

POPULATION AND HOUSING CENSUSES

STRATEGIES FOR REDUCING COSTS

POPULATION AND
DEVELOPMENT
STRATEGIES

NUMBER 4





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NOTES:

The views and opinions expressed in this report are those of the experts who attended the *UNFPA/PARIS21 International* Expert Group Meeting on *Mechanisms for Ensuring Continuity of 10 Year Population Censuses: Strategies for Reducing Census Costs*, held in Pretoria, South africa on 26-29 November, 2001 , and do not necessarily reflect those of the United Nations Population Fund (UNFPA).

The designations employed and the presentation of material in this publication do not imply the expression of any opinion whatsoever on the part of the United Nations Population Fund (UNFPA) concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. The term 'country' as used in the text of this report refers, as appropriate, to territories or areas. The designations of 'developed' and 'developing' countries are intended for convenience and do not necessarily express a judgement about the stage reached by a particular country or area in the development process.

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FOREWORD

For any country, the population census is the primary source of information about the size of population, its geographic distribution and the social, demographic and economic characteristics of its people. The strengths and distinctiveness of a census compared with most alternative sources of statistical information arise from its complete geographic coverage and the continuity and comparability of statistics from census to census. Thus the possibilities provided by the census to generate statistics about all the people living in any local or defined area or belonging to any defined sub-group of the population distinguishes it from other data sources. As a result it permits, for example, the analysis of migrant populations, persons living in disadvantaged areas or circumstances, or female-headed households and other gender-related issues. Together with the housing census, invariably conducted in tandem, the population census provides an important part of the foundation for good governance and development.

For more than three decades UNFPA, working in partnership with other international technical and donor agencies, especially the United Nations Statistics Division (UNSD) and the United Nations Regional Commissions, has played a leading role in supporting censuses in developing countries throughout the world. UNFPA technical and financial assistance to developing countries has contributed to the rich census histories in many countries and their strengthened capacities to conduct modern censuses.

The 2000 census round has been marked by a funding crisis throughout the developing world, but especially in sub-Saharan Africa. Rising costs,

shrinking public sector budgets and reductions in overseas development assistance have all contributed to the problem. Several countries, mostly low-income countries, have been compelled to take drastic action, such as the postponement or delay in conducting the census because of persistent financial uncertainties and/or late government approval. In some cases, as countries searched for external sources to support their censuses, the problems inherent in working with new partners contributed to delays in the release of funds and in some instances had unintended effects on the quality and consistency of censuses over time. The hope that after three decades of support, countries would have developed the capacity to conduct their censuses and be in a position to finance census activities has proved overly optimistic.

Given all these problems and constraints, the time is ripe to consider cost-saving strategies and approaches, extending beyond national boundaries. While the scale of some recent approaches is still small, some promising initiatives have been tried with encouraging results. These include the standardisation of census methodologies and concepts, encouraged through the work of the UNSD (especially through the publication and distribution of *Principles and Recommendations for Population and Housing Censuses*) and the UNFPA advisory services provided through the regional Country Support Teams. These have been well-supported by regional and international census symposia and conferences, of which the meeting in Pretoria on which this report is based is a good example. Another approach has been the sharing of experiences between countries, often facilitated by the existence of regional institutions, leading to greater rationalization in the design of census instruments, in processing technologies and in the sharing of resources.

UNFPA, in partnership with the PARIS21 Census Task Team, and with additional support provided by EUROSTAT and the United States Bureau of the Census, took the lead in organising an international conference to review census funding issues, and to help map the way for achieving stability and cost-effectiveness in the future funding of censuses - the *UNFPA/PARIS21 International Expert Group Meeting on Mechanisms for Ensuring Continuity of 10-Year Population Censuses: Strategies for Reducing Census Costs* was held in Pretoria, on 26-29 November 2001 and was hosted by the Government of South Africa.

The meeting was attended by experts from 41 countries and territories, comprising mainly developing countries, especially from Africa and

including China, India and Palestine, as well as developed countries, donors and multilateral agencies. In all, there were some 60 international participants and some 40 national participants to share their experiences and help in creating a better understanding of the common problems that all countries have in census taking.

Presentations were given on technical issues related to ensuring continuity of censuses, maintaining the reliability of census results and reducing census costs. These covered a range of technical topics from different regions, raising many valuable pointers to how cost savings could effectively be achieved. The discussions that followed the presentations demonstrated the rich experience of participants and the importance of seeking solutions to the more fundamental funding problems identified, crucial if censuses as we now know them are to continue. This report contains a summary of the papers presented and the discussions that followed, along with a summary of conclusions and recommendations – the complete papers can be obtained on: http://www.paris21.org/htm/TT_census.htm and http://www.unfpa.org/population/data_papers.htm. To help ensure momentum, the meeting also proposed important steps that needed to be taken.

On behalf of UNFPA, I would like to take this opportunity to thank PARIS21, EUROSTAT and the United States Bureau of the Census for their support for the meeting. Special thanks go to Statistics South Africa for hosting the meeting, for providing a convivial and hospitable setting, and for demonstrating a high level of political commitment from the Government of South Africa. I would also like to thank all the participants at the Expert Group Meeting for sharing their expertise in the area of population censuses.

Finally, I would like to thank my colleagues from the Geographical Divisions at UNFPA Headquarters, especially Africa Division, as well as the UNFPA Country Office in Pretoria, South Africa. I would especially like to thank members of the report team (see page vii) for their hard work and commitment in organising the meeting and preparing this report.

Mari Simonen



Director
Technical Support Division
August 2002



MEMBERS OF THE REPORT TEAM

Mr. Richard Leete

Chief, Population and Development Branch (PDB),
Technical Support Division (TSD), UNFPA

Mr. Hasan Abu-Libdeh

President,
Palestinian Central Bureau of Statistics, Palestine

Mr. Laurie Lewis

Consultant

Ms. Lorena Duharte

Research Assistant,
PDB, (TSD), UNFPA

CONTENTS

Foreword	iii
List of Boxes	ix
List of Figures	ix
1 Opening	1
2 South Africa's 2001 Census	5
3 Census Funding Issues	13
4 Status of 2000 Round of Censuses in sub-Saharan Africa	21
5 Challenges of Census Taking in Different Settings	25
6 Regional Census Strategies: Opportunities for Reducing Costs	33
7 Mobilising Resources for Censuses: Strategies for Reducing Census Costs : Perspective of Partner Countries and the Economic Commission for Africa	39
8 Mobilising Resources for Censuses: Strategies for Reducing Census Costs : Perspective of Donor Countries	47
9 Census Use and Advocacy: Needs, Target and Content	55
10 Priority Operational Research for Census Cost Saving Strategies	61

11	Closing	67
12	Conclusions, Recommendations and Next Steps	69
	Annex I – Population Censuses Held and Planned in the 1990 and 2000 Rounds	79
	Annex II – List of Participants	85
Boxes		
3.1	Rising Costs of Censuses and Cost Saving Strategies	14
3.2	Main Components of Census Costs	16
3.3	Regional Cooperation in Census Taking	19
5.1	Challenge of Census Taking in China	26
5.2	Census Taking in Crisis Situations	28
6.1	Strategies for Reducing Census Costs	34
9.1	Ingredients of Cambodia’s Successful 1998 Population Census	56
10.1	From Traditional to Register-based Censuses?	62
Figures		
2.1	Information Collection Stakeholder Relationship	7
3.1	A Perspective on World Bank’s Mission	18

CHAPTER 1 OPENING

Mr. Pali Lehohla, Statistician-General, South Africa, *introduced Mr. Trevor A. Manuel, Minister of Finance, South Africa,* and, on behalf of the Government and People of South Africa, welcomed participants and noted that it is a distinct privilege for South Africa to host this distinguished gathering.

Mr. Manuel noted in his opening address that in the era of rapid globalisation, little remains unchanged. There was thus the need to improve the integration of economies; the skill base to support constant economic change; the possibilities for governments to develop alternative and effective development policies that offer opportunities to millions of impoverished people, and to recognize the reality that people, in their basic desire to seek the best, will move to where opportunities exist – despite the rules of sovereign states. The advent of democracy, information and communication technology and globalisation have brought to the fore the need to know, the need for evidence-based policy formulation and the need to account.

The responsibility to undertake wide-ranging, regular and accurate censuses places an enormous fiscal burden on developing countries and, even more so, on least developed countries, because of competing priorities. The fiscal challenge is accentuated by the fact that the rate of economic change requires that the time-lag between census enumeration and dissemination be shortened. The consequence of this is that further demands are placed on governments to respond through the acquisition of technology, the development of geographic information systems

and the training in different skills of many thousands who, typically, are in service for only a short period.

The 2000 round of censuses, especially in sub-Saharan Africa, was marked by funding crises. The ever-increasing costs of conducting a census of accuracy and quality, combined with ever-shrinking public-sector budgets forced several countries to delay their censuses. The scourge of conflict and the outbreak of war and political instability further made the prospect of carrying out regular censuses somewhat oblique. A core aim of this meeting was to ensure the stability of funding of future censuses in developing countries, taking into account the role of key stakeholders: the United Nations, the UNFPA in particular; donors and providers of technical assistance; national governments and their statistical agencies; and cross-national institutions providing co-operation and co-ordination, such as SADC and the PARIS21 group.

Mr. Manuel observed that censuses were an important measure of the qualitative improvements in the living standards of our people such as in ensuring that access to water and sanitation, health-care, housing and education were all available. Essentially, our censuses advised us on the rate of rectification of the distortions and inequalities which we inherited from apartheid. They are the most secure tool to advise government where regional and local inequalities demand special interventions. The challenge of delivering democracy was exceedingly urgent for us; hence we were impatient for the results of census 2001. But, we understood that the task of organizing a census was enormously difficult – the logistics of reaching underserved rural areas was enormous and, the situation was not helped by low literacy levels. Yet, we remained confident that the rewards for the census effort were well worth it.

Mr. George Nsiah, UNFPA Representative to South Africa, introduced **Ms. Thoraya Obaid, Executive Director, UNFPA**, who made a video presentation to the meeting.

Ms. Obaid said that it was really a privilege and great pleasure to welcome participants, in absentia, on behalf of the United Nations Population Fund (UNFPA), to this *UNFPA/PARIS21 International Expert Group Meeting on Mechanisms for Ensuring Continuity of 10-Year Population Censuses: Strategies for Reducing Census Costs*, and to warmly thank the South African government for hosting the meeting.

Ms. Obaid stated that this meeting was a true partnership endeavour. In addition to the support of the South African Government and PARIS 21, UNFPA had also received strong support in organising this meeting from EUROSTAT, the U.S. Bureau of the Census, the United Nations Statistical Division and the World Bank. This joint effort gave a strong and clear message: working in partnerships was imperative for ensuring successful population censuses.

Indeed UNFPA, working with a number of partners, had played a leadership role in supporting censuses in developing countries and in countries in transition for over three decades. Apart from its direct support at the country level, UNFPA provided regional technical support through a network of Country Technical Services Teams (CSTs), and interregional support through a team of experts at U.N. Statistical Division.

The value of a population census for a country should be self-evident, despite the large costs involved. The industrialized countries have conducted censuses every decade for more than 200 years. Census data provided a foundation for planning and good governance, for monitoring development progress, and for providing direction for the future. A lack of census data seriously hampered planning activities across a broad range of sectors in many countries, especially the measurement of progress towards national and international development goals. This was particularly true as governments walked along the road map towards the Millennium Development Goals, which included putting indicators into place and monitoring implementation by partnerships of national actors. And adequate gender-sensitive poverty assessments were rarely possible without the sex-disaggregated information provided by a census.

Ms. Obaid looked forward to reviewing the outputs of this meeting, in particular the recommendations for strategies to reduce census costs, a priority research agenda on issues related to reducing census costs, and a plan for preparing national and international census advocacy materials. In closing, she reiterated how much UNFPA looks forward to learning from this meeting about innovative approaches countries were adopting in mobilising support for their population censuses and how national census programmes were reaching to all national and international stakeholders. UNFPA was fully committed to partnerships with countries, PARIS21, the EU, the US Census Bureau and agencies within

the UN system, that were based on comparative advantages and meeting priority needs.

Ms. Deborah Guz, OECD-DAC/PARIS 21 thanked the South African government for hosting this meeting and for its active support for PARIS 21 activities. She also thanked UNFPA for its recognition of the importance of PARIS 21, its leadership of PARIS 21's Census Task Team and for organizing this meeting.

PARIS21 stood for Partnerships in Statistics for development in the 21st Century. Its objective was to strengthen national statistical capacity, and promote and support the collection, use and dissemination of statistics for the purposes of effective knowledge-based decision making. It was an association of individuals and organisations and worked by promoting Partnerships, Advocacy, Resource mobilisation, Information exchange and Strategies to build sustainable national capacity in statistics.

Censuses were an indispensable statistical tool for planners and policy makers, and were absolutely fundamental to the PARIS21 mission. This meeting was fully supported by Paris 21 because it promoted:

- **Partnerships** by bringing together donors and governments and encouraging donor co-ordination to support national efforts in census taking.
- **Advocacy** to demonstrate the power and use of censuses for knowledge based policy making.
- **Resource** mobilisation and reduction of costs to ensure the continuity of censuses.
- **Information** exchange in order to combine and share expertise in order to find ways to be more cost effective and increase census funding.
- **Strategies** to secure the continuation of regular censuses which were essential for developing sustainable capacity in statistics.

Ms. Guz concluded that PARIS21 would like to see this meeting come up with a clear strategy of how to strengthen advocacy for census funding and reduce census costs in order to ensure that all countries were able to continue to hold periodic censuses.

CHAPTER 2 | SOUTH AFRICA'S 2001 CENSUS

Summary

***South Africa's 2001 Census Methodology:
Applying Lessons Learned from the 1996 Census***
Ros Hirschowitz

South Africa was a diverse society, divided along racial, gender and urban-non-urban dimensions. The apartheid legacy was still clearly visible, but numerous changes were taking place since the advent of democracy.

The first census after democracy took place in October 1996. For the first time all people were treated as equal citizens of the same country during census-taking. Previously, the African population size was largely estimated by means of demographic modeling. This first democratic census gave useful results for government in terms of future planning and decision-making, particularly for small areas in the country. But Statistics South Africa learned many lessons on how to improve its operations, that it implemented in Census 2001.

For example, better ways of project management, improved training, geographical demarcation and listing, and data management systems were introduced. The level of technology was also made more sophisticated. For example, bar-coding of questionnaires and boxes and intelligent character reading for scanning questionnaires were introduced. Statistics SA could follow the distribution of questionnaires to the regions and back more adequately. It was also hoped that the scanning would speed up the process of data processing.

The Census Administration Systems of 2001 enabled us to track the progress of the enumeration process in 1996. Final payments of enumerators went off much more smoothly in 2001 compared to 1996, even though initial problems were experienced in paying enumerators an allowance before starting the enumeration process.

The changes made in 2001 would hopefully lead to a more accurate count. Nevertheless, there were further improvements still required, not least of which was the establishment of a permanent census structure in the organization; and the establishment of permanent regional offices, in addition to the existing nine provincial offices.

Summary

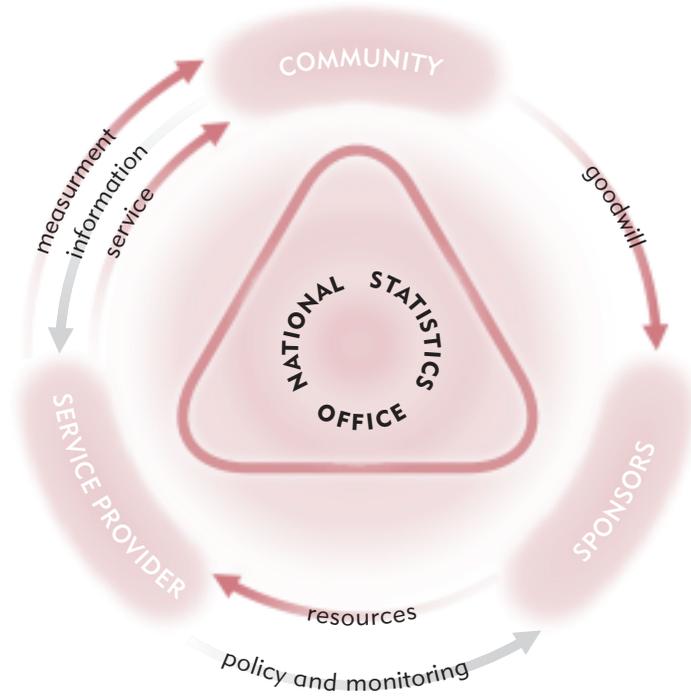
Mobilising Support from Census Stakeholders *Motale Phirwa*

There were four (4) major categories of role players in any data collection effort. The data facilitated measurement of a need for a service by a community. Service providers carried the mandate to deliver a service to a community. Sponsors provided resources for the measurement and the delivery of a service. Lastly the designated organisation needed to co-ordinate the measurement of the extent of a need for a service. It is this organisation that should cultivate and nurture the relationships amongst the community, the service providers and the sponsors. The diagram below depicted the four stakeholders and the relationship amongst them.

Channels of communication

- **Media relations and advertisement** – It was quite important to regularly brief members of the media regarding progress.
- **Partnerships** – Government departments (national and provincial and local), Non-governmental organisation and the private sector should be involved in the discussion about of the uses to which the census information has been put.
- **Endorsement by Stakeholders** - Personalities drawn from political organizations, sportspersons, media and other popular activities should be used to endorse the census.
- **Call Centre** – Provided for the public to phone in, free of charge, to obtain information relating to the Census 2001.
- **One to one interactions** – 15–30 minute presentation on the Census collection to a meeting of the executive members of the administrative structures.

FIGURE 2.1: Information Collection Stakeholder Relationship



SOURCE: *Statistics South Africa*, the National Statistics Office in the Republic of South Africa, conducted its Population and Housing Census after five years. This was a requirement of the Statistics Act of 1999.

- **User consultation** – Service providers were invited to workshops to determine what information to collect in Census 2001.
- **Project Sponsor** – Regular meetings to brief the sponsor/s were necessary. Also the sponsor/s should be involved in the publicity campaigns.

Interests raised

- **Gay and Lesbian Support Groups** – information being collected was discriminating against them.
- **Remonstrations against recruitment policy** – Census was not being fair in its recruitment policies.
- **Guaranteed confidentiality** – respondents needed to be guaranteed that the information they gave would be used only for statistical purposes.
- **Population Groups** – collection of information regarding race was unconstitutional.
- **Sale of Information** – Service providers should not buy information from the National Statistics Office.
- **Levels of undercount** – speculative estimation of the level of the undercount by the media.

Discussion

Use of scanning for the South African census developed from its use in household surveys, and was adopted to achieve quicker, accurate results, reducing the wastage that occurred with keyboard entry. This also had the advantage of making document management more efficient and also accessible to other government departments – not only in conveying images but also in promoting e-government. This could be achieved at no additional cost.

The translation and printing of Census 2001 questionnaires in minority languages resulted at a late stage of preparation in response to demand from Afrikaans groups. It was considered discrete to do this as it might otherwise have led to court cases as part of a more general power game that Statistics South Africa (SSA) did not want to become caught up in. While the use of these other-language forms did not improve the quality of the census process, it did improve the response rate.

The location of households and boundaries posed problems for enumerators, mainly because of a deficit of map reading/aerial photogra-

phy skills – especially on the ground. This occurred even though the enumerators that were hired were well-educated (standard ten secondary school graduates) though unemployed persons. Verbal directions were found to be much more effective, but difficult to provide. The enumerators were generally drawn from local communities. This basis for selection worked well, especially since, as unemployed people, the enumerators could be available at any time, unlike school teachers who had comprised a major component of the enumeration teams in the past.

Problems did occur, however, through difficulty of access, particularly to commercial farms and to high-walled private properties. In the case of the farms, Afrikaans/English speakers were not available as enumerators, and the teams that had previously been used to interview farm workers, were considered too threatening on this occasion. To overcome this, the farmers themselves were designated as enumerators. The more opulent suburban areas constituted a greater problem as they were insistent on personal enumeration visits but forms were difficult to get in and out of these properties. Postal methods might have to be considered as an option in future.

The notable deficiency of children aged 0-4 in the 1996 census cannot be explained definitively, and was probably attributable to both falling birth rates and undercounting at the census. Incomplete births registration, especially for Blacks, made verification difficult, and this was compounded by the elimination in recent years of the details of race from the registration forms.

Results of the 2001 census must be available within 18 months, but Statistics South Africa is aiming to achieve this in closer to 12 months. The 1996 census was the first comprehensive census of the Republic and many more detailed tabulations than previously were released, but there were quite long delays in the release of information. Some of the thematic reports were still in production with a volume on youth appearing in 2001, and a further volume on education not scheduled to appear until 2002. It was intended to make the initial releases of 2001 data much more quickly, and the data released would be based on the adjusted data (that is, data modified in accordance with the findings of the PES). Raw data would not be released except for research purposes. This procedure was being followed in order to avoid confusing users. Results would be made available without charge, in accordance with the

provisions of the Freedom of Information Act. In any case this was not a major concern as Statistics South Africa intended to make census results as accessible as possible to everyone, and charging would compromise this aim.

On the issue of the independence of the census operation from other statistical functions, the census will remain part of the overall government statistics organization in South Africa, as it would be too difficult to separate out in this case. In fact, since it is the largest single activity of SSA, its removal would emasculate the whole operation. This also relates to the funding of the census which is an additional budget item for which there is an ad hoc grant (i.e., not part of the on-going regular annual budget of SSA) from government.

On the other hand, the current approach does not provide for continuity of staffing between censuses, so that each census tended to be a discrete event, and staff had to be assembled and trained each time. Despite the (five-year) frequency of the census, this was a major disadvantage. The SSA did not receive direct funding from any other source, although it had been the beneficiary of various types of technical assistance from a number of countries (including Sweden, Canada, Australia and the United States) and from agencies such as UNFPA, for both the 1996 and the 2001 censuses.

Assessment of the success of the census and the census process was made by the Statistics Council, which evaluated the output and raised any issues it considered significant regarding undercounts (of particular age groups, minorities etc) or other perceived deficiencies, with the Minister. This was a normal part of the overall procedure aimed at identifying any weaknesses and making the process transparent, while not delaying or otherwise interfering with the census output. Irrespective of these comments, the census data will be released by the Minister as required by statute.

It was acknowledged that, in a sense, the census may be regarded as something of a political tool, but this could be quite positive. This was especially true at the local level in ensuring the appropriate allocation of resources in areas suffering most severely from poverty or unemployment, where other needs required particular attention or basic

services were inaccessible. The census could deliver improved detail for small geographical units and groups of people with precision. While the census itself should be regarded as neutral, there were political types of outcome where, for instance, some regions exert leverage to try and derive more resources, frequently on the grounds that the census itself was accused of understating the real, local population size. Nevertheless, the ability to relate resources to population size or characteristics was a major political benefit.

As far as costs of the census were concerned, in net terms and allowing for inflation, the 2001 census would cost much the same as the 1996 census. This follows deduction of certain fixed costs which would be of continuing benefit to government departments, and discounting some of the physical costs in which redundant equipment (some scanners, cartographic equipment) was passed on for use in other departments such as education, revenue and home affairs.

CHAPTER 3 CENSUS FUNDING ISSUES

Summary

Mobilising Support for India's Census: Constraints and Challenges *J. K. Banthia*

The paper identified and addressed some of the constraints and challenges faced in planning and conducting the Census of India 2001, and categorized them under five heads. India was only the second country ever on to count over a billion people. While identification of the constraints and challenges for each of the five categories were dealt with at length, the main focus remained on documenting how to extract best value for the money spent and on the direct cost cutting measures successfully implemented during the course of conducting the census. For example, under the financial aspects, the paper illustrated new measures adopted for enhancing the scope of the census enquiry and obtaining better value for the committed expenditure. It also dealt with the major cost cutting proposal for adopting new technology in data processing, which could lead to reduction in the census budget by as much as forty percent.

The paper strongly recommended the adoption of innovative methodologies for obtaining demographic and socio-economic data on slum dwellers at no extra cost. It also identified and explained how the constraints of a small publicity budget were overcome. The strength of the paper was that it did not theorize on the cost reducing strategies but demonstrated how these were practiced and achieved in a real life situation by creative and exploratory thinking and actual implementation.

Summary**A critical appraisal of census costs**
Iqbal Alam

Population and housing censuses were the largest and most costly data collection activities that governments undertook. The increased demands for timely, accurate and detailed data, along with rising population numbers, contributed to making censuses more costly to conduct. However, there was growing national and international pressure to make population and housing censuses more cost-effective.

Box 3.1**Rising Costs of Censuses and Cost Saving Strategies**

Censuses are the largest, most elaborate and costly data collection activity that Statistical Offices undertake, and costs are rising - in many countries a census covers around 10-15 per cent of the budget of Statistical Offices over an entire decade. One factor contributing to the increase in census costs in developing countries is relatively high population growth. In many, annual population growth exceeds two per cent per annum implying an increase in population size of at least one third over a normal 10-year census period. Another is that labour-saving and time-reducing technology comes with a hefty price tag. Moreover, as potential users recognize the value of census data, the request for a more complex and far-ranging census on outputs is growing, adding value to the census, but increasing total census costs. Even in industrialised countries, *per capita* census costs are rising, despite the use of mail-out and mail-back questionnaires, sophisticated computer data processing technology and having relatively small annual population growth. For example, the year 2000 the US population census is estimated to have cost \$4.5 billion, or \$16 per head, compared with a figure of around \$10 per head in 1990.

Financial accounting practices varied greatly among countries and therefore the United Nations' Principles and Recommendations for Population and Housing Censuses emphasized the need for data on effective planning and control of the various census activities, that could be used to prepare financial estimates for the cost of each census activity.

The main activities that accounted for census costs and delays in census undertakings were: (i) census mapping (cartographic work); (ii) house numbering and household listing; (iii) census tests; (iv) staff recruitment and training; (v) enumeration; (vi) use of sampling in the enumer-

ation; (vii) data processing; (viii) coding; (ix) data capture; and (x) publicity. There was a fine balance between keeping the vast costs of a census to a minimum and preserving its unique advantages as a tool for a complete stocktaking of the size and characteristics of a country's population. Cost-reducing strategies should not compromise the quality of the information that was being collected. Nevertheless, with escalating census costs, often partly on account of rapidly growing populations, countries had to carefully weigh the various costs and benefits of their approaches to census taking at every stage of the operation. Censuses could be cost effective if: (i) the census topics consisted of a minimum number of basic topics with precoded responses; (ii) the questions were easy to follow and culturally neutral; (iii) sampling was used in data collection and data processing; (iv) the recruitment, training and management of temporary field force of census supervisors and enumerators were undertaken with careful planning. Where sampling was employed, the qualifications of the field staff should be better than those involved in the full census count; and (v) adopting appropriate data processing technologies such as, optical mark/character reading (OMR), computer-assisted coding (CAC), user-friendly multi-functional software packages.

The above-mentioned approaches required strong political commitment from countries, sub-regional co-operation and networking. To achieve this countries would have to play a more pro-active role in clearly specifying their needs and the directions they would like to take. Technical co-operation among countries in sub-regions would contribute to the success of their censuses. It is apparent that new sources of funds for supporting censuses will need to be tapped. Greater involvement of the private sector should be further explored in the years ahead.

Summary

Funding Crisis in the 2000 Census Round *Richard Leete*

The paper made the case for adequate and timely national and international support for censuses; outlines constraints experienced in the 2000 census round and suggested ways to avoid a funding crisis in the next census round.

Censuses provided a unique data source for, inter alia, a wide range of policy and planning purposes, including delineation of administrative

Box 3.2

Main Components of Census Costs

Censuses need to be more cost-effective. But they will remain costly despite the use of modern, relatively low-cost, computer technology. There is a fine balance between keeping census costs to a minimum and preserving the unique advantages of a census. UNFPA has found that unless sufficient resources are available at each stage of the census, the quality and value of the entire census can be jeopardized. Three activities tend to take-up the bulk of census operation costs.

First, census maps. Accurate maps provide the basis for a variety of census operations, including setting enumerator assignments, ensuring completeness of coverage, estimating travel time and costs, and establishing field offices. They also provide the basis for producing thematic maps for spatial analysis of the census. The use of GIS, with ground-truthing, can lead to significant cost savings in the determination of enumeration areas. Further, the continuous and multiple use of maps by and across different government departments can help spread cartographic costs.

Second, population enumeration. This is the most expensive census operation. Each person and every living quarter in a country must be enumerated within a short period of time. Enumeration costs depend upon factors such as method of enumeration; the source of supply of enumerators, the geography and topography of the country and the number of questions asked in the census questionnaire. Sampling can reduce census enumeration and processing costs, and improve the quality of information. Sampling at enumeration reduces field-training and processing costs in the main census, and enhances data quality for difficult topics and provides additional information from selected households. However, considerable care needs to be taken in sample selection and implementation to avoid biases in the results.

Third, data capture, processing, analysis, preparation of reports and dissemination. Continued advances in computer systems technology, such as electronic scanning of marks and characters, have greatly increased the speed and reliability in producing and disseminating tabulations, increasing the extent to which automation can be applied as the standard method of processing. However, modern high-level data processing technology, and the skills to handle it, are frequently in short supply in developing countries. And it is by no means self-evident that, in labour surplus situations advanced technologies, such as sophisticated scanning devices, should necessarily be chosen to replace more labour intensive methods. Although avoiding human transcription errors, such as data mis-reading or mis-punching, the technology may have limited application in the years following a census. By contrast, a large number of stand alone personal computers and related equipment items bought to facilitate census data processing may help permanently upgrade institutional capacity.

boundaries and regional resource allocation. They provided a complete stocktaking of the population and a continuity of national, local area and sex-disaggregated data. Without a recent census, planning would be based on unreliable data with possible serious policy and resource allocation distortions.

A funding crisis had arisen in the 2000 census round as a result of rising costs, shrinking public sector budgets, cut-backs in ODA. As a result; several countries, especially in sub-Saharan Africa, postponed censuses, increasing the interval since the previous census beyond 10 years; some countries secured funding at a late stage forcing compromises in census decision-making while others had funding gaps that have slowed post-enumeration activities, including dissemination of results. Further complex crises and political factors have also affected census-taking.

In many countries census costs were rising on account of high population growth. Imported labour and time-saving census data processing technology came with a high price tag. But even in industrialized countries per-capita census costs were rising. Cost saving strategies could include sharing census experiences between countries. Sharing census activities with neighbouring countries: common census year, core questionnaire, sharing manuals, training, processing and dissemination. As a way forward the paper proposed to:

- Assist countries advocate the need for conducting regular censuses and securing funding within countries, and across the donor community. Appropriate advocacy material would need to be developed.
- Assess funding problems that have arisen in the 2000 census round, from the perspectives of developing countries and donors;
- Research into census costs and operational methods to determine measures to reduce costs, as well as how to maximise the timely dissemination and use of census results; including demonstrating how census data can be used for poverty monitoring and mapping.

UNFPA, had long played a leadership role in supporting national efforts to build capacity for census-taking. The Fund, working in partnerships with others and building on comparative advantages, would continue to play a leadership role in support of these aims.

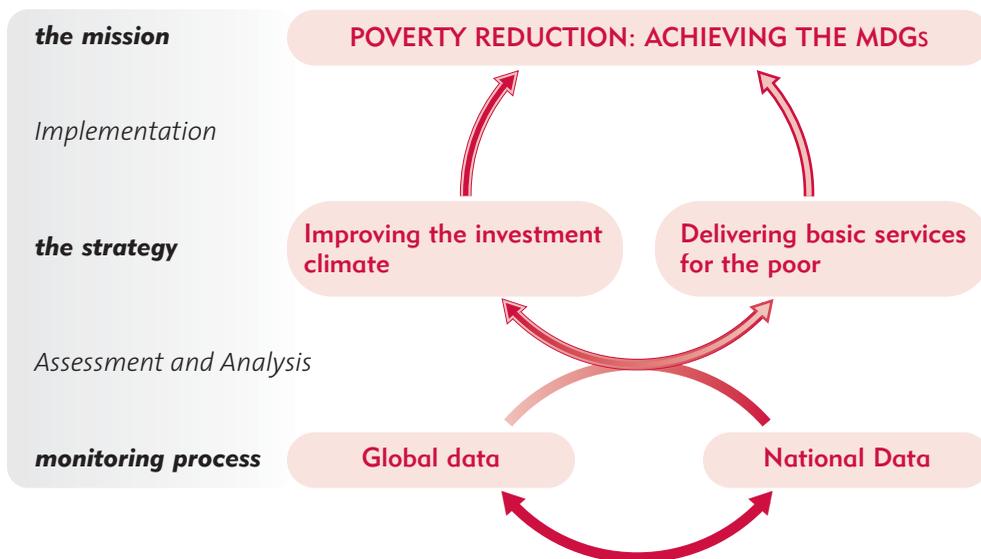
Summary

Censuses as a Source of Poverty Monitoring
Graham Eele

The Bank's overall mission was to promote poverty reduction. Progress towards this goal could be assessed in a number of ways, but at the global level, and increasingly in many countries, there was agreement around the Millennium Development Goals (MDGs). The mission was to be achieved through a number of strategies, key elements included strengthening the investment climate and delivering basic services for the poor. These strategies in turn were underpinned by processes of assessment and analysis.

These depended on data at both the global and national levels. National data thus underpinned the whole process and they required not only effective data collection systems, but also an appropriate statistical infrastructure. Global data included data sets derived from national data as well as some transnational data sets. In between these two elements was a set of activities including the setting of standards and norms, networking and coordination.

FIGURE 3.1: A Perspective on World Bank's Mission



Box 3.3**Regional Cooperation in Census Taking**

The time is ripe to consider broader multi-national cost-saving strategies such as: coordinating international census data requirements; sharing of experiences between countries; and sharing of selected census activities among groups of neighbouring countries with similar problems in data collection and data needs. Specifically these might include a common census year; absolute minimum core questionnaires; and sharing of questionnaires, manuals, training, data processing, analysis and dissemination activities. UNFPA has supported the adoption of these strategies for countries in the Pacific region, Central Asian countries, and parts of Africa since 1999 through the Southern Africa Development Community (SADC). Cooperative success requires strong political commitment from all of the countries concerned. Coordination also requires considerable technical support from the international donor community and from the participating countries with relatively strong technical capabilities. UNFPA, in collaboration with other partners, has supported a number of workshops to promote this strategy.

Population data were either a direct component of the MDGs, or else were required as denominators to calculate ratios. Either way, without good quality population numbers, measuring progress towards poverty reduction at both global and national levels would be impossible. In most countries the only source of good population data were censuses and so we needed to make the case for proper investment in census programmes. Key elements in making the case for increased investment included:

- Need to build demand for better data, within countries and internationally;
- Linking censuses to processes such as PRSP, CDF
- Building censuses into statistical development strategies and plans
- Enlisting support from donors and other partners

We needed to advocate for increased resources, not specifically for censuses alone, but rather as part of a wider process of developing a culture of evidence-based decision-making. We should focus not just on the cost of conducting censuses, but rather the cost of not having the data. In relation to the level of government expenditure and even official development assistance, it would require only a small increase in efficiency to provide substantial returns to having better population data.

In comparison to the potential benefits censuses probably provide good value for money, but we needed to make the case. The World Bank could assist with this in a number of ways, including working with partners such as UNFPA, providing grants for capacity building and possibly even helping to mobilize resources through the lending programme. This may well become more important as donor funds were increasingly provided in the form of budgetary support.

Discussion:

Much of the discussion focused on the 'cost' of population censuses. It was suggested that the question of census costs was separate to the question of whether censuses were expensive. Although censuses cost a lot of money in relative terms they were not expensive in terms of the potential value of their outputs. However, there was concern that censuses were often not fully utilized because the data collected were not always analysed and turned into information that could be used by policy-makers. It was suggested that one reason why census data were not fully utilized in some countries was because donor agencies tended to lose interest, because of the lapse of time since the census project was initiated, and did not wish to fund further work on analysis and dissemination. UNFPA and other agencies were paying increasing attention to the need to support the use of data especially for poverty mapping (covering both the economic and human dimensions of poverty), as well as in promoting thematic policy dialogue on census findings.

Census costs should not just be considered in financial terms. It was also necessary to consider the human resource costs and the opportunity costs of not carrying out other work. The idea of cost sharing with other government departments (for example health and education line ministries) was suggested, although, it was pointed out that other government departments were still funded from the same finite central budget. The possibility of sharing costs with the private sector (such as cartographic costs) was also mentioned.

The importance of national statistical offices and census agencies advocating for censuses within their national governments, especially Ministries of Finance, was agreed. It was suggested that the funds governments received as part of the HIPC process could also be used for statistical capacity building, as well as the current emphasis on basic education and health services.

CHAPTER 4 STATUS OF 2000 ROUND OF CENSUSES IN SUB-SAHARAN AFRICA

Summary

Status of Censuses in SADC Countries *Guest Charumbira*

The paper outlined the responsibilities of the SADC Statistics Committee in the coordination of the development of statistics in the region. The terms of reference of the committee were spelt out. The development of the SADC Census Project for the 2000 Census round was discussed. The paper discussed the benefits of the UNFPA sponsored training workshops in Census Management, Census Questionnaire Design, Census Mapping and Cartography, Sample Survey Design and Census Data Processing.

Of the 14 countries in the sub-region, nine had carried out a census between 1996 and 2001. Three were expected to carry out their censuses in the year 2002. The situation in the remaining two member states was not clear due to the unstable political situation. With the exception of three countries, countries in the sub-region had serious funding gaps in their censuses. This had led to the postponement of the census in at least one country.

Regarding the conduct of post-enumeration surveys, it was observed that most of the countries did not have sufficient resources or capabilities to carry out or analyze such a survey.

Issues of data processing had not been discussed. Some countries adopted optical character reading as opposed to the traditional meth-

ods of data capture. The experience of Zambia, which was the first country to take such a route, showed that this was viable for future census data processing. Progress in this area was considered appropriate, given the need to provide users information at an early date.

The status of Census Funding in some of the countries was discussed. Regarding costs the paper noted that there was insufficient information on what constituted total costs in Census operations. The problems faced by the individual member states in census-taking were outlined.

Summary

Status of Censuses in Western and Central Africa

Richard Dackam Ngatchou

Lessons learned from 1980 and 1990 rounds of censuses in Africa have shown that there were common problems within the region as well as some best practices. The common problems that had a negative impact on the mobilization of resources for the 2000 round of censuses were;

- Long delays between enumeration and publication of census reports, including population based indicators used by the keys stakeholders;
- Low quality data and the consequence of poor census products;
- Lack of national and political commitment;
- Non-existence of a national strategy /plan or programme for the comprehensive demographic and socio-economic data collection.

As a consequence of these problems many countries in the region which had planned to conduct censuses had to postpone the because of serious funding gaps. Yet in many of these countries the per capita cost of a census was less than one US\$.

To reverse this situation some countries adopted evidence based advocacy, using expected products of the census, especially those that helped with poverty monitoring and mapping.

In all censuses held in the 2000 round, statistical tables were being produced within 9 to 12 months after enumeration. Analytical reports, illustrated by GIS output and other new thematic areas, were available within two years of enumeration. User-friendly databases would also be available and accessible to improve utilization of census data.

Discussion:

Comparing census costs and budgets among countries was like comparing apples to oranges because there was no agreement on consistency in what different countries included as cost and what is considered to be a free good.

The question of post enumeration surveys (PES) was raised. Some countries reported good experiences in conducting a PES; others did not. The observation was made that if a statistical office had the energy and resources to mount a PES very soon after census collection was completed, there was a reasonable chance that it would be useful. If a country was exhausted by collection and did not have the manpower or funds to properly conduct a PES it was likely to drag, and the longer it took to complete the less useful it became.

Analysts fulfilled an important role in the census at the beginning as well as the end. Their expertise and interest should be used in designing the questionnaires since they appreciated the limitations of the census and the axiom that one could only get out of a census the information that one asked for. In addition, analysts had a knowledge about census users and their need for census information, so could approach them to become advocates for the census.

Census maps and population data had uses in emergency situations such as floods. Also their use for election purposes was well known. Governments and donors frequently had no difficulty finding funds for parliamentary elections but were not as open to funding censuses, even though they provided the basis for the elections.

CHAPTER 5 CHALLENGES OF CENSUS TAKING IN DIFFERENT SETTINGS

Summary

Challenges in Census Taking in China

Xiru Li

The 2000 census was the fifth in China since 1949. It was the first census during the period of transition from a planned to market economy. According to manual tabulations from the census, China's population was 1.3 billion.

Following the establishment of China's socialist market economy, there have been increased demands for census data. Compared with the 1990 census, the new items added covered birth place, time of residency, time of work last week, source of income and housing. Short and long questionnaires were used during the 2000 census for the first time – 10 per cent of households were selected to complete long questionnaires.

Greater difficulties in obtaining accurate figures in the 2000 census arose because of factors such as the extension questions on economic activities, the frequent movement of the floating population, the decline in respondent cooperation compared with earlier censuses, the weakening of the administration of the household registration system and the introduction of base maps, constructed for the first time.

An added problem was the difficulty of selecting enumerators - nearly six million enumerators were selected mainly from among governmental staff. Under the planned economic system, enterprises belonged to the government, and it was easier to find enumerators. Under the market economy, however, some of the enterprises had been changed into

Box 5.1

Challenge of Census Taking in China

Carrying out a census is a major, complicated and expensive logistical and statistical exercise and, even in China, is the largest event in terms of social mobilization carried out in peacetime. The difficulty of conducting a census in China is quite evident from the huge size of the population and the country. China has an area of 9.6 million square kilometres, with certain parts of the country still not easily accessible. Economically, China is still developing, and there are wide disparities in the levels of regional development. In addition, the 2000 census of China was the first population census to be undertaken during the transition period from a planned economy to a market economy. Consequently, the fifth population census encountered some unprecedented difficulties. These included:

Growth of the floating population: In recent years, with the emergence of the market economy and fundamental changes in the mechanisms and patterns of employment, there has been a large movement of surplus rural labour to the towns and cities. As a consequence, both the spatial and the time criteria for the identification of permanent residents in any particular locality, and especially in the cities, had to be formulated and refined, and considerable time was required by enumerators to establish the correct classifications of this large, mobile population.

The weakening in the administration of household registration: The strict administrative rules that pertained for previous censuses have not been sustainable since the economic reforms have made a major impact. The maintenance of household registration during a period of growing mobility has declined, so that there is now a large population without household registration, or for whom household registration and actual residence differ. According to estimates based on the one per cent sample survey of population conducted in 1995, there were 80 million people whose permanent residence differs from that of their household registration.

The decline in cooperation by citizens: The social and economic changes in recent years have made people much more sensitive about protection of individual privacy. Many are also tired of the endless surveys being conducted and have become resistant to answering questions, and the threat of punishment by the administration has also had a negative impact on the census. For instance, some members of the floating population were afraid of having to pay fees or be sent back to rural areas, while households with extra births beyond the family planning programme were afraid of being fined.

The difficulty of selecting enumerators: Under the earlier planned economic system, enterprises generally belonged to the government, and it was relatively easy to designate people as census enumerators, most often without additional compensation. Since the emergence of the market economy, however, many of the enterprises have changed into shareholding and private companies with various types of ownership, which made it more difficult to find enumerators prepared to work without payment. ►

Box 5.1 *continued*

The necessity of census mapping: For the previous four population censuses of China census maps were not prepared because of the comprehensive and stable administrative network, consistent with territorial units right down to the most local units. With high levels of mobility and the breakdown of the household registration system, implementation of the census under the *de jure* system appeared extremely difficult. Therefore, for the 2000 census, districts were defined by census region rather than by administrative jurisdiction, and maps were prepared for nearly five million enumeration areas covering the whole country. This proved to be a very difficult exercise, not only because it was the first time census maps had been prepared, but also because the time for preparation was limited; available base maps from other sources were inadequate; and there were virtually no skilled persons to undertake the mapping in the census offices.

Budget: The critical issue was achieving a balance between meeting the increasing demands for information with high quality data, and the economic feasibility of funding such a large budget. The ‘Statute for the Fifth National Population Census’ designates the population census as a common task of government at various levels, so the population census was jointly financed by central and local governments. The central government mainly covered the costs of census questionnaires, data capture hardware and software and other expenditure in the central census office, plus special grants for counties where poverty was an issue. The budget input by local governments, from provincial level to township level, was for the preparatory and field enumeration phases, particularly for the costs for recruiting census staff and enumerators. To reduce the census budget, government departments were made responsible for providing census staff and logistical support. In China’s 2000 census, nearly six million enumerators were deployed mainly from governmental staff, teachers of primary and middle schools, and cadres of village committees. No salaries were paid to enumerators but a small amount was paid in subsidies by local governments.

private enterprises which made it more difficult to find enumerators without having to pay for them.

According to the ‘Statute for the Fifth National Population Census’, the census was a common task of governments at different levels. The funds needed for the census were jointly financed by central and local governments, although predominately by local government. Central government contributed some US\$ 60 million covering the costs of printing questionnaires, purchasing data capture hardware and software and other expendables. Local governments, from provincial to township level, contributed about US\$ 400 million for the preparation and field enumeration phases of the census.

Summary***Challenges in Census Taking in Palestine****Hasan Abu-Libdeh*

The Palestinian Census of 1997 was the first ever to be conducted under a Palestinian national authority. This census might have been one of very few sovereign statistical exercises involving populations, housing units, and economic establishments within areas of different security controls. The Palestinian census was planned and conducted under unique political and socioeconomic conditions.

The paper considered the Palestinian experience of conducting a population census in the absence of political stability, with ignorance of

Box 5.2**Census Taking in Crisis Situations**

The Palestinian census, undertaken in 1997, had to be planned and executed in the context of a politically troubled area, going through a very rapid and rough socio-economic transition, and suffering from the prolonged effects of occupation. Special precautions, procedures, and treatments were developed to minimize the negative impact of the prevailing circumstances on the quality of the census. The following factors were particularly important.

- The Israeli government was informed of the plans for fieldwork operations well ahead of time. Movement within areas controlled by Israel was always supervised and monitored by Palestinian security forces, in civilian dress.
- Fieldwork management and operations, as well as storage and distribution of stationary, equipment, and census material, were totally decentralized. In the event, census material was distributed some three weeks ahead of census day.
- Backup fieldwork teams were trained and assigned to be on call for the duration of the enumeration period. These teams were deployed following the detention of scores of fieldworkers by Israeli military forces during the first three days of the enumeration.
- An emergency committee was established within each community to assume responsibility for fieldwork in case of any emergency arising from inclement weather or unstable political conditions.
- Intensive campaigning was carried out through all available means and venues, including mosques and churches, to assure the public of the confidentiality of their census returns. The residents of Jerusalem were accorded special treatment, allowing them to omit responses to questions that could affect their residential rights in Jerusalem, and similarly, 'illegal' residents were given certain guarantees for protection of information identifying their whereabouts.

stakeholders, competing priorities, and lack of technical infrastructure. It focused on the major challenges, recommendations, and lessons learned from experience in invoking stakeholder's interest, organizing fieldwork activities, setting up the organizational structure and utilizing statistics in socioeconomic planning.

The census represented a unique opportunity for the country and international community to obtain detailed information about the country at the locality and small area levels. The data were much needed for planning developmental actions on the basis of needs of various parts of the country. Being the first of its kind in the recent history of the nation, the census faced serious conceptual, methodological, and operational challenges, which had to be tackled in order to secure minimum conditions of success. Conceptually, for example, some compromise had to be found in census content between the great needs for information expressed during consultations, and the limitations of funding.

Some creative means had to be found in order to be able to conduct a full census in a country which was not sovereign. Operationally, we had to bring the census to a successful end in spite of the political difficulties resulting from continued Israeli occupation, and we had to make sure that final results were produced in record time, accepted with no major reservations, and used by the majority of stakeholders. Specific challenges were addressed in the paper.

Census taking provided a unique learning experience not only for the census team and National Statistical Office, but also for the country as a whole. With no prior experience to learn from, we had drawn extensively on the UN recommendations, experiences of other countries, and experiences of technical advisors, in planning and implementation of the census. However, the nature of facts on the ground in terms of the political realities led, in many cases, to diverting from the classical approaches in favor of unorthodox approaches at times to keep the exercise manageable and on track. Based on the accumulated experience leading the planning and implementation of the first Palestinian census, some lessons were derived for the next one.

Summary***Challenges in Census Taking in Kyrgyzstan***
Zarylbek Kudabaev

A law on the census was passed and relevant decrees were adopted to provide a sound legal framework for the holding of Kyrgyzstan's first population census. The President of Kyrgyzstan repeatedly made statements and gave his personal support at all stages for its preparation and conduct. On the first day, the President was interviewed by an enumerator from the statistical committee of Bishkek, where he was a resident, and this marked the official beginning of the census.

A vast media campaign on the census was conducted on television, radio and in newspapers, including a direct television line where citizens could ask questions about the census and receive answers from the Chairman of the National Statistical Committee. A lottery draw based on the questionnaire forms was held and people won many valuable prizes. This played an enormous role in involving the public in the census, and in fact only isolated individuals were not enumerated.

Following the pragmatic approach described above, the decision was taken to hold one pilot census. The pilot census, conducted half a year before the general census, was a dress rehearsal for the first national population census and was carried through to its logical conclusion, that is the results of the pilot census were processed and published, a bulletin with cartographic and tabular material was issued and census staff were given practical training.

Given the tight financial and budgetary situation of the Republic's budget, optimum arrangements were made to combine financing of the census both from the Republic's budget and from local budgets. Efforts were made to attract donor support. For example, an international agreement was signed with the Government of Switzerland to help fund the pilot census in Kantsky district; and external technical assistance was provided for the census, especially with the support of the United Nations Population Fund.

Some lessons learnt from the national census were that (1) the use of scanning is not always cost-effective, especially as a result of high paper costs and (11) use of school teachers as enumerators/supervisors was cost-effective as was the use of retired statisticians and people, especially statisticians, from government agencies for training purposes.

Discussion:

In its discussion on possible political influence on the census, the meeting affirmed the importance that the census not be construed as being influenced politically or providing figures that were essentially pro-government. In reality, however, it was felt that a census could not be conducted entirely outside the political system. Support of politicians and parliaments was essential to enacting census legislation and enabling the conduct of the census. But political systems should be regulated so as not to abuse power. The census had its own wide constituencies, regardless of the government. It was thus important for the census to draw on the support of the government and its opponents as stakeholders in the census.

The meeting considered the optimum training duration for census enumerators and supervisors. Based on country experience, the duration of training varied from a few days to more than a month. The meeting felt that there were many variables to take into account, including the complexity of questions to be asked and the skill-levels of the enumerators, and thus could not propose any duration as ideal. However, it felt that the topic was important and warranted further research. Other important aspects of training were raised. The use of videos, for example, had proved useful and could result in reducing the time and cost of training. Census training should be seen as a continuous process involving many people and should not focus only on enumerators and supervisors.

A number of questions were raised on the level and nature of under-enumeration. In general, infants and young working age people were selectively omitted from censuses. The meeting noted problems that arose from attempts to link census coverage with details contained on national registration systems. Resulting from such links, problems in capturing information on the so-called "floating population" of migrants to the cities might occur leading to selective under counts of this population. It was also possible that the employment of low paid or unpaid enumerators was a factor contributing to under-enumeration.

The meeting heard some interesting arguments on the relative merits of scanning devices and conventional key entry of census data. A number of countries considered and rejected the use of scanning technology for their most recent censuses. In support they argued that the purchase of more computers for the census provided additional employment oppor-

tunities during the census processing. The purchase of the additional computers required for keying also contributed to building national capacities and could be used at different geographic levels in a variety of applications on completion of the census. On the question of efficiency, it was further argued that conventional key input did not necessarily take longer than scanning; speed was dependent more on management factors than the choice of equipment.

However, other countries had used scanning technology successfully and did not feel that their purchase or use had been donor driven. One big advantage of scanning was the facility to archive information automatically, removing the need for much paperwork. The meeting acknowledged that the choice between scanners and conventional key input was not universal but depended on the circumstances of each country and what it wished to achieve.

The meeting noted with interest the operation of a lottery in one country designed to improve public interest and census coverage. Other cost-saving resorts included cost sharing, such as utilizing employees of other government departments, the use of existing infrastructure, transportation, communications facilities and a range of in-kind contributions. The meeting also felt that the reduction in size of an overly lengthy questionnaire could contribute to reducing cost, although the extent of such savings would depend on the actual topics and questions involved. The issue of outsourcing was raised as a possible way of reducing costs. However, the meeting expressed some reservations on the appropriateness of outsourcing to many of the developing countries.

REGIONAL CENSUS STRATEGIES: OPPORTUNITIES FOR REDUCING COSTS

Summary

Experience of SADC *Pali Lehohla*

SADC, currently comprising 14 member states, was established 6-7 years ago in order to harmonise their statistical data. The many political protocols required substantiation and support through such mechanisms as a common statistical base. An obvious starting point was to establish a common census year. However, because of constitutional and other considerations it became an intricate task. At this time, seven countries were in the process of organizing and conducting censuses and four others were scheduling censuses in adjacent years, providing a basis for the strengthening collaboration. This also provided an opportunity to confront common problems, to recognize common destinies, and to cooperate through common arrangements.

The first group of workshops under UNFPA sponsorship, 1998-2002, would soon be completed. In addition, there had been opportunities for the interchange of teams observing and discussing issues relating to pilot censuses in several countries, and this had been of particular value to South Africa in the run up to the 2001 census. The workshops themselves offered opportunities for learning new techniques and to move towards a common questionnaire for censuses throughout Southern Africa – a major movement towards statistical harmonisation. The project provided for planning, training, cartography, processing and analysis.

The key issues decided had already led to cost reduction, not only in dollar terms, but also in what would have been foregone had these steps

Box 6.1

Strategies for Reducing Census Costs

Cartography

- Establish a Geographical Information System (GIS). With the establishment of a permanent Geographical Information System for establishing areas, future enumerator area demarcation countrywide will no longer be required as a preparatory activity for the census. Continuous revision and updating work, at a small scale and cost each year between censuses, is all that is required.
- Maintain a census map database and share the resource with district authorities and other users to mutual benefit.
- Establish and maintain close and permanent contact and cooperation between the National Bureau of Statistics and district authorities in order to maintain a constant flow of relevant information on changes in population and settlements, and to update census, survey and other relevant maps for areas where there have been significant changes.
- Promote use of modern technology in the on-going map updating exercise. This includes the use of satellite imagery and aerial photography, particularly in fast growing urban centres.
- Fiscal issue: constraints resulting from the increase in the number of older persons relative to the number of working age persons;
- Time to reassess the positive contribution of the elderly and assist in meeting their long-term needs.

Census questionnaire

- Restrict the number of census questions to a minimum by avoiding inclusion of questions (e.g., on HIV/AIDS, agriculture) that need special surveys or enumerator skills to implement. This saves time in the field, cutting the total cost of employing enumerators.
- Print questionnaires through tenders or quotes from a competitive open market.
- Reduce the number of enumerators to a practical minimum to avoid wastage or duplication, reduce time and cost of training, and make best use of qualified personal with other responsibilities.

Post enumeration

- Implement a Post Enumeration Survey (PES) if this can be done quickly after the census, efficiently and beneficially.

Vital registration

- Establish and maintain a compulsory and comprehensive vital registration system.

not been taken. Accessing options on, for example, PACE (Pan-African Census Explorer) had been particularly significant in this context providing for the accessing of data and developing capacity towards inter-censal data analysis.

Issues of cost reduction focused on the ability of SADC to facilitate and promote the use of data within countries and within the region, based on the agreement on common processes and access. The next phase was to develop a research programme. This phase of data analysis and application was about to begin here in this meeting, in a paper drawing on the South African Census 1996. Within a few years, it was hoped to have the critical mass to look across at the broader regional context and start writing for a broader regional audience.

Summary

Small Island Countries *Laurence Lewis*

Despite wide differences in their census histories, during the 1980s, supported largely by UNFPA, significant technical support was provided to the Pacific island countries for their census programmes. Partly as a result of the UNFPA-funded regional advisory services from ESCAP and the SPC, the regular convening of regional census meetings, and the production of UNSD and ESCAP publications covering recommendations and principles for population and housing censuses, a considerable convergence in census practices was beginning to emerge, particularly in the topics and questions included in the censuses. By the mid-1990s, however, there was growing concern in the national statistics offices regarding the conduct of the next census. Traditional sources of technical and financial support were drying up and dependable alternative sources were hard to locate. The introduction of the Country Support Team into the Pacific region did provide some technical assistance to censuses, but it was no longer possible for donors to provide direct financial support for population censuses at the same level as in earlier years.

Given the harsh realities, UNFPA, UNSD and the SPC held extensive discussions during 1997 on the strategies that the Pacific island countries might pursue for the 2000 round of censuses. As a result of these discussions a meeting was convened in November 1997 to consider a regional approach to census taking and to develop, as far as practicable, common strategies. Many of the recommendations of the regional meeting pointed the way to reducing census costs. The most important

of these recommendations was to set up a regional census network comprising NSOs, regional and international agencies and the national statistical offices. For most purposes, the regional inter-governmental organization, the South Pacific Commission (SPC) agreed to serve as the focal point.

Given the convergence already attained in most of the countries, the meeting was able to agree on a core set of topics and questions for both population and housing topics. This core list was further refined in a follow-up meeting held in 1999. It was envisaged that the SPC would take the lead in developing a supplementary list of topics and questions that could be adopted by countries if they wished. More immediately cost saving could be achieved through the coordination of data processing. As a starting point the regional meeting agreed that IMPS should become the standardized software for census processing, and standard training courses should be developed. The common or near-common approach to census form design and content and census processing provided many new opportunities for regional cooperation.

Summary

Regional Experiences of Western and Central Africa *Richard Dackam Ngatchou*

Concern with reducing census costs was a major issue affecting census design in Western and Central Africa. The main components of all censuses within the region depended on international or bilateral donors. There was currently no sub-regional institution, like SADC, able to guide governments on a common approach to help reduce census costs. Before 1990, UDEAC, in central Africa had tried to promote a common approach, taking censuses for five countries - Cameroon, Central African Republic, Chad, Congo, Gabon, Equatorial Guinea – but this effort was not sustained.

CST-Dakar had contributed to change the step-by-step approach of the 2000 round of censuses, from design through to dissemination, so as to make censuses more cost-effective and based on lessons learned from past practices within the region. The main recommendations were presented in a CST publication "Strategies for Reducing Census Costs – UNFPA/TSS Task Force Group, 1996". Many countries in this region had adopted a new approach whereby the analysis plan was portrayed as the key component in increasing the cost-effectiveness of the census. The CST was encouraging this approach and promoting operational

research on reducing census costs. The rationale was that the census was expensive when the utilization of data from the census was weak.

The CST was identifying common problems in census-taking within the region. After exchanges with countries, a UNFPA/CST meeting was convened that decided on the organisation of a series of regional workshops to solve common problems within the region. These were: Geographic Information System (GIS) 1997, Data processing with IMPS, 1998, Managing Census Process, Analysis/Tabulation Plan, Utilization of Census Output (Data, Result) 1999, Post Enumeration Survey (PES), 2000.

South/South cooperation has been a strategy to reduce technical support costs using regional training institutes such as Institut de Formation et de Recherche Demographiques (IFORD). IFORD has also contributed to several censuses within the region through training on demographic analysis and on thematic topics, including through on-the-job-training.

Discussion:

The presentation focused more on the benefits of regional cooperation. It was difficult to reduce census costs, but regional cooperation and coordination helped. Some costs could be reduced through modern technology and sharing; examples include digital mapping and data capture w/ scanning. SADC cooperation was a positive framework. Regional training cooperation created savings.

The meeting asked whether the SADC individual country data sets would be made widely available within the SADC region. There would be efforts to increase and facilitate data sharing among the SADC countries, but the specifics had not been worked out. The meeting also considered how the common analysis activities would accommodate cultural differences among the SADC countries. The cultures within the SADC region were fairly common and any differences could be dealt with. Language was a similar issue that would need to be taken into account. The notion of a common census date for SADC countries was raised, but it was felt that the political realities in the region made this impossible at this time.

Whatever the proposals at the various workshops, there had not yet been any real attempt at standardization at the detail level. Rather,

there was more focus at the general strategic level. The differences that persisted among the countries determined what was possible. Thus some countries accepted recommendations and some did not. In general, there was a tendency to resist new technologies and change. The creation of a common census fund was not envisaged, though common training and coordination was proceeding.

It was felt that this type of cooperation was very useful. The Meeting noted the considerable linguistic isolation that existed in the region and discussed the need for a regional structure among English speaking countries to facilitate greater cooperation. Training at the regional level was considered more cost-effective than training overseas. Greater cooperation called for the use of common software for GIS and data processing.

It was noted that in many cases, a lack of political stability led to a lack of census support. The key to resolving the problem was advocacy. Accordingly, the meeting called for high level assistance in developing advocacy strategies and materials.

MOBILISING RESOURCES FOR CENSUSES: STRATEGIES FOR REDUCING CENSUS COSTS – PERSPECTIVE OF PARTNER COUNTRIES AND THE ECONOMIC COMMISSION FOR AFRICA

Summary

Chad

Bandoumal Ouagadjo

African countries in general and particularly those in sub-Saharan Africa, faced immense difficulties in conducting censuses every ten years due to financial constraints. Faced with these difficulties, countries also needed to contend with donor fatigue. For these reasons, it was extremely difficult for many countries to conduct censuses every ten years. In the case of Chad, the next census was due to take place in 2003 (the first took place in April 1993) but the preliminary work had not begun, due to lack of funds.

Conducting censuses and reducing census costs were inextricably linked. In order to carry out a more cost-effective census, it was necessary for countries to adopt new approaches at all operational levels.

Census-taking was an act of sovereignty and should therefore be principally financed by the state. The paper took note that censuses were the responsibility of the state, and must be designed in partnership with all political actors, particularly with the private sector and civil society, including associations, NGOs, communities and donors so as to obtain their consent and their involvement in the census process.

The paper also highlighted the difficulty in creating and managing databases after a census had taken place. A census should be included within the framework of a national integrated system to collect demographic and socio-economic data. It should be considered as the central information system for population and development data.

Summary**Namibia***Liina Matheus-Kafidi*

The Statistical Office conducted a post-independence census in 1991 with the support of experts, mainly from UN agencies. The office expanded from 1993 when many local staff were then employed on a permanent basis. Nevertheless, the Statistical Office in Namibia was one of the most understaffed offices in the government. As a result, only a few core staff members (subject matter specialists) were available for the census preparations. The shortage of staff and lack of some expertise in the Central Bureau of Statistics (CBS) was recognized as a problem. However, it was not felt necessary to seek technical assistance from outside the organization, as staff were available with specific expertise from different departments of the National Planning Commission, where the CBS was located. The Census Office was established and its function was temporarily detached from the normal functions of the CBS. This office efficiently executed the census program.

Namibia had no government expertise in the area of cartography. Hence some of the cartographic work was outsourced to external consultants. However, it was rather difficult for the CBS to monitor and evaluate the work of the consultants. The census enumeration was completed on schedule, followed by a PES to check the coverage, which commenced immediately after the census enumeration.

The experience gained from SADC meetings and workshops was very useful in executing the 2001 Census project in Namibia, particularly on planning the census and designing the questionnaire. The involvement of government and non-government institutions in the census planning was a cost-effective approach, especially on logistics arrangement and on the publicity campaign. These institutions were very supportive mainly in providing vehicles, helicopters, boats, and other logistics.

Summary**Nigeria***Dr. A. Kadejo*

It was becoming increasingly difficult for countries in sub-Saharan Africa to secure funding for censuses, due in particular to economic and financial crises, and bilateral and multilateral donor fatigue. Hence, it had become imperative to examine cost-saving strategies in undertaking censuses. This paper briefly discussed Nigeria's experience with its census PES; and examined the implications for cost-saving strategies for census operations.

The Nigeria Population Census programme of 1991 had a PES as one of its major activities - conducted three weeks after the 1991 Census throughout the country. It was designed to serve as an instrument to cross-check the accuracy of the census results. A further objective was to collect additional information, especially on fertility, mortality and migration.

After the preliminary analysis of the PES results, it became obvious that the results could not be used to evaluate the census as planned since it was conducted under different conditions from the census. These related, especially, to problems with the mobile population, the timing (Christmas) and the apathy among respondents to answering numerous questions.

All these factors accounted for the high rate of call-backs and "refused interview" at the end of the exercise. Hence the PES was not used to estimate coverage error. However, the additional demographic information collected through the PES was utilized in the analysis of census results.

Cost- saving strategies in future census PES operations should:

- Use an efficient sample size and sampling strategy.
- Use an absolute minimum core number of questions.
- PES should be treated as a continuous exercise with the same tempo as the main census: the IEC/advocacy machinery for the census could include information on PES from the outset.
- Use an unambiguous PES plan as part of the overall census programme.
- PES should be conducted in the immediate period following the main census.
- PES methodology should be computerized.
- Data processing of the PES should be included in the census work plan to ensure prompt tabulation, but should be kept distinct from the main census processing.

Summary

Tanzania

Abdulrahman M. Kaimu

The Tanzanian Population and Housing Census was planned to be conducted in August 2002. Three other censuses had been conducted since independence, for the years 1967, 1978 and 1988.

Census costs had been increasing over the years. In 1988 the cost was US\$8.0 million while for the next census the cost was estimated to be US\$34.68 million. In 1988, financial support was received from UNFPA, SIDA, ODA and UNICEF.

On funding sources and levels, the government set aside US\$20.44 million, i.e. 59% of the US\$34.68 million of the estimated cost. Donors who had so far contributed to the census budget were USAID (US\$750,000), UNDP (US\$250,000), UNFPA (US\$2.5 million), DFID (£1.95 million), SIDA (US\$4.0 million) and Japan (US\$778,777); and Belgium had pledged US\$500,000.

By 31st October 2001, 52,609 EAs (85 percent) out of 61,570 expected EAs had been demarcated. A Pilot Census was carried out in August 2001. Optical Mark Recognition Scanning technology was used to scan the forms and the rejection rate was 1.71 percent.

Strategies for reducing census costs were directed at the following areas:

Cartography

- establishment of a Geographical Information System (GIS);
- maintenance of a census map database shared with District Authorities and other users;
- establishment and maintenance of close and permanent contact and cooperation between the National Bureau of Statistics and District Authorities on sharing information on changes in population and settlements in the districts, and the updating of census/survey maps;
- use of modern technology in map updating from satellite imagery and aerial photography.

Census Questionnaire

- restriction of the number of questions to a minimum;
- printing of questionnaires by competitive tender;
- reduction in the number of enumerators in the sample rural EAs where the detailed questionnaire is to be administered.

Post Enumeration

- exclusion of a Post Enumeration Survey (PES).

Vital Registration

- establishment of a well maintained population register and enforcement of vital registration.

Vital Registration

- establishment of a well maintained population register and enforcement of vital registration.

Summary

Economic Commission for Africa *Israel Sembajwe*

The presentation took note of the need for data on monitoring indicators for national programmes and international frameworks and recognised the census as the major source of national data. It identified issues raised at the 1996 UNECA/UNFPA Expert Group Meeting on Post-ICPD Needs in Basic Data Collection, Analysis, Dissemination and Research, including lack of a comprehensive census plan (from initial planning to analysis, dissemination and utilization); constraints to census taking (such as limited human and financial resources, as well as lack of sharing census costs); cost effectiveness (in terms of collecting data that are relevant, required by the users and can generate results at lower geographical units); gender mainstreaming; storage and maintenance of census materials and equipment; and extended data processing period.

Among the 1996 meeting's recommendations were the need to: adopt a global vision of the census from the beginning; recognize the interdependence of the census phases and its position in the integrated national data collection system; advocate for government commitment to provide equipment and human resources through temporary reallocation; and advocate for government commitment to provide financial resources. It was deemed necessary to use a multidisciplinary team to prepare the project document and involve the analytical team in the whole conception of the census operation; involve female personnel in all the census stages and let female respondents give answers to questions that concerned them; adopt the use of short and long questionnaires except in small nation situations where a single sufficiently short questionnaire could be used; and include in the project document a comprehensive budget and work plan covering all phases of the operation. Further, it was recommended that there was a need to accelerate data processing by a) making detailed planning and testing, b) using inten-

sive dialogue with other specialists and users, c) adopting use of new technologies and new simplified methods, d) providing extensive training of data processing specialists, and e) making timely acquisition and appropriate maintenance of equipment to be used.

It was deemed pertinent to carry out data evaluation and analysis in an "analytical workshop"; train all categories of personnel well in advance (using IFORD, RIPS, CST Advisors, etc.); use UNFPA/UNECA Regional Advisors to carry out on-the-job training activities; strengthen collaboration and co-ordination among national institutions, among nations and among international donors; and let UNFPA use its comparative advantage to co-ordinate donor assistance for censuses.

Discussion:

Discussions followed on the optimal length of census questionnaires. Given the restrictions imposed on the main census, the possibility of utilising the PES to ask additional questions was raised. Although the PES functioned as an analytical tool for measurement of census deficiencies, some participants felt that it was feasible to use the PES to include additional topics of investigation, useful to researchers and statisticians. Most participants, however, rejected this position primarily on the basis that expansion of the PES would increase costs and complexity, and thus jeopardize the PES operation. The primary purpose of the PES should remain as a check on quality and coverage of the census.

Commentators argued that preparation and analysis of the census should be a multidisciplinary exercise, whereas in practice, it still seemed to be largely an undertaking by and for statisticians and demographers. Statisticians and demographers tended to defend their territories, but over time many others utilised the data for socio-economic and other purposes. Interested parties should be involved in census planning from the beginning. A census that was prepared without consultation with the broad civil society would not be successful. In general, there was a consensus that multidisciplinary, in terms of including other disciplines and social partners (such as the government, the NGO-community and the private sector), would make for greater relevance and utility.

An element of pessimism surfaced with regard to the future of censuses in Africa. This was based on the observations that in some instances, censuses were somewhat donor driven, inhibiting the mobilisation of

local political support. Moreover, donor fatigue and donor frustration arose over low levels of local commitment, as reflected by internal funding responses and the lack of willingness to build-up internal funds for censuses over the ten-year inter-censal intervals in annual budget allocations. This pessimistic view was, however, not generally shared by delegates.

Concerns were raised about cost-reduction practices that risked deletion or weakening of integral components of the census programmes. The meeting agreed that cost-reduction should not be at the expense of census quality.

The strategy of involving line ministries in mounting the census did not necessarily overcome the severe national budget constraints facing census takers. It did however, assist in tasks of strengthening census advocacy and influencing the setting of priorities in the census-taking process.

Some specific issues on the scope of the census were raised. The inclusion of more survey-type questions was suggested, but the meeting concluded that, without due care, this could be counter productive as it would lengthen the interview time, especially where an increased number of direct individual responses were required. Censuses were seen as an essential part of national statistical systems. Registration systems were very costly, took a long time to develop, and relied on a culture of willingness to report events by the population concerned. Population registers were not seen as a viable in most developing countries and thus could not readily replace censuses.

Concern was expressed that several Central and West African countries had been unable to analyse census results after data had been collected. The meeting stressed the need for comprehensive census planning that included detailed plans of analysis as the way to address this problem; some useful examples of effective census planning, especially in West Africa were cited.

It was most desirable that the census should be perceived as a recurrent event, rather than an ad hoc project, and planned for accordingly throughout the intervening intercensal period. One serious problem that may otherwise occur was the risk of losing the continuity and transfer of experience and assets. In this context, there was support for the SADC initiatives that had resulted in the transfer of knowledge, data and expertise.

MOBILISING RESOURCES FOR CENSUSES: STRATEGIES FOR REDUCING CENSUS COSTS – PERSPECTIVE OF DONOR COUNTRIES

Summary

Japan
Takehiro Fukui

International cooperation played an important role in helping developing countries improve their capability for conducting censuses, which were instrumental in developing statistical capacity. To date, Japan had been providing support to developing countries, mainly those in East Asia, and its cooperation had been generally effective. One of the key factors for successful technical cooperation in censuses was the partner country's will and determination to conduct censuses.

In order to conduct a census, a solid survey structure, adequate human resources and the use of appropriate technology were vital. Needless to say, it was fundamental that social infrastructure, such as well-developed national and local administrative structures, cartography, and clearly defined administrative divisions, be developed. At each stage of census preparation, enumeration and post-enumeration, it was necessary to adopt cost-effective approaches. In this respect, it was important to identify and share good practices on cost reduction based on country experiences and, where possible, to record them to serve as guidance for the future on good census practices.

When designing and implementing technical cooperation, donor coordination, as a means to share common views, was of great importance. Also, the following aspects should be considered: political stability, administrative structure, and adequacy in competence of human resources, the level of census skills and the modality of census.

Summary**| The Netherlands**
Bart de Bruijn

The Netherlands Government was a fervent supporter of population activities. Most financial support in this field was channelled through the UNFPA, rather than bilateral. This orientation was testified by the Netherlands position as the largest donor to UNFPA. However, with the international shift of focus to reproductive health – corroborated by the Netherlands Government and UNFPA – assistance to population censuses now received less attention. The Netherlands was aware of the importance of regular data collection through censuses and was committed to continuing the level of contribution to UNFPA. But it was unlikely that support to the Fund would be stepped up because of the demand for census assistance.

Bilateral support to census taking and for strengthening the statistical organisations of countries had been provided over the past decades and this would probably continue. However, more than before the relevance of censuses and statistical systems would need to be defined within the framework of larger development goals that were bilaterally agreed upon between development partners. From the point of view of receiving countries this implied a commitment to putting census taking on the agenda and a good emphasis on underpinning of the census contribution to specific development priority areas. Moreover, receiving countries should be aware that these priority areas may change over time due to focus shifts in the international arena and within Netherlands policy, especially since there was at least a standard census interval of ten years before the issue was again put on the agenda.

Presently, poverty reduction, human resource development, health, education and good governance were areas that received much attention in Dutch development cooperation. Linking up census taking – or specific activities within the total census operation – with programmes focused on any of these themes may enhance the likeliness that (partial) assistance materialises. Furthermore, the function of South-South cooperation was well recognised in Dutch policy and if this was realised it may not only contribute by sharing human resources and reducing costs, but also by mobilising donor support.

Summary

United Kingdom *Julia Bunting*

Decennial population and housing censuses were even more important to governments when there were increasing demands on limited resources. A good census could provide the basis for more effective government expenditure by targeting finite resources to where they are most needed. This angle should be emphasised in discussions with donor agencies.

When conducted on a regular basis, population censuses allowed a picture of society to be painted over both space and time. This enabled development progress to be monitored but more importantly development progress to be achieved; by enabling resources to be targeted to areas where they could have the greatest benefit.

The time was now ripe for revitalising the census programme because of the current emphasis on partnership and on results-based management which were enshrined in the UN's Development Assistance Framework (UNDAF) and the World Bank's Poverty Reduction Strategies Papers (PRSPs). In addition, the current move amongst donors' from funding specific projects and programmes towards providing budgetary aid required effective information systems and greater transparency by national governments both to donors but, also to their own citizens.

National statistical offices and census agencies needed to advocate for the importance of increased investment in statistics in general, and censuses in particular, within their own governments. This needed to be done in particular amongst line ministries to ensure that all available opportunities were found for sending this message to the donor community.

Summary

Encouraging Donor Support *Robert D. Bush*

This paper focused on general strategies for encouraging donor funding.

Establish Relationships with Donors before the Census - Donors should be viewed as valued customers with valid data needs that you could and should help serve. When they approached you for information or for assistance in implementing data collection activities, the occasion should be viewed as an opportunity to establish the type of close and ongoing professional relationship that would encourage subsequent support.

Local Donor Representatives Key - For most donors, the decision to support the census was made at the local level, in competition with other demands for resources. You and your government were critical in communicating your priorities for the use of these resources to donors. Even if you made an excellent case for census support, your efforts could be undone by a Minister of Planning or other very senior official that indicated other activities had higher priority for assistance.

Start Census Preparations Early - Population and housing census planning and implementation should begin at least 2 years in advance of the census. Early planning and implementation activities, and a realistic census schedule instilled confidence in donors, gave you an opportunity to begin discussions of census support with donors well in advance of the census, and (it could take 1 to 2 years to mobilize donor support) made the development of local capabilities more likely.

Country Commitment - Donors expected the country to fund most or all local census costs. Late and/or uncertain country commitment of funds for local costs had been the most important factors in discouraging donor support.

Key Role of the United Nations Population Fund (UNFPA) - Early contact with the local UNFPA representative recommended, as the representative could be of great help in encouraging other donor support.

Joint Assessments - For most donors, the first step in the census support process was an assessment. One strategy for encouraging early and broader census funding commitments was to involve all donors that were likely to support the census in a single assessment. This would: save your staff time; lower the cost of the assessment for individual donors and increase likelihood of donor support.

Donor Programme Focus - Donors focused on broad programme areas. The more closely you could tie your requests for assistance to these programme areas, the more likely you were to receive a positive response.

Donor Preferences - Virtually all donors were willing to provide training and technical assistance, most were willing to assist with computer hardware, while most were reluctant to support other commodities (i.e. vehicles) and local costs. Further, budgets that were too high (or too low) would raise questions and often delayed the funding process.

Serving Donors Need - Once the census was completed, it became even more important to be responsive to the information needs of the donors that supported the census.

Other Factors - The rapid release and wide dissemination of census results were important to donors.

While most donors must focus on broader programme goals, once the importance of a census in achieving those goals was established, donors wanted exactly the same outcome as partner countries, a well planned, cost-effective, accurate, timely, and widely used census. A mutual appreciation of this common interest was a solid basis for a strong working relationship between you and your census donors.

Summary

EUROSTAT

Jürgen Heimann

Increasing costs and increased reluctance to respond to questionnaires created a strong incentive for European countries to seek new solutions in census data collection and more effective methods of data processing. There was a clear move from traditional census taking towards register based census, and in some cases other approaches to "census-like" data combining administrative resources and sample sources.

The European Commission implemented census programmes for the 1980 and 1990 census rounds to satisfy community data needs. In 1997 it drew up guidelines, approved by Member States, specifying core variables, collection methods, output tables and timetables for data transmission for the 2000 round. A preliminary outline for the Community action programme for the 2011 Census round had been presented by Eurostat which sought to strengthen the collaboration with the Statistical Division of the UNECE. It also aimed to support national census preparation through pilot projects and workshops on numerous topics, such as new techniques in data collection and dissemination, and small area estimations.

As far as EC co-operation with developing countries was concerned a genuine strategy still needed to be developed. This would be in line with the approaches developed within the PARIS21 initiative. Emphasis was put on the link between the national/regional development strategies adopted, their impact on information demand and on the national sta-

tistical systems which had to supply the data. This link needed to be established when "programming exercises" were conducted and Country Strategy Papers and Indicative Programmes were prepared.

There was now recognition amongst donors of the role of official statistics for improved policy making and for monitoring the development process. This created real opportunities to mobilise financial and technical support from the donor community, provided that this aid was requested by the beneficiary countries and that it led to sustainable development of statistical capacities. One of the requirements for this would be an increase in the share of national budgets devoted to official statistics. The fact that the EU, through the Commission and bilateral aid of its Members, was the biggest donor in census-funding meant that an improved co-ordination between Member States and the Commission was essential. The establishment of guidelines/strategies for future census funding for developing countries by the EU was also fundamental.

Discussion:

Following the presentations, the Eritrean and Democratic Republic of Congo Experts made short statements on the status of census work in their countries. The meeting noted that there had been no statistical activities so far in Eritrea, with the exception of the 1995 DHS. The information and experience was used in planning for the 1998 Census, which was aborted because of conflict with a neighbouring country. SIDA and CIDA were still prepared to support the conduct of a census, now planned for 2002 or 2003. The Statistical Office had recently recruited 24 new graduates, which was likely to be helpful in conducting a good census. In the Democratic Republic of Congo, no training has been provided to statistical staff since 1960.

The Expert Group considered some of the issues involved in the decision by some European countries to move from traditional censuses to register based information systems. These systems were not primarily designed to provide census-type statistics and thus, since they existed essentially for other purposes, they could be viewed as providing a cost-effective alternative to conventional censuses. However, the meeting believed that register based systems were not an option for developing countries in the foreseeable future.

The meeting noted the recent emphasis donors were giving to specific but broad thematic areas, such as building of infrastructure or reduction of poverty. However, given the nature of political regimes it might not be feasible to absorb censuses or statistics into the larger programmes. The Expert Group expressed reservations about the way technical cooperation was provided, and suggested the need for a review of disbursement practices and cost-benefits in the utilization of resources.

To improve coordination, there was a need for knowledge to be shared among donor partners. The Expert Group felt that the formation of donor partnerships in providing technical and financial support would provide a more effective way of allocating resources. To assist donors, the Group proposed that census project documents should be comprehensive and include analysis plans. Support for the census should not end at the tabulation stage, but should make adequate provision for analysis. Apart from formal analysis, the construction of key indicators would also be useful.

Support by donors for national censuses needed to be a multi-year commitment. Yet experience suggested that for various reasons, the commitment tended to diminish very quickly, for example as personnel changed, with the result that often countries faced a funding gap at the later stages of the census, which resulted, inter alia, in weak analysis, dissemination and uses of census data. To help overcome this problem, UNFPA advised that it intended to establish a trust fund to help fill the funding gaps in the stages following data processing that could include analysis, data dissemination, storage and archiving.

The meeting discussed a number of other issues relating to the funding of censuses. Assistance was required to encourage the sharing of data and reports between countries. The Expert Group noted that often, when donor missions were undertaken for a census, contacts were limited to statistical offices, and very rarely covered the ministries of Finance and Planning. This could result in an apparent lack of commitment at the national level and a corresponding waning of support from the donors.

The donors apprised the Group on the prospects for funding of censuses. DFID reported that it could provide technical assistance if requested, to strengthen national requests to DFID for support for statistical activ-

ities. The meeting also noted that OECD, supported by the World Bank and DFID, had set up a trust fund and was planning a meeting in March 2002 in Mexico; £16 million may be available from this fund over five years for statistical activities, and these could include censuses. The representative of Eurostat advised the Group that its funds were normally made available through national indicative programmes and regional indicative programmes, but, as censuses were not a high priority area, it would not be easy to obtain funds from these sources.

Summary***Using Census and Household Survey Data for Poverty Mapping***
Berk Ozler

Poverty maps, spatial descriptions of the distribution of poverty in any given country, were most useful to policy-makers and researchers when they were finely disaggregated, i.e. when they represent small geographic units, such as cities, towns, or villages. Unfortunately, almost all household surveys were too small to be representative at such levels of disaggregation, and most census data did not contain the required information to calculate poverty.

A new methodology that combined household survey data with census data to provide poverty and inequality estimates for small areas had recently been developed by a team of researchers at the World Bank. The methodology, described in detail in Elbers et al. (2001), and summarized in Alderman et al. (2001), had been applied in various countries and received a very positive response from various quarters of the development community.

Since poverty maps were easily accessible to policy-makers as a tool to target government allocations to local administrative units, they stimulated information-based policy-making and increased the demand for related information that Statistical Institutes could provide. If cash-strapped governments were made aware of such diverse uses of census data, they would be more likely to allocate funds for them in the future. Hence, poverty maps could also be used as advocacy tools for the census efforts in developing countries. Finally, poverty maps could help

Statistical Institutes to reconcile information from various data sources and encourage researchers to demand and utilize census data.

Summary

Using Census Data in Emergency Situations: Mozambique's Experience with Census 1997
Christopher Corlett and Joao Dias Loureiro

Results from Mozambique's 1997 Population and Housing Census, the second post-independence census in the country, were released in late 1999. A few months later, in February 2000, severe flooding occurred in the south of the country and put thousands of lives at risk. This disaster received wide international press and television coverage at the time.

Local government and international relief agencies looked to Census 97 for data on the impact of the flooding and the number of people at risk in the affected zones. The INE, in conjunction with the U.S. Census Bureau, the WFP, and other agencies, mobilized an operation to build a

Box 9.1

Ingredients of Cambodia's Successful 1998 Population Census

In 1998 Cambodia held its first population census since 1962. Despite the difficult political conditions prevailing at that time, the relatively weak state of communications, infrastructure and the need to mobilise and train a field force of some 25,000 enumerators and 8,000 supervisors from a low-skill base, the census was a remarkable success. Key contributing factors were:

- Strong commitment at all levels of government;
- Strong collaboration and coordination between the government, donors and United Nations organisations, led by UNFPA, in the provision of technical, financial and logistical support;
- A well targeted census advocacy campaign that increased awareness and gained widespread support for the census at all leadership levels, *and*
- Dissemination of positive messages about the census to the Cambodian people through mass media campaigns.

The census results provide important population, social and economic data for the preparation of the national development plan and serve as a baseline for monitoring progress towards the international development goals. The census experience also helped to build capacity of the national census and statistical office in, *inter alia*, technical and managerial skills and with the provision of data processing equipment.

GIS system for the relief effort, incorporating Census data at the village level and satellite imagery showing the extent of the flood zones. Part of this operation involved determining spatial coordinates for the Mozambique's approximately 10,000 rural villages. The Census results proved to be of tremendous assistance to the disaster relief efforts.

INE's quick response to the disaster had several important ramifications. First and foremost, Census 97 data helped save lives. Visibility of the census in this operation had a political impact, since people realized how important and valuable the census was. Work done on the GIS system later contributed to other projects, such as land-mine eradication, poverty mapping, and a national thematic atlas. It was fully expected that future censuses in Mozambique would build on the successful experience of Census 97.

Summary

Using Census and Household Survey Data for Poverty Mapping and other Development Attributes in Kenya *Francis Munene*

The presentation described the process of developing an integrated multi-information system, potential capabilities of each framework, citing tangible achievements, constraints, and a way forward and gave a synthesized overview of the utility of some of the key census products.

The development of the Kenyan IMIS encompassed the development of a population database; development of a GIS database; Integration of population and GIS databases and the creation of local and wide area networks. The population database had flexibility to in-build parallel databases from previous censuses, link household based survey data, micro-level/ mini-case studies datasets onto the census database and had in-built summary indicators for trend analysis and performance monitoring.

The census products generated from the integration of census data and survey data had been used for various purposes such as:

- development planning through the integration of population census data, household based data and administrative records data, it had been possible to generate, inter alia, poverty maps for Kenya, distribution map by key socio-economic attributes, high HIV/AIDS prevalence areas, informal settlements/slums, generation of monitorable development indicators for monitoring and evaluation of national development programmes

- facilitation of in-depth census analysis. Kenya had in the past experienced continuous administrative boundary changes. As a result it had not been possible to monitor demographic profiles for the country. Consequently, through use of the GIS products, it was possible to reconstruct population profiles for 1979 and 1989 population censuses using the 1999 Administrative area structures as a base. This information was important for deriving fertility and mortality estimates, which were key inputs into population projection models.

Some constraints experienced were high maintenance cost of the network, procurement of the GIS software, inadequate skills on optimal use of GPS, delays in the digitization of the EAs.

Due to its wide and invaluable benefits accrued from census products, statistical agencies could use these products to argue for or negotiate for enhanced funding from governments, private sector institutions, influential individuals and donor communities alike.

Discussion:

GIS Technology was becoming increasingly important in dissemination and analysis, as demonstrated by examples from South Africa, Mozambique, Guinea, Kenya and numerous other countries.

Shortcomings of Poverty Indicators and consequent poverty maps:

- Many measures of poverty, some based on income, some on expenditures, some on other living condition factors;
- Different measures were required for different levels of disaggregation (e.g. Regional vs. Household, examples from Guinea);
- Most indicators were not very useful to enable the targeting of areas for intervention.

Poverty Mapping and similar small area estimation techniques that combined the use of survey and census data were very useful where there were sufficient numbers to support the various estimates. But, while useful for advocacy, there was a downside in that the multiplicity of indicators could be confusing or cause controversy.

The World Bank modeling techniques involved the use of data transformations and extrapolation. The meeting was concerned that this could make it difficult to explain the results to administrators, but the World

Bank experience suggested that the analyses were surprisingly well received, and that the perceived complications did not seem to be an impediment.

While the combined use of survey and census data had been demonstrated to be useful as an advocacy tool, there was a need for integration to go further. The meeting suggested that administrative data covering areas such as education and health could also be tapped and included.

There was some discussion of the various sources of data, which led into a discussion of the optimal size of the census questionnaires and its relationship to household survey questionnaires. The point made was that consistency between the census questionnaires and other household survey questionnaires should be emphasized.

There was a general observation that while "mapping" was becoming an increasingly ubiquitous as a dissemination and analytic tool, there was room for more imaginative uses.

In connection with Advocacy, and the various devices and tools available, it was observed that when the political leadership was willing, everything appeared to fall into place. When the political leadership was unwilling, or even afraid, then advocacy did not make much headway. Several suggestions were offered to deal with this problem. One participant related country experience in dealing with its parliamentarians, where the emphasis in the provision of factual information seemed to facilitate their understanding of the importance of a census and related surveys. Another participant emphasized the importance in his country of continuous consultation involving all parties through all phases of census planning, implementation, processing, etc. that appeared to have resulted in a readiness for them all to assume some responsibility for the census.

Summary***A Rolling Census or a Traditional Census? Micro Perspective***
Philippe Pommier

This paper contributed to the PARIS21 studies on national and regional statistical capacity building strategies in the field of statistics and adopted by French Technical Co-operation. It pointed to the necessity to reconsider demographic and social information systems in order to implement the PRSP's on a global scale.

The paper suggested an inversion of the traditional approach of censuses. Censuses were costly and budgets could be artificially inflated. Censuses were not only a tool for demography, and institutions were under pressure from donors as it was difficult to gather all necessary information from a census. Apart from budgetary problems there were difficulties with census preparations and implementation. Censuses were frequently not fully exploited and therefore could be wasteful of resources. For example, some countries lacked the capacity to carry out analytical statistical work on census data.

The paper suggested that a new approach should be adopted, giving priority to the development of a coherent system of sample surveys, completed eventually by a rolling demographic census. Surveys should be carried out based on different observations.

It argued that such an approach was technically operational. In fact, censuses were not a necessary prerequisite to build and update a sampling base for household surveys. The advantages for a rolling census were; it

Box 10.1

From traditional to register-based censuses?

Population and housing censuses are still the major source of demographic and socio-economic statistics. They are a unique source of geographically detailed data. Increasing costs and pressure to reduce the response burden have created a strong incentive for some countries in Europe to seek new solutions in census data collection and more effective methods of data processing. The increased use of administrative registers and data sources and the development of automatic procedures in data capturing, checking, editing and coding are examples of how European countries are responding to these pressures.

In addition to the generally observed trend towards increased application of automatic procedures European countries may be classified into four groups according to the methodology adopted for census data collection:

Group 1 - Countries with the traditional census

These countries use administrative data and registers only as supporting tools in organizing the fieldwork and in data collection, and have no specific plans to replace the traditional model by a new one. These countries invest especially in development of automatic procedures in all stages of census data processing. Countries belonging to this group are the southern European countries (Greece, Italy, Portugal and Spain), and northern European countries (Ireland and the United Kingdom).

Group 2 - Countries with an entirely or largely register-based census

Nordic countries such as Denmark, Finland, Iceland, Norway and Sweden belong to this group. These countries also use extensive automation in checking, editing and coding.

Group 3 - Countries in transition from the traditional to a register-based census

These countries are Austria, Belgium, Switzerland and Luxembourg. They planned a register-based or largely register-based census for the 2000 round, or are building up their capabilities for a totally register-based census after 2000.

Group 4 - Countries seeking another solution

This may involve considerable reliance on administrative data, but the aim is not to depend only on this information source. The use of sampling, imputation and modelling may also be involved. Countries belonging to this group are France, Germany and the Netherlands. Following their 1999 census, France is planning for a continuous census after their 1999 census, which would involve a rolling total count every 5 years for most of the population and estimates to cover the gaps. Germany, where the census has a particularly negative image, the latest proposal is to base population estimates on the local Registers of Population, to derive employment data for small areas from registers of employment, and otherwise to rely on the 1 per cent micro-census and other statistical sources. The Netherlands has developed a distinctive approach of its own. Their census will be a combination of information from administrative sources and of results from sample surveys.

ensured regularity for statistical institutions; it was cost-effective and the findings could be easily integrated into an existing information system. The paper proposed that countries and institutions in agreement with this approach set up a Working Group to take forward the initiative.

Summary

A Rolling Census or a Traditional Census? Macro Perspective

Harry Freedman

The author's thesis was that significant reduction in census costs was possible by overcoming the loss of expertise associated with the decennial nature of censuses and the even more significant savings possible if countries pooled their census tasks and resources. The model was based on the concept of rolling census components and the Master-Journeyman-Apprentice training concept.

In brief, each stage of the census process from planning through dissemination and analysis was managed by a "Master" in that process. (S)he would be assisted by one or more "Journeymen" from other countries as well as "Apprentices" who used this opportunity for on-the-job learning. As the first stage was finished in country "A", it recommenced in country "B" with the same management staff, and local operational staff, although replacements were possible as Journeymen achieved Master status and Apprentices become Journeymen. The retiring Master was on call as Master-Emeritus to assist and support the new Master.

This model was followed through the chain of census processes through each country in the consortium. This multi-census experience reinforced census expertise and reduced costs by re-cycling activities and re-using material, programmes and processes.

A corollary activity was the building of centers of expertise for certain processes in certain countries which could be used as training centers for others planning/conducting censuses in intervals between census cycles (assuming the number of countries in the consortium took less than a decade to complete their censuses).

Summary

Reflections on Priority Research Needs

Ronald Schoenmaeckers

The author made an appeal to pay more interest in census operations to the great themes of the International Conferences organized during the last decade by the UN: population and sustainable development, gender

issues/empowerment, reproductive health, ageing, achieving universal primary education, combating poverty. The central advocacy idea would be to represent the census as a global and essential tool for socio-economic development.

This interest to 'new' themes would ensure, next to UNFPA and UNDP, the participation of 'new' stakeholders in census operations (FAO, ILO, UNESCO, UNICEF, WFP, WHO...). Dealing with these 'new' themes would give rise to increased costs, especially at the stage of data analysis. However, it was to be expected that these new collaborations would also generate additional funding. Within the UN family the collaboration could be ensured within the global setting of UNDAF (UN development Assistance Framework). An efficient collaboration of 'new' stakeholders could only be expected on the condition that they were included as full 'partners' from the early stages of the census programme.

Discussion:

The Expert Group considered some of the alternative methods of collecting basic population data. It felt that the papers on alternative strategies to conventional censuses had touched on some interesting ideas. However, the Group noted several reservations with the general concept of rolling censuses. First they did not reduce costs but spread census costs evenly over time. Second, the continuous nature of rolling censuses provided conceptual problems in defining temporal reference points. It concluded that due particularly to the absence of good administrative data or population registers, rolling censuses were not at this stage suitable for most of the African region.

The idea of developing common census forms and training, supported by a core census team was generally well received. It was felt that such an approach could lead to more accurate censuses as professional staff accumulated skills and experiences over a number of countries. It was also felt that rolling censuses of this kind offered prospects for cost reduction, although the meeting felt that this was an area for further investigation. Some work towards these goals had already begun in a number of regions, the work of SADC was especially singled out in this regard.

The group also recommended alternative strategies or modification to existing approaches. For example, countries could carry out a conventional census using a short core questionnaire that would be supple-

mented by regular more detailed sample surveys. However, many participants felt that too much experimentation was dangerous and could disrupt the fragile statistical development of some countries.

The group stressed the importance of reaching out to stakeholders. The best way to do this was to help them to use census data. This approach would reinforce their roles as advocates for national census programmes.

CHAPTER 11 CLOSING

In bringing the meeting to a close, Mr. Pali Lehohla, Statistician-General, South Africa, and Mr. Lalan Mubiala, Deputy Director, Africa Division, UNFPA, noted that the dialogue on censuses had raised important issues common to countries across all regions. The sharing of experiences and networking had been to the mutual benefit of all participants. Many new and innovative ideas had arisen from the discussions of the presentations, which were conducted in a spirit of cooperation and cordiality. Further reflection would need to be given to the many ideas and issues raised.

The conclusions, recommendations and next steps provided an exciting prospect for greater regional and national support for census taking. They also provided an opportunity for experimenting with more cost-effective strategies, approaches and methodologies for censuses and building on best practices determined on the basis of sound research.

Mr. Lehohla and Mr. Mubiala thanked PARIS21 and other sponsors of the meeting including the U.S. Bureau of the Census, EUROSTAT and the World Bank. Such partnerships were essential for ensuring the successful implementation of censuses and building sustained national statistical capacity.

Mr. Lehohla and Mr. Mubiala warmly thanked all participants for their sincere and effective contributions, and great team work, that had made the meeting such an outstanding success. He also thanked the staff of Statistics South Africa and UNFPA for their dedication and sustained hard work behind the scenes.

CHAPTER 12 CONCLUSIONS, RECOMMENDATIONS AND NEXT STEPS

Conclusions

The *UNFPA/PARIS21 International Expert Group Meeting on Mechanisms for Ensuring Continuity of 10-Year Population Censuses: Strategies for Reducing Census Costs* met in Pretoria, South Africa between 26-29 November, 2001. The Expert Group Meeting was attended by representatives from 41 countries, comprising mainly developing countries, as well as developed countries, donors and multilateral agencies. The meeting was inspired in its serious consideration and discussion of major population census issues by the opening address of Mr. Trevor Manuel, Minister of Finance of South Africa, who made a strong case that census information was essential for progressing towards his nation's vision of development.

The majority of countries represented at the meeting had recently undertaken a census and much of the discussion focused on recent experience with census taking and the immediate future. Despite wide differences in political, economic, social and cultural characteristics, the Experts identified a number of common problems with census taking including, inter alia, skill shortages and other capacity constraints, insufficient analysis, dissemination and use of census results – problems frequently stemming from funding gaps.

The Expert Group Meeting considered that countries lacking recent census data would face immense problems in ensuring the effective functioning of many of the democratic institutions. They would also confront a lack of population based data for formulation of national and local policies and plans, as well as in tracking progress towards national and international development goals.

There was a consensus among the Experts at the meeting on the need to improve the efficiency of census taking without compromising the quality of census information. Cost-effective strategies and methodologies needed to be implemented that would lead to reductions in census costs without changing the goals of census taking, especially completeness of coverage and quality of information. The costs of a census, when spread over a 10-year period, were only a very small proportion of government budgets.

The Expert Group Meeting supported the idea that a UNFPA managed Trust Fund be established to support many of the tasks not adequately covered. In particular, those occurring during the post-data processing phase, including, inter alia, analysis, data dissemination, storage, archiving and policy dialogue on census findings.

As countries approached the next census round, 2005–2014, there would be a window of opportunity to explore in detail some of the new ideas that emerged from consideration of the various papers presented at the meeting. It would also be possible to make an assessment of the impact that current and prospective changes in technology might have on census taking.

The Experts were of the opinion that census taking should be fully integrated within national statistical systems and not be seen as stand alone operation. Census information should be seen as essential for meeting the needs for programmes to reduce poverty along its many dimensions. Hence a multi-disciplinary perspective and approach should be taken when planning, conducting and supporting the use of a census, taking into account the views and needs of stakeholders. This would help broaden ownership of the census and build alliances that could support advocacy for mobilizing the necessary resources.

Recommendations

The Expert Group Meeting, recognising the importance of taking into account the specific country context, recommended that:

1. General

The census needed to be seen in its totality, as an exercise involving all major stakeholders and in the context of its role in the development and establishment of an integrated national statistical system (1.1-1.3). While

cost reduction remained an important consideration, there were some census activities that could not easily be reduced in scale or disregarded without posing serious risks to the quality of the census results (1.4)

- 1.1 the census should be seen as an integral part of an on-going permanent, integrated statistical system which, underpinned by the census, would include regular intercensal household survey programmes, with appropriate provision for census funding and greater continuity of staffing between censuses;
- 1.2 census users should be consulted on the nature of future data dissemination and analysis; the potential outputs should be used to encourage greater participation of stakeholders so as to enhance the legitimacy of the census and provide advocacy for funding and continuity in census taking;
- 1.3 the time-lag between enumeration and dissemination of results should be reduced to no more than 12-18 months consistent with the generation of high quality census products to enable the dismantling of temporary staffing structures and to enhance the value of the data to users;
- 1.4 caution should be exercised in cutting costs from census activities; in designing the census, cost effective strategies and methodologies should be developed to reduce costs without impairing quality;

2. Planning and mobilization of resources for the census

Sound planning was the best way to ensure an accurate and cost effective census. As a prerequisite, however, NSOs needed strengthening to enable them to carry out effective planning and conduct of censuses. Good planning would also enable census programmes to be viewed comprehensively, with clear links between the various activities (2.1), but with a special focus on the proposed census products as the drivers of the census (2.2). In recent years many censuses have been marred by funding crises, both national and international. Efforts to mobilize funds and comprehensive census planning should begin very early (2.3).

- 2.1 appropriate linkages should exist between all components of the census, e.g., establishing links between questionnaire design and data processing;
- 2.2 census data products should be recognized as the objectives and drivers of the census and accordingly should be designed at a very early stage;
- 2.3 efforts to mobilize support and comprehensive planning for the census should commence well in advance;

3. Census management and coordination

The census needs to be recognised as a high priority national enterprise calling for highly skilled professional staff and managers (3.1). The idea that the census involved all stakeholders needed to be stressed with the resultant need to set up the machinery for regular coordination and consultation (3.2).

- 3.1 the most capable people available should be assigned to all key management positions including finance and administration; these managers must be required to meet regularly to assess progress;
- 3.2 every effort should be made to strengthen coordination mechanisms between the statistical office and census stakeholders, through all stages of the census.

4. Scope and content of the census

To ensure cost effectiveness and efficacy, the Group stressed the need for all census procedures and instruments to undergo proper testing and investigation before adoption (4.1). To further ensure the optimal relevance of the census, it is important that potential users and other stakeholders be consulted on the scope and content of the census (4.2).

- 4.1 to ensure that all procedures and instruments of the census are effective, they should, wherever possible, be tested before adoption;
- 4.2 to ensure that the census is designed to meet the most essential needs of users, as many stakeholders as possible should be consulted to participate in defining the scope of the census.

5. Census training and fieldwork

Well-conducted fieldwork is a prerequisite to an accurate census. Though fieldwork and training consume a large proportion of the census budget, care is needed in attempting to reduce these costs, as inappropriate cost-cutting could easily lead to poor quality fieldwork. Nevertheless, some ideas were presented by the Group that could be considered in some circumstances, including the use of fewer interviewers (5.1), that would reduce the size of the workforce (though not the total workload) and also help the policy of recruiting only the most able (5.2). There was also a call by the Group for more imaginative and cost-effective approaches to training, again suited to the needs of each country (5.3).

- 5.1 consideration could be given to reducing the costs of the training component of fieldwork through the recruitment of fewer enumerators and corresponding assignment of larger enumeration areas; this resort would also be recommended where there were insufficient enumerators qualified to conduct the census;
- 5.2 the highest possible quality of fieldwork should be sought; only the most efficient, best-qualified people available should be recruited as census supervisors and enumerators;
- 5.3 imaginative and cost-effective training methodologies be tested and, where appropriate, adopted, such as in the use of verbatim training, video conferencing, video tapes and other visual aids.

6. Census publicity

The question on outsourcing is complex, depending on the relative capacities of the NSOs, national government and non-government services, and the private sectors. But census publicity was identified by the Group as one of the areas where outsourcing or the enlisting of wider participation seemed to open possibilities for improvements (6.1). In particular, the active participation by schools and parents should be encouraged as an effective means of creating nationwide awareness of the census (6.2).

- 6.1 census promotion and publicity should be undertaken, wherever practicable, by outsourcing and enlisting the support of the private and public sectors, specialized agencies or media;
- 6.2 the involvement of schools and parents in the census publicity programme should be encouraged, preferably by incorporating the census into school curricula.

7. Census data processing

Data processing and associated technologies offer good prospects for cost-reduction. The sharing of data processing facilities and expertise should be explored (7.1). The census provides an exciting opportunity for introducing new technologies, but it is important to recognise the associated risks. The Group thus stressed the importance of thorough testing and investigation prior to the purchase or adoption of major new technologies into the census (7.2). One of the benefits following the census was the absorption of census data processing into the mainstream national statistical systems (7.3). Some practical steps should be taken to improve census questionnaires as tools for collecting and processing information (7.4).

- 7.1 consideration should be given to the potential for cost savings through the sharing of data processing facilities and expertise amongst agencies or countries;
- 7.2 thorough investigation and testing of new technologies and equipment should be undertaken before deciding on whether or not to adopt or purchase;
- 7.3 following the census, data processing technology, systems and skills, wherever practicable, should be absorbed into the national statistical system;
- 7.4 questionnaires should be designed in a labour-saving way; in particular, responses should be pre-coded and questions be readily understood.

8. Outsourcing

The Expert Group was of the opinion that outsourcing, if carefully and effectively monitored, could reduce costs for census undertakings (8.1). This has worked in some countries and failed in others; the failures are thought to have been mainly due to inadequate monitoring of the institutions to which the activities have been outsourced.

- 8.1 countries should explore outsourcing as a means of reducing costs in undertaking censuses, particularly in the area of data processing.

9. Census cost sharing

A census cannot be carried out by the NSO alone. As a national undertaking, for the census to be successful it must draw widely on national resources at all stages (9.1). As part of this process, NSOs should be encouraged to consider the possibilities of leasing, hiring or borrowing equipment or personnel as alternatives to drawing exclusively on their own resources (9.2). Mapping provides a good example of tapping outside skills and facilities. Mapping agencies are often in a good position to take a major role in the census and at the same time present opportunities for improving the national mapping systems (9.3, 9.4). The Group highlighted possibilities for tapping facilities and expertise from the region, without adding heavy burdens to census budgets, including participation in regional networks (9.5), strengthening South-South cooperation and inter-country attachments (9.6).

- 9.1 the census office, wherever practicable, should be encouraged to draw on public and private resources to support all stages of the census;
- 9.2 procurement strategies be adopted that take account of the possibilities of leasing, hiring or borrowing equipment and facilities as an alternative to outright purchase;

- 9.3 maps and related geographic/boundary information, wherever practicable, be compiled from existing sources, drawing on the skills and resources of national mapping agencies; final mapping advancements should be fed back into the national system;
- 9.4 a census mapping system be designed for facilitating on-going maintenance and updating;
- 9.5 countries be encouraged to participate in regional census networks; this would facilitate cost-saving measures such as sharing of training activities, resources, best-practice information and census data exchange;
- 9.6 South-South cooperation and inter-country attachments should be explored as ways of sharing regional skills and reducing the cost of recruiting international experts.

10. Census analysis and dissemination

Then Group felt that analyses and dissemination of census results were often neglected, leaving potential benefits unrealised. It is essential that analysis and dissemination are effectively integrated into the early census planning process (10.1). It is also important to ensure that census outputs are effectively disseminated to users and other stakeholders who need them (10.2).

- 10.1 analysis and dissemination should be integrated into the overall census plan;
- 10.2 census outputs should be disseminated to all stakeholders who require them.

11. Census research

To ensure that the accumulated experience of cost-effectiveness in census taking is passed on it is important that research into census costs and operations be conducted and documented (11.1). Some examples of area where research is needed include training duration and methodologies (11.2), alternative census methodologies and instruments (11.3). In this regard the Group proposed research into the efficacy of the rolling census approach in achieving cost reductions (11.4).

- 11.1 research be undertaken into all aspects of census costs and operations;
- 11.2 research be undertaken into appropriate training durations and methodologies, taking account of the expected qualifications of census workers;
- 11.3 further studies be undertaken to investigate alternative census or other data collection instruments, methodologies and strategies;

- 11.4 research be conducted in a small number of pilot countries on the prospects and efficacy of the rolling census approach in achieving cost reduction.

12. Census advocacy

The Group highlighted the potential role that the PARIS21 Census Task Team could play as advocates for population censuses. The Group felt that the Team should undertake further work in preparing census advocacy materials, targeted at key audiences (12.1). The Group emphasized that the most important advocacy materials were often the census results themselves, which, where seen to be of value, could encourage donors to support further census work. Thus NSOs need to do more to assist stakeholders in interpreting and using census data (12.2) and to provide them with proper reports of census results and progress (12.3).

- 12.1 the UNFPA-led PARIS21 Census Task Team, working with a small group of country experts from different regions and with other agencies, should take immediate steps to prepare culturally sensitive advocacy materials targeted at (i) national governments and agencies; (ii) donors, and (iii) regional and international agencies, building on existing efforts and emphasizing the vital needs and uses of census information;
- 12.2 national statisticians should appreciate the potential contribution of stakeholders to the census programme. An effective approach to achieve this is, where feasible, to encourage and help stakeholders to use census data, thus reinforcing their advocacy roles in future census work;
- 12.3 advocacy of donors can be reinforced by timely and proper reporting of census progress and results.

13. Census financing

Recognising the fundamental importance of census information for good governance, and that a lack of such data could seriously hamper efforts to eradicate poverty, the Group stressed the need for governments to make every effort to meet national census budgets, and for donors to strive to fill census funding gaps (13.1).

- 13.1 sufficient focus be placed on securing resources to help fill the funding gaps in the later stages of the census cycle, following census data processing, including, inter alia, analysis, data dissemination, storage, archiving and policy dialogue on census findings.

Next Steps

The Expert Group Meeting proposes that UNFPA/PARIS21, in collaboration with other partners, should be asked to address the main issues raised above, through its Task Team, as a programme of action for the next two years. This programme could focus on the following major issues:

- review of factors influencing resource mobilization and utilization, cost saving, cost effectiveness, and increased resource allocation from national sources. If necessary, the Team could conduct cross country reviews of these issues;
- assessment of current conceptual information available to countries on census-taking, including methodologies, guidelines and frameworks;
- production of advocacy materials on the need for regular census-taking, giving attention to the implied costs of not taking censuses, the role of censuses in development, cost-benefits of censuses to policy making, and the designing of strategies for marketing census programmes within national governments.
- Design of a census management system, including a census budgeting system;
- establishment of a 'good practice' data base in census planning and implementation, and facilitation of exchange of examples of good practice in census planning, implementation, dissemination, and utilization;
- overseeing the introduction of a census bulletin board to exchange census news among various countries;
- initiation of research on conceptual, methodological, and operational challenges for the next round of censuses;
- compilation of rosters of national expertise on various stages of census-taking for usage through a South-South agenda for censuses;
- review of the SADC experiences in regional cooperation and propose to other countries specific modalities for inter-country or sub-regional cooperation, *and*
- compilation of information for use by developing countries on potential sources of funds, and basic donor requirements for funding censuses and statistical activities;
- consultations with bilateral and multilateral donors for possibilities of providing funds as recommended in 13.1;
- convening a follow up meeting to review progress in achieving some of the recommendations and steps of this Expert Group Meeting.

POPULATION CENSUSES HELD AND PLANNED IN THE 1990 AND 2000 ROUNDS

AFRICA		
Country	1990 Census Round 1985-94	2000 Census Round 1995-04
Angola		2002
Benin	02/92	02/02
Botswana	08/91	08/01
Bukina Faso	12/85	12/96
Burundi	08/90	08/00
Cameroon	04/87	1997
Cape Verde	06/90	2000
Central African Rep.	12/88	01/00
Chad	04/93	2003
Comoros	09/91	2001
Congo	11/94	
Cote d'Ivoire	03/88	11/98
DR of Congo	na	2003
Equatorial Guinea	07/94	2004
Eritrea	na	12/01
Ethiopia	09/94	09/04
Gabon	07/93	07/03
Gambia	04/93	04/03
Ghana		03/00
Guinea	12/96	
Guinea Bissau	12/91	12/00
Kenya	08/89	08/99
Lesotho	04/86	04/96
Liberia		2002
Madagascar	08/93	2003

AFRICA continued

Country	1990 Census Round 1985-94	2000 Census Round 1995-04
Malawi	09/87	09/98
Mali	04/87	04/99
Mauritania	04/88	12/99
Mauritius	07/90	2000
Mozambique	-	08/97
Namibia	10/91	10/01
Niger	05/88	05/99
Nigeria	11/91	2001
Rwanda	08/91	2001
Saint Helena	02/87	1997
Sao Tome & Principe	08/91	08/01
Senegal	05/88	12/99
Seychelles	08/87	1997
Sierra Leone	12/85	1996
South Africa	03/91	2001
Swaziland	08/86	05/97
Togo	11/93	11/98
Tanzania	08/88	1999
Uganda	01/91	08/00
Zambia	08/90	08/00
Zimbabwe	08/92	08/02

AMERICA, NORTH

Anguilla	04/92	05/01
Antigua and Barbuda	05/91	05/01
Aruba	10/91	10/00
Bahamas	05/90	05/01
Barbados	05/90	05/00
Belize	05/91	05/00
Bermuda	05/91	05/00
British Virgin Islands	05/91	05/01
Canada	06/91	05/01
Cayman Islands	10/89	1999
Costa Rica	-	06/00
Cuba	-	-
Dominica	05/91	05/01
Dominican Republic	09/93	11/01
El Salvador	09/92	2002
Greenland	-	-
Grenada	05/91	05/01
Guadeloupe	03/90	1997

ANNEX I: POPULATION CENSUSES HELD AND PLANNED
IN THE 1990 AND 2000 ROUNDS

AMERICA, NORTH continued

Country	1990 Census Round 1985-94	2000 Census Round 1995-04
Guatemala	04/94	2003
Haiti	-	09/01
Honduras	05/88	07/00
Jamaica	04/91	09/01
Martinique	03/90	1997
Mexico	03/90	02/00
Montserrat	05/91	05/01
Netherlands Antilles	01/92	01/01
Nicaragua	-	04/95
Panama	05/90	05/00
Puerto Rico	04/90	04/00
St. Kitts and Nevis	05/91	05/01
St. Lucia	05/91	05/01
St. Pierre and Miquelon	05/90	1997
St. Vincent / Grenadines	05/91	05/01
Trinidad and Tobago	05/90	05/00
Turks and Caicos Islands	05/90	08/01
United States of America	04/90	04/00
United States Virgin Islands	04/90	04/00

AMERICA, SOUTH

Argentina	04/91	11/01
Bolivia	06/92	09/01
Brazil	09/91	08/00
Chile	04/92	04/02
Colombia	10/85	10/03
Ecuador	11/90	11/01
Falkland Islands (Malvinas)	03/91	04/01
French Guiana	03/90	03/99
Guyana	05/91	05/02
Paraguay	08/92	2002
Peru	07/93	2003
Suriname	-	01/03
Uruguay	10/85	05/96
Venezuela	10/90	10/01

ASIA

Afghanistan	-	-
Armenia	01/89	10/01
Azerbaijan	01/89	01/99
Bahrain	11/91	2001

POPULATION AND HOUSING CENSUSES/
STRATEGIES FOR REDUCING COSTS

ASIA continued

Country	1990 Census Round 1985-94	2000 Census Round 1995-04
Bangladesh	03/91	01/01
Bhutan	-	-
Brunei	08/91	05/01
Cambodia	Not held	03/98
China	07/90	11/00
China, Honk Kong SAR	03/91	03/01
China, Macao SAR	08/91	2001
Cyprus	10/92	10/01
East Timor	10/90	2000
Georgia	01/89	01/02
India	03/91	03/01
Indonesia	10/90	06/00
Iran Islamic Rep. of	12/91	2001
Iraq	10/87	10/97
Japan	10/85	10/00
Jordan	12/94	2004
Kazakhstan	01/89	02/99
DPR of Korea	12/93	-
Rep. of Korea	11/90	11/00
Kuwait	04/85	04/95
Kyrgyzstan	01/89	03/99
Lao People's Dem. Rep.	03/85	03/95
Lebanon	-	-
Malaysia	08/91	07/00
Maldives	03/90	03/00
Mongolia	01/89	01/00
Myanmar	-	2004
Nepal	06/91	06/01
Occupied Palestinian Territory	-	12/97
Oman	12/93	12/03
Pakistan	-	03/98
Philippines	05/90	05/00
Qatar	03/86	03/97
Saudi Arabia	09/92	2002
Singapore	06/90	06/00
Sri Lanka	-	07/01
Syrian Arab Republic	09/94	2004
Tajikstan	01/89	01/00
Thailand	04/90	04/00
Turkey	10/90	10/00
Turkmenistan	01/89	01/04

ANNEX I: POPULATION CENSUSES HELD AND PLANNED
IN THE 1990 AND 2000 ROUNDS

ASIA continued

Country	1990 Census Round 1985-94	2000 Census Round 1995-04
United Arab Emirates	12/85	12/95
Uzbekistan	01/89	2001
Viet Nam	04/89	04/99
Yemen	12/94	2004

EUROPE

Albania	04/89	04/01
Andorra	-	-
Austria	05/91	05/01
Belarus	01/89	02/99
Belgium	03/91	03/01
Bosnia Herzegovina	03/91	03/01
Bulgaria	12/92	03/01
Channel Islands	03/91	04/01
Croatia	03/91	03/01
Czech Republic	03/91	03/01
Denmark	01/91	01/01
Estonia	01/89	03/00
Faeroe Islands	-	-
Finland	12/90	12/00
France	03/90	03/99
Germany	05/87	09/95
Gibraltar	10/91	-
Greece	03/91	04/01
Hungary	01/90	02/01
Iceland	-	03/01
Ireland	04/91	04/02
Isle of Man	04/91	2001
Italy	10/91	10/01
Latvia	01/89	03/00
Liechtenstein	12/90	-
Lithuania	01/89	04/01
Luxembourg	03/91	02/01
Malta	11/85	11/95
Monaco	07/90	2000
Netherlands	01/91	01/01
Norway	11/90	11/01
Poland	12/88	05/02
Portugal	04/91	03/01
Republic of Moldova	01/89	2002
Romania	01/92	03/02

EUROPE continued

Country	1990 Census Round 1985-94	2000 Census Round 1995-04
Russian Federation	01/89	10/02
San Marino	-	-
Slovakia	03/91	05/01
Slovenia	03/91	03/02
Spain	03/91	10/01
Svalbard / Jan Mayen Islands	-	-
Sweden	11/90	-
Switzerland	12/90	12/00
Frmr Yugoslav Rep Macedonia	06/94	10/01
Ukraine	01/89	12/01
United Kingdom	04/91	04/01
Yugoslavia	03/91	03/01

OCEANIA

American Samoa	04/90	04/00
Australia	06/91	08/01
Cook Islands	12/91	2001
Fiji	08/86	08/96
French Polynesia	09/88	09/96
Guam	04/90	04/00
Kiribati	11/90	11/00
Marshall Islands	11/88	1999
Micronesia, Federated States	09/94	2004
Nauru	04/92	2001
New Caledonia	04/89	2002
New Zealand	03/91	03/01
Niue	11/91	08/97
Norfolk Island	08/91	2001
Northern Marianas Islands	04/90	04/00
Palau	04/90	2000
Papua New Guinea	07/90	07/00
Pitcairn	1991	-
Samoa	11/91	11/01
Solomon Islands	11/86	11/99
Tokelau	11/91	-
Tonga	11/86	1996
Tuvalu	11/91	11/01
Vanuatu	05/89	11/99
Wallis and Futuna Islands	12/90	2002

ANNEX II LIST OF PARTICIPANTS

Ms. Ana Paula Jordao Machado

Head, Census and Surveys Department
Instituto Nacional de Estatística
CP. 1215, Luanda
Angola

Prof. Ronald Schoenmaeckers

Senior Population Specialist
CBGS-Population and Family Study
Centre
Markiestraat 1, B-1000 Brussels
Belgium

Mr. Guest M. Charumbira

Government Statistician
Central Statistics Office
Private Bag 0024
Gaborone
Botswana

Mr. Elliott D M Odirile

SADC Secretariat
Private Bag 0095
Gaborone
Botswana

Mr. Francois Ilboudo

Director of Demography
Institut National de la Statistique et de
la Demographie INSD
01 BP 374, Ouagadougou
Burkina-Faso

Mr. Vincent Ndikummasabo

Director of Census Bureau
Ministere de L'Interieur et de la
Securite Publique
P. P. 174 Gitega
Burundi

Mr. Harry Freedman

*Project Director and Senior
Census Advisor*
Statistics Canada
5199 U.N. Avenue
P.O. Box 31896, Zambia

Mr. Charles Patrick

Statistics Canada
25-F, R.H. Coats Building
Tunney's Pasture
Canada

Mr. Ouagadjio Bandoumal

Director of Census Bureau,
Ministere de la Promotion
Economique et du Developpement
BP 453
N'djamena
Chad

Mr. Xiru Li
Deputy Director of Coordination and Administration Division,
Department of Population, Social, Science and Technology Statistics
National Bureau of Statistics
China

Mr. Marcel Ndiba Kayumba
Demographic Section
I.N.E.
BP 20 Kinshasa
Gombe
Democratic Republic of Congo

Mr. Woldeyesus E Gulay
Head, Population and Social Statistics Department
National Statistics and Evaluation Office
Asmara
Eritrea

Mr. Ghebrekristos Ogbamicael Beraki
Head, Finance and Administration
National Statistics and Evaluation Office
Asmara
Eritrea

Mr. Philippe Pommier
Charge de Mission
Direction du developpement et de la cooperation technique
20, rue Monsieur
75700 PARIS 07 SP
France

Dr. Kwaku A. Twum-Baah
Ag. Government Statistician and Census Coordinator,
Ghana Statistical Office
Statistical Service
P.O. Box 1098, Accra
Ghana

Mr. J. K. Banthia
Commissioner
Office of the Registrar-General
2-A Mansingh Road
New Delhi, 110 011
India

Mr. Takehiro Fukui
Director, Suvey Planning Div., Statistical Survey Dept., Statistics Bureau
Ministry of Public mangement, Home Affairs, Posts and Telecommunications
19-1-Wakamatsu-cho, Shinjuku-ku, Tokyo
Japan

Mr. Masahiko Takizawa
Multilateral Cooperation Division Economic Cooperation Bureau,
Ministry of Foreign Affairs
2-2-1, Kasumigaseki, Chiyoda-ku, Tokyo, 100-8919
Japan

Mr. Francis M. Munene
Deputy Director and Head of Population Census
Central Bureau of Statistics
P.O. Box 30266
Nairobi
Kenya

Mr. ZarylbeK Kudabaev
Chairman
National Statistical Committee of Kyrgyz Republic
374 Frunze Street
Bishkek City, 720033
Kyrgyzstan

Ms. Mapitso Lebuso
Statistician, Demographic Labour and Social Statistic Division
P.O. Box 455
Maseru 100
Lesotho

Mr. Charles Machinjili

Commissioner of Census and Statistics
National Statistics Office
P.O. Box 333
Zomba
Malawi

Mr. Harish Bundhoo

Director of Statistics,
Central Statistics Office
LIC Centre
John Kennedy Street, Port Louis
Mauritius

Dr. Joao Dias Loureiro

President
Av. Ahmed Sekou Toure No. 21
Maputo
Mozambique

Mrs. Liina Matheus-Kafidi

Assistant Census Manager,
National Planning
Commission Secretariat
Government Office Park, Luther Street
Private Bag 13356
Namibia

Mr. Bart de Bruijn

Head, Department of Population,
Migration and Development
Netherlands Interdisciplinary
Demographic Institute
P.O. Box 20061
2500 EB The Hague
The Netherlands

Mr. Ekade Ghalio

Director, Bureau Central du
Recensement
Ministry of Economy and Finance
B.P. 862 Niamey
Niger

Dr. A. A. Kadejo

Director General
National Population Commission
2031 Olusegun Obasanjo Way Wuse
Zone Z
Nigeria

Mrs. Fatima Kadiri

Deputy Director, Public Affairs
National Population Commission
Lukulu Street, Wuse Zone 3
P.M.B. 0281, Garki
Nigeria

Mr. Hasan Abu-Libdeh

President
Palestinian Central Bureau of
Statistics
P.O. Box 1647
Ramallah, West Bank
Palestine

Ms. Laura Ahtime

Director of Statistics
Management and Information Systems
Division
P.O. Box 206
Victoria, Mahe
Seychelles

Mr. Trevor Manuel

Minister of Finance
South Africa

Mr. Pali Lehohla

Statistician-General
Central Statistical Service, S.A.
Private Bag 0001
Pretoria
South Africa

Dr. Ros Hirschowitz

Deputy Stats-General
Statistics South Africa
South Africa

Ms. Petronella Mamba

Demography and Vital Events Section
Central Statistical Office
P.O. Box 456
Mbabane
Swaziland

Mr. Abdulrahman M. Kaimu

Director of Social Statistics
National Bureau of Statistics
P.O. Box 796
Dar Es Salaam
Tanzania

Mr. Z.E.A. Kaija

*Director, Population and Social Statistics,
Deputy, National Census Coordinator*
Uganda Bureau of Statistics
Plot 10/11 Airport Road
P.O. Box 13, Entebbe
Uganda

Ms. Julia Bunting

Statistics Adviser
Department for International
Development
Abercrombie House, Room 222
Eaglesham Road, East Kilbride
United Kingdom

Mr. Robert Bush

Chief, International Assistance
U.S. Census Bureau
International Programs Center
Washington Plaza II - room 309
U.S.A.

Mr. Christopher Corlett

International Technical Advisor
U.S. Census Bureau

Mr. Kombutso Dzeke Dzeke

*Deputy Director of Census and
Statistics*
Central Statistical Office
P.O. Box CT 342
Lusaka
Zambia

Mr. L. M. Machirovi

Director of Census and Statistics
Central Statistical Office
P.O. Box 8063
Causeway, Harare
Zimbabwe

MULTILATERALS

Ms. Deborah Guz

Administrator
OECD-DAC/PARIS21
2 rue Andre Pascal
Cedex 16 Paris
France

Mr. Jurgen Heimann

*Project Manager ACP Countries,
EUROSTAT*
European Commission
Bech Building
4, rue alphonse Weicker
Luxembourg

Mr. Elio Ouedraogo

Afristat
B.P. E 1600
Bamako, Mali

Mr. Graham Eele

Consultant/Statistician
The World Bank
1818 H Street,
Washington DC 20433
U.S.A.

Dr. Berk Ozler

Development Research Group
The World Bank
1818 H Street, NW
Washington, DC 20433
U.S.A.

UNITED NATIONS ORGANIZATIONS

Mr. Jag Sehgal

*Coordinator, Labour and Population
Employment Strategy Department*
International Labour Organisation
CH-1211 Geneva 22
Switzerland

Mr. Iqbal Alam

United Nations Statistics Division
2 United Nations PlazaDC2-1534
New York, NY 10017
U.S.A.

Mr. Israel Sembajwe

Senior Population Affairs Officer
Economic Commission for Africa
P.O. Box 3001
Addis Ababa
Ethiopia

UNFPA

Mr. Richard Leete

*Chief, Population and
Development Branch*
UNFPA
220 E. 42nd Street
New York, NY 10017
U.S.A.

Mr. Lalan Mubiala

*Deputy to the Director,
Africa Division*
UNFPA
220 E. 42nd Street
New York, NY 10017
U.S.A.

Mr. George Nsiah

UNFPA Representative
P.O. Box 6541
Pretoria 0001, South Africa

Ms. Kumiko Yoshida

Programme Officer, Africa Division
UNFPA
220 E. 42nd Street
New York, NY 10017
U.S.A.

Ms. Lorena Duharte

*Research Assistant, Population and
Development Branch*
UNFPA
220 E. 42nd Street
New York, NY 10017
U.S.A.

Mr. Richard Dackam-Ngatchou

*Advisor on Population and
Development Strategies*
CST, UNFPA
Dakar
Senegal

RESOURCE PERSONS

Mr. Laurence Lewis

Consultant
Suva, Fiji

Prof. Warwick Neville

Consultant
University of Auckland
Private Bag 92019
Auckland
New Zealand

Ms. Samantha Page

Consultant
30 W 13th Street. Apt. 3A
New York, NY 10011
U.S.A.

**ADDITIONAL SOUTH AFRICAN
DELEGATION**

Mr. Motale Phirwa

Director
Census Statistics South Africa

Dr. Gugu Gule

Deputy Stats-General
Statistics South Africa

Ms. Margaret Africa

Head, Free State Province

Mr. Desmond Booyesen

Head, Eastern Cape Province

Ms. Leticia Bower

Head, Northern Cape Province

Mr. Jean Ditsebe

Head, North West Province

Mr. Yugen Naidoo

Head, Mpumalanga Province

Mr. Khomotso Malatji

*Census Manager, Head,
Northern Province*

Mr. George Shebi

Head, Gauteng Province

Mr. Eddie Tiltman

Head, Western Cape Province

Ms. Drucillah Mukasa

Head, Kwazulu Natal Province

Phil Fong

GIS Advisor,

*Swedish International
Development Agency*

Statistics South Africa

Steyn's Arcade
274 Schoeman St
Private Bag X 44
Pretoria 001
South Africa

Helene Verhoef

GIS Quality Assurance & Methodology

Statistics South Africa

NGO

Akil Khalfani

University of Pennsylvania

39 Birch St
West Orange
NJ 07052
USA

New Population and Development Strategies (PDS) series

Population and Development Strategies (PDS) is one of two major substantive thematic areas guiding the operational activities of UNFPA – the other being reproductive health – with advocacy and gender as important cross-cutting dimensions. The focus of PDS is on integrating population issues into sustainable human development processes and on examining the impact of development processes on population variables.

The goal of the Fund's work in this area, guided by the ICPD Programme of Action, the recommendations of ICPD + 5 and the Millennium Declaration, is to help countries achieve an improved balance between population dynamics and economic and social development. The Fund's PDS work follows a people-centred approach to sustainable development, putting the well-being of individual women and men at the centre of sustained economic growth and sustainable development.

Within the PDS programmatic area, UNFPA seeks to enhance countries' capacity to develop and implement integrated and multisectoral population and development policies, mainstreaming gender and human rights approaches. The Fund helps support country efforts to articulate population and development policies and programmes; strengthen national capacity in the area of data collection and analysis; and deepen the knowledge base of the linkages between population variables and economic and social phenomena. These linkages occur among poverty, environment, migration, urbanisation, population ageing and intergenerational solidarity. In carrying out its programmatic interventions, the Fund attempts to ensure maximum impact on the lives of the poor, and especially women.

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United Nations
Population Fund

220 East 42nd Street
New York, N.Y. 10017

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