

MARCOUX, Richard, Laurent RICHARD et Mamadou Kani KONATÉ (2013). «Digital Preservation of Demographic Heritage. Population Censuses and Experiences in Mali and the Democratic Republic of the Congo», *The Memory of the World in the Digital Age: Digitization and Preservation*, sous la direction de L. Duranti et E. Shaffer, UNESCO, pp. 672-684

Conference Proceedings

Edited by:
Luciana Duranti and
Elizabeth Shaffer

The Memory of the World in the Digital Age: Digitization and Preservation

An international conference
on permanent access to
digital documentary heritage

Hosted by:



a place of mind
THE UNIVERSITY OF BRITISH COLUMBIA

In collaboration with



UNIVERSITY OF
TORONTO



United Nations
Educational, Scientific and
Cultural Organization



Memory of the World
20th Anniversary

26 to 28 SEPTEMBER 2012

Vancouver, British Columbia, Canada
Sheraton Vancouver Wall Centre

Digital Preservation of Demographic Heritage

Population Censuses and Experiences in Mali and the Democratic Republic of the Congo

Richard Marcoux, Laurent Richard and Mamadou Kani Konaté

Abstract

To preserve and promote the demographic heritage of French-speaking States in some African countries is one of the goals pursued by the Observatoire démographique et statistique de l'espace francophone (ODSEF) at Université Laval (Quebec). The demographic heritage concept opens new ways on how to think about microdata collected by census operations that goes far beyond the statistical analysis challenges. This paper presents the main experiences that led to the creation of two digitization workshops of census paper schedules; the first one in Bamako (Mali) and the second one in Kinshasa (Democratic Republic of Congo).

Authors

Richard Marcoux is a full professor in the department of sociology at Université Laval and director of the Observatoire démographique et statistique de l'espace francophone (ODSEF), (*Demographic and statistical research institute for French-speaking countries*). He has addressed conferences and published numerous works in scientific journals and reviews covering international demographic issues, with particular focus on Africa and Quebec. In 2009, he directed a collaborative work published by Presses de l'Université Laval, titled "Mémoire et démographie : regards croisés au Nord et au Sud."

Laurent Richard is a research professional at the Observatoire démographique et statistique de l'espace francophone (ODSEF) at Université Laval and an analyst at Statistics Canada. Apart from helping to organize ODSEF digitization workshops in African countries, he has also been one of the coordinators of the Canadian Century Research Infrastructure project (CCRI).

Mamadou Kani Konaté is a sociologist and coordinator of ODSEF activities in Africa. For more than 20 years, he has published numerous scientific works on population issues and has been involved in noteworthy international partnerships, in particular with statistics institutions in Africa. He holds a master's degree from the Ethno-sociology Institute of the University of Abidjan and a Diplôme d'Études Approfondies (post-graduate diploma) in rural sociology from the Paul Valéry University - Montpellier III.

ODSEF¹

The Observatoire démographique et statistique de l'espace francophone (ODSEF) was set up in Quebec in the spring of 2009 following the signing of a protocol of understanding between the Government of Quebec, the Organisation internationale de la Francophonie (OIF), the Agence universitaire de la Francophonie (AUF) and Université Laval. Two objectives define the two-pronged orientation of ODSEF activities. The first objective involves taking steps both to preserve and promote the demographic heritage of French-speaking States, at a time when the heritage of certain African countries faces serious threats, so justifying the need for urgent, decisive action. The second involves supporting all initiatives seeking to

¹ www.odsef.fss.ulaval.ca

circumscribe the linguistic dynamics so as to get a deeper understanding of the place occupied by the French language, not only within French-speaking populations, but elsewhere as well.

In the last two years, ODSEF has undertaken a number of investigative missions to assess the state of demographic heritage in Africa, and has worked in particular with statistics institutions responsible for census-taking in Mali, Senegal, Benin, Burkina Faso, Niger and the Democratic Republic of the Congo. With financial support from the Institut francophone numérique (IFN), ODSEF supervised a pilot project to set up a digitization workshop at the Mali institute of statistics (INSTAT) in Bamako. In less than one year, the project compiled an electronic record of more than one million documents from the 1976 census. The success of this pilot project helped ODSEF obtain further funding from the IFN to continue the Mali project for the 1987 and 1998 censuses and set up a similar workshop in Kinshasa so as to record the only census taken in independent Congo, that of 1984.

Aside from the preservation activity, ODSEF also supports initiatives to gain recognition for census data and hosted some thirty researchers from fifteen African countries to work on data from their different countries. A number of young researchers who stayed at Université Laval now use their investigations to take part in the second ODSEF objective which is to support all initiatives geared towards developing census data.

1. Introduction

Significant advancements have been made in demography and other scientific disciplines in recent decades and this has been made possible by innovative breakthroughs in methodology and technology. It is worthy of note that it has become increasingly easy to acquire and process recent demographic and statistical information. Certain national institutions, like Statistics Canada, allow access to recent census and survey results and even to samples of raw data just two to three years after the data collection operation. Initiative de démocratisation des données (*Data Liberation Initiative*) was a major program that, to a certain extent, revolutionized the practices regarding access and processing of data collection operations at Statistics Canada (Moon, 2000; Poirier and Le Bourdais, 2009). For southern hemisphere countries, Macro International, leader of the vast worldwide program of demographic and health surveys (EDS), has set up a search engine and other tools that help provide access to data from numerous collection operations conducted in Latin America, Asia and of course, Africa.

Furthermore, widespread availability of access to more powerful and more advanced computer equipment has greatly contributed to making it easier to process data, for this is an important element in the work done by demographers. Our tiny portable computers, lighter and more powerful than ever before, now give us the capability of analysing databases for more than 15 to 30 million persons, equivalent to the total census data for the population of several countries. That was an impossible task at the end of the last century, less than 12 years ago!

Notwithstanding all this progress, two pernicious effects of these technological advancements can be noted. Firstly, a frenzied rush is in progress to obtain new data and to access the very latest information. There is now a very high demand for up-to-date indicators and the search for the information needed to construct them is often done to the detriment of any real thought to the social and demographic processes that influence these very indicators. The result is that older databases are often underused, a fact that weakens our comprehension of demographic processes which for the most part play out over the medium or even long-term.

The second factor that can be considered as having a negative effect is the widening gap separating researchers in the south and in the north in their ability to access demographic information, especially in French-speaking countries. Researchers in Quebec, Belgium, France and Switzerland for example, now have fairly open access to an array of chronological data about their different countries which, despite the changes in definitions and concepts, help to define a certain number of trends. Numerous scientific collaborations between demographers, historians, archivists and statistics administrators have proven to be very helpful in performing new evaluation of old surveys and censuses. Many of the initiatives currently underway made it possible to question certain myths and prejudices regarding the demographic past of the populations in these countries. At the same time, and in contrast with the above, countries in the south and in French-speaking Africa especially, often have great difficulty finding traces of censuses, civil status or even surveys that preceded recent data collection operations. This therefore limits the abilities of scientists to effectively delimit and understand the demographic transformations that they set out to study.

2. Demographic heritage

Just what is meant by “demographic heritage”? Most dictionaries define the term “heritage” more or less as follows: “Property that is inherited from past generations,” “property, valued possessions passed down collectively by ancestors,” “common heritage of a group.” The word “demography” comes from the Greek *graphè*, the “action of describing,” and *demos*, which means “people,” “population”. As such, demographic heritage refers to all sources that make it possible, or have made it possible in the past, to describe populations. Demographic sources are often the only written traces that provide a window onto the many social and economic characteristics as they relate to individuals who make up the population of a given territory. Taken together, this data forms the demographic memory of the individuals in a collective group, and as such, represents a high cultural value.

Although they can take different forms, demographic sources are generally divided into three main types: 1) registers and administrative files (civil status, parochial registers, etc.); 2) population censuses; 3) surveys. Registers and censuses represent the only exhaustive form of data compilation since they list each person in the population by family name and first name. In contrast, surveys include samples that are sometimes quite small. The statistical representativeness of a survey is generally based on census data (survey base) so as to be able to deliver “statistically significant” results, even though they may rely on samples often representing less than 1 % de la population. The fact that these surveys are not exhaustive diminishes their patrimonial nature accordingly, in comparison with all the demographic sources together. On the other hand, civil status registers are usually very specialized and cover a single theme in detail (births, marriages, deaths, etc.). They can be cross-referenced with other sources of information so as to facilitate more in-depth analysis.

Despite the criticisms they receive, population censuses are often the only source of quality information that covers the entire population. Civil status registers are usually unequal in quality depending on the sub-populations living in a country. In several regions of the world, the civil status contains gaps that make it unusable for other purposes other than administrative work. This is essentially the case for most countries in Sub-Saharan Africa (Dackam, 2003). In the 1970s, a United Nations study estimated that the rate of coverage of populations relying on civil status systems reached 99% in Europe and North America, whereas they scarcely reached 26 % in Africa (Laboratories for Population Statistics, 1976). Information available for the most recent period suggests that the civil status coverage in Africa

has scarcely improved over the last 30 years. African demographic heritage that is based on population censuses constitutes the most complete source of information, even though it is a threatened heritage, as we will show in later pages. And just what is the situation regarding this heritage in Quebec?

3. Quebec and its demographic heritage: an experience to share

Quebec is often called a paradise for genealogists. Its citizens have easy access to detailed information and this has allowed many persons of French-Canadian origin to find their ancestors over more than 12 generations (Caron, 2002). The potential of the sources preserved in the parishes of Quebec since the start of the French colonization goes way beyond the simple reconstitution of past generations of families. By matching the information taken from parochial registers for marriages, baptisms as well as from tombstones, it was possible to reconnect the demographic customs of the people of Quebec with their past generations (Charbonneau et al., 1987; Vézina et al., 2005).

Nevertheless, the gaps found in registers are now attracting a greater following of researchers and genealogy enthusiasts who try to fill in the deficiencies in information by having recourse to censuses (Marcoux et al., 2003). The quality of the information extracted from registers is not of equal merit, depending on the religious groups present in the population in Quebec. By way of example, the demographic history of the Franco-Catholics in Quebec is much better documented than for other ethno-religious groups. One of the negative effects of such inequality of coverage is that the history of numerous communities and their populations who helped build Quebec was left in the dark. Furthermore, data from registers showed a severe lack of information regarding the activity and work performed by individuals. Often, there was no reference to the level of education, linguistic practices, ethnic origin, or other characteristics essential to have a better understanding of the transformations experienced by the populations at the time.

Canada has not only one of the longest-standing traditions in organizing censuses, but even more, it is one of the rare States to have kept such precious information intact for a long period of time. In keeping with Article 8 of the Constitution Act which established Canada in 1867 (originally called the British North America Act), a general census was required to be taken every ten years beginning in 1871. As of 1951, Canadian censuses operated on a five-year interval. By virtue of Article 17 of the Statistics Act which seeks to protect the confidentiality of all personal information collected, any such information can only be disclosed after 92 years: the 1901 general census was disclosed only in 1993, and the 1911 census in 2003. All the questionnaires filled out by hand by census-taking agents (since 1871 for Canada and 1851 for Quebec) are stored in the national archives of Canada.

The preservation of such documents in paper format presents considerable challenges, such as the need to maintain the physical state of files or the limits to warehousing space. In order to allow for better conservation and to free up warehousing space, the questionnaires were transferred to microfilm in the 1950s (the paper documents were destroyed). The microfilms were in turn replaced some years ago by digitized files (images). Both Canada and Quebec succeeded in safeguarding a vital demographic heritage that contains very detailed information on individuals and families for more than 150 years.

Although the information on microfilm was originally of interest to only a small group of specialists (historians, demographers and other researchers), their widespread use spearheaded by the development of new information technologies has generated a number of initiatives. One of the most important projects now underway aims to give the general public access to all personal information of past censuses on the website of Library and Archives Canada. Using the browser developed by the

Canadian genealogy centre, users can consult written documents relating to each of the 5 million and 7.2 million persons registered in Canada in 1901 and 1911 respectively.

Beyond the circle of amateur and professional genealogists, the scientific communities in Quebec and Canada have joined forces to make great use of the data available. One notable example is the Canadian Century Research Infrastructure (CCRI), a research program headed by professor Chad Gaffield (University of Ottawa) that sets out to study the social, cultural, economic and political changes in Canada by making extensive use of databases from 1911-1951 that were created from personal data in census returns (St-Hilaire, 2009). In 1997, we also embarked on a research project in partnership with our colleague, geographer Marc St-Hilaire, to study the population of the city of Quebec. Using data extracted from the first seven censuses taken in the city (refer to Marcoux et al., 2003; Marcoux and St-Hilaire, 2003; St-Hilaire and Marcoux, 2001 and 2004), we have been able to create a local database with extremely detailed information as well as georeferences to approximately half a million persons who lived in Quebec between 1851 and 1911. All this information is now being processed as part of the research program *Population and social history of the city of Quebec*, and offers us a new vision of the city that celebrated its 400th birthday in 2008: the program looks at the transformations of the city through its modes of residence, death rate, child education and labor, marriage and areas of recruitment for spouses, widowhood and remarriage, fertility rate and family, as well as other factors.

4. Challenges to preserving census data in French-speaking Africa

At the end of the 1960s, conscious of the lack of basic information available on the populations living in the vast majority of the newly independent Sub-Saharan countries in Africa, the United Nations Population Fund (UNFPA) set up the *African Census Analysis Project (ACAP)*, which empowered some twenty countries on the African continent to take their first general census (Graft-Johnson, 1988). For reasons of social and political instability, some countries had to wait until the 1980s and 1990s before being able to organize a nationwide data collection operation. Others had already started to gather information on their populations at different periods, as was the case with Mali and Burkina Faso which carried out their fourth census in 2009 and 2006 respectively.

With questionnaires being the only really exhaustive form of data collection employed in African countries, they are also used to record more than 50 characteristics pertaining to individuals and households, with some being compliant with the conventions established by UNESCO and other United Nations agencies: age and sex of responders, national languages and mother tongues; literacy and school attendance rates; matrimonial situations, economic activities, housing conditions and household equipment, etc.

Population censuses in Africa provide the greater part of the basic information used to develop all public policies. The guidelines for economic and social development rely on information generated by these censuses. In short, these vast data collection campaigns form the core elements of all planning exercises and constitute a vital tool for African States, especially for French-speaking countries, many of which plan to organize censuses in the years to come (Annex 1).

Based on the wealth of data now collected, it is safe to say that in the last four decades, Sub-Saharan Africa has managed to extricate itself from the very dire situation of socio-demographic information poverty that it once experienced (Van de Walle, 2006; Marcoux, Zuberi and Bangha, 2005). The problem is that this rapid burst of knowledge of African populations was not accompanied by any real effort to preserve the information collected. Computerized data storage technologies have evolved at

such a rapid pace that, quite often, with no measures having been adopted to transfer the data to new storage media, the data from earlier censuses have now been completely lost — either because the media once used to store such information is now obsolete, or because they have simply disappeared, as highlighted in Gubry and Moriconi-Ébrard (2007, p. 5):

The digital age creates new challenges born from the very rapid evolution of technologies and possible storage conditions. The large magnetic tapes of the Seventies, scheduled to be recycled every ten years or so, were replaced by storage media such as the Bernoulli Boxes which have in turn disappeared, just as their drive readers. This meant that fine-grained diachronic analyses, which would again need to access such information, were no longer possible.

The possibility that data from numerous African censuses could disappear completely is a danger that needs to be addressed, given the financial investments they required. Population censuses are collection operations that need to be carried out by all States, but they are also very costly. It is estimated that the cost of these operations in Sub-Saharan Africa totaled almost one billion dollars for the decade of the 1990s. Funding for a general population census in an African country represents a very significant portion of the limited budgets of most planning ministries and this explains why the international community is often called upon for assistance in such operations. Canada alone has allocated approximately 15 million dollars from its public aid development budgets to finance African census-related activities during the 1990s. It is quite unacceptable that investments of this magnitude are not better protected.

Recent initiatives nevertheless provide reason for greater optimism for the preservation of future census operations. The Integrated Management Information System (IMIS) program set up by the United Nations Population Fund should help ensure that past mistakes are no longer made and that data from censuses taken in the 2000s are better preserved (Zoungrana et al., 2007). With regard to the censuses done in the 1990s, it is important to highlight the initiative of the Integrated Public Use Microdata Series—International (IPUMS) program of the University of Minnesota, in which researchers are allowed to access samples from census databases of some 30 countries worldwide, four of which are in Africa. Albeit an interesting project, this American initiative refers only to census samples (5% to 10%), thus sidestepping one of the primary characteristics of a census, namely the exhaustiveness of the collection process.

A second, noteworthy, American initiative is the African Census Analysis Project (ACAP) of the University of Pennsylvania which helped safeguard the databases of more than 50 censuses from 26 African countries. French-speaking African countries do not however reap much of the benefits of these actions of preservation. This is not new, and is a situation we have already mentioned (Marcoux, 1990; Gervais and Marcoux, 1993).

Nevertheless, we are well aware that in a context where there are deficiencies in the civil status system, censuses represent the most reliable sources of information.

A general population census offers the only way to provide accurate, reliable data as well as other information on said population at every geographical level in African countries. Alternative methods are not practical and there is currently no other source available in Sub-Saharan Africa, nor will there be one in the foreseeable future (Dackam, 2003, p. 96).

If no other options can be devised in the foreseeable future to replace censuses as a sure way to collect detailed information on African populations, **the general censuses of the past constitute indeed, a demographic heritage of prime importance.** Now however, this heritage faces the risk of extinction as,

more often than not, only rare, perfunctory publications exist of the African censuses taken in the 1970s and 1980s: digital databases have completely disappeared, now making it impossible to carry out any new evaluation of past information.

However, certain African countries, following the example of Canada and the United States, have passed legislation making it mandatory to store the handwritten questionnaires of the first censuses in their official archives. This is the case in Mali (Ongoïba, 2007), Burkina Faso (Zoungrana et al., 2007) and the Democratic Republic of the Congo (Lututala et al., 2009). Missions undertaken by ODSEF management have revealed that questionnaires for several censuses have also been preserved in their entirety in Benin, Niger and Senegal. The exchanges we have with statistics and archives managements lead us to believe that this is also the case in several other African countries. These last handwritten, exhaustive vestiges of the lives of the populations in certain countries during the 1970s, 1980s and 1990s are often exposed and deteriorate in the harsh physical conditions of preservation. It is for this reason that more than one hundred researchers, meeting at an international symposium in 2007, signed the *Quebec City Declaration Regarding the Recognition, Protection and Development of African Censuses* (Annex 2).

5. Experiences in Mali and the Congo

One of the signatories of the Declaration was the current director of the statistics institute in Mali (INSTAT), who is also director of that country's archives. It is interesting to note that in 2007, Mali was in the middle of preparations to conduct its 4th national population census. The archives director was quite worried about the idea of having to handle a stock of more than five million, A3-sized documents that represented all the questionnaires for the 2009 census. One of the options under consideration was to destroy the documents from the 1976 and 1987 censuses so as to free up the space needed to accommodate the questionnaires for the 2009 census.

This was the context in which ODSEF and its partners worked to set up a digitization workshop that was inaugurated in January 2010 in the INSTAT facilities in Bamako.² The workshop was created with funding from ODSEF and its partners (technical missions, Mali staff training, etc.) whereas the equipment for the installation was funded by an initial outlay (70 000€) from the Institut de la Francophonie numérique (OIF-University Laval agreement protocol signed in September 2009). The digitizing pilot project for the 1976 census forms in Mali served as a prototype to validate this type of operation in a French-speaking African country. Apart from equipment acquisition, other financial and human resources invested in the pilot project were covered by direct funding from ODSEF and the Mali statistics institute (INSTAT).

During the first three months of operation, the Bamako workshop validated its operations and digitized 20% of the forms used in the 1976 census. Following an ODSEF mission carried out in May 2010, a number of modifications were made to the document preparation process and the production chain. The production rate was increased three-fold, ramped up from a weekly average of 10 000 to 30 000 documents. The work rate was modified, with digitization of the 1976 Mali census completed in January 2011.³

² Information on the installation of the workshop can be found on the ODSEF website (www.odsef.fss.ulaval.ca)

³ Approximately 2 500 000 colour images, in JPEG format at 300 ppp, were produced. The original census forms have recto-verso printing, on paper with dimensions (318 x 450 mm) slightly bigger than an A3 document. A one-centimeter trimming was done in one of the document margins so that high-speed digitizers with automatic sheet-

Given the success of the operation, ODSEF and INSTAT sought to continue their partnership and protect the other two Mali censuses conducted in 1987 and 1998. Whereas the number of forms to be digitized was estimated at one million for the 1976 census, our estimates for the 1987 and 1998 censuses were for 2.5 and 4 million respectively. In order to maximize the chances of success of the operation, we fitted the workshop with a more powerful guillotine and ensured that the computer equipment was operational, or replaced if necessary, at the same time adding a new, high-speed digitizer to start a new production line for images. In order to supervise and support the team in Mali, ODSEF will continue to accompany INSTAT in this project and will carry out staff-training missions to Mali so as to build on the experience acquired from the pilot project for the 1976 census. By mid 2013, the first three population censuses for Mali will have been stored. Copies of the digital files are stored in different locations, including at INSTAT.

It is to be hoped that by the end of 2013, INSTAT will have assimilated the practices of protecting the country's census data into its activities, not only making use of the structure in place (digitizing workshop), but also taking advantage of the equipment and trained personnel to create the requisite conditions to sustain a veritable digital culture in the years to come for the benefit of safeguarding the demographic heritage within the Malian statistics institute and among its partners.

It is worthy of note that with the expertise they have acquired, Mali and the INSTAT team are now the driving force among other statistics institutions in the west African region. Now, teams from Burkina Faso and Niger, with support from UNFPA offices and their respective capitals, have been able to visit Mali on technical missions to tour the Bamako workshop, meet INSTAT partners, familiarize themselves with the different stages of protection and storage, as well as to see the tools used for digitizing census questionnaires.⁴

Just as with Mali, the Democratic Republic of the Congo had also sounded the alarm during a presentation at the Quebec symposium (Lututala et al., 2009). It should be pointed out that the DRC conducted just a single census in its history, in 1984. With the economic and political difficulties facing the country, the data from this census was, for all intents and purposes, left unused (Lututala et al., 2009). In 2009, three institutions from the Democratic Republic of the Congo approached ODSEF to outline their needs and identify the actions to take to ensure protection and recognition of data from the 1984 census. This prompted an ODSEF mission to Kinshasa in September 2010 which led to a series of meetings with the managements of the National Statistics Institute (INS) in the DRC, the University of Kinshasa and the national Congolese Bureau of the UNFPA.

After carrying out a thorough evaluation of the INS archives, ODSEF has stated that the 1984 census documents were safeguarded in their entirety and were in a state that would allow them to be digitized, as was the case in Mali. The problem of document warehousing was also raised by the Congolese authorities. With preparations underway for the next Congolese census in 2014, the 1984 census documents are now at risk, given the limited space that INS has at its disposal for archiving. With a population estimated at 80 million, the storage needs for 15 million questionnaires for the next census

feeders could be used. The same strategy was used for digitizing subsequent Malian censuses and for the 1984 census in the DRC, with both original forms being printed on paper formats larger than A3.

⁴ Cf. two documents: 1) "Bamako mission report, 13 to 22 August 2011," National institute of statistics and demography, Burkina Faso; 2) "Mission report: assessment mission to INSTAT, Mali," Niger institute of statistics (December 2011). The DRC team mission to Bamako should have taken place in March 2012 but has been postponed on account of the events that have gripped Mali.

may incite authorities to remove the 1984 census questionnaires which, based on similar experiences in other countries, could seriously damage the integrity and completeness of these archives.

It is within this framework that ODSEF embarked on a new initiative to set up a second digitizing workshop for census questionnaires, this time in Kinshasa. Despite the numerous constraints present in this African capital, an institutional partnership dynamic and the high motivation shown by the INS staff for this Congolese demographic heritage protection program have combined to create the right conditions for the success of the project. The national bureau of the United Nations Population Fund (UNFPA) covered the cost of outfitting the facilities that will house the digitizing workshop (painting, electricity, air conditioning, office furniture, etc.) whereas a new funding packet received from the Organisation Internationale de la Francophonie was used to cover equipment procurement costs as well as training and project supervision costs by ODSEF (equipment installation, setting up of the production chain, personnel training, etc.). The workshop began operations in May 2012 and after just five months, it has completed the digital storage of the questionnaires for the entire city of Kinshasa and the Lower-Congo province which together account for 15% of the total population of the country. It is estimated that the entire digitization process for the only general population census carried out in the history of the DRC will be completed before the end of 2013.

6. Conclusion

National population censuses are an integral part of the world's demographic heritage. In comparison with other forms of documentary heritage concerning populations, census-taking, as it is conducted in the majority of countries, is singular in its campaign to record the personal details of every individual, irrespective of age, sex, social status, level of education, wealth, class, and so on. This source of information on national populations adorns a very democratic nature, compared to other sources that consider only the life of educated individuals (those leaving written traces), or the elite of a society.

It is a fact that documentary heritage is particularly abundant in some developed countries and especially in Canada. For almost twenty years now, teams from Library and Archives Canada have been working on a monumental project to provide researchers and the general public with tools giving them online access to digitized handwritten documents of Canadian national censuses for a period stretching back more than two centuries. Interest in this type of information is evident for it is one of the most popular sources of information on the website of Library and Archives Canada (Tremblay, 2012).

The countries of Sub-Saharan Africa have for the most part only very recent experience, often dating back to the 1970s and/or the 1980s, in organizing population censuses. Despite the recent nature of African documentary heritage, it is clearly at risk in some countries and urgent action is needed, as was made clear by the *Quebec City Declaration Regarding the Recognition, Protection and Development of African Censuses*, signed in 2007.

Although it has been clearly demonstrated that it is crucial to protect the demographic heritage represented by African population censuses, the very large quantity of documents to process creates sizeable logistics and organizational challenges. Perennial protection of these documents calls for high-speed digitizing equipment, installation of an efficient production chain, pluridisciplinary technical staff with adequate training, and institutional organization coupled with proper supervision to respond in a proactive manner to obstacles that may arise. The experience gained by ODSEF in Mali and in the DRC represents concrete actions that have come in the wake of the Quebec City Declaration. Bolstered by the invaluable collaborative effort with the statistics institutions in these two countries and with the financial

backing from ODSEF partners, it was possible to implement structures to ensure the protection of precious demographical heritage represented by population censuses.

In the coming years, ODSEF will continue to work with its institutional partners at both national and international levels to carry out actions to preserve census data and extend its program to some twenty other French-speaking countries, all this while pursuing four objectives:

1. Ensure the protection of the documentary heritage represented by censuses, a heritage facing a fragile future, but containing insightful social, cultural, economic and demographic information that is unique to African populations.
2. Promote the adoption of a true digital culture in African national institutions in the field of statistics and archives.
3. Promote a regional South-South dynamic through the recognition of digital archival data, and work to support national institutions, the Mali Statistics Institute (INSTAT) and the National Statistics Institute (INS) in the Democratic Republic of the Congo, empowering them to play front-running roles to lead other countries in their respective regions.
4. Conduct collaborative ODSEF actions in partnership with statistics institutions in French-speaking Africa, guiding them in the preparation of future censuses and other surveys, and in so doing, promote the collection of pertinent, quality information, especially as regards national and official languages as well as the linguistic practices of the populations in these countries.

References

- Caron, Caroline-Isabelle. "La narration généalogique en Amérique du Nord francophone. Un moteur de construction identitaire." *Ethnologies comparées*, 4 (2002) "Mémoires des lieux".
- Charbonneau, Hubert, Bertrand Desjardins, André Guillemette, Yves Landry, Jacques Légaré, and François Nault. *Naissance d'une population : les Français établis au Canada au XVII^e siècle*. Paris et Montréal, Institut national d'études démographiques et Presses de l'Université de Montréal, 1987.
- Dackam, Richard. "New Strategies to Improve the Cost-Effectiveness of Census in Africa." In *Counting the People*, Population and Development Strategies Series, 77-97. New York, United Nations Population Fund, 2003.
- Gervais, Raymond, and Richard Marcoux. "Saving Francophone Africa's Statistical Past." *History in Africa* 20 (1993): 385-390.
- Graft-Johnson, K.T. "Les sources de données démographiques en Afrique." In *L'état de la démographie africaine*, 13-28. Liège, International Union for the Scientific Study of Population, 1988.
- Gubry, Françoise, and François Moriconi-Ébrard. "Transformer un gisement en ressources : la valorisation des données de recensement, une mission du CEPED." Paper presented at the international conference "Mémoires et démographie: Regards croisés au Sud et au Nord," Québec, 19-22 June 2007.
- Laboratories for Population Statistics. "Development of a National Strategy for the Improvement of Civil Registration and Vital Statistics." Conference Document 61 PC, Chapel Hill, 1976.
- Lututala, Bernard Mumpasi, Pascal Kapagama Ikando, and Kishimba Ngoy. "État des lieux des données du recensement scientifique de 1984 en République Démocratique du Congo." In *Mémoires et*

- démographie. Regards croisés au Sud et au Nord*, edited by R. Marcoux, 98-101. Québec: Presses de l'Université Laval, 2009.
- Marcoux, Richard, and Marc St-Hilaire. "Régimes démographiques, famille et travail des enfants : y a-t-il une spécificité des nouveaux citoyens d'origine rurale à Québec en 1901?" In *Famille et marché. XVI^e-XX^e siècles*, edited by Christian Dessurault, John A. Dickinson, and Joseph Goy, 323-340. Québec: Septentrion, 2003.
- Marcoux, Richard, Marc St-Hilaire, and Charles Fleury. "Ville et population en changement: transformations urbaines et ajustement familiaux à Québec au XIX^e siècle et au début du XX^e," *L'Ancêtre* 29 (2003): 227-230.
- Marcoux, Richard, Tukufu Zuberi, and Martin Bangha. "Les recensements en Afrique francophone : les enjeux d'un patrimoine menacé." *4^e Colloque francophone sur les sondages*, Québec, 24-27 mai 2005.
- Marcoux, Richard. "Les enquêtes démographiques nationales des années 60 en pays sahéliens francophones." *Bulletin de l'Association canadienne des études africaines* (Winter 1990): 14-21.
- Moon, Jeff. "L'IDD et l'art de former les utilisateurs de données." *Bulletin de l'IDD* 4, no. 1 (2000): 2-6.
- Ongoïba, Aly. "La conservation des archives des recensements au Mali." Paper presented at the international conference "Mémoires et démographie : Regards croisés au Sud et au Nord," Québec, 19-22 June 2007.
- Poirier, Jean and Céline Le Bourdais. 2009. "Bilan et perspectives de l'Initiative canadienne pour les statistiques sociales à la lumière de l'expérience du Centre interuniversitaire québécois de statistiques sociales (CIQSS)." In *Mémoires et démographie. Regards croisés au Sud et au Nord*, edited by R. Marcoux, 148-152. Québec : Presses de l'Université Laval, 2009.
- St-Hilaire, Marc, and Richard Marcoux. "Le ralentissement démographique." In *Atlas historique du Québec. Québec, ville et capitale*, edited by Serge Courville et Robert Garon, 172-180. Sainte-Foy, Presses de l'Université Laval, 2001.
- St-Hilaire, Marc, and Richard Marcoux. 2004. "Quebec City." In *The Oxford Companion to Canadian History*, edited by Gerald Hallowell, 523-524. Don Mills, Ont.: Oxford University Press, 2004.
- St-Hilaire, Marc. 2009. "L'Infrastructure de recherche sur le Canada au 20^e siècle : des outils pour renouveler l'histoire de la population." In *Mémoires et démographie. Regards croisés au Sud et au Nord*, edited by R. Marcoux, 144-147. Québec: Presses de l'Université Laval, 2009.
- Tremblay, Sylvie. "Les recensements numérisés du Canada, une approche nouvelle pour des documents d'archives." Paper presented at the colloquium *La sauvegarde numérique des patrimoines démographiques*, Forum mondial de la langue française, Quebec, July 2012.
- Van De Walle, Étienne. "Introduction" In *African Households. Census and Surveys*, xxi-xxxix. New York, M.E. Sharpe, 2006.
- Vézina, Hélène, Marc Tremblay, Bertrand Desjardins, and Louis Houde. "Origines et contributions génétiques des fondatrices et des fondateurs de la population québécoise." *Cahiers québécois de démographie* 34, no. 2 (2005): 235-258.
- Zoungrana, Cécile-Marie, Benjamin Zanou, and Hamissou Kano. "Sécurisation et dissémination des données de recensements au Burkina Faso : pour une meilleure démocratisation de l'information." Paper presented at the international conference "Mémoires et démographie : Regards croisés au Sud et au Nord," Québec, 19-22 June 2007.

Annex 1

Population Census done and planned since 1985 in African francophone countries

Country	1985-1994	1995-2004	2005-2014	Planned after 2010
Algérie	03-1987	<u>06-1998</u>	<u>08-2013</u>	2018
Benin	02-1992	<u>02-2002</u>	11-2012	2012
Burkina Faso	12-1995	12-1996	<u>12-2006</u>	2016
Burundi	09-1990	-	<u>08-2008</u>	
Cameroun	04-1987	-	<u>11-2005</u>	2015
Cap Vert	06-1990	<u>06-2000</u>	<u>(06-2010)</u>	
R. centrafricaine	12-1988	<u>12-2003</u>	(2013)	2013
Tchad	<u>04-1993</u>	-	06-2009	
Comores	09-1991	11-2003	(2013)	2013
Congo	12-1994(1)	<u>07-1996</u>	04-2007	2017
Côte d'Ivoire	03-1988	<u>12-1998</u>	(2012)	2011-2012
RD du Congo	-	-	(2013-2014)*	2012-2013
Djibouti	-	-	<u>12-2009</u>	
Gabon	07-1993(P)	12-2003	(2013)	2013
Guinée	-	<u>12-1996</u>	(2012)	2011-2012
Guinée Bissau	12-1991	-	<u>03-2009</u>	
Madagascar	08-1993	-	(2013)	2011-2012
Mali	04-1987	<u>04-1998</u>	04-2009	2019
Mauritanie	04-1988	11-2000	(2012)	
Maroc	12-1994	<u>09-2004</u>	(2014)	2014
Niger	06-1988	<u>05-2001</u>	(11-2012)	2011-2012
Réunion	03-1990	8 March 1999	<u>01-2006</u>	
Rwanda	08-1991	<u>08-2002</u>	(2012)	2012
Sénégal	05-1988	<u>12-2002</u>	(2012)	2011-2012
Seychelles	<u>08-1987(P)</u>	<u>08-1997</u>	08-2010	
	08-1994	<u>08-2002</u>		
Togo	-	-	11-2010	2011
Tunisie	04-1994	04-2004	(2014)	2014

Source: <http://unstats.un.org/unsd/demographic/sources/census/censusdates.htm#AFRICA>

Annex 2

Quebec City Declaration Regarding the Recognition, Protection and Development of African Censuses



Quebec City Declaration Regarding the Recognition, Protection and Development of African Censuses



www.demographie.auf.org

Most African countries have conducted at least two national population censuses over the past 40 years. These censuses have allowed us to enrich our knowledge of African societies. They alone provide the most geographically detailed and exhaustive nominal data on the population. As such, they constitute the cornerstone of an integrated system of demographic and socio-economic information, and represent a unique legacy in the demographic study of Africa's populations. In contrast to the attention devoted to permanently preserving designated historical documents in archival centres, the comprehensive archiving of census documents and data has been neglected. This data heritage is thereby at risk of destruction, despite its critical value in the production of knowledge on African societies and the monitoring of development policies and programs.

Faced with this situation, various organizations have mobilized to recognize, preserve and develop this legacy. ACAP (the African Census Analysis Project at the University of Pennsylvania) has played a pioneering role in preserving documents. It is also heartening to see the initiatives of CERPOD, IPUMS-International, and CEPED, as well as those developed by the United Nations system, particularly UNFPA and PARIS21, to establish integrated database systems.

Since urgent action is required, we, researchers, educator researchers, and other specialized producers and users of population data, gathered together for the 7^{es} Journées scientifiques du Réseau Démographie de l'Agence universitaire de la Francophonie (AUF), in Quebec City from June 19 to 22, 2007, call upon governments, national and international institutions, and the scientific community to ensure that this legacy is protected by taking urgent action to:

1. Establish the infrastructure needed for archiving completed questionnaires, cartography, methodological and technical documents, printed reports, computer files, and any other kind of census-related record;
2. Establish a system to facilitate access to data in order to develop research that will promote African expertise, inter/pluridisciplinary approaches, and international comparisons;
3. Develop an inter-institutional partnership based on the use of open protocols and standards that ensure the integration of various resources and their dissemination, taking heritage and copyright considerations into account, and making provision for any required legal protection.

Declaration made in Quebec City on June 22, 2007

PARTICIPANTS AT JOURNÉES SCIENTIFIQUES DE QUEBEC MÉMOIRES ET DÉMOGRAPHIE: REGARDS CROISÉS AU SUD ET AU NORD

ADJAMAGBO, Agnès , IRD-IFED, FRANCE	CORDELL, Dennis , Southern Methodist University, USA	Ghidain, Cédric , Université Laval, QUÉBEC, CANADA	MARCOUX, Richard , Université Laval, QUÉBEC, CANADA	RANDALL, Sara , University College London, UNITED KINGDOM
ANTOINE, Philippe , IRD, SENEGAL	DABINE, Charles , Université de Montréal, QUÉBEC, CANADA	GOURBIN, Catherine , Université Catholique de Louvain, BELGIUM	MASUY-STROOBANT , Ondelève, Université Catholique de Louvain, BELGIUM	RICHARD, Laurent , Université Laval, QUÉBEC, CANADA
ASSELIN, Jean-Pierre , Vice Rector, AUF, QUÉBEC, CANADA	DACKAM, Richard , UNFPA, CONGO	GUBRY, Françoise , IRD-CEPED, FRANCE	MBACKE, Cheikh , Hewlett Foundation, SENEGAL	SANDERSON, Jean-Paul , Université Catholique de Louvain, BELGIUM
BAGIRISHYA, Héloïse , Université Laval, QUÉBEC, CANADA	DELAGE, Gisèle , Secrétaire à la politique démographique, QUÉBEC, CANADA	HARTON, Marie-ève , Université Laval, QUÉBEC, CANADA	MESLÉ, France , INED, FRANCE	SAVARO, José-Maurice , Société génétologique de Québec, QUÉBEC, CANADA
BAKASS, Fatima , Institut National de Statistique (INSTAT), MAROCCO	DEMONT, Floriane , Université de Genève, SWITZERLAND	HERTRICH, Veronique , INED, FRANCE	MIANGOTAR, Yodé , Université de Montréal, QUÉBEC, CANADA	SCHOUWAKER, Bruno , Université Catholique de Louvain, BELGIUM
BAVA, Bana , ISSP-Université de Ouagadougou, BURKINA FASO	DIAGNE, Aïmeou , IRD/Université Cheikh Anta Diop, SENEGAL	JEAN-BAPTISTE, Murielle , Université Laval, QUÉBEC, CANADA	MONDAIN, Nathalie , University of Ottawa, CANADA	SIDZE, Estelle Monique , Université de Montréal, QUÉBEC, CANADA
BEDROUNI, Mohamed , Université Saad Dahleb Blida, ALGERIA	DIAL, Fatou Bintou , IRD/Université Cheikh Anta Diop, SENEGAL	KABBANI, Lama , Université de Montréal, QUÉBEC, CANADA	MORICON-EBRARD, François , Centre National de la Recherche Scientifique, FRANCE	SMRES, Yasmine , Université Laval, QUÉBEC, CANADA
BEGUY, Donatien , African Population and Health Research Center, KENYA	DIAWARA, Mourling , Université Laval, QUÉBEC, CANADA	KANO, Hamidou , Institut national de la statistique et de la démographie, BURKINA FASO	N'BOURÉ, Aïmeou , Université de Montréal, QUÉBEC, CANADA	ST-HILAIRE, Marc , Université Laval, QUÉBEC, CANADA
BÉLANGER, Danièle , University of Western Ontario, CANADA	DILON, Lisa , Université de Montréal, QUÉBEC, CANADA	KAPAGAMA, Pascal , Université de Kinshasa, R D CONGO	OLSON, Sherry , McGill University, QUÉBEC, CANADA	TABUTIN, Dominique , Université Catholique de Louvain, BELGIUM
BELARBI, Zouhida , Université Saad Dahleb Blida, ALGERIA	DION, Jennifer , Université Laval, QUÉBEC, CANADA	KATEB, Kamel , INED, FRANCE	ONGOBA, Aly , Archives nationales du Mali, MALI	TRAORE, Seydou Moussa , Dir. Nationale de la statistique, République MALI
BENDER, Rosemary , Statistics Canada, CANADA	DIOP, Nafissatou , Johns Hopkins School of Public Health, USA	KEISSOU, Pierre , INFPA, Boussa Bénin, BÉNIN	ORIS, Michel , University of Geneva, SWITZERLAND	TREMBLAY, Maryse , Université de Montréal, QUÉBEC, CANADA
BENNINGUISSE, Gervais , IFORD-Université de Yamoussoukro, CÔTE D'IVOIRE	DJIBA, Bakary , Agence Nationale de la Statistique et de la Démographie, SENEGAL	KOMAN, Daouda , Université Laval, QUÉBEC, CANADA	OUEDRAOGO, Dieudonné , ISSP-Université de Ouagadougou, BURKINA FASO	TRAORE, Mantala , UNFPA, MALI
BINEY, Clotilde , Université Paris 10-CERPOS, FRANCE	DOS SANTOS, Stéphanie , IRD-Université de Montréal, QUÉBEC, CANADA	KOSS, Bogumil , Université Laval, QUÉBEC, CANADA	PARENT, Lucie , Agence universitaire de la Francophonie, QUÉBEC, CANADA	VALLIN, Jacques , INED, FRANCE
BINGO-LY-ILWORO, Germain , Université de Montréal, QUÉBEC, CANADA	DURÉ, Hélène , Société génétologique de Québec, QUÉBEC, CANADA	LAFLAMME, Valérie , Université de Montréal, QUÉBEC, CANADA	PAYEUR, Frédéric , Université de Montréal, QUÉBEC, CANADA	VÉRON, Jacques , INED, FRANCE
BLAIS, François , Dean, Université Laval, Faculty of Social Sciences, QUÉBEC, CANADA	DUMAINE, Jean-Nikolas , Université Laval, QUÉBEC, CANADA	LABRÈRE, Danièle , Université de Montréal, QUÉBEC, CANADA	PEIRON, Benjamin , Université Laval, QUÉBEC, CANADA	YÉZINA, Héloïse , Université du Québec à Chicoutimi, QUÉBEC, CANADA
BODO, Adéniyi Germain , Université de Montréal, QUÉBEC, CANADA	DUGUAY, Jocelyne , Agence universitaire de la Francophonie, QUÉBEC, CANADA	LABRÈRE, Danièle , Université de Montréal, QUÉBEC, CANADA	PÉPIN-FILION, Dominique , Université du Québec à Rimouski, QUÉBEC, CANADA	YIGNIKIN, Kokou , IIRD-Université de Lomé, TOGO
BONVALET, Catherine , INED, FRANCE	EGENREUX, Thierry , Université Catholique de Louvain, BELGIUM	LAVOIE, Joannie , Université Laval, QUÉBEC, CANADA	PIERRE, Victor , Université de Montréal, QUÉBEC, CANADA	YIANNER, Philippe , University of Geneva, SWITZERLAND
BOUKROUNE, Khalof , AUF, FRANCE	FORNEY, Yannic , University of Geneva, SWITZERLAND	LEBOURDAIS, Céline , McGill University, QUÉBEC, CANADA	PILON, Marc , IRD, FRANCE	WAYACK-PAMBE, Madeline , ISSP-Université de Ouagadougou, BURKINA FASO
CALVÉS, Anne-Emmanuelle , Université de Montréal, QUÉBEC, CANADA	GAFFLIER, Chad , Social Sciences and Humanities Research Council, CANADA	LELÉVRE, Éva , INED, FRANCE	POIRIER, Jean-Claude , QUÉBEC, CANADA	ZUBERI, Tuluha , University of Pennsylvania, USA
CHERHAOU, Mohamed , Université Caïd Ayyad à Marrakech, MAROCCO	GASTINEAU, Bénédicte , IRD, MADAGASCAR	LISALI, Bonot , ICFPPO, DJIBOUTI/RÉPUBLIQUE	QUIRRION, Gaston , Université Laval, QUÉBEC, CANADA	
CHEVAUCHERIE, Éric , Université Charles de Gaulle-Lille3, FRANCE	GAUVREAU, Danièle , Université Concordia, QUÉBEC, CANADA	LUTITALA, Mimpasi Bernard , Université de Kinshasa, R D CONGO		
COMÉ, Fiedra Elise , Université du Québec à Montréal, QUÉBEC, CANADA	GENREAU, Francis , AUF, FRANCE	MAIGA, Abdoulaye , ISSP-Université de Ouagadougou, BURKINA FASO		
		MANDÉ, Issiaka , Université de Paris-2, FRANCE		

Source: http://www.demographie.auf.org/IMG/pdf/Quebec_City_Declaration-Census_Africa.pdf

UNESCO Memory of the World Programme, Knowledge Societies Division

This book of Proceedings includes most of the papers and posters presented at the International Conference “The Memory of the World in the Digital Age: Digitization and Preservation” held on 26–28 September 2012 in Vancouver, British Columbia, Canada, by the UNESCO Memory of the World Programme, Knowledge Societies Division, and The University of British Columbia in collaboration with the University of Toronto.

The proceedings have been compiled and formatted with minor editing; papers and posters appear as submitted. The authors are responsible for the choice and the presentation of the facts contained in this publication and for the opinions they express, which are not necessarily those of UNESCO and do not commit the Organization.

The designations employed and the presentation of material throughout this publication do not imply the expression of any opinion whatsoever on the part of UNESCO 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 organizers of this UNESCO Memory of the World Programme Conference would like to sincerely thank everyone who contributed to the Conference in Vancouver and to these proceedings.

Published by UNESCO 2013, with the financial support of the Social Sciences and Humanities Research Council of Canada | Conseil de recherches en sciences humaines du Canada (SSHRC) and the International Research on Permanent Authentic Records in Electronic Systems (InterPARES) Project.



Social Sciences and Humanities
Research Council of Canada

Conseil de recherches en
sciences humaines du Canada

Canada



InterPARES Project

International Research on Permanent Authentic Records in Electronic Systems