In This Issue

No. 44, June 2001

Erratum

Census in Poland (article on page 51 in *The Survey Statistician*, No. 43)

Please note that the next census in Poland is now planned for 2002, instead of April or May 2001.

Letter from the President

Preparations for the Seoul session of the ISI are nearing completion. I just received my copy of Bulletin 2 and I have started looking into flight schedules. Both the scientific and social programs look outstanding. I look forward to seeing as many of you as possible in the Korean capital in August!

Many of you will want to attend one of the short courses organized by Dan Kasprzyk, IASS Scientific Secretary. Over a period of many years, the IASS short courses have contributed to the continuing education of survey statisticians and methodologists around the world. This year, courses include Workshop on Survey Sampling, Variance Estimation in Complex Surveys, Introduction to Small Area Estimation, Nonresponse Error Research, and Editing and Imputation of Survey Data. I will be at the site working on the course on variance estimation, as I have done on several previous occasions. My thanks in advance to Dan Kasprzyk, Graham Kalton, Colm O'Muircheartaigh, Wayne Fuller, Jay Breidt, Jae-Kwang Kim, Jon Rao, Clyde Tucker, John Kovar, and Eric Rancourt for their volunteer efforts in organizing and teaching this program of short courses.

Production of the IASS jubilee volume, *Influential Papers in Survey Statistics*, is nearing completion. The volume should ship to members before the meetings in Seoul. Thanks to Mike Brick and Fritz Scheuren for the Herculean task of producing this volume. Recall that an earlier committee chaired by Gad Nathan had determined the content of the volume.

I have invited Lars Lyberg to commence development of jubilee volume II, tentatively titled *Influential Papers in Survey Methodology*, and he has agreed. Lars is forming an international committee to define the volume's content. The volume will include such topics as questionnaire design, cognitive methods, and interviewer recruitment and training. If you have views about this volume, please communicate them directly to Lars.

It is my goal that the two jubilee volumes should represent many of the important aspects of surveys with which our members are concerned.

Fred Vogel has been working to upgrade and redesign our web pages. You can view what has been done so far at www.cbs.nl/isi/iass. Please let him know what you think. Thanks to you, Fred, for this important new development.

It is my pleasure to announce that Kristiina Rajaleid (Estonia) has been named recipient of the 2001 Cochran-Hansen Prize. The title of her paper is "On the Order Sampling Design." The prize, established in 1999, is given for the best paper on survey research methods submitted by a young statistician from a developing or transition country. It includes books and journals to the value of about 500 Euros, plus all expenses paid to the ISI session. Many thanks to this year's jury, including Cathy Dippo, Malka Kantorowitz, Susan Linacre (chair), Pedro de Silva, Chris Skinner, and Yves Tille.

Country representatives should begin working even now to identify promising applicants for the 2003 Cochran-Hansen prize.

We recently suffered a bit of a setback in our program of regional conferences. Due to insufficient registrations, it became necessary to cancel the workshop on labor force surveys scheduled for April in Libourne, France. We will reschedule this important event at a later date to be determined, and advertize the conference more aggressively at that time.

On the other hand, the IASC-IASS summer school in Capri (June 2001) should be in progress as this journal reaches you. Thanks and good luck for much success to Vincenzo Esposito, organizer of the school.

I am also very pleased to report that considerable progress is being made to organize the International Conference on

Improving Surveys, to be held in August 2002 in Copenhagen. Hans Bay is the organizer, and IASS representatives on the committee include Edith de Leeuw, Jean Martin, and David Marker. From what I've seen so far, the scientific and social programs look very exciting. Mark your calendars now.

In the last several issues of *The Survey Statistician*, many countries have reported on their recent census of population. I am very pleased to note that four more census reports appear in this issue: Belgium, Bolivia, China, Euskadi (Basque country), and Sweden. I would like to see several more reports in the December 2001 issue. Again, let me urge more countries to contribute.

Speaking of reports, Leyla Mohadjer (co-editor of *The Survey Statistician*) and I were talking recently and she observed that she does not receive many submissions at all, on any topic, from our members. Please consider this a gentle reminder that we would like to hear from you. If you have any material of interest to our membership, please assemble it and submit it to Leyla, who will include it in future issues.

Last December, it was my very great honor and pleasure to attend the meeting of the ISI council in Voorburg, and satellite meetings of the IASS executive committee in Paris and Libourne. Many thanks to Christophe Lefranc and especially to president-elect Xavier Charoy for helping make this trip most productive and valuable. I would like to thank Mme Claude Olivier and her colleagues at the secretariat in Libourne. As you may recall, the secretariat has been working over this 2-year period to upgrade the IASS membership files. And I would like to offer special thanks to M. Jean-Pierre Bemoiras, director of the Cefil, INSEE training center in Libourne. The secretariat exists and thrives in Libourne due to his energy and considerable support. I found it delightful to visit his offices and discuss IASS objectives with him. IASS owes him a considerable debt of gratitude.

Finally, at the time of the ISI session in Helsinki, we identified the need to develop an administrative manual for the IASS. It seemed that most administrative information was passed by word of mouth from one generation of officers to another. As we have grown in complexity as an organization, this approach is failing us and there is a need to document in writing the duties and responsibilities of the various officers and committee chairs. President-elect Xavier Charoy has taken on the considerable task of developing the administrative manual, and I would like to offer him thanks on behalf of myself, all members, and especially all future officers and committee chairs. The manual should make everyone's life easier and clearer.

I'll see you soon in Seoul.

Kirk Wolter
President IASS
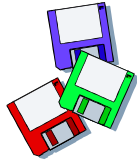
SOFTWARE REVIEW

New Version of WesVar

Version 4 of WesVar is now available with a number of newly added features. WesVar is a powerful tool for the statistical analysis of data from complex surveys. When complex survey designs are used to collect survey data, special techniques are needed to obtain meaningful and accurate analyses. WesVar computes estimates and replicate variance estimates that reflect the complex sampling and estimation procedures that are used in practice.

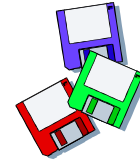WesVar can be used with a wide range of sample designs, including multi-stage, stratified, and unequal probability samples. The replicate variance estimates can reflect the effects of many types of estimation techniques, including nonresponse adjustment, poststratification, raking, and ratio estimation.

WesVar will import ASCII, SPSS®, SAS® (ssd format), and SAS transport files directly. Any other file type that adheres to the ODBC standard can also be imported, including Microsoft Excel®, Access®, and SAS (sd2 format). You can export in SPSS, SAS transport, or ASCII formats.

You can estimate standard errors using any one of five methods of replication:

JK1—the delete-one jackknife for unstratified designs
JK2—jackknife for 2-per-stratum designs
JKn—delete-one jackknife for stratified designs
BRR—balanced repeated replication for 2-per-stratum designs
Fay BRR—balanced repeated replication using Fay's method.

You can create up to 512 BRR or Fay BRR weights using bundled orthogonal matrices. If you supply your own matrices, you can create up to 9,984 replicate weights for the BRR and Fay methods. Up to 9,999 replicate weights can be computed for the jackknife methods.

You can also import replicate weights, that have been created outside WesVar, for any of the five supported replication procedures or others like the bootstrap.

Below is a list of new features in Version 4 of WesVar.

Statistical

◆ Multi-tables - produce many 2-way or 3-way tables with a simple request screen (e.g., a single request for all nine tables formed by combining variables A, B, and C as the rows with D, E, and F as the columns)
◆ Plausible value analysis of education test scores
◆ Analysis of data sets with multiple imputations
◆ Multinomial logistic regression with unordered levels
◆ Estimates and confidence intervals for odds ratios in logistic regression
◆ New R^2 measures for logistic regression
◆ User friendly tool for constructing specialized odds ratios
◆ Confidence intervals for linear and logistic model parameters
◆ Score tests in logistic regression models
◆ Adjustment of replicate weights for nonresponse
◆ Standardized regression coefficients
◆ Enhanced F-test capabilities
◆ Correlation matrix for estimated regression parameters (in addition to covariance matrix)
◆ Diagnostic to measure whether replicate contributes heavily to variance estimate
◆ Wilson method for handling "confidence intervals outside the permissible range" of a proportion
◆ Design effects for totals of continuous variables

Usability

◆ Workbook output can be shared without having the source data sets

◆ Continuous variable transformation

◆ Improved file handling, management

◆ Data file browser

◆ Utilities for moving and copying data files, workbooks, and associated files

◆ Log file for tracking the history of changes made to a data file

◆ Improved error handling, notification

Refer to www.Westat.com for more information about the new version of WesVar.

Country Reports

ARGENTINA
from Clyde Charre de Trabuchi

A **workshop on the measurement of household income and spending using a household survey system** was held on October 4-6, 2000 **in Buenos Aires**. This event was organized jointly by the *Instituto Interamericano de Estadística* (*IASI*) and the *Instituto Nacional de Estadística y Censos* (*INDEC*), both from Argentina.

The main purpose of the workshop was to review the thematic and methodological aspects of household spending surveys, as well as their frequency. The ultimate goal was to obtain outstanding, timely and reliable data, and use them to analyze the population's consumption and level of wellness, as well as the impact of public policies.

Mr. Jacob Ryten, former Assistant Chief Statistician with Statistics Canada, was in charge of coordinating the workshop with the help of Pilar Martín Guzmán, Spain's *Instituto Nacional de Estadística*'s former Director. Local and international experts exchanged their respective information and experiences based on the themes proposed in a background document developed by technicians from the *INDEC*'s *Encuesta Nacional de Gastos de los Hogares.*

Participants included international experts from the United States Bureau of Labor Statistics, Statistics Canada, France's *Institut national de la statistique et des études économiques* (*INSEE*), United Kingdom's Office for National Statistics, and Spain's *Instituto Nacional de Estadística* (*INE*).

The following topics were discussed in the background document and during the workshop: i) the frequency at which the Survey of Income and Spending is conducted; ii) methods used to reduce respondent burden; iii) reference periods; iv) collection instruments; v) quality control and data imputation; vi) non-response; and vii) measurement of income.

Based on the interest in these topics, which are summarized in the background document, the international experts described their experiences and made suggestions and recommendations.

The workshop proved very helpful for all participants, particularly local experts, who are currently in the process of reviewing the conceptual and methodological aspects of Argentina's National Survey of Household Spending.

A publication containing the background document and the proceedings from the meetings will soon be released, both in Spanish and English. Additional information may be obtained at the following e-mail address: cdop@indec.mecon.gov.ar.

AUSTRALIA
from Geoff Lee

Leisure Activities of Children: Data from the first comprehensive survey by the ABS of leisure activities of children aged 5 to 14 years were released in January 2001. Information is provided on participation of children in organised activities (i.e., organised sports and selected organised cultural activities) outside school hours, as well as in five non-organised leisure activities (namely watching TV or videos, playing electronic or computer games, bike riding, skateboarding or rollerblading, and undertaking art and craft activities). The publication based on this survey is entitled 'Children's Participation in Cultural and Leisure Activities' (ABS catalogue no. 4901.0).

Further information can be obtained from Dr. Adriana Vanden Heuvel, Director of the National Centre for Culture and Recreation Statistics, ABS (tel: +61 8 8237 7399;
e-mail: a.vandenheuvel@abs.gov.au).

from Etienne Waeytens, Camille Vanderhoeft, and
Jean-Marc Museux

Reformed Tourism Survey: Starting from the year 2000, the survey on tourism demand among a sample of households is being studied thoroughly. In order not to complicate things too much, a straightforward stratified simple random sampling design is applied for the selection of a sample of households in each trimester. The size of the initial samples is between about 8,000 and 10,000 households. The questionnaires are sent by mail. The households have to send back the forms also by mail, but additional information and help can always be obtained by telephone. One or two reminders are sent each trimester. The four samples are non-overlapping. Due to severe non-response, each trimester between 40% and 50% of households are providing data. The sampling scheme for one trimester may be modified, if the analysis of the collected data in the previous trimester(s) indicates that this might be useful. This analysis involves an analysis of non-response and an analysis of the precision of some important study variables obtained in past trimesters. The questionnaire has not been changed significantly if compared to previous survey years, and follows the harmonisation rules and other requirements of EUROSTAT.

Software components are being developed with the following goals in mind:

◆ the system has to be parameterised as much as possible, so that it can easily be managed and extended;

◆ most components of the survey process, from sampling design to estimation, should be integrated;

◆ it should allow to obtain (provisional) results as fast as possible, and at regular times, even during the data collection phase;

◆ a more efficient non-response management must be possible;

◆ advanced calibration and estimation techniques are built in;

◆ external data sources (registers as well as information from other surveys) can be integrated easily;

◆ the system should be adaptable to other household based surveys in the future.

The evolution of the methodology is discussed with all users in the tourism sector. They are very interested in the integration of different systems in different organisations, government and private, in order to provide more consistent estimates and to reduce response burden for the data providers.

Contact person :
camille.vanderhoeft@statbel.mineco.fgov.be;
ilse.vaneetvelde@statbel.mineco.fgov.be

The first **National Household Mobility Survey** was conducted between December 1998 and November 1999. Besides providing statistics on transport, it also made it possible to study household activity links, understand user patterns and respond better to their requirements.

This survey is co-ordinated by the transport research group (GRT-FUNDP) and conducted with the assistance of Langzaam Verkeer, the Institut Wallon, the Universitaire Instelling Antwerpen and the Institut National de Statistique (INS). The fieldwork was the responsibility of the Dimarso company.

The survey method was mixed, involving both mail and telephone. The mail was used to distribute the questionnaires which were self-administered. The telephone was used only for follow-up, to motivate households prior to the survey, to remind people of procedures and to validate responses. Approximately 70% of the households selected were contacted by telephone.

The INS constructed the sample of households. The sample frame was the Registre national des personnes physiques [national register of individuals]. The survey plan opted for stratification by province (administrative subdivisions of the region) and by household size (one-person/household containing more than one person). The overall response rate was 32%. The survey is not mandatory.

The data collected were of two kinds:

◆ Data concerning the household: profile of persons in the household, number and characteristics of the household's vehicles, location and environment of the household.

◆ Data concerning each person in the household: use of various modes of transportation, long-distance travel, travel between home and

workplace and between home and school, details concerning all travel on a specific day.

A calibration method was used to extrapolate the results and the totals were adjusted for the variables of sex, age group and household size by province and by quarter.

Further information: http://statbel.fgov.be or philippe.barette@fundp.ac.be

CANADA
from Gordon Brackstone

The **Workplace and Employee Survey (WES)** was developed by Statistics Canada with the support of Human Resources Development Canada and the Policy Research Initiative to provide an integrated view of the activities of employers and their employees. The survey covers technology adoption, innovation, human resource practices, labour turnover and business strategies of employers, as well as wages, training, technology use, working hours and other workplace activities of employees. In addition to providing cross-sectional linked employer-employee data, the survey is also longitudinal. This will allow researchers to study both employer and employee outcomes over time. The first wave of this annual survey took place in 1999.

The original WES sample of approximately 8000 workplaces was selected from the Business Register of Statistics Canada using a stratified random sample design. Stratification was by industry, geographic region and the estimated number of employees in the workplace. The first workplace interview was conducted with the employer, normally the human resources officer, by Computer Assisted Personal Interviewing. At the end of this interview, the interviewer selected a sample of three, six, nine or twelve employees, depending on the size of the workplace. This sample of approximately 29,000 employees was contacted and interviewed using Computer Assisted Telephone Interviewing. In the second year, the sample of employees, including those who had left the employer, was followed up and interviewed again. A new sample of employees will be redrawn in year three and every second year thereafter. The sample of workplaces will be refreshed every second year by selecting a sample of workplaces born in the previous two years.

The most recent results from the survey were released in Statistics Canada's *The Daily* on February 19, 2001 (www.statcan.ca). For more information on the Workplace and Employee Survey, please contact Pierre Lavallée, Statistics Canada, Ottawa, Ontario, K1A 0T6, Canada, plavall@statcan.ca.

The **Trends in International Mathematics and Science Study** (TIMSS) is the most recent in the series of IEA (International Association for the Evaluation of Educational Achievement) studies designed to measure trends in student achievement in mathematics and science. TIMSS provides participating countries with the opportunity to measure progress in educational achievement. Furthermore, trend data from the context questionnaires (for schools, teachers and students) produce a dynamic picture of changes in the implementation of educational policy, and raise new issues relevant to reform efforts.

TIMSS 1995 produced benchmark results for over 45 participating countries at three grade levels: the fourth, eighth and twelfth grades. TIMSS 1999, whose results were recently released (Dec. 5, 2000), provided cross-sectional results for 38 countries participating at the eighth grade and, for the first time, trend data for 26 countries which had participated in the 1995 study. TIMSS 2003 is about to begin, with tremendous interest from around the world, and will assess the fourth and eighth grades. TIMSS 2003 will produce cross-sectional results, extend the trend line at the eighth grade, and set a trend line at the fourth grade.

The **Progress in International Reading Literacy Study (PIRLS)** is the new IEA (International Association for the Evaluation of Educational Achievement) study of reading literacy of fourth grade students that is designed to measure trends in children's reading literacy achievement. Scheduled for main data collection in 2001, PIRLS focuses on the reading literacy achievement of young children and the experiences they have at home and school in learning to read. It will provide valuable comparative information about children's levels of reading literacy that can be used to improve instruction and learning. Targeting the fourth grade is of great interest as it is generally recognised as the transition between learning to read and reading to learn. Thus reading literacy levels at that period of children's development can

have important consequences on their future academic achievements.

PIRLS 2001 is the first cycle of the study with an estimated 38 countries expected to participate. To date, PIRLS has concentrated its efforts on framework and test development in 1999 and most of 2000. Statistics Canada, in its role as sampling consultant, has guided the participating countries in the selection of their national samples and assessing their quality. A Field Trial was conducted in September 2000 to assess the quality of the test instruments and context questionnaires and final versions of all survey instruments were delivered to participating countries in mid-February 2001. Main data collection is scheduled to begin in April 2001 and will be completed in late 2001. PIRLS results are scheduled for international release in May 2003.

For more information on TIMSS or PIRLS, contact Pierre Foy (613-951-9479, e-mail: pierre.foy@statcan.ca), Social Survey Methods Division, Statistics Canada, Ottawa, Ontario K1A 0T6.

CENTRAL AMERICA AND PANAMA
from David Fitch

Let me again, in reporting on some activities in Guatemala, try to give some understanding of how undeveloped things can be statistically in a developing country and how exciting it is to see progress. Iodine deficiency is still a big problem in our countries despite the laws requiring salt to be iodinized. UNICEF established a salt monitoring program in 1995. It is to be congratulated for undertaking this work. However the research traditions here are quite primitive. UNICEF to save money, decided at least initially, to monitor only the salt used by households with children in the public schools. I've no problem with this. It's a practical beginning. But there are two statistical problems. The UNICEF tradition, at least here, is to select judgementally, i.e., to not do probability sampling of, e.g., schools.

The second problem is more serious and is at the present time being tackled. The procedure is to collect salt from the households of 20 students. Each student selected brings in 5 grams. To save money on the measurement of the iodine content of salt, two pools each with the salt from 10 students are formed and it is these two pools that are tested.

Now the problem is that much salt has little or no iodine but measuring and publishing results from these pooled samples gives the impression that most all salt has some iodine even though less than would be desirable. Dr. Roberto Molina (rmolina@uvg.edu.gt) of the Department of Mathematics of Del Valle University is working with INCAP on this problem. He has a strong background in probability and suggests that the parameters, alpha and beta, of the gamma distribution can be estimated from the mean and variance of the two pooled samples, and that the gamma distribution likely gives a much improved idea of the distribution of the 20 individual salt samples. He is asking (1) if the amounts of salt in a pool, from each pupil, can be measured in proportion to the number of people in the household from which he comes, and say halved if there are two pupils from the household in the school, and (2) what might the implications of this be for estimating the variance of the estimated mean based on these two pooled samples. Dr. Molina, I'm sure, would appreciate comments from readers on this work. It is work with very important health implications for people in poor countries. And like survey work generally, there is often a vast gulf between the statistical talent applied to problems in developed and underdeveloped countries. (In this case it looks like technical assistance will come from a developing country, by way of a US trained Ph.D. mathematician-statistician, a rarity in groups such as USAID that try to give technical assistance.) It reminds me of the title of a report some years ago, something like "Two Americas, One Black and the Other White, and Unequal." There is, e.g., a group in Ottawa, Canada funded to do, and doing, important work on micronutrients such as iodine. With some of the world's best sampling statisticians "right across the street" they have turned to people who have made a career out of advising on developing country work and don't have, in my opinion, sufficient expertise. Let me suggest that bringing more of the survey work financed by the international banks and donor organizations into the statistical mainstream is a challenge we should increasingly be facing - and tackling.

For more information, please contact David J. Fitch, Instituto de Nutricion de Centro America y Panama, Apartado Postal 1188, Guatemala, C. A., Tel. 502 471 3605, Fax 502 473 6529.

HUNGARY
from Éva Laczka

The 6th Hungarian Agricultural Census (AC) took place between 1-21 April 2000, with the reference date of March 31, 2000. Earlier agricultural censuses were carried out in the years 1895, 1935, 1972, 1980 and 1991. The act on the AC was passed by the Hungarian Parliament in May 1999. The target population of the AC consisted of all family farms and agricultural enterprises. For the purpose of the AC, a total of 13,712 interview districts were defined by the regional directorates of the Hungarian Central Statistical Office (HCSO) and by local authorities. The enumerators, supervisors and settlement officers were trained by the qualified regional officers of the HCSO directorates on the basis of the implementation directive and the training curriculum issued by the Department of Agriculture.

In the framework of the census the enumerators had visited 2.1 million households (more than 60% of total households). About 960,000 households had reached the reporting holding size. Another 835,000 households controlled smaller land area or livestock than the specified threshold, and 300,000 households did not perform any agricultural activities.

According to the data, on March 31, 2000 the agricultural sector in Hungary included nearly 960,000 family holdings and more than 8,400 enterprises engaged in agricultural activities. In the census completed in 1991, 2,600 enterprises and 1.4 million family holdings were recorded.

Some 27% of the enterprises do not cultivate any land area. More than 70% of the family holdings utilise less than 1 ha and altogether farm less then 8% of the total productive land area used by all family holdings.

The structure of the livestock is dominated by cattle in the case of enterprises and by pigs in the case of family holdings. Two species account for 90% of the total livestock in the case of enterprises, and four species in the case of family holdings.

From the total livestock of family holdings more than 40% of cattle, nearly 50% of cows, 36% of pigs, and 41% of breeding sows are kept by farmers controlling 1 to 10 ha productive land area.

This sector controls more than 30% of the cow- and pig-keeping capacity and nearly 50% of the wine storage capacity. This sector has a considerable share in the stock of tractors and trucks too (42% and 38%). In the case of enterprises these resources are concentrated in units using 100 ha or more.

Slightly below three persons on average belong to a family holding, with two of them actively participating in farming. Nearly 25% of holders are females. The average age of the holders is 60 in the case of females and 53 in case of males.

For more information please contact: Éva Laczka, Hungarian Central Statistical Office, Agricultural Statistics Department, Head of Department, H-1024, Budapest, Hungary, Keleti Károly u. 5-7.
E-mail: eva.laczka@office.ksh.hu

ITALY
from Claudio Quintano

Several methodological innovations are being made in Italy's multipurpose system of social surveys.

Citizen safety: In the year 2001 (September 2001 – February 2002) a new survey on citizen's safety will be conducted. The main purpose will be to measure the dark figures of micro criminality from the point of view of the citizens, objective and subjective indicators of safety perception, propensity to report to police and other aspects. Particular attention will be paid to sexual harassment and violence through an experimental project; this will widen the contents and questions surveyed.
(Maria Giuseppina Muratore - muratore@istat.it)

Time use survey: In the year 2001 also a new time use survey will start. It will be based on face to face interview and diary filling from respondents. It will last one year, divided into 12 monthly data collection slots, aiming to measure the way citizens spend their time, with a special focus on unpaid work (especially domestic and care work). The survey is part of a harmonised European project, in co-operation with Eurostat.
(Maria Clelia Romano - romano@istat.it - clemar@iol.it)

Standardisation of fieldwork rules, files, record layout and data treatment for telephone

interview based surveys: Two main telephone interview based surveys are conducted: one current survey on tourism and another on citizen safety. Data collection is carried out through the co-operation of an external company that carries on interviews under the direction and control of Istat. After four years of tests and experiments with several companies, a global approach to fieldwork organisation, data collection rules, quality indicators, data files and treatment will be defined. (Rina Camporese - campores@istat.it - ca.rina@katamail.com)

JAPAN
from Chikio Hayashi

The Statistics Bureau of Japan (SBJ) is going to introduce a new **Retail Price Survey** (RPS) system using mobile PCs from October 2001 to promote efficiency of the survey and to disseminate results earlier than before. The RPS is conducted every month in 167 municipalities (cities, towns and villages) sampled out of 3,000 municipalities, and collects more than 230 thousand prices. Under the current survey method, enumerators visit stores in survey districts to collect price data (and also visit rented houses to collect house rent data), and fill out questionnaire sheets. As in the case of many other countries, the collected price data in this survey are used for compiling the CPI, and the stores to be surveyed are fixed because tracing the price changes at the same stores is important in the CPI. The questionnaire sheets differ among item groups, so that the enumerators carry 20 to 30 sheets for a monthly enumeration. But in the new survey system, the enumerators carry only the mobile PC.

For more information, contact: M. Aida - Economic Statistics Division, SBJ Tokyo, e-mail: maida@stat.go.jp.

MADAGASCAR
from Julia Rachel Ravelosoa

1-2-3 Survey extended to Madagascar's seven large cities in 2001: a representative measurement of the role of the informal sector in the national economy.

The 1-2-3 Survey is a three-phase survey that gives a statistically representative picture of employment conditions and the informal sector. It was conducted for the first time in Madagascar in 1995, covering only the metropolitan area of Antananarivo, then again in 1998. It is the only survey that provides a quantitative measure of Madagascar's informal sector. The importance of the informal sector as a source of employment is no longer in question. The 1998 edition of the survey enumerated approximately 165,000 informal production units of non-agricultural marketing activity, which generated 242,000 jobs, in the metropolitan area of Antananarivo. Also, the informal sector met over three-quarters of total household consumption requirements in the city. In all, it is estimated that the informal sector represents 30% of the official Madagascan GDP. These figures demonstrate the importance of this sector for the Madagascan economy and therefore of this statistical operation.

The first phase (Phase 1) of the 1-2-3 Survey deals with employment conditions. It identifies the heads of informal production units, in their principal job or in a secondary job. These persons will be surveyed in the second phase of the 1-2-3 Survey. This second phase is a specific survey of a representative sample of informal units. They will be asked about their working conditions, labour and employment, capital, funding and investment, and their problems and prospects. The third phase (Phase 3) deals with a sub-sample of Phase 1. It is a survey on household consumption. But beyond evaluating standard of living, a second objective of this third phase of the 1-2-3 Survey is to measure how important the informal sector is in meeting households' needs. It will also help us to find the reasons for choosing the informal sector or the formal sector for the various goods and services used by households.

In addition to measuring the informal sector, this geographical extension of the 1-2-3 Survey, conducted by Project MADIO (economic information and analysis support project) in collaboration with the Institut National de la Statistique, will give an objective and subjective regional picture of poverty in Madagascar's seven large cities.

Finally, because costs for the 1-2-3 Survey are modest, and it is not difficult to conduct, this type of survey is well suited to developing countries such

as Madagascar, especially for tracking poverty and household living conditions over time.

For more information, please contact: Julia Rachel RAVELOSOA, Project MADIO, BP 485 – 101 Antananarivo, Tel.: (261)-20-22-258-32, E-mail: jrachelravelosoa@dts.mg.

PHILIPPINES
from Gervacio G. Selda, Jr.

The National Computer Center of the Philippines is conducting the **Information and Communications Technology (ICT) Survey 2000** to generate data on IT resources and the status of their application in government. The collected data will be used in preparing the ICT profile in the government as well as in drawing up policies and standards. The field operation for the survey is currently ongoing and the specific data to be gathered include (i) hardware/computer equipment; (ii) software and systems; (iii) networking; (iv) organization and manpower; (v) IT budget and spending; (vi) IT projects undertaken; (vii) IT standards and policies developed and implemented by the agency; and (viii) IT needs and concerns. The survey will cover all national government agencies, government-owned and controlled corporations, state universities and colleges and selected local government units. For more details, contact: Ms. Eva Neri of the National Computer Center at nsneri@ncc.gov.ph.

The Philippine Statistical System (PSS) is going to hold its **8th National Convention on Statistics** on October 1-2, 2001 in Manila with the theme, "*The Role of Statistics in a Knowledge-Based Economy.*" The biennial activity is spearheaded by the National Statistical Coordination Board (NSCB) through an Inter-Agency Steering Committee and will coincide with the opening of the 12th National Statistics Month and the ASEAN Workshop on Development Indicators sponsored by the UN Statistics Division. The convention aims to: (i) provide a forum for exchanging ideas and experiences in the field of statistics and for discussing recent statistical developments and prevailing issues in the PSS; and (ii) elicit the cooperation and support of statisticians and professionals in related fields from the government, academe and private sector towards a more responsive statistical system. The convention will involve both scientific sessions and exhibits. About 80 papers on the following topics

will be presented: (i) statistical theory, education and training; (ii) quality control and best practices in statistical operations; (iii) market and opinion surveys; (iv) socio-economic statistics and indicator systems in response to current and emerging challenges; (v) local and small-area statistics for development planning and governance in the countryside; and (vi) IT in statistics and E-commerce in an information-age Philippine society. In addition, there will be a session where students can present their papers. For more details, contact: Dr. Romulo A. Virola, Secretary General of the NSCB at ncs@nscb.gov.ph or http://www.nscb.gov.ph/ncs.

The NSCB recently created a Task Force on the **Measurement of Electronic Commerce** to enable the development of a framework and identification of methodologies and strategies for the generation of data and other indicators on electronic commerce. The Task Force, whose members are from various statistical agencies, is tasked to: (i) formulate the definition of electronic commerce that will be used for measurement purposes and determine its coverage considering both the local setting and practices of international organizations and other countries; (ii) identify current and future concerns of policy-makers on the use of electronic commerce in the country as a basis for determining data requirements; and (iii) conduct consultations with concerned government and private sectors and other inter-agency bodies to identify data requirements and seek their cooperation in the implementation of the Task Force's action plan. For more details, contact: Dr. Romulo A. Virola, Secretary General of NSCB at ra.virola@nscb.gov.ph.

The PSS has also embarked on developing an **Electronic Data Archiving System for Philippine Statistics**. This development is one of the projects identified for implementation under the Government Statistics Accessibility Program (GSAP), a PSS program to improve the accessibility of statistical information and services. Taking off from the study made by the Statistical Research and Training Center (SRTC) entitled "Development of Prototype for a Web-Based Data Archiving System for the Philippine Statistical System," the National Statistics Office and NSCB have already taken steps toward the development of a data warehouse/archive by packaging project proposals for funding. Furthermore, NSCB has approved the creation of a

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Task Force on Data Archiving to provide a forum for the exchange of views and expertise in the development of the archiving policy. Among the specific functions of the Task Force are to: (i) draft a statement on the vision of the PSS on data archiving; (ii) develop policies on the implementation of the archiving program for the PSS; (iii) recommend the appropriate institutional linkages and coordination for the development of the archives; (iv) formulate the integrated work program and funding requirements of the PSS agencies on data archiving; (v) propose strategies to fund the program; and (vi) conduct consultation with all participating agencies in the PSS and other sectors of the government and the private sector. For more details, please contact: Dr. Romulo A. Virola, Secretary General of NSCB at ra.virola@nscb.gov.ph.

POLAND
from Janusz Wywial

The 26th Conference of the International Association for Research in Income and Wealth was held on August 30 – September 9, 2000 in Cracow, Poland. Among the topics considered were: factor and technological change, international standards for income distribution statistics, measures of economic prosperity, environmental accounting, surveys of government and other non-profit institutions, surveys of family budgets, problems of poverty and social exclusion. For more details contact S.M. Kot, eskot@cyf-kr.edu.pl.

The 19th International Conference on Multivariate Statistical Analysis was held on December 4-5, 2000 at the University of Lodz, Poland. This Conference was organised by the Department of Statistical Methods of the University of Lodz. The topics of the proceedings were focused on the following problems: multivariate statistical inference, survey sampling, regression analysis, application of statistical methods in economics. More details connected with the Conference are available from Cz. Domanski, czedoman@krysia.uni.lodz.pl.

The Polish innovation survey started in 1960. Present analysis is based on the regular yearly census survey on innovation covering enterprises with 50 employees or more in the Mining and Manufacturing sectors, and with 20 employees or more in the Services sector. The innovation

activities are measured, for example, by data referring to expenditure on innovation, domestic and export sales of innovative products, and transfer of advanced technologies. For more information contact G. Niedbalska, Central Statistical Office, Niepodleglosci 208, 00-925 Warsaw, Poland.

On the basis of data from the **Household Budget Survey** collected by the Polish Statistical Office several poverty and inequality measures from 1990 to 1997 have been estimated. Over this period the data were observed in a two-stage sample of 10,000 to 32,000 households. For more details contact A. Szulc, aszulc@sgh.waw.pl.

SENEGAL
from Serigne Touba Diassé

Senegal, through its Forecasting and Statistics Division, is preparing two large operations: a budget-consumption survey (EBC) called the Senegalese Household Survey (ESAM II), and a general census of population and housing (RGPH). They will both take place in 2001. Data collection for the EBC will be starting in April; the RGPH is planned for November. ESAM is conducted in the context of defining the strategy for poverty reduction, with technical and financial support from the World Bank.

Both these large operations include quantitative and qualitative elements for measuring poverty and defining its determining principles in order to identify the groups of poor people and understand their behaviours. With these combined approaches, we will be able to comprehend all aspects of poverty. We must not only measure households' standard of living by using expenditures and then describing their living conditions (food and nutritional level of populations, health, education, housing, etc.), but also determine the characteristic poverty levels (level of expenses or meeting of basic needs), and finally identify groups that can be considered poor.

When faced with poverty, before any action is taken to reduce it, one generally asks two broad questions. The first, conceptual, question is to ask what poverty is. In operational terms, this may be translated by: At what point can we consider that a person is poor? This leads to distinguishing various forms of poverty: monetary poverty, poverty in living conditions, and poverty with regard to opportunities.

The second, more methodological, question concerns the way we apprehend and measure these different forms of poverty. The second question arises naturally from the first and involves using particular methods and, in some cases, specific instruments. Both operations undertaken by the Forecasting and Statistics Division will generate data that will provide a description of benchmarks for the state of poverty of populations. Anti-poverty projects can then be planned based on these data.

With the quantity and diversity of the information it will collect, ESAM is by far the largest household survey ever carried out in Senegal. Data from the survey will provide in-depth knowledge of households' behaviour with regard to budgetary units and consumption.

Data collection will cover a sample of 6,624 households representative of the whole country. These households are distributed among 552 Census Divisions (CD), 282 of them urban and 270 rural. The urban CD account for 3,384 households, the rural CD, 3,240.

Data collection will take place over 12 months and will be done by 77 teams of interviewers. It will be done in three rounds. For each round, three days are planned for travel and setting up teams. A team will include a controller, three interviewers and one back-up interviewer. Each interviewer will work either alone or with the back-up interviewer in one CD. He or she will be responsible for twelve households and will visit four households per day. In two of the four households visited daily, food will be weighed for 7 consecutive days. Data from all questionnaires will be entered at Dakar.

The particular characteristic of the EBC is that it includes a module entitled Unified Questionnaire on Development Indicators (QUID). With this module we will be able to track indicators of poverty in standard of living. Simple and short, it is administered in a single visit. The QUID collects information on education, health, employment, household goods, characteristics of housing, predictors of poverty, and anthropometric measurements of children under 60 months. It has two notable features. It will be completed by filling in bullets corresponding to pre-coded responses, and data will be read by means of an optical scanner. This rapid input will considerably reduce

the time for data processing and results will be available almost in real time.

For information, contact Momar Ballé SYLLA, Chef de projet, or Elhadji Malick DIOP, chef de la Section dépenses et mode de vie.

SPAIN
from Rosa Maria Bermudez Gomez

The results of the **Survey on the Generation of Industrial Waste** conducted by the National Statistical Institute (INE) are now available. It is the first research of this type in the field of environmental statistics and it will be carried out annually. In 1999, Spanish industrial enterprises generated almost 52 million tons of waste. 56.2% of it, i.e., 29.2 million tons, was produced by the manufacturing industry and the remaining 43.8%, i.e. 22.8 million tons, by the extracting industry.

Within the framework for the implementation process of the European National and Regional Accounts System, SEC 95, the National Statistical Institute has produced the 1995 **Symmetric Input-Output Table of the Spanish Economy**. This table is the first one of this type to be developed in Spain and it completes the set of basic elements of the current accounts methodology, particularly its input-output system which is the central core of National Accounts.

The first results have been published of the **New Survey on Disability, Impairment and the Health Status** conducted in 1999 and aimed at 80,000 households (over 200,000 people). It updates knowledge about disability in Spain and it will be one of the main supports for the analysis of dependence and its development, thus having significant repercussions on the design of public policies and private performance for social protection.

In the second quarter of each year the **Labour Force Survey** includes a series of questions on specific matters regarding the labour market. Results are available for the module *Transition from initial education to the labour market,* which was collected during the second quarter of 2000. During the second quarter of 2001, information was collected on *Length and patterns of working time.*

These studies are prompted by the changes undergone by the labour market in recent years. In the face of growing competency, employers try to increase the mobility of their workers and, as far as possible, to adapt their behaviour to the labour market situation and make the best use of their resources.

The flexibility sought after for the new labour conditions becomes apparent in: new employer-worker relationships; flexibility in labour conditions and working hours; and operational flexibility, based, on the one hand, on a more gratifying work through developing different tasks and, on the other hand, on an increased responsibility at the lower levels of an enterprise's staff.

Furthermore, from the employees' point of view, new jobs are created that allow for more flexible working hours, enabling greater compatibility with family responsibilities, studies or other activities. However, the price of these facilities may be lower stability of the new jobs as compared to the conventional ones.

For more information, contact Rosa Maria Bermudez Gomez at rbermudez@ine.es.

UNITED STATES
from Ron Fecso

In 2000-2001, the **Integrated Postsecondary Education Data System** (IPEDS), a data collection program of the U.S. National Center for Education Statistics (NCES), initiated a data collection program that takes full advantage of state-of-the-art computer technology and the Internet. The IPEDS is a data collection instrument and data processing tool. The system collects data through key entry and file upload, generates totals and other calculated data processing items, and edits data at the time of entry. The approach shortens data processing time by eliminating the handling required by a paper-based system, increases data quality through ensuring internal data integrity and consistency with prior year reporting, and reduces burden on postsecondary institutions by reducing the need for repeated callbacks.

The IPEDS Peer Analysis System allows NCES to make current year edited data (at the institution-level) available to responding institutions within a few months of the end of the collection period.

Responses are also posted to the IPEDS College Opportunities On-Line (IPEDS COOL) to enable students and parents access to the most recent data available on postsecondary institutions. For more information on the IPEDS data collection program and the two applications -- Peer Analysis System and IPEDS COOL -- visit http://nces.ed.gov/ipeds/ or contact Susan Broyles at Susan_Broyles@ed.gov.

The U.S. National Center for Education Statistics has recently completed the second edition of a **Quality Profile for the Schools and Staffing Survey**. The Schools and Staffing Survey (SASS) is a system of periodic sample surveys providing information about teachers and administrators and the general condition of America's public and private elementary and secondary schools. The purpose of the quality profile is to summarize what is known about the quality of data from the surveys that comprise SASS. The report provides information about the sample design, survey content, data processing, nonresponse, estimation, and an evaluation of the survey estimates. The report, authored by Graham Kalton, Marianne Winglee, Sheila Krawchuk, and Daniel Levine, all of Westat, Inc., is titled *Quality Profile for SASS: Rounds 1-3: 1987-1995, Aspects of the Quality of Data in the Schools and Staffing Surveys*. The publication number is NCES 2000-308 and is available through the NCES web site http://nces.ed.gov/surveys/sass or by contacting Dan Kasprzyk at Daniel_Kasprzyk@ed.gov.

The **Statistical Standards Program (SSP) of the U.S. National Center for Education Statistics** (NCES) provides methodological and statistical support to the Center, as well as to federal and non-federal organizations that engage in statistical work in support of the mission of NCES. This Program develops standards for procedures to ensure the quality of statistical surveys, analyses and products, and consults and advises on the implementation of standards for all NCES projects.

Although NCES has been guided by written statistical standards for some 12 years, they were last revised in 1992. Given the number of advances in the field of survey management, data collection, processing, and analysis in the intervening years, SSP is currently leading an agency-wide project to produce an updated set of statistical standards.

The topics covered range from survey management, data documentation, graphic displays and product dissemination to data confidentiality, disclosure risk control, nonresponse, imputation, multiple comparisons, and variance estimation. At the conclusion of this process, the revised statistical standards will be available in print as well as on the NCES home page -- http://nces.ed.gov. To learn more about NCES' statistical standards revision process, contact Marilyn McMillen, Chief Statistician of the National Center for Education Statistics, at Marilyn_McMillen@ed.gov.

Combining Data from Different Sources

A.H. Kroese and R.H. Renssen
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1. Introduction

At Statistics Netherlands, the design and organization of the statistical process is changing rapidly. This change is driven by the need to produce more consistent data and by political pressures to reduce staff costs as well as response burden. Keller et al. (1999) provide an outline of a future statistical process. In view of this new process, a number of methodological problems have to be addressed. In particular, an appropriate estimation technique has to be found. Kroese and Renssen (1999) have discussed two possible estimation methods: mass imputation and (traditional) weighting. In this paper, we briefly describe the new statistical process as well as both estimation methods.

2. The New Statistical Process

The new statistical process is depicted in Figure 1. First, data from different sources (e.g., administrative registers, surveys, Electronic Data Interchange) are matched in the input database, BaseLine. The data from sources refer to observation units, which are not necessarily equal to statistical units. In BaseLine, all input data are transformed to correspond to statistical units.
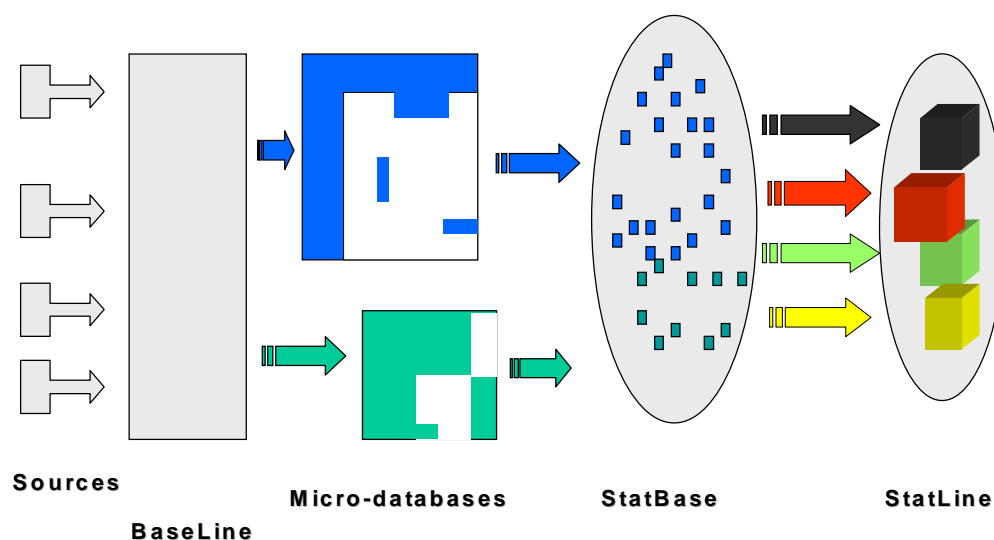
Figure 1. A Diagram of the New Statistical Process

Second, a micro-database is constructed for each object type (persons, households, businesses, etc.). The micro-database for businesses can be seen as a table with a row for each business in the population (the business register). Each column represents a variable. The information in the micro-database is edited and the variables are harmonized. The values of some variables (SIC code, size class) are known for all businesses in the population; the values of other variables are

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[1] The views expressed in this paper are those of the authors and do not necessarily reflect the policies of Statistics Netherlands.

known only for a subset of the population, for example, businesses responding to a sample survey. Consequently, the micro-database may contain many empty cells.

The next step in the new statistical process is to estimate population totals based on the data in the micro-database. If the value of a variable is known for each business in the population, the population total is estimated by simply adding all values. If the value of a variable is not known for a business, a statistical estimation technique has to be applied. All estimates are placed in StatBase, which can be regarded as a database containing all data Statistics Netherlands considers worth publishing.

The set of estimates in StatBase should satisfy three requirements: Reliability, consistency, and disclosure control. *Reliability* means that the estimates should be generated either by an approximately design-unbiased method or by a model-based method where the model used is plausible in some sense. *Consistency* means that when confronting estimates in StatBase, no contradictions may result. *Disclosure control* implies that it should not be possible to derive information about individual businesses by combining estimates.

Finally, the estimates are disseminated by means of StatLine, which can be seen as a "view" on StatBase. In StatLine the aggregates are presented in a user-oriented way, that is, the aggregates are arranged in multi-dimensional tables (called data cubes) that reflect standard "areas of interest" or "themes" in society. For example, it is our ultimate goal to gather all data referring to the theme "health" in one such data cube, from which users can select the data in which they are interested.

3. The Estimation Problem

Before the new statistical process can be implemented, a number of methodological problems have to be solved. One of the main methodological challenges is how to proceed from micro-databases to StatBase. An estimation technique that starts from a number of only partly filled micro-databases has to be developed. Such a technique should result in a set of reliable and consistent estimates. Two candidate estimation methods have been investigated with respect to reliability and consistency: mass imputation and weighting.

a. Mass Imputation

The idea of mass imputation is illustrated in Figure 2. On the left-hand side, a micro-database for businesses is depicted. The backbone of that micro-database is the business register with information about SIC code, number of employees, and legal status. Matched to this business register is an administrative register containing tax declarations of the businesses. Also matched to the business register are data from two business surveys: the production survey (here with three variables: turnover, added value, and costs of purchases) and the environment survey (one variable: total waste produced). Mass imputation implies that all empty cells are filled with imputed values; see the right-hand side of Figure 2. Estimates of population totals are then obtained by adding the observed and imputed values.
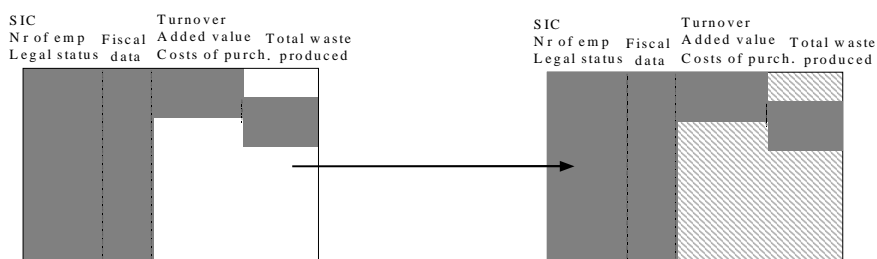

Figure 2. Mass Imputation of the Micro-database for Businesses

The question is whether these estimates are both consistent and reliable. A necessary and sufficient condition for consistency is that all records (both imputed and observed) are internally consistent, that is, consistent at the micro level. Assuming that the observed values are internally consistent, mass imputation results in consistent estimates if the imputation method used preserves the internal consistency. Reliability is much more of a problem. In constructing the imputations, only a limited set of explanatory variables can be handled. If the interest is in totals of subsets of the population defined by the explanatory variables in the model, mass imputation leads to approximately design-unbiased and, hence, reliable estimates (at least if the variances are reasonably small). However, if the interest is also in totals of subsets defined by other variables, mass imputation may lead to unreliable estimates. This assertion holds, especially for subsets for which the so-called conditional independence condition is invalid.

b. Weighting

The second method described here can be seen as an application of traditional weighting. It consists of several steps. In the first step, the micro-database is split into several rectangular data sets; each of these is used for a specific set of estimates. This step is illustrated in Figure 3. Data set 1 is the business register enriched with fiscal information. Data sets 2 and 3 are the production survey and the environment survey, respectively, both enriched with register information. Data set 4 corresponds to the intersection of the two surveys. In the second step, the data sets are assigned, one by one, a set of weights, related to the appropriate inclusion probabilities and calibrated with respect to known register totals or previous estimated totals. In the final step, estimates are obtained by weighted counting in the appropriate data set.
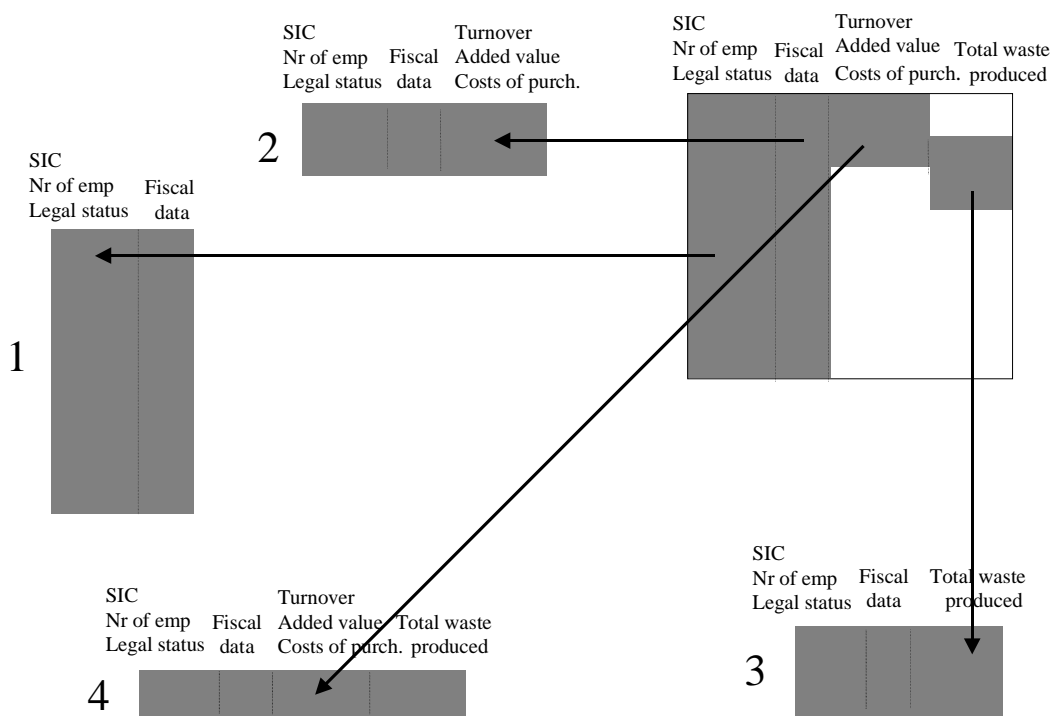

Figure 3. The Weighting Approach to Estimation

The main issue is whether this procedure leads to reliable and consistent estimates. Generally, estimates that are based on weighting methods are approximately design-unbiased and hence reliable, provided that variances are sufficiently small.

Whether or not such estimates are consistent is illustrated by the following example.

Suppose that an estimate has to be made of the relation between "turnover" and "total waste

produced. "Using data set 4" we obtain an estimate that is consistent with the marginal distributions of "turnover" and "total waste produced" only if the weights are calibrated with respect to these marginal distributions. Generally, fool-proof consistency cannot be guaranteed, since only a limited number of calibration restrictions can be applied to assign weights to a data set.

To solve the problem of inconsistent estimates, Kroese and Renssen (1999) have suggested the idea of repeated weighting. With this new weighting approach, a much larger set of reliable and consistent estimates can be obtained.

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Census in Belgium

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1. Introduction

The first Belgian census of a scientific nature was organized in 1846. Since then there have been 14 population and housing censuses in Belgium, occurring at intervals of approximately 10 years. The last one took place in 1991. The next one will be conducted on October 1, 2001.

The collection method has changed only slightly during the past 150 years; each time, interviewers were specifically recruited to collect the completed census forms at the houses of civilians. On the other hand, data processing has benefited from technological progress: Thanks to developments in information technology, it was possible to proceed from manual processing to using optical reading in 1991.

The past censuses had a great administrative significance: They were used to determine the official population number of each municipality. In 1985, however, the National Register of Natural Persons (NRNP) was recognized as the centralizing database of municipal registers; it is a reliable source for determining population numbers. The official population number has consequently been determined by means of this register since 1991.

To indicate specifically that the next population and housing census will not be purely a counting of the population but rather an actual general socio-economic survey, the Belgian government decided to change the name of this big operation. The original term "telling" (the Dutch word for census) did indeed provide an incorrect connotation that it concerned only a counting of the population. The new name is "General Socio-economic Survey 2001," or "Survey 2001" for short.

The days of classic censuses in Belgium are therefore long gone. The general socio-economic survey keeps up with modern times by using administrative registers and new information and communication technologies.

2. Distribution and Collection of Documents

Data Collection Using Paper Forms

During the last census, Statistics Belgium disseminated the questionnaires via the postal service and collected them via census enumerators designated by the municipalities. In April-May 1999, Statistics Belgium conducted a test survey to examine a closer co-operation with the Post Office. This test survey was intended to evaluate a new method, involving postal offices as well as postal workers in the collection of the questionnaires.

Based on the results of this test survey, Statistics Belgium and the Belgian High Council for Statistics decided to use the following method for disseminating and collecting the documents:

◆ Phase 1: Sending the documents by post to all households registered in the NRNP (this will be done the week before the official date of the census, i.e., September 24-28, 2001).

The questionnaires will be personalized. The name, surname, and date of birth will be preprinted on each individual form, and the address will be preprinted on each dwelling form. Therefore, citizens have only to check and, if necessary, correct the data.

Citizens have to fill in their forms and send them back to Statistics Belgium:

· by depositing them in a public post office box of their choice anywhere in the country,

· by giving them to their postal carrier during his or her daily round, or

· by leaving them in a post office of their choice anywhere in the country.

◆ Phase 2: Delivering a non-addressed reminder card to all letterboxes (the last week of October 2001).

◆ Phase 3: Sending a registered letter to those who have not sent back the documents (estimated at $\pm$ 40% of households) (the mailing will take place by municipality between December 15, 2001, and January 15, 2002).

◆ Phase 4: Having an interviewer visit homes that have not replied (estimated at ± 20% of households) (the interviewers will go to the legal residence of nonrespondents between January 15, 2002, and the end of March 2002).

Estimated response rates of 60% following delivery of the reminder card and 80% following delivery of the registered letter are based on the results of the 1999 test survey. These are, however, cautious estimations; the response rates obtained in the test survey were higher. Furthermore, Statistics Belgium expects better results in the full-scale survey thanks to a public awareness campaign.

The collection phase using interviewers (phase 4) will involve the difficult cases: people who are often away from home, people of little means, people who are not aware of the usefulness of the survey, etc. Consequently, in many cases interviewers will have to help civilians fill in their forms or provide information on the usefulness of the survey, why the survey is organized, etc. Specific training will be given to help the interviewers face these difficulties.

Non-co-operative households will be responsible for the costs incurred to collect questionnaires from them (at least the costs arising from phases 3 and 4), except for people who are not capable of fulfilling their obligations on their own (social aspect). Handicapped people, those who are not capable of filling in their forms on their own, can be assisted by a family member or third party of their choice. A toll-free telephone number will be available to provide further information. As a last resort, the interviewer will leave a card for people who are clearly not capable of fulfilling their obligations on their own. The card can then be used to request an exemption from the costs. A fine will be imposed on people who refuse to answer or send their forms back after the fourth phase.

Electronic Data Collection Alternatives

Statistics Belgium is also studying the technical and practical possibility of letting civilians fill in the survey forms on the Internet. It is important that the security of the transferred data be guaranteed.

Inspired by the e-census that was carried out for the Swiss Census 2000, Statistics Belgium first studied the possibility of administering Survey 2001 online.

When the inhabitants of Belgium receive their forms by traditional mail, they would have the choice to fill in the paper forms and send them back by ordinary mail or to complete their forms through the Internet. The user would have to type in his or her ID and password (preprinted on the personal form) on the web site and log onto the secured system. The electronic form would contain the user's personalized data. The various members of the household would fill in the forms online and the data would be saved automatically. When all members of the household had filled in the forms according to the defined procedure, the user would receive a confirmation that the data had been entered in the database.

The time and resources necessary to carry out such an e-census project for Survey 2001 are, however, lacking. Statistics Belgium is now studying a promising alternative to this method: administering Survey 2001 through e-mail.

Under this plan, civilians would be given the option to download the forms from a web site and e-mail the completed forms (in text file format) back to Statistics Belgium. Statistics Belgium is investigating whether the returned text files can be imported automatically into the internal application developed for data processing.

Statistics Belgium hopes to be able to offer this service to the inhabitants of the country. However, we will have to wait until the evaluation of this project is complete before making a decision about this alternative.

3. Processing of Paper Questionnaires

The paper questionnaires will be processed almost entirely through optical reading (optical scanning and image recognition technology). The checkboxes, bar codes, and numerical characters will be recognized by the system. A series of quality control checks will also be performed by the system.

The dwelling form contains only closed-ended questions that have to be answered by ticking a box. This form consequently requires very little manual work. Processing the individual forms is more complex, however. Four variables must be coded; specifically, school or workplace, occupation, branch of economic activity, and

educational level. This coding will be done by video recording, so it will not be necessary to return to the paper questionnaires.

4. __Future of the Survey__

The General Socio-economic Survey 2001 will be the last exhaustive traditional census in Belgium. In the future, socio-economic data on the population residing in Belgium will be collected from the following sources:

◆ Existing administrative registers: Their agreement with the census data will be examined through the General Socio-economic Survey 2001; and

◆ Databases to be developed by Statistics Belgium: For information that cannot be found in the administrative registers, namely, the characteristics of dwellings and the educational level of the population.

The principal advantages of this method are low cost, absence of additional burden for the population, removal of data collection from the field, and permanent availability of data so that updated tables can be produced annually.

a. The Dwelling Register

A dwelling register will be set up with the data collected during the General Socio-economic Survey 2001. All characteristics of occupied dwellings will be entered, such as the period of construction, the type of ownership, the number of rooms, the floor space, and the energy used. To keep the database up to date, the following procedure will be applied.

Beginning on October 1, 2001 (the date of the survey), the municipalities will provide a questionnaire resembling the census dwelling form to each person who wants to register a change of residence. This form will then be sent to Statistics Belgium, where it will be entirely processed through optical reading. By means of the information received from the NRNP, Statistics Belgium will draw up a list of people who moved during the previous year. This list will be compared to the list of people from whom a completed form was received. A new questionnaire will then be sent to persons who are on the first but not the second list. Therefore, the database will comprise all residence changes, which will enable Statistics Belgium to

assess and summarize the situation as of January 1 of each year.

The dwelling register can then be completed with information from the Land Register (for instance, the construction period). Construction statistics collected by Statistics Belgium—in particular, data on started buildings—will also be used. Thanks to these statistics, it will be possible to list the addresses of buildings where alterations have already started. As the number of dwellings per building is known and each dwelling is identified by its address, Statistics Belgium will be able to send a form to each dwelling where alterations are being made and in this way complete its dwelling register.

b. The Educational Level Database

The educational level database will also be created on the basis of the data collected in the General Socio-economic Survey 2001. The information entered in this register will include the year of graduation and the degrees obtained in Belgium or abroad. This register will be kept up to date from 2002 on by means of the information kept by the ministries responsible for control of school attendance, as well as by colleges and universities. Each year these institutions will provide Statistics Belgium with data on school attendance and awarded certificates.

For people who come to live in Belgium after October 1, 2001, information on educational attainment will be collected when they register in the NRNP. The procedure will be similar to the one chosen to update the dwelling register.

c. The Socio-economic Database

A database of the principal socio-economic characteristics of the population will also be constructed. The following data will be entered: occupational status, name and address of employer, branch of economic activity, and weekly working hours.

The information mentioned above is contained in various databases kept by the institutes of social security and is centralized by the Crossroads Bank for Social Security (CBSS). These data can be used in the framework of the census because they are indexed using the same personal identification number as in the NRNP. Statistics Belgium will ask the CBSS for a copy of the necessary data each

time they are needed for an updated publication of the results.

Civilians' workplace locations might also be available from the CBSS, but this approach would require the adaptation of the statistical section that firms annually complete. Thanks to the availability of information about the actual workplace, the distance traveled to work will also be known. Annual information on mobility will consequently be available.

We have to note, however, that it is impossible to set up a permanently updated database for two socio-economic variables collected during the census, namely, occupation and primary means of transport to the workplace. This information is subject to large variations. It will be updated through decennial sample surveys and/or by specific surveys on request.

5. Conclusion

Survey 2001 will be the last exhaustive census in Belgium and will be used as base material to set up new databases of information that cannot be obtained from existing registers. Thus, it would be possible to regularly publish updated results for even very small geographical units (neighborhoods), and only a limited survey on two or three specific topics would be necessary. Although this procedure would mean an additional investment in the short term, in the long term it would enable large savings.

Censuses in Bolivia

1. Historical Overview

The history of censuses in Bolivia goes back to 1831, when the country's first census was taken. It was followed by four censuses in the period up to 1882. In fact, these were population counts to determine the total number of people in each department.

In the past century, four censuses (1900, 1950, 1976 and 1992) took place. They were each different from the previous ones, mainly in their thematic content, coverage, logistics, technology

and dissemination of results. All of these aspects improved considerably from one census to the next.

The General Population Census of 1900, despite difficulties of access and limited human resources for the operation, produced a demographic picture of Bolivia for the first time, by investigating such population characteristics as sex, age, marital status, occupation, literacy, religion, residence and disabilities, classified and distributed by the various geographic areas of the country.

The Demographic Census of 1950 broadened the thematic content of the research and improved the information base on the well-being and general characteristics of the population with data on family relationship, age, sex, marital status, native population, language or dialect, literacy, education level, school attendance, place of birth, nationality, labour force participation, occupation, field of activity, type of employment and military service (men only). For the first time, it collected information on housing characteristics, such as location, ownership/tenancy, number of rooms and availability of water and sanitary facilities.

The 1976 National Population and Housing Census (CNPV-76) had a greater statistical significance for the country because it included technological advances to collect, process and disseminate the results and contained questions to construct socio-demographic indicators and indirectly estimate indicators of fertility, mortality and migration[1]. The National Statistical Information System Law, which consolidated the National Institute of Statistics as a decentralized public agency with administrative autonomy and its own management, expanded and strengthened statistical activities in the country.

The CNPV-76 census questionnaire was structured in two clearly defined chapters, one for housing and the other for population. The chapter on housing included questions on type of housing, occupancy, main materials used, availability of water and of sanitary facilities, sewage disposal, bathing and shower facilities, electricity, number of rooms and bedrooms, kitchen, ownership/tenancy and language spoken most often in the family. The chapter on population investigated general aspects of all persons: family relationship, sex, age, place of birth, usual residence at time of census, usual

---

[1] In Bolivia, vital statistics are incomplete and unreliable.

residence five years before the census, and languages spoken. Basic information on education was obtained for persons aged five years or older, such as literacy, school attendance, and last grade completed. Data on economic characteristics were compiled for those aged seven years or older, such as labour force participation, primary occupation, field of activity and occupational category. Fertility data were collected for women aged 12 years or older, using the following questions: "How many children born alive have you had? How many of them are still alive? Excluding stillborn babies, in what month and year was your youngest child born?" Finally, the marital status of persons aged 12 years or older was determined.

2. 1992 National Census of Population and Housing

The latest National Census of Population and Housing in Bolivia was held on June 3, 1992, 16 years after the previous one (September 29, 1976). It is making an important contribution to planning population development, since the data obtained are the most complete source of demographic, economic, social, cultural and housing information of the country.

The information collected has been very useful in planning the programs required by the reforms that the country has undergone in recent years, providing statistical support especially in the following areas: the laws on public participation, those on land use, educational and health reform, social security, pension fund, public services, public investment, and modernization of the democratic system. It also helped to set priorities for direct action in the fight against poverty (poverty map, a guide for social action - 1993).

The census information generated, the indicators developed and their massive dissemination in different media (paper publications, diskettes, CD-ROMs and the Internet) helped to provide a most detailed geographic picture of the country so that the nation could meet its needs and demands for statistical information. The data also allowed international comparisons and information sharing with other countries.

The data also made it possible to meet the information requirements of international organizations involved in various programs and

projects to aid the country, such as those of the Inter-American Development Bank, the World Bank, the United Nations Fund for Population Activities, the Economic Commission for Latin America and the Caribbean, the Latin American Demographic Centre, and other friendly countries.

Nevertheless, the census was very difficult to carry out for lack of a statistical census tradition. Many people associated the survey with government taxation and other charges, leading to doubt and uncertainty in compiling basic information. Furthermore, the inaccessibility of the country's rural areas did not permit total coverage, as evidenced in the "survey of census coverage and evaluation," which showed a 6.9% undercount at the national level.

The changes made in the questionnaires for the last census (1992) and the one planned for May 30, 2001 are presented in the appendix.

3. 2001 National Census of Population and Housing

The National Institute of Statistics is now preparing the next National Census of Population and Housing to be held on May 30, 2001. It will be different from previous censuses, with improved thematic content, training of census officials and introduction of new techniques of data capture and processing. For this purpose, an efficient census structure has been established to cover all census geographic areas, obtain up-to-date information and thus strengthen the country's statistical system.

It will constitute the frame of reference for evaluating and analyzing the past and present situation and for estimating future trends in demographic change variables and other socio-economic indicators, which are basic inputs for monitoring, planning and designing policies to improve the conditions of the general population.

Among the most important innovations to be included in the census operation are the following:

◆ The census form has been designed considering the general requirements of the many users in Bolivia and abroad, comparability with previous censuses and those of other countries, and the number and kind of questions in clearly defined modules.

- Electronic data processing will be used for the first time. This will mainly involve optical reading of marks and characters on census forms (using a scanner), with systems for assisted coding, validation and imputation using previously established guidelines for editing and automatically assigning data.
- The organization and design of a database for access to smaller geographic areas, providing an updated sampling frame for subsequent specialized sample surveys.
- The final results will be disseminated in the form of paper publications and CD-ROMs, as well as GIS and the Internet, with data broken down geographically at the national level and by department, province, municipality, canton and community organization.

Appendix
Questions asked
National Census of Population and Housing, 1992 and 2001

Description	Census	
	1992(1)	2001(2)
Geographic location	x	x
Housing		
Type of housing	x	x
Occupancy (occupied/unoccupied)	x	x
Predominant materials in walls	x	x
Plaster in inside walls		x
Materials most used in roofs	x	x
Materials most used in floors	x	x
System for supplying water for drinking and cooking	x	
Distribution of water for drinking and cooking		x
Source of water for drinking and cooking	x	x
Home		
Availability of sanitary facilities	x	x
Use of sanitary facilities (private/shared)	x	x
Waste evaluation from sanitary facilities	x	x
Availability of electricity	x	
Use of electricity to light home		x
Number of rooms occupied	x	x
Number of bedrooms	x	x
Separate kitchen (room)	x	x
Type of fuel or energy used for cooking	x	x
Own/rent	x	x
Equipment/furnishings		x
Religion	x	
Health care in home	x	
Mortality in home (year preceding census)	x	
Number and age of deceased (males)	x	
Number and age of deceased (females)	x	
Disability		x
Number of persons in home	x	x

Appendix (continued)
Questions asked
National Census of Population and Housing, 1992 and 2001

| | Census | |
Description	1992(1)	2001(2)
Population		
Full name	x	x
Possession of identity card or document	x	
Sex	x	x
Age (rounded down to nearest whole year)	x	x
Family relationship	x	x
Languages (and/or dialects) spoken	x	x
Usual residence at time of census	x	x
Place of birth	x	x
Usual residence five years before the census	x	x
Current marital status	x	x
Literacy	x	x
School attendance	x	x
Present level of education		x
Highest level of education achieved	x	x
What was the prerequisite for this course?		x
Did you work during the last week?		x
During the last week: (survey question)		x
During the last week: (looking for work)		x
Labour force participation	x	
Primary occupation	x	x
Occupational category	x	x
Field of activity	x	x
Self-identification with a native or aboriginal people		x
Total number of children born alive	x	x
Sons and daughters now living	x	x
Deceased sons and daughters		x
Sons and daughters living in other countries	x	
Month and year in which youngest child was born	x	x
Place where most recent birth occurred		x
Who assisted with the birth?		x

(1) This census was taken on June 3, 1992.
(2) This census is planned for May 30, 2001.

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Census in China
from Huang Langhui

In accordance with the decision of the State Council, China carried out its fifth national population census on November 1, 2000. Thanks to the leadership of the State Council and governments at all levels and the support and cooperation from people of various nationalities, the field enumeration was completed through the painstaking efforts and hard work of nearly 10 million census workers. The postenumeration check by sample survey showed that the enumeration was successful. At present, all data collected through the census are undergoing computer processing. Advance tabulation of the

major figures was completed, and the results are released as follows:

China has a **total population** of 1,295.33 million, of which the total population of the 31 provinces, autonomous regions, and municipalities (excluding Jinmen and Mazu islands of Fujian Province hereafter) and of servicemen on the mainland of China was 1,265.83 million; the population of Hong Kong SAR was 6.78 million; the population of Macao SAR was 440,000; and the population of Taiwan Province and of Jinmen, Mazu, and a few other islands of Fujian Province was 22.28 million.

Population Growth: Compared with the population of 1,133.68 million from the 1990 population census (with zero hour of July 1, 1990, as the reference time), the total population of the 31 provinces, autonomous regions, and municipalities and of the servicemen of the mainland of China increased by 132.15 million persons, or 11.66%, over the past 10 years and 4 months. The average annual growth was 12.79 million persons, or a growth rate of 1.07%.

Population of Family Households: In the 31 provinces, autonomous regions, and municipalities of the mainland of China, there were 348.37 million family households with a population of 1,198.39 million persons. The average size of family households was 3.44 persons, somewhat less than the 3.96 persons of the 1990 population census.

Sex Composition: Of the people enumerated in the 31 provinces, autonomous regions, and municipalities and servicemen of the mainland of China, 653.55 million persons, or 51.63%, were males, while 612.28 million persons, or 48.37%, were females. The sex ratio (female = 100) was 106.74%.

Age Composition: Of the people enumerated in the 31 provinces, autonomous regions, and municipalities and servicemen of the mainland of China, 289.79 million persons were in the age group 0-14, accounting for 22.89% of the total population; 887.93 million persons were in the age group 15-64, accounting for 70.15%; and 88.11 million persons were in the age group 65 and over, accounting for 6.96%. Compared with the results of the 1990 population census, the share of people in the age group 0-14 was down by 4.80 percentage

points, and that for people aged 65 and over was up by 1.39 percentage points.

Composition of Nationalities: Of the people enumerated in the 31 provinces, autonomous regions, and municipalities and servicemen of the mainland of China, 1,159.40 million persons, or 91.59%, were of Han nationality and 106.43 million persons, or 8.41%, were of various national minorities. Compared with the 1990 population census, the population of Han people increased by 116.92 million persons, or 11.22%, while the population of various national minorities increased by 15.23 million persons, or 16.70%.

Composition of Educational Attainment: Of the 31 provinces, autonomous regions, and municipalities and servicemen of the mainland of China, 45.71 million persons had finished university education (referring to junior college and above); 141.09 million persons had received senior secondary education (including secondary technical school education); 429.89 million persons had received junior secondary education; and 451.91 million persons had had primary education (the educated persons included graduates and students in schools).

Compared with the 1990 population census, the number of people (per 100,000 population) with university education increased to 3,611 from 1,422; with senior secondary education increased to 11,145 from 8,039; with junior secondary education increased from 23,344 to 33,961; and with primary education decreased from 37,057 to 35,701.

Of the people enumerated in the 31 provinces, autonomous regions, and municipalities and servicemen of the mainland of China, 85.07 million persons were illiterate (i.e., people over 15 years of age who cannot read or can read very little). Compared with the 15.88% of illiterate people in the 1990 population census, the proportion had dropped to 6.72%, or down by 9.16 percentage points.

Urban and Rural Population: In the 31 provinces, autonomous regions, and municipalities of the mainland of China, there were 455.94 million urban residents, accounting for 36.09% of the total population, and 807.39 million rural residents, accounting for 63.91%. Compared with the 1990

population census, the proportion of urban residents rose by 9.86 percentage points.

Note that:

1. All figures in the Communiqué are preliminary results.
2. The population enumerated, with a zero hour of November 1, 2000 (Beijing time), as the reference time, refers to people with citizenship of the People's Republic of China and with permanent residence on the mainland of the country.
3. A postenumeration check was conducted nationwide covering 602 enumeration districts after the field enumeration. The results of the sample survey indicated that the underreport rate was 1.81%. The total population of the 31 provinces, autonomous regions, and municipalities of the mainland of China has taken into consideration the underreporting.
4. The population of Hong Kong SAR was obtained from data on June 30, 2000, which was provided by the Hong Kong SAR government.
5. The population of the Macao SAR was obtained from data on September 30, 2000, which was provided by the Macao SAR government.
6. The population of Taiwan Province, Jinmen, Mazu, and a few other islands refers to the population at the end of December 2000, which was released by the Taiwan authority.
7. The population of family households does not include servicemen nor those who are not related to one another and live as single persons in a non-family household.
8. The calculation of the urban and rural population is based on the Regulation on Statistical Classification of Urban and Rural Areas (draft), released by the National Bureau of Statistics in 1999.

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Five-Year Demographic Censuses in the Autonomous Community of Euskadi

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1. Basque Statistics: Eustat and Demographic Censuses

Since the 11th century, various population and household counts—from ecclesiastical registers to censuses by public powers—have been carried out in what is today the Autonomous Community of Euskadi. Without pausing to reflect on these, we turn our attention to the modern census. The birth of an autonomous administration in the Basque Country has necessitated the parallel development of a statistical office, which has been committed, from the outset, to participating in census tasks to collect demographic data.

In the Population and Housing Censuses of 1981—managed from the Spanish statistical office, the Instituto Nacional de Estadística—the Basque Statistics office participated on two fronts. First, the census included several questions referring to knowledge of the Basque language, as well as questions on disabilities, year of arrival in the municipality, and last place of residence. Second, 100% of the data collected in the Basque Country were processed, compared with traditional data capture from representative questionnaire samples.

In 1986, taking advantage of the renewal of the municipal register—a revision of the population lists made available to town councils for administrative purposes—basic questions included in preceding censuses were included in the questionnaires for this operation. The 1965 and 1975 register renewals had also included questions from previous censuses. Questions included for the first time in the 1981 census were repeated in 1986.

In 1991, general censuses were carried out again in the whole of the Spanish state, continuing the collaboration between the state and Basque statistical offices. For the first time, 100% of the questionnaire data were processed for the entire state.

In 1996, within the framework of the last register renewal (by law, the registers had ceased to exist by this name), Eustat and the statistics offices of six other autonomous communities decided to continue the 5-year information series initiated in 1965 and to link statistical questionnaires with administrative questionnaires.

2. Population and Housing Statistics 1996: The New Dissemination

The aim of maintaining the 5-year series and, above all, the need to update rapidly aging information and tools (such as pyramids; population activity; professional capacitation; knowledge and use of Basque; family censuses; and products deriving from the census, such as projections, demographic, health and municipal indicators, the statistical atlas, housing directories, spatial typologies for samples), were justification enough for embarking on the adventure of carrying out our own census. This census was christened with the title Population and Housing Statistics 1996.

Accepting this challenge meant trying to adapt statistical and computer methods and tools to new times, and also a great effort to further satisfy a new demand for census products. We will briefly mention the contributions or changes in census mechanics introduced by Eustat.

In addition to including, in preliminary census work, the usual cartographic revisions (updating sections, street maps, etc.), in 1995 Eustat drew up a housing pre-directory aimed at:

◆ Building a housing directory to support information collection work, improving coverage and quality. Prior to carrying out 10-year population censuses, building and premises censuses had been conducted with a similar aim.

◆ Defining a housing identifier code, IDEV, whose aim is similar to that of the personal identity card number. This code will remain linked to the housing unit permanently. Since its creation in the pre-directory, it has been included in all the exchange files between the statistical office and local bodies.

◆ Creating the seed for an updated housing directory.

Three questionnaire models were designed: one to collect register information (administrative), a

questionnaire for the home, and another for collective establishments, prepared so that part of the person- and housing-level information extracted from the municipal registers could be preprinted. The questionnaires were sent in sealed envelopes.

The census was technically an information revision operation rather than a renewal operation or classic information collection. Therefore, space was provided beside the preprinted information to correct or add information.

At the time of the census, there were 825,000 households in the Autonomous Community of Euskadi. The results of the census envelope distribution process, carried out by census agents, were as follows: 96.3% of the preprinted questionnaires reached their destination and were collected without difficulty; in 0.5% of the homes, it was necessary to give one copy that was preprinted and one that was not; in 1.3% of the cases, the household or the entire family had to be newly registered (11,000 questionnaires); and 1.9% (approximately 15,000) of the preprinted questionnaires did not reach their destination, according to data from the Response Assessment Survey (carried out in a sample of households after the close of questionnaire collection).

The newly revised or collected information was recorded on a file equivalent to that used to carry out the preprinting of the questionnaires. One of the aims of this procedure was to maintain a maximum amount of high-quality, pre-prepared information, reducing the response burden of the questionnaires and saving work in the subsequent processing phases.

Entries for profession, company activity, area of academic study, and geographic fields were coded. This process incorporated a new spell-checking step, which optimized the number of variables to be processed.

As in the three previous censuses, there was a Validation Survey. Aside from assessing the quality of the collected information, a secondary function of this survey was to measure the coverage of the operation.

Two new types of information were collected to permit additional analyses of the information collected and processed in this census: First, male

fertility was analyzed in addition to female fertility, in order to complete the study of differential fertility. Second, in order to extend the information about families, a new classification was designed to refer to family reconstitution; this classification distinguished between initial formation of a nuclear family, a broken nuclear family due to widowhood or separation, and a reconstituted nuclear family following a previous break-up.

Nevertheless, the greatest changes with regard to previous censuses occurred in the dissemination phase. Eustat pledged a strong commitment to electronic dissemination and products. In July 1998, the main results of the 1996 census were placed on the web (http://www.eustat.es). Three months later, Eustat made available Excel 97 electronic books containing the tables that had traditionally been included in six thematic paper volumes. Two CD-ROMs were published using the PC-AXIS statistical table manipulation program; the CD-ROMs included a group of macrotables (tables with up to 5 dimensions) that covered even the spatial level of neighborhood for municipalities of 10,000 or more inhabitants. A database on buildings,[1] designed and published in Access, included practically all the information on the population, housing, and families in the census, highly aggregated and conveniently anonymous. The only publication produced on paper described the methodological aspects of the operation and presented a brief analysis of the most outstanding results. All these changes in the dissemination model were supported by a widespread publicity campaign that included informative leaflets and public presentations.

3. Population and Housing Censuses 2001: The Population Register Imputation Module (MIR)

With a reference date of November 1, 2001, the tasks of collecting information for the 16th population and housing census will begin in the whole of the Spanish state. Preprinting processes will be incorporated on the one hand, and all the questionnaires will be scanned and captured on video. As it has done over the past 20 years, Eustat will collaborate with the Instituto Nacional de Estadística in the execution of several tasks. We describe two of the most novel tasks below.

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[1] Our understanding of a building is a group of households included under a postal address.

Over the past 4 years, Eustat has set up a Statistical Population Register in an attempt to integrate all the sources of demographic information into a database. As occurred with the Buildings and Premises Censuses in 2000 and 2001, the Register will serve as a source for questionnaire preprinting files. Beforehand, the register information provided by the Instituto Nacional de Estadística will be incorporated. The aim of this step is to improve population and housing coverage on the one hand, and to achieve unique identification on the other. This approach will enable the integration of the information in the Register, once it has been collected and recorded, in such a way that it can be associated with output units.

Eustat's second contribution to the 2001 censuses consists of carrying out validation, refinement, and imputation using a new methodology made possible by the Population Register. In addition to maintaining and applying traditional methods for new additions to the Register (buildings, housing, premises, and persons), Eustat will apply longitudinal treatment methods for incoherence, errors, or nonresponse.

On the one hand, the Register includes tables in which 1996 census information that was changed or imputed is distinguished from information that was not modified because it passed all the validation controls. On the other, we have information tables containing person-level data from other statistical or administrative sources (enrollment in study centers, profession of self-employed workers, data on the natural movement of the population, etc.). The availability of this or similar information for a statistical unit at several points in time or from different sources, integrated in a unique database model, enabled us to develop the "cold-deck" method. This method has scarcely been used to date due to logical problems in associating units with different origins.

In order to be able to carry out validation, refinement, and imputation, we introduced the Population Register Imputation Module (Módulo de Imputación del Registro, or MIR), a unique system integrated in the Population Register and made up of several modules and submodules: A Standardization of Variables Module was programmed, to account for the need to carry out equivalencies or conversions when using different

sources. The Validation Module contains two submodules: Transversal Validation (verification of information within a table) and Longitudinal Validation (verification of information in two or more tables, of which at least one has to be historic). The Refinement Module also has its Transversal and Longitudinal submodules. The same scheme applies to the Imputation Module, except that there are four submodules created by combining the imputation direction (transversal or longitudinal) with the value assignment procedure (deterministic or random).

In all cases, treatment may be multidirectional: We can refine or impute variables for 2001 with information from 1996, but we can also refine or impute variables from 1996 with information from 2001 (information that was imputed in 1996 or that we assess as incorrect in the light of new sources). We can thus substantially improve the quality of the series.

MIR is complemented by an information management module for data on the family. It will be extended with hot-deck imputation procedures and other specific procedures for processing variables of defined groups (such as buildings).

Swedish Population Census

The next Population and Housing Census in Sweden has been postponed until 2005. The reason is that the Government made a decision in 1995 that the next census in Sweden must be totally register based. Although the plan was to create the needed registers in 2000, time was too short. Therefore, a new decision was made in 1999 to postpone the census until 2005.

Before that date, a new occupational register will be established by Statistics Sweden. The information is now collected from employers with questionnaires on a rolling basis. The National Land Survey (Lantmäteriverket) will, together with the municipalities, build a nationwide register of housing units. The information will be collected from owners of residential buildings in 2003 and 2004. A unique dwelling number must be established for each dwelling before that time. The local tax authorities and the national Tax Board, which are responsible for civil registration in

Sweden, will introduce registration on housing units during 2004.

These registers will—together with other registers of economic activity, education, income, and other population characteristics—be used to take the next Population and Housing Census in Sweden. The first results will be published in mid-2006.

Welcome New Members!
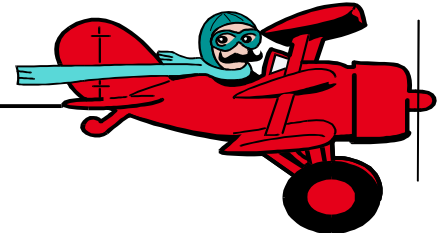
We are very pleased to welcome the following new members.

Algeria

Fodil Chekaoui

France

Michel Lejeune

Italy

Bila Bangambe

Ivory Coast

Kouame Kouakou

Morocco

Mohamed Ibrahima Cisse

Kerfalla II Conte

Nepal

K.C. Rabindra

Suman Raj Aryal

Turkey

Behiye Yenilmez

United Kingdom

H.D. Patterson

Institutional Member

Spain

Instituto Nacional de Estadistica
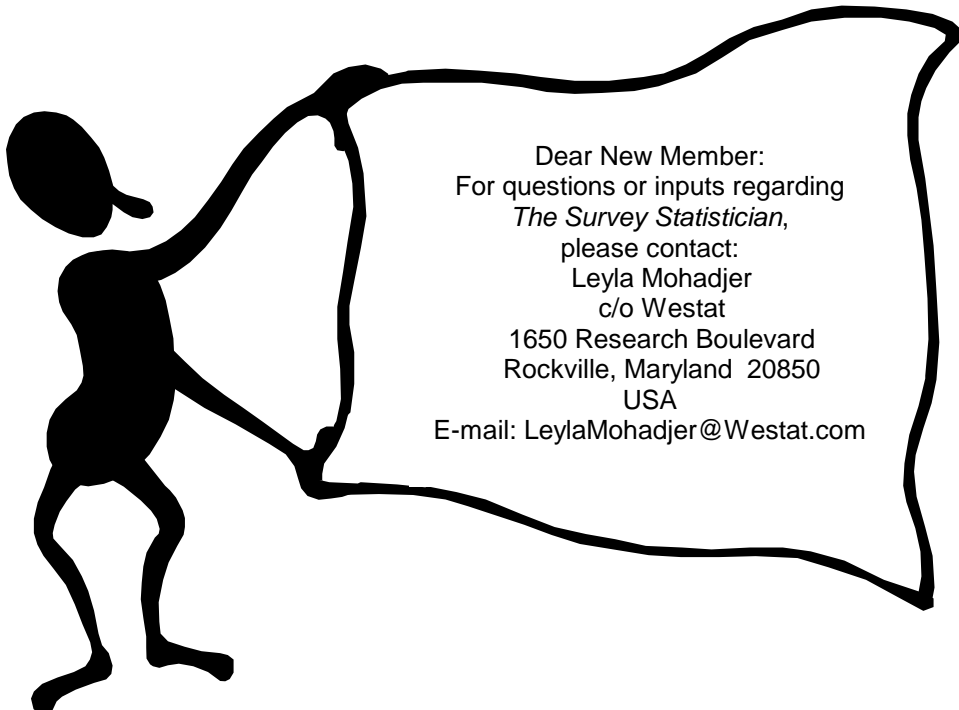
Dear New Member:
For questions or inputs regarding
The Survey Statistician,
please contact:
Leyla Mohadjer
c/o Westat
1650 Research Boulevard
Rockville, Maryland 20850
USA
E-mail: LeylaMohadjer@Westat.com

Announcements

IASS General Assembly

The next General Assembly of IASS members will take place during the ISI meetings in Seoul on **Thursday, August 23 from 11:45 a.m. to 1:15 p.m**. All IASS individual members, as well as the representatives of institutional members, are warmly welcomed to participate in this meeting.

IASS Directory

The next directory of IASS members will be prepared during the last quarter of 2001. The directory will include addresses and telephone numbers of all registered members as of October 1, 2001. Only members in good standing on this date will be listed.
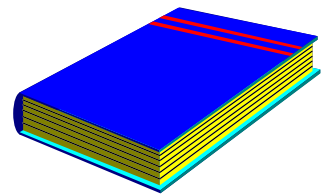
Global Symposium on the 2000 Round of Censuses, Mid-Decade Assessment and Future Prospects

The United Nations Statistics Division is organizing a symposium for a global review of the 2000 round of censuses, mid-decade assessment and future prospects, on August 7-10, 2001, in New York.

The symposium will address issues and problems that have emerged in the current census round (1995-2004) and seek solutions to guide census planning during the next round (2005-2014). It will also identify national strategies that contribute to the success of censuses with respect to relevance, cost, coverage, timeliness, and accuracy.

The sessions will focus on the following key issues, based on one or two papers in each session:

1. **Strategies for involving stakeholders in census activities**

What methods do census organizations use to build a consensus among all parties concerned to ensure the availability of reliable and timely data for dissemination? Who are the stakeholders, i.e., those organizations interested in census results? What is the role of stakeholders in the collection, dissemination, planning, and use of population data?

2. **Strategies for choosing among data collection methods as sources of demographic and social statistics: censuses, sample surveys, and administrative records**

How can national statistical offices decide upon the most efficient and effective data sources for population and social statistics, taking into account costs, donors, periodicity, geographic coverage, respondent burden, timeliness, content, and statutory considerations? This session will compare the pros and cons of implementing traditional censuses versus alternative methods and strategies of data collection.

3. **Adapting new technologies to census operations**

What are the most appropriate methods so far tried to effectively adapt to the emerging demands for new technologies while maintaining the integrity of the existing data collection systems? What are the advantages and disadvantages of outsourcing, as of data processing?

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4. Maintaining census-related activities during intercensal years

What are the most effective methods census planners have used to manage **institutional memory, archiving, and other programs and resources required to support census activities? Which core structures and activities should be retained and why? What factors affect the optimization process?**

5. Identifying and resolving problems of census mapping

What successful approaches have been adopted by census organizations to improve mapping?

6. Postenumeration surveys: Are they worth it or not?

Conventionally, countries have undertaken postenumeration surveys to evaluate coverage and content errors; however, the administrative and management burden of planning for postenumeration surveys may be taxing, especially while still managing the larger census activities. However, a proper postenumeration survey is, in many cases, constrained by the lack of proper institutional arrangements. Under what conditions is it worth the cost and the trouble to conduct a postenumeration survey? Does a postenumeration survey serve the purposes intended?

Papers will be posted at the Statistics Division's web site beginning in early April (see www.un.org/depts/unsd/sd_social.htm).

United Nations Statistics Division

New Publications in 2000/2001[*]

Internet and CD-ROMs

Demographic Yearbook, 49th Edition, 1997 CD-ROM (DYB-CD) Historical Supplement 1948-1997
Series R, No. 28/CD, $149.00, Sales No. E/F.99.XIII.12
This first electronic issue of the Demographic Yearbook special tables offers a comprehensive collection of international demographic statistics covering 50 years of data (1948-1997) for 229 countries/areas. The DYB-CD uses a web browser to provide easy access to the table of contents, data tables, and documentation. The DYB-CD is a unique and invaluable resource for analysts, researchers, statisticians and demographers, students, librarians, and information specialists. No computer background or experience is needed. A demonstration version of this CD is available in English and French on request to United Nations Publications at publications@un.org, or United Nations Publications, New York, NY 10017.

Statistical Yearbook, 44th Issue, CD-ROM (SYB-CD)
Series S, No. 20, Sales No. E.00.XVII.2, $199.00 or $259.00 for both CD-ROM and print publication
The United Nations Statistical Yearbook, 44th issue, CD-ROM (SYB-CD) provides access to time series data on a broad range of social, economic, and environmental statistics for more than 200 countries and areas of the world. It contains more than 400 series based on data from over 20 international statistical sources and is organized into 19 topics. The SYB-CD provides user-friendly software for browsing the database, selecting series of interest, viewing the selected series in a spreadsheet format, and exporting the data. The SYB-CD can be installed on multiple clients from network installations at no extra charge.

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[*] E/F is bilingual English and French. Other publications are currently available only in English unless otherwise noted. French, Spanish, Russian, Arabic, and Chinese translations of all methods publications will be issued as completed. All prices are given in US$. To purchase publications, including CD-ROMs and Internet subscriptions, contact United Nations Publications at www.un.org/publications; by fax at 212-963-3489 (New York) or 41-22-917-0027 (Geneva); or by telephone at 800-253-9646 (USA), 212-963-8302 (New York), or 41-22-917-2783 (Geneva).

Wistat Women's Indicators and Statistics Database, Version 4, CD-ROM
Series K, No. 15, $149.00, Sales No. E.00.XVII.4
Wistat on CD-ROM is a comprehensive and authoritative compilation of currently available statistics and indicators on sex, population, and development for 206 countries or areas, covering mainly the period 1970-1997.

UNESIS System Interactive UN Common Database on the Internet; URL: unstats.un.org (password required)
This first comprehensive version of the UN Common Database features data from the Statistics Division, the Population Division, the UN's Project LINK, the International Monetary Fund, the World Bank, the International Labour Organization, the Food and Agriculture Organization, the International Telecommunications Union, the World Health Organization, and the United Nations Educational, Scientific, and Cultural Organization, among others. Most time series go back to 1970 or 1980. The database interface allows users to quickly and easily compare series from different sources and refer to the underlying international standards and definitions. Texts of technical standards are given in their original versions, as adopted by the responsible intergovernmental bodies.

Users can browse through the series in a single consolidated list, or in lists organized by source or topic. Single series (many with substantial disaggregation) for up to 10 countries can be chosen and immediately viewed in HTML. For more than one series and country, "Advanced Data Selection" offers the user multiple options: retrieval and viewing in Excel (Excel can be launched on demand within the program) or export as Excel or database files. Also available are country profiles with basic graphs that provide key economic, financial, and social indicators for one country at a time.

Monthly Bulletin of Statistics On-line; URL: esa.un.org/unsd/mbs/ (password required)
$525.00 (12 issues and 12 months full access to on-line version);
$60.00 per copy for print publication
The bulletin provides monthly statistics on 60 subjects from more than 200 countries and territories, including special tables illustrating important economic developments. Data for significant world and regional aggregates are included quarterly in the print version and continuously in MBS On-line.

Data Compilations (printed)

Statistical Yearbook, 44th Issue
Series S, No. 20, $125.00 or $259.00 for both CD-ROM and print publication, Sales No. E/F.99.XVII.1
This annual compilation provides statistics for more than 200 countries and areas of the world. The yearbook presents 85 tables in the fields of demographic and social statistics, national accounts, finance, labor force, wages and prices, agriculture and manufacturing, transport and communications, environment, science and technology, intellectual property, international merchandise trade and tourism, balance of payments, and development assistance. It covers, in general, the 10-year period 1988-1997 or 1989-1998, with data available as of November 30, 1999.

Demographic Yearbook, 1998
Series R, No. 29, $150.00, Sales No. E/F.00.XIII.1
The 50th issue of this comprehensive compilation provides demographic and related statistics for more than 200 countries or areas of the world. The yearbook features annual tables that give a world summary of basic demographic statistics and statistics on size, distribution, and trends in population, mortality, natality, nuptiality, and divorce. Wherever possible, statistics are shown for urban/rural areas.

National Accounts Statistics: Main Aggregates and Detailed Tables, 1996, two vols.
Series X, No. 25 (in press)

International Trade Statistics Yearbook, 1998, Vol. I and Vol. II
Series G, No. 47, $135.00, Sales No. E/F.00.XVII.3

Energy Statistics Yearbook, 1997
Series J, No. 41, $100.00, Sales No. E/F.00.XVII.8

Industrial Commodity Statistics Yearbook, 1998
Series P, No. 38, $115.00, Sales No. E/F.01.XVII.3

Analytical Studies

The World's Women 2000 — Trends and Statistics
Series K, No. 16, $16.95, Sales No. 00.XVII.14
The third quinquennial issue of this popular analytical report comprehensively examines the status of women through the lens of statistical data and analysis. It highlights the main findings of statistical analysis on women's situation as compared to men's worldwide in a broad range of fields, including families, health, education, work, human rights, and politics. For more information, see www.un.org/depts/unsd/ww2000/index.htm.

Statistical Methods

Population and Housing Censuses and Geographic Information Systems (GIS)

Handbook on Census Management for Population and Housing Censuses
Series F, No. 83, Rev. 1, Sales No. 00.XVII.15 (in press)

Handbook on Geographic Information Systems and Digital Mapping
Series F, No. 79, $35.00, Sales No. 00.XVII.12
This handbook provides technical and methodological information to facilitate a country's choice of suitable tools and procedures for mapping activities. The handbook considers GIS topics relevant to enumeration and postenumeration activities, such as the costs and benefits of a digital approach to census mapping and issues in planning and setting up digital census mapping programs, GIS database development, and GIS applications during enumeration activities. An additional chapter focuses on postenumeration mapping tasks and the use of digital mapping to present, analyze, and disseminate census data. This publication is part of a series of population census handbooks in support of the 2000 round of population and housing censuses.

National Accounts and Classifications

Classifications of Expenditure According to Purpose: Classification of the Functions of Government (COFOG); Classification of Individual Consumption by Purpose (COICOP); Classification of the Purposes of Non-Profit Institutions Serving Households (COPNI); Classification of the Outlays of Producers According to Purpose (COPP)
Series M, No. 84, $20.00, Sales No. 00.XVII.6 (currently available in English and Chinese)

New Publications in 2000/2001 (cont.)

Handbook of National Accounting — Links Between Business Accounting and National Accounting
Series F, No. 76, $30.00, Sales No. 00.XVII.13

Household Accounting Experience in Concepts and Compilation, Vol. I, Household Sector Account, Vol. 2, Household Satellite Extensions
Series F, No. 75, $85.00, Sales No. 00.XVII.16

Environmental Statistics

Integrated Environmental and Economic Accounting — An Operational Manual
Series F, No. 78, $30.00, Sales No. 00.XVII.17

Achieving Data Quality in a Statistical Agency:
A Methodological Perspective
October 16-19, 2001
XVIIIth International Symposium on
Methodological Issues and Workshops
Statistics Canada

With its eighteenth annual symposium, Statistics Canada continues its successful series of conferences on methodological issues, attracting renowned statisticians, researchers, academics, and data analysts and others interested in meeting the challenges of a statistical agency. Symposium 2001 will feature both invited and contributed sessions, and will provide an ideal forum for exchanging your experiences and knowledge of methods to achieve data quality. Confirmed speakers include Gordon Brackstone, Wayne Fuller, Graham Kalton, Lars Lyberg, J.N.K. Rao, Fritz Scheuren, Alastair Scott, Dennis Trewin and many other well known statisticians. The conference will host representatives from many organisations, such as the Australian Bureau of Statistics, Eurostat, INSEE, ISTAT, OECD, Statistics Finland, Statistics Netherlands, Statistics Sweden, UNESCO, US Bureau of the Census, US Bureau of Labour Statistics, US National Center for Health Statistics.

The symposium will be held at the Palais des Congrès in Hull, Québec, just minutes away from downtown Ottawa. Here are some highlights of the symposium program: Remembering Dr. Leslie Kish; Communicating Quality; Generalised Methods; Electronic Data Reporting; Measuring Quality;

Small Area Methods; Quality Issues of International Statistics Designing/Redesigning Large Surveys; Preventing and Correcting Nonresponse; Quality of Administrative Data; Business Surveys; Special Session in Honour of Dr. J.N.K. Rao.

The program also includes three one-day workshops held on October 16, 2001. A copy of the registration form is available on our Web site. We look forward to seeing you in October. Visit our Web site:
http://www.statcan.ca/english/conferences/symposium2001/index.htm.

In Other Journals

Survey Methodology

A Journal Published by Statistics Canada

Contents Volume 26, Number 2, December 2000

Contents Volume 16, Number 4, 2000

Contents Volume 17, Number 1, 2001

Contents Volume 17, Number 1, 2001 (cont.)

Statistics in Transition

Journal of the Polish Statistical Association

Contents Volume 4, Number 6, December 2000

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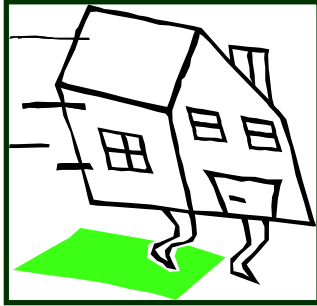
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