adequate coverage of vital events, making the production of quality statistics even more dependant on population and housing censuses.

### **International standards**

54. The workshop concluded that the revised set of *Principles and Recommendations for Population and Housing Censuses, Revision 2* represents a major methodological guidance for the 2010 round of population and housing censuses. Emphasizing the need to generate outputs as being recognized as a substantially positive shift in terms of focusing on the ultimate goal of the census. This is not necessarily limited to successful field operations, but is to making small area data available to decision makers across public and private sector in Pacific Island Countries and Territories, as well as regional and international stakeholders, such as development and research agencies. In that respect, producing the set of recommended tabulations at small area level would be instrumental for national development and for enabling comparisons within the region and beyond. In that context, the workshop recommended that, where ever possible, the topics and outputs set in the United Nations *Principles and Recommendations for Population and Housing Censuses, Revision 2* should be adhered to in developing regional guidelines for conducting population and housing censuses.

55. In the context of core topics and recommended tabulations, the workshop noted that the implementation of international recommendations related to the collection of data on disability using the population and housing census might have a negative impact on the success of the census. Quantifying disability as a social and individual phenomenon in the South Pacific is hampered by traditional prejudices, concepts of human functioning that might be alien to the region, lack of knowledge of professional medical diagnoses and the need for extensive training of enumerators. While recognizing these obstacles, and in the light of the need to provide an overview of disabled population, the workshop concluded that every effort should be undertaken to implement the international recommendations, listing disability as on one the core topics for the population and housing census.

56. The workshop took note of the recent development of alternative methods for generating small area census-like data, such as the use of population registers, rolling

censuses (surveys) and combinations of various methods. It was concluded that, while it is beneficial to explore alternative designs, all the countries in the region will conduct a traditional enumerator administered population and housing census in the 2010 round, and probably in the 2020 round as well, given the level of actual and projected statistical capacity. Consequently, the focus of the national authorities in the region is on improving the efficiency and quality of the traditional census.

57. The workshop concluded that there is a need to follow international guidelines in terms of quality assurance, census management and planning. Careful planning is a centerpiece of a successful census, as is the support from the government and other stakeholders. Primary responsibility for conducting and exploiting the census rests with each National Statistical Office and every effort needs to be taken in to minimize the risks of the failure and preparing for various circumstances that can adversely affect the census.

### **Regional cooperation and the Pacific Model Census Questionnaire**

58. The workshop recommended that the Statistics and Demography Programme of the South Pacific Community develop the Pacific Model Population and Housing Census Questionnaire based on the thorough discussion and conclusions as presented in Annex 1 of these Conclusions and Recommendations. It is necessary to explore the possibility of developing a Joint Short Questionnaire that would be implemented in all the participating countries as an attempt to share expertise, methodologies, human resources and technologies throughout the region.

59. As the first step towards enhancing the regional cooperation, the countries may wish address the fact that their censuses are staggered throughout the census decade, thus making joint and coordinated activities extremely difficult. On the other hand, it was noted that the support from SPC for population and census activities is more accessible is distributed over a longer time period.

60. Harmonization of concepts, definitions and classifications is yet another crucial issue in an attempt to consolidate population and housing censuses in the region and to take advantage of sharing of the resources. It requires establishing a continuous forum of methodologists in the region, under the coordination of the Statistics and Demography Programme of the Secretariat of the Pacific Community, that will ensure and enable the exchange of knowledge and developing of common concepts. This process should be initiated and fully supported by the countries themselves.

61. Would it be possible to share equipments, knowledge and skills in the region? The workshop concluded that the answer to this question depends on the ability to successfully address issues elaborated above (paragraph 7-9) The initiative of the United Nations Fund for Population Activities (UNFPA) in providing Geographical Positioning System (GPS) equipment for the Fiji Population and Housing Census 2007 under the

understanding that it will be made available to countries in the region, together with exchange of knowledge and experiences was discussed in this regard.

### **Contemporary technologies for census geography, data capture and data dissemination**

62. The workshop concluded that the development of new technologies for census geography and data capture provides a powerful tool for significantly increasing the efficiency of the census-taking in the region. It noted that the recent experience in Fiji, where the actual enumeration was followed by a team from the Fiji Bureau of Statistics that geo-referenced every single housing unit occupied by a household using Geographical Positioning System (GPS) devices. This was cited as one of the examples of how to add value to the census, as this procedure will enable a much more accurate poverty mapping and significantly facilitate future censuses and other statistical exercises.

63. The costs of acquiring satellite imagery that would enable using Geographical Information System (GIS) applications for census geography, such as delineation of enumeration areas, are considerably lower compared to just several years ago. However, these costs are still not easily born by the majority of national statistical offices in the region. In that context, where the Secretariat of the Pacific Island Applied Geosciences Commission (SOPAC) has access to satellite imagery, it can provide it free of charge for all of the Pacific Islands; this represents an excellent starting point for developing census geography on a contemporary platform. The workshop concluded that each national statistical office should consider using this collection in evaluating the use of GIS for the population and housing census.

64. While there is no doubt that GIS vastly improves the accuracy of the census and provides a much better tool for data dissemination, most of the national statistical offices in the region have few staff and that adversely affect their capacity to develop GIS applications. Thus, the workshop concluded that it is crucial to ensure cooperation at the national level when it comes to acquiring, using and developing GIS applications. It welcomed the information regarding the establishment of the GIS focal points and user groups in each of the island nations, a framework developed by SOPAC. Working with these existing focal points is the optimal way to ensure synergy and avoid duplication and waste of otherwise scant human resources.

65. In that context, it is crucial to underline the need for continuous and well-formatted technical assistance provided by national and international agencies. For many countries in the region, this represents a crucial component in building their capacity to conduct complex exercises such as a census. It was also concluded that the success of the census very often relies on the success of the public communications and awareness campaign that precedes it; resources for running such a campaign often come from outside donors and international agencies and these need to be fully exploited.

66. The workshop concluded that the contemporary technologies for data capture, such as Optical Mark Recognition (OMR), Optical Character Recognition (OCR) and Intelligent Character Recognition (ICR) represent powerful tools for vastly improving data capture for the population and housing censuses. This was witnessed by the recent experience in Fiji, where all the data from the census will be captured in twenty days, as opposed to projected three months of manual data entry. Discussion is underway to explore the feasibility to introduce optical data capture technologies in some countries undertaking the population and housing censuses in the near future.

67. At the same time, the size of population in some of the countries of the region requires the adopting of this approach but the acquisition of costly devices and (scanners) has to be approached cautiously and as a national and regional strategy. Introducing such technology for the purposes of the population and housing census might not be the most efficient use of resources; using it for other government functions as well, such as yearly educational testing, processing border entry forms, capturing data from economic and other household sample surveys, and so forth needs to be considered.

68. In that context, developing the joint questionnaire for at least several island nations would enable using this data capture technology and moving it from island to island as need be. At the same time, there would be a need to train only few specialists that would be able to provide assistance to all offices in such a scheme.

69. The workshop acknowledged the existence of SPC's Population Geographic Information Systems (*PopGIS*) and national Map Servers developed by SOPAC, which have been (*PopGIS*) and can be (*Map servers*) widely utilized by most Pacific Island countries and territories as part of census information dissemination and planning tools. The aforementioned systems have sensitized producers and users of statistics on the importance of accurate census mapping of enumeration areas.

### **Census and disaster management**

70. The workshop concluded that the census represents not only the ideal but is actually the only starting point in developing improved disaster management schemes. This is because it is the only source of data for small areas, by providing data at the enumeration blocks or areas. The value of this relationship is greatly enhanced by the capacity of the census to geo-reference enumeration areas, thus enabling aggregation of enumeration areas relative to the pattern of the disaster and by providing detailed demographic, economic and social profile of populations at risk.

The workshop concluded that the national statistical offices in the region may wish to establish cooperation with disaster management agencies at national, regional and international level in order to better assess their needs and support their planning.

### **2010 World Population and Housing Census Programme**



71. The workshop welcomed the activities of the 2010 World Programme that are planned for 2008 and subsequent years. This programme, endorsed and supported by the United Nations, represents a much needed tool in ensuring the support for census activities at the national level in the region. It was also noted that it would be advantageous to consider developing, under the overall umbrella and guidance of the 2010 World Programme, a Pacific Island Census Programme

72. The workshop noted that the activities of the 2010 World Programme should include the issue of census data analysis and accompanying software as this area is in need of support in the region.

73. The resource center developed by the 2010 World Programme is a valuable and welcome application that will be extensively used in the region. The workshop concluded that the United Nations Statistics Division should continue the work on preparing methodological materials, conducting workshops such as this one and maintaining the Census Resource Center.

## Appendix I. Programme of Work

UNITED NATIONS STATISTICS DIVISION

SECRETARIAT OF THE PACIFIC COMMUNITY  
STATISTICS AND DEMOGRAPHY PROGRAMME (SDP)

*Workshop on the 2010 World Programme on Population and Housing Censuses: International standards, contemporary technologies and regional cooperation*  
(Noumea, New Caledonia, 4 – 8 February 2008)

### PROGRAMME OF WORK

**Monday, 4 February 2008**

**8:00 – 8:30 Registration of participants**

#### **1. Opening**

**8.30 – 9.00** Opening Remarks  
Administrative Matters

#### **2. Review of United Nations *Principles and Recommendations for Population and Housing Censuses*; quality assurance in the population and housing censuses**

**9:00 – 11:00** **2.a *Principles and Recommendations for Population and Housing Censuses, Revision 2 - Overview of major changes***

A presentation on the main issues that have gone into the revision of the United Nations *Principles and Recommendations for Population and Housing Censuses*, highlighting the changes or features that distinguish Revision 2 from Revision 1. The presentation will include a special focus on emerging alternative methodological approaches to the traditional census; on recommended core topics including what they are and the difference in change from a process driven approach, in *Principles and Recommendations* Revision 1, to an output driven approach in Revision 2 and on the recommended tabulations and other types of tabulations in the revised *Principles and Recommendations* including on the rationale behind the choice of tabulations. The session will also include a presentation on the role of the United Nations *Demographic Yearbook* in the dissemination of results from the 2010 round of population and housing censuses.

- **Presentation by United Nations Statistics Division**
- **General discussion**

**11:00 – 12:00**

**2.b Quality assurance, census management and planning**

International recommendations and standards on quality control, census management and planning. Issues refers to the role of the census as a pillar of national statistical system, role of the government, risk evaluation and management, developing and monitoring project plans and quality assurance.

- **Presentation by United Nations Statistics Division**
- **General discussion**

**12:00 – 13.30**

***Lunch Break***

**3. Review of Pacific Model Census Questionnaire**

**Objective:** To review and assess a proposed Pacific Island country model questionnaire containing common concepts and questions that could facilitate the possibility of using and sharing identical tools for processing and dissemination of census results.

**13:30 – 15:30**

**3.a Draft joint SECRETARIAT Secretariat of the Pacific Community census questionnaire**

Presentation of the draft revised model census questionnaire, incorporating improvements and inputs/ suggestions based on experiences over the past years.

- **Presentation by SECRETARIAT Secretariat of the Pacific Community**
- **General discussion**

**15:30 – 16:30**

**3.b Working groups**

Discussion and evaluation of the applicability of the draft joint SECRETARIAT Secretariat of the Pacific Community questionnaire taking into account national circumstances.

**18:30 – 20.00**

***Cocktail***

Tuesday, 5 February 2008

8:30 – 10:30

3.b Working groups (*continued*)

10:30 – 12:00

3.c Plenary session, reports of the working groups, conclusions on the draft census questionnaire

12:00 – 13.30

*Lunch Break*

#### 4. Census geography and contemporary technologies

**Objective:** To present and discuss new approaches in census geography, including the use of Geographical Information Systems and Global Positioning Systems in census mapping, data collection and dissemination

13:30 – 15:30

4.a GIS fundamentals and database design

Present GIS concepts, definitions and characteristics, geographic modelling and data structure (vector vs. raster). Focus on prerequisites to and instructions on building a GIS project.

- **Presentation by United Nations Statistics Division**
- **General discussion**

15:30 – 16:30

4.b Data collection and data conversion

Discuss different data collection methods such as Global Positioning System, imagery acquisition, and local knowledge as well as data conversion such as scanning or digitizing; introduce a GIS platform and conduct a digitizing exercise such as EA creation and splitting.

- **Presentation by United Nations Statistics Division**

- Exercise 1 on Manual Digitizing (35 minutes)
- General discussion

**Wednesday, 6 February 2008**

**8:30 – 11:00**

**4.c Spatial statistics applications and issues and the use of geospatial technologies**

Present and discuss applications and issues with new approaches in census geography, including the use of Geographical Information Systems in census mapping, data collection and dissemination and to demonstrate some of the capabilities of the various platforms. Design of enumeration areas (EA): different factors/considerations; practical examples of delineating EA's; advantages and constraints of these technologies with regard to geo-coding.

- **Introduction of File Geodatabase (30 min.)**
- **Presentations by United Nations Statistics Division on GIS software options (15 min.)**
- **Exercise on the use of these technologies for EA mapping (30 min)**
- **General discussion**

**11:00 – 12:00**

**4.d Demonstration of spatial applications**

Practical examples of geo-coding from direct collection using GPS, geo-coding features in a GIS, and integration of data; advantages and constraints of these technologies with regard to geo-coding.

- **Presentation by United Nations Statistics Division (15 min)**
- **Exercise on GPS data integration (20 min.)**
- **Presentations by United Nations Statistics Division (Opensource Technologies/brief introduction to Object-based image analysis) (15 min)**
- **General discussion**

**12:00 – 13:30 Lunch Break**

**13:30 – 16:30**

**4.e Census geography in SECRETARIAT Secretariat of the Pacific Community region**

Overview of current practices in the use of contemporary technologies for census geography in SECRETARIAT Secretariat of the Pacific Community region; theory of what might/could be (including consideration by SECRETARIAT Secretariat of the Pacific Community to stockpile hand-held GPS units for loan to countries prior to census/survey operations; provision of training to countries) – including a practical demonstration. Presentation of the concepts, framework and national practices in the SECRETARIAT Secretariat of the Pacific Community region in census geography; recent example with survey operational planning in the Marshall Islands.

- **Presentation by SECRETARIAT Secretariat of the Pacific Community**
- **Presentation by UNFPA**
- **Country presentation – Cook Islands**
- **Country presentation – Fiji**
- **Country presentation – Australia**
- **General discussion**

**Thursday, 7 February 2008**

## **5. Contemporary technologies for data capture in censuses**

**Objective:** Explore the use of optical character recognition (OCR) for census (survey) data capture in the SECRETARIAT Secretariat of the Pacific Community region.

**8:30 – 9:00**

### **5.a Introduction to OCR**

Introduction to OCR and its use for the purposes of the census; prerequisites, costs; national experiences.

- **Presentation by United Nations Statistics Division**
- **General discussion**

**9:00 – 12:00**

### **5.b National experiences and their impact to census in the SECRETARIAT Secretariat of the Pacific Community region**

Presentation of national experiences in use of OCR in population and housing censuses from the region; discuss possibilities from training and ongoing system support of Pacific Island countries; discuss possible sharing of equipment in conjunction with the joint SECRETARIAT Secretariat of the Pacific Community census questionnaire.

- **Presentation by Australia**
- **General discussion**

## **6. Commercial suppliers' demonstrations**

Presentation by corporate (commercial) providers of GIS and OCR solutions for censuses (DRS, ESRI).

**12:00 – 13:30**

***Lunch Break***

**13:30 – 16:30**

**6. Commercial suppliers' demonstrations (continued)**

Presentation by corporate (commercial) providers of GIS and OCR solutions for censuses (ESRI, DRS).

- **Presentations will be followed by Q&A sessions**

**Friday, 8 February 2008**

## **7. Population and housing censuses and disaster management**

**8:30 – 10:00**

- **General points – presentation by United Nations Statistics Division**
- **National experiences in this field – presentations by two countries**
- **General discussion**

## **8. 2010 World Population and Housing Census Programme: Activities and products**

**10:00 – 11:00**

- **Presentation by United Nations Statistics Division**
- **Discussion**

## **9. Final Report, Recommendations and Conclusions**

**11:00 – 12:00**

**recommendations**

- **Review and adopt report, conclusions and recommendations**

## Appendix II. Conclusions on the Pacific Model Questionnaire

### DRAFT Proposed Pacific Island Model Census Questionnaire For the 2010 Round of Population and Housing Censuses

#### Geographic Identifiers

As per country requirement – use hierarchical nested administrative geography.

G1-Province (state/region) # \_\_\_\_

G2-Village # \_\_\_\_

G3-Enumeration Area # \_\_\_\_

G4-Dwelling # \_\_\_\_

G5-Household # \_\_\_\_

G6-Household Type \_\_\_\_

Urban/Rural – countries to decide

#### Definitions

##### Dwelling

A dwelling is discrete building structure where people live, which can provide accommodation for one or more households.

##### Household

A household is an arrangement of persons, individually or in groups, who provide for themselves food or other essentials of living. It can also be defined as those persons who usually eat together and share the work of preparing the food and/or the cost of work of providing it. Members of this HH can live in one or more buildings.

##### Head of Household (Person 1)

The Head of the Household is defined as that person who is acknowledged as such by the other members. This person is sometimes referred to as Person 1, for purposes of reference, and is the first person listed in question H1.

##### Usual Resident

A usual resident is a person who has lived in this household for 6 months or more during the last 12 months.

##### Institution

The institutional population comprises persons who are not members of households. These include persons living in military installations, correctional and penal institutions, dormitories of schools and universities, religious institutions,



hospitals and so forth. Personnel responsible for the running of an institution and not living in dormitories or similar accommodations should be excluded from the institutional population. Persons living in hotels or boarding houses are not part of the institutional population and should be distinguished as members of one- or multi-person households, on the basis of the arrangements that they make for providing themselves with the essentials of living.

## Household/Dwelling Questionnaire

### H1-Household members

List the names, sex and usual residency status of all persons in this household at midnight (12:01am) on Sunday July 1, 2007.

Household Line Number	Name		Sex		Usual Resident	
	Surname	Given name	Male	Female	Yes	No
Person 1- Head of Household						
Person 2						
Person 3						
Person 4						
Person 5						
Person 6						
Total						

### H2 Building Materials

What is the main type of material used in the construction of the walls, floor and roof of the main building where this household lives and sleeps?

	Walls	Floor	Roof	Windows
Wood				
Metal				
Plastic				
Thatch				
Reed, bamboo, Straw, grass				
Earth/Mud				
Concrete/ Cement/block				
Glass/Louvers				
Other				

**Notes for discussion:** Some countries have indicated an interest in adding a question on the housing type. This is to determine the number of households that could be

described as “make-shift” in construction and often occupied by what has been termed as “squatters”.

### **H3 Drinking Water**

What is the main source of drinking water for this household?

- Piped water supply
- Water truck
- Rain water
- Protected (covered) well
- Unprotected well
- Bottled water
- spring water
- river, lake, pond
- Other, please specify

Notes for discussion:

- the question is used to determine the suitability of the water for human consumption.
- is there a need differentiate between private/community-stand-pipe access?
- is boiled/treated water a common source?

### **H4 Washing Water**

What is the main source of water used for washing in this household?

- Piped water supply
- Water truck
- Rain water
- Sea
- Protected (covered) well
- Unprotected well
- Other, please specify.

### **H5 Sanitation (or main toilet facility)**

What type of toilet facility does this household use?

- Flush toilet to central sewerage system
- Flush toilet to septic tank
- Ventilated Improved Pit Latrine
- Open pit/latrine
- Lagoon/Ocean
- Bush or field
- Other, please specify

### **H6 Household Waste Disposal**

How does this household mainly dispose of its household waste?

- Commercial/local government waste collection
- Burn
- Bury
- lagoon/ocean
- Composting

- Take to central waste disposal site
- Recycling
- Other, please specify

### **H7 Source of Lighting**

What is main source of lighting used in this household?

- Electricity supplied – main grid
- Electricity supplied - own generator
- Kerosene lamps
- Candles
- Gas
- Solar
- Other, please specify

### **H8 Energy for cooking**

What is the main source of energy used for cooking in this household?

- Electricity supplied – main grid
- Electricity supplied - own generator
- Kerosene
- Wood
- Gas
- Solar
- Other, please specify

### **H9-Housing Tenure**

What is the tenure of this household?

- Owned
- Rented
- Rent free
- Other, please specify \_\_\_\_\_

---

### **Possible additional household questions:**

#### **HA10 – Land tenure (where the house stands on)**

#### **Source of Income**

##### **HA1**

**What is this household's main source of income? – List 3 main in the order of priority**

- No income
- Wages/salary/commissions
- Own business
- Sale of own products (fish, crops, handicrafts, etc.)
- Lease of land

- House rental
- Remittances
- Other sources

**HA2-Source/frequency of remittances (international/domestic)**

**HA3-Household use/access to the internet**

- Dial-up
- Broadband

**HA4-Mortality (as recommended in UN Rev2)**

**HA5. Add list of all household appliances (or items)**

TV, fridge, computes, etc

## **Personal Questionnaire**

### **P1-Name**

What is this person's name? Family name \_\_\_\_\_  
Given name \_\_\_\_\_

### **P2-Relationship**

What is this person's relationship to the head of the household (person in H1)?

- Head of household
- Spouse
- **natural born/biological** son or daughter
- Step child/adopted child/grand child
- Mother or father
- Brother or sister
- Other relative (**specify in manual**)
- Unrelated (Visitor/Friend)
- Other, please specify

**Mention 'relationship matrix'**

### **P3-Date of birth/Age**

P3.1 What was person's date of birth?  
DD.MM.YYYY

**and/or age in complete year**

P3.2 What was person's age at last birthday  
(years)

**P4-Sex**

Is this person male or female? (**consider not asking the question, just get the answer by observation**)

- Male
- Female

**P5-Marital Status**

What is this person’s marital status?

- Single (never married)
- Married
- de facto (customary marriage, common law)
- Divorced
- Separated (not divorced)
- Widowed
- Other-(**same sex marriage**)

**P6-Religion = core in the Pacific-but up to countries if they wish to include.**

What is this person’s faith or religion?

- Christian-if Christian, go to P7.
- Muslim
- Hindi
- Buddhist
- Baha’i
- Other, please specify \_\_\_\_\_
- No religion/faith
- Refuse to answer

**P7-Christian Church Affiliation (Core)**

Which Christian church is this person affiliated with? \_\_\_\_\_  
(Write name of church and code) Church Code

**P8-Ethnicity – (Non-core)**

What were the ethnic or cultural origins of this person’s ancestors? \_\_\_\_\_  
Ethnic origin Code

**Notes for discussion:**

**Alternate P8- What ethnic or cultural group does this person most closely identify with?**

**Important to distinguish ethnicity, race, citizenship, nationality.**

**What is ethnicity?**

**How will data be used?**

**What is the purpose of this question?**

**Can individuals have multiple ethnicities?**

**How is an ancestor defined-how many generations ago?**



- No
- Yes, full time
- Yes, part time

**P18-Type of school or educational/training institute**

P18A: What type of school/educational institution is this person attending?

- Pre-school (kindergarten, nursery school)
- Elementary school (**specify grade/level**)
- Secondary school (**specify grade/level**)
- Tertiary
- Other post-school qualification such as secondary certificate, a diploma program, or apprenticeship (nursing, teacher's certificate, trade license)
- Other (specify).

P18B: What type of school/educational institution is this person attending?

- Government/Public
- Private/Church

**For classification, refer to ISCED**

**P19-Educational Attainment (FSM example)**

(only asked to population 15 years and older)

How much school has this person completed?

- No school completed
- Pre-school (head start, kindergarten)
- Elementary school (specify grade/level)
- Secondary school (specify grade/level)
- completed Secondary school, without diploma
- High school graduate- Timing of census day is important in cases where results of previous year's education may not be yet known.
- Some college but no degree
- Associate degree in college
- Bachelor's degree
- Master's degree
- Professional school degree
- Doctorate degree

***QUESTIONS P20 – P27 ARE ONLY ASKED OF PERSONS 15 YEARS OF AGE AND OVER –Lower age limit to 10 or 12 years of age to capture children working in subsistence activities***

**P20-Labour Market Activity**

During last week, did this person do any work? (Consider using a longer time dimension, e.g. in the last month/last year and ask about both current and usual jobs)

- Yes- If yes, continue below
- No-If no, go to P21

**Notes for discussion: Is there a distinction between work, a job and employment?  
Is “work” the correct word to use?**

-If yes,

What type of work did this person do?

-Work **for pay?** (wages, salary, commission, payment in kind?)

-Work to support the household by producing goods mainly **for sale?** (goods include products from fishing, farming and handicrafts)

-Farming or gardening mainly for sale?

-Fishing mainly for sale?

-Handicrafts mainly for sale?

-Work to support the household by producing goods mainly **for own consumption?** (goods include products from fishing, farming and handicrafts)

-Farming or gardening for own consumption?

-Fishing for own consumption?

-**Volunteer work?** (Missionary, Peace Corps, VSO, CUSO)

-**Unpaid family work?**

-**Other?** please specify \_\_\_\_\_

**P21 Had a job, but was not at work**

During last week, did this person have a job at which they did not work?

-Yes

-No-If no, go to P27

If yes,

What was the main reason this person did not work at his/her job last week?

-Temporary illness

-Temporary lay-off

-Strike/Layoff

-Maternity leave

-On vacation/holidays

-Weather conditions

-Cultural/national events (funeral, weddings etc.)

-Family/personal reasons

-Other

**P22 Occupation**

What is this person’s occupation? \_\_\_\_\_

**P23 Main Tasks**

What are the main tasks of this occupation? \_\_\_\_\_

**P24 Employer**



What is the name of this person's employer? \_\_\_\_\_

**P25 Main Activities**

What are the activities, services, products of the workplace? \_\_\_\_\_

**P26 Employment Status**

What is this person's employment status?

- Employee
- Employer
- Self employed with no employees (Own-account worker)
- Unpaid family worker
- Other

**GO TO P30**

**P27 Looked for work**

During the past week, did this person look for work?

- Yes, Go to P29
- No, if no go to P28

**P28 Reason for not looking**

Why didn't this person look for work last week?

- Not interested in finding work
- Full time homemaker
- Weather conditions
- Believes no work available
- Discouraged from looking
- Retired, disabled, family responsibilities
- Transportation not available
- Attending school full time
- Other

**P29 Availability**

During last week, was this person available to start work if a job were offered?

- Yes
- No

**Notes for discussion:**

**Those persons who answered yes to P20 but are doing subsistence or other work are considered as being employed and therefore are not given the opportunity to answer the "looking and available" questions that could classify them as unemployed.**

**However, using these questions, the total number of persons in this group can be identified and users can assign some or all of them to either of the other two labour market status's than employed. Should consideration be given to having subsistence workers answer a question about looking for work, if there were opportunities for a job in their community?**

**-is data required on multiple job holders?**

**Fertility**

**QUESTIONS P30 TO P34 ARE ONLY ASKED OF WOMEN 15 YEARS OF AGE AND OVER (ask only females 12 or 15 years and older)**

**P30 Given Birth**

Has this woman ever given birth, even if the child died later?

-Yes → go to P31

-No → finish

**P31 Number of children still alive**

How many children of each sex did this woman give birth to who are still alive and are now living...

	Males	Females	Total
-In the household?			
-Somewhere else in this PICT?			
-Overseas?			

**P32-Number of children that have died**

How many children of each sex did this woman give birth to who have died?

Males	Females	Total
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**P33 Total number of children ever born alive**

How many children of each sex have ever been born alive to this woman?

Males	Females	Total
-------	---------	-------

**P34 Date of last birth**

What is the date of birth and sex of this woman's last child born alive? (including a child that may have died later)

Day	Month	Year	Sex	M
				F

**Comments:**

**Note the sensitive nature of these questions.**

**Good pre-enumeration publicity/advertisement necessary**

**Possible additional personal questions**

**PA1-Language Use/Literacy relating to Educational Attainment**

-Wording/content would ultimately depend on purpose of question -> **general literacy** focus would be different than, were interest primarily in **functional literacy**;

-Also, it would be useful to ascertain level of reading/writing/speaking proficiency in all national languages: for example, most PICs have their national language or *lingua franca* (e.g. i-Kiribati; Tongan versus *Tok Pisin, Bislama*) in addition to English (French) and other local/sub-national languages.

-One thing = being proficient in speaking/writing/reading/understanding i-Kiribati or Samoan, while having major challenges doing the same in English – the language of both business and government in most PICs.

**PA2-Disability**

Does this person have any disabilities?

Questions used in 2006 Tongan Census

2. Does this person have difficulty in;		(insert the appropriate codes in boxes)	
a. Seeing, even wearing glasses?		1 = No difficulty at all	<input type="checkbox"/>
b. Hearing, even if using a hearing aid?		2 = Some difficulties	<input type="checkbox"/>
c. Walking, climbing steps or use of Arms?		3 = A lot of difficulties	<input type="checkbox"/>
d. Remembering or concentrating?		4 = Cannot do at all	<input type="checkbox"/>
e. Do you have difficulty (with self-care such as) washing all over or dressing			<input type="checkbox"/>
f. Using your usual (customary) language, do you have difficulty communicating, for example understanding or being understood?			<input type="checkbox"/>

**REVISED Census Questions on Disability Endorsed by the Washington Group**

**Introductory phrase:**

The next questions ask about difficulties you may have doing certain activities because of a HEALTH PROBLEM.

**Core questions** (all incorporated in Tonga format above)

1. Do you have difficulty seeing, even if wearing glasses?
  - a. No - no difficulty
  - b. Yes – some difficulty
  - c. Yes – a lot of difficulty
  - d. Cannot do at all
  
2. Do you have difficulty hearing, even if using a hearing aid?
  - a. No- no difficulty
  - b. Yes – some difficulty
  - c. Yes – a lot of difficulty
  - d. Cannot do at all

3. Do you have difficulty walking or climbing steps?
  - a. No- no difficulty
  - b. Yes – some difficulty
  - c. Yes – a lot of difficulty
  - d. Cannot do at all
  
4. Do you have difficulty remembering or concentrating?
  - a. No – no difficulty
  - b. Yes – some difficulty
  - c. Yes – a lot of difficulty
  - d. Cannot do at all

**Additional questions:**

5. Do you have difficulty (with self-care such as) washing all over or dressing?
  - a. No – no difficulty
  - b. Yes – some difficulty
  - c. Yes – a lot of difficulty
  - d. Cannot do at all
  
6. Using your usual (customary) language, do you have difficulty communicating, for example understanding or being understood?
  - a. No – no difficulty
  - b. Yes – some difficulty
  - c. Yes – a lot of difficulty
  - d. Cannot do at all

**Notes for discussion.**

**-are respondents capable of providing consistent and comparable responses to questions that are better answered by medical professionals?**

**PA3-Personal Internet Usage**

Does this person use/have access to the internet?

- in the household
- at an internet café
- at work
- at school
- at friends
- other-please specify.

## APPENDIX III. List of Participants

05 February 2008

ORIGINAL: ENGLISH/ANGLAIS

### UNITED NATIONS STATISTICS DIVISION

### SECRETARIAT OF THE PACIFIC COMMUNITY STATISTICS AND DEMOGRAPHY PROGRAMME (SDP)

*Workshop on the 2010 World Programme on Population and Housing Censuses: International standards, contemporary technologies and regional cooperation*  
(Noumea, New Caledonia, 4 – 8 February 2008)

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