IN-DEPTH REVIEW OF HOUSEHOLD SURVEY METHODS
IN DIFFERENT COUNTRIES

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I. INTRODUCTION

1. Together with censuses of population and housing and administrative data, household surveys play a major role as a source of social and demographic data. Household surveys have unique features that allow them to produce statistics that cannot be produced from either censuses or from administrative records. Compared to these other two sources the modern household survey is relatively new, having been spurred in large part by the development of probability sampling methods in the 1930s and 1940s. This may account in part for the relatively small amount of international coordination in the area of household survey methods generally, compared to international coordination efforts for the more traditional sources such as censuses and vital statistics. As well, much of the international effort to date has occurred in the context of specific subject matter topics, e.g., income statistics, household budget surveys, migration, fertility, or time use, rather than for household survey methods as a unified whole.

2. For most national statistical organizations (NSOs), household surveys form a key part of their statistical program and statistical infrastructure. But the methodologies for household surveys are facing unprecedented issues and challenges in the twenty-first century. The ever-increasing demands from data users, increasing resource constraints, increasing challenges in contacting households and increasing resistance from respondents have required NSOs to investigate and to invest in new methods to increase survey capacity, improve quality, reduce or contain costs, and lower response burden. While censuses also face some of these challenges, many of them are unique to household surveys. Accordingly, the Bureau of the Conference of European Statisticians (CES) requested at its November 2010 meeting that a paper be prepared to summarize the issues and challenges for the methodology of household surveys, based on the experiences of Canada, Australia, the United Kingdom and the Netherlands.

3. The main purpose of this paper is to identify issues for household survey methods in the United Nations Economic Commission for Europe (UNECE) region where further international coordination efforts would be beneficial. The report will first describe some of the distinctive features of household surveys, followed by a summary of the household survey methods used in the NSOs that contributed to this paper. Section V describes the issues and challenges facing these agencies. Section VI summarizes these challenges and provides recommendations for consideration by the CES Bureau.

4. The household survey methods considered in this paper are not specific to any particular subject matter, but they do exclude surveys that are conducted as an integral part of a census of population and housing. In particular, we exclude the use of sampling in a census, where some households get a longer version of a census questionnaire, and post-enumeration surveys conducted to evaluate census quality.

II. DISTINCTIVE FEATURES OF HOUSEHOLD SURVEYS

A. Frequency and timeliness

5. Compared to a traditional census, which because of its size and complexity is generally limited to a frequency of every five or ten years, a household survey can be conducted much more frequently. For example, many NSOs conduct some form of Labour Force Survey on a monthly or quarterly basis in order to monitor the fast-changing conditions of the labour
market. In other cases, the phenomenon under study may change more slowly, and a frequency of yearly or every few years is sufficient. In yet other cases, the need for data may be ad hoc, and the survey may only be conducted once. Household surveys have the flexibility to handle such variations in frequency, and generally have a much shorter lead time than that required for a census.

6. Frequency can be considered from the perspective of both how frequently the data are collected and how frequently they are published. In some cases, data may be collected on a more or less continuous basis, but only published when sufficient sample has been accumulated to permit the publication of reliable data. For example, the American Community Survey (ACS) in the United States (U.S.) collects data every month, but only publishes estimates annually, as one-year, three-year and five-year averages.

7. While sometimes confused with frequency, timeliness refers to the delay between the reference date of the concept being measured and the date of publication of the results. Because of their smaller scale, household surveys generally have better timeliness than a census, with its massive amounts of data to collect, capture and process (although many countries have made impressive progress in improving the timeliness of the census). In the case of a monthly Labour Force Survey, for example, the results may be published just two or three weeks after the reference period. Timeliness can be improved by automating as many aspects of the survey as possible, using technologies such as Computer Assisted Interviewing (CAI) for simultaneous collection, capture and preliminary editing of the data; using automated coding, editing and imputation for “hands-free” processing; and using automated analysis and smart publishing tools for the preparation of survey outputs and reports.

B. Topics and populations covered

8. The topics covered in a household survey can be more complex and be covered in more depth than in a general vehicle like a census. For example, a census may include only two or three questions on labour market participation, whereas a Labour Force Survey may ask several dozen questions, thus measuring the desired labour concepts much more precisely.

9. Household surveys also have the ability to gather information on sensitive topics such as criminal victimization or on topics that may have a social (un)desirability dimension, such as drug use or drinking and driving behaviour. Such topics must always be approached with sensitivity and concern for the respondent, but are at least possible for household surveys to collect. Household surveys can even go so far as to collect physical measures such as blood or urine samples, to apply psychometric measures to assess education or literacy, or to measure distance travelled by a motor vehicle using a plug-in monitor. In collecting data on sensitive topics or subjects that demand considerable effort on the part of the respondent, the NSO may choose to make the survey voluntary for the respondent, rather than compulsory (as a census generally is).

10. Unlike a census, which uses self-enumeration and/or temporary enumerators with minimal training in interviewing techniques, household surveys generally employ trained and experienced interviewers. A skilled interviewer may be essential in convincing respondents to cooperate with surveys with a high response burden, such as a household expenditure survey. An interviewer may also be needed to administer complex questionnaires or to deal with complex methodologies, such as the selection of one person
within the household to be interviewed, or the collection of information on all household members from a single knowledgeable respondent (so-called “proxy” response). Nevertheless, training and monitoring of interviewers is still necessary in order to control interviewer effects, or even cheating on the part of interviewers. The use of CAI can facilitate such control, by recording so-called “paradata” about the interview process, such as the amount of time taken to ask each question and to enter the response.

11. As well as surveys of the general population, household surveys may target rare or specialized subpopulations, such as the disabled, minority groups, seniors, children or persons in specific occupations. In some cases, the specialized population can be identified from screening questions on a large general household survey, and the survey can be administered immediately if the person falls into the target subpopulation. In other cases, the subpopulation of interest is too rare, or is too complex to identify with one or two screening questions, and a sampling frame must be found that can identify the subpopulation more directly. Dual frame methods combining these two approaches may be used; see paragraph 16.

C. Sampling

12. Reliable household surveys of the type described above would be impossible without the use of probability sampling. Sampling can reduce costs, permit much faster production of results, and allow non-sampling errors to be controlled more closely because of the smaller scale of operations. Most household surveys conducted by NSOs have sample sizes ranging from a few thousand households to a hundred thousand households or more. The largest household survey in developed countries today is the ACS, with a sample size of 250,000 households each month. Because of the importance of sampling to household surveys, this section is divided into three parts:

   (a) Sampling frames;

   (b) Sample design; and

   (c) Estimation methods.

(i) Sampling frames

13. In many household surveys, the main interest is in the attributes of the persons living in the household. In order to select a probability sample of persons, it helps to be able to associate each person with one and only one unit on the sampling frame for the survey. In countries with a high quality population register, it may be possible to select a sample of persons directly from the register. In countries without a population register, a commonly-used approach is to associate each person with a single dwelling unit, i.e., the physical structure in which the person usually resides. The occupant(s) of the dwelling can then be contacted and a complete list of the individuals living there can be obtained. While this approach is effective for the majority of the population, it can break down for certain subpopulations. For example, some persons may have more than one residence (e.g., vacation homes, children in joint custody) while others have no residence (e.g., homeless persons). If such subpopulations represent an important part of the survey, the sampling methods may need to be adjusted.
14. Some countries have complete and up-to-date lists of addresses that can be used to select a sample of dwellings directly. Many other countries have no such list and creating and maintaining one would be prohibitively expensive; in this situation, area sampling methods have traditionally been used. Based on a recent census, the entire country might be divided into a number of geographic strata, and within each stratum a number of primary sampling units (PSUs) might be delineated. One or more PSUs would be selected within each stratum, all addresses within the selected PSUs would be listed, and a second stage sample of addresses would be selected to be surveyed.

15. In the last half of the twentieth century, the increasing penetration of telephones in many countries led to the development of telephone frames as an alternative to area frames or address list frames. Telephone frames take advantage of the fact that, while not every telephone number is associated with a dwelling, almost every dwelling is associated with at least one telephone number. Techniques such as random digit dialling (RDD) were developed to select samples of telephone numbers which could then be linked directly to the household. Considerable effort has been expended in refining telephone sampling methods to increase the percentage of attempted telephone numbers that represent a household (Groves et al 2001, Lepkowski et al 2008). Rapidly changing telephone technologies, such as the introduction of cell phones, continue to introduce new challenges for the use of telephone frames; see paragraph 111.

16. In the case of rare or specialized subpopulations, the use of multiple frames may be appropriate. A common situation is when there is a list frame that covers a large portion, but not all, of the subpopulation of interest. By combining such a frame with a more general area frame or telephone frame, the samples from the two frames can be combined to produce an unbiased estimate more efficiently than could be produced from the general frame alone.

(ii) Sample design

17. Household surveys conducted by NSOs are generally based on probability sampling, and a major factor in the design is the type of frame available. Over time, there has been a trend towards sample designs with fewer stages of sampling, which generally means a more efficient sample design. Stratification plays a role in sample designs for household surveys as well, not only in increasing efficiency but, perhaps more importantly, in controlling the allocation of the overall sample to the various domains of interest (e.g., geographic regions). Unequal probabilities of selection are also common; in a stratified multi-stage area frame design, PSUs are often selected with probability proportional to size.

18. Sample sizes of household surveys are typically sufficient to produce results at national and regional levels, and sometimes for major cities and major population subgroups, but in most cases they are not sufficient to produce estimates with sufficient reliability at the level desired by all users, for example detailed levels of occupation and geography. However the use of relatively low sampling fractions (often below 1%) for household surveys does mean that the chances of a household falling into the sample of more than one survey at the same time are relatively low.

19. In the case of regularly repeated household surveys, such as a monthly Labour Force Survey, the overlap of samples in successive months is an important consideration. Maximization of sample overlap generally allows for the most precise estimates of change from month to month and minimizes collection costs, but sample overlap must take into
account the need to relieve respondents of the burden of responding at some point. A typical compromise is to use a rotating panel design, where the household is in the sample for a period of six or eight months. Similar considerations of costs, response burden, and data accuracy apply in the case of longitudinal surveys, which are designed to follow the same sample of subjects (persons or households) over several waves of the survey. In some cases the respondent may be in the survey for several years.

20. So-called “two phase” sampling methods may be used in some cases. A typical approach is to use a large sample to identify the target subpopulation, and then to select a subsample of those so identified for the real survey of interest. A post-censal survey which uses a question on the census to identify a large first phase sample of the target subpopulation is an example of this technique. A more complex variant is the split form strategy, where doorstep screening is used to optimize the allocation of a set of questions to households, based on a topic by sub-population group matrix of selection probabilities.

(iii) Estimation methods

21. Samples for household surveys are often selected using stratification, multiple stages of sampling, and unequal probabilities of selection; consequently the estimation methods reflect the complexity of the design. Typically, each household or individual is assigned a weight that reflects the various features of the sample design. In the case of repeated surveys with sample overlap, it may be possible to use composite estimation methods, where estimates of change from the sample in common between two periods are used to improve estimates for the current period.

22. Estimation methods for household surveys must also take into account non-response to the survey. Non-response tends to be unevenly spread across population subgroups and is therefore a potential source of bias. Typically, the sampling weights are adjusted to take account of the differential rates of complete non-response. Item non-response is more likely to be handled by imputation methods, or by publishing “don’t know/refusal” categories. In the case of longitudinal surveys, the patterns of non-response may be quite complex, with response at some waves of data collection but not at others.

23. Auxiliary data, such as independent estimates of the population by geographic, age and sex groups, are often used in estimation for household surveys. Using auxiliary data in estimation can reduce the variance as well as reduce coverage biases resulting from the tendency of a household survey to miss some persons, such as young males, more than others. Where the survey produces estimates for both individual and household characteristics, and auxiliary information is available for both individuals and households (e.g., household size and type), it may be desirable for the weights for all individuals in a household to be the same and to be consistent with the auxiliary information for both individuals and households. Such procedures add further complexity to the estimation.

24. The calculation of weights that account for a complex sample design, that adjust for differential patterns of non-response, and that make use of auxiliary information and sample overlap, means that the estimation methods for household surveys are often very complex. The associated variance estimation methods may also be complex. A high level of statistical expertise may be required to develop and maintain the estimation methods.
D. Data collection, processing and dissemination

25. The methodology used to collect the data on the survey questionnaire depends on a number of factors, including the contact information (e.g., name, address, telephone number) available on the sampling frame, the suitability of the subject matter of the survey to different response modes (e.g., self-enumeration, telephone interview, personal interview), the costs of the various collection methods, the timeliness requirements, and the accuracy of the resulting data. The three most common approaches of the past several decades have been mail, personal visit and telephone.

26. Mailing the questionnaire to the household is usually the least expensive approach, but the questions asked in such a survey must be suitable for self-enumeration. Mail surveys alone also tend to suffer from low response rates, so non-response follow-up by telephone or personal visit may be required to achieve acceptable levels of data accuracy, resulting in a longer data collection period and additional costs. Sending an interviewer to the dwelling unit to conduct the interview in person is usually the most expensive approach, and in many developed countries it has become increasingly difficult to make contact at the doorstep. Nevertheless, for complex, long, or sensitive surveys, personal interviews may be the only feasible approach. Telephone interviews have replaced personal interviews as the most common means of data collection in many NSOs, due to the relatively high penetration rates of telephones, the development of telephone sampling methods, and the significantly lower costs of conducting an interview by telephone compared to in person.

27. In many cases a combination of methods is the most effective approach. In a monthly Labour Force Survey, the survey may be introduced to the household by an advance letter mailed to the household, the first month’s interview may be conducted in person, and then arrangements may be made to conduct subsequent interviews over the telephone. For a survey that requires the respondent to keep a diary, such as an expenditure or a nutrition survey, the interviewer may conduct an initial interview in person, introduce the diary and show the respondent how to complete it, telephone the respondent during the recording period as a reminder, and return to the household at the end of the recording period to retrieve the diary and to complete any missing information.

28. Automation has been the most important trend in data collection over the past 25 years. The use of CAI for both telephone and personal modes has allowed better control over the interview process, resulting in higher productivity and improved data quality. Whereas processing used to be viewed as a distinct step that followed data collection, in the modern household survey the lines are blurred. The use of CAI permits a certain level of editing to be conducted during the interview itself, giving an opportunity to detect and correct errors, although how much editing can be done without interrupting the “flow” of the interview is a difficult issue. As well, many countries are now experimenting with the use of the Internet as a response mode for household surveys. In cases where a paper questionnaire is still used to conduct the survey, new technologies such as optical character recognition are replacing the older method of key-entry in many NSOs.

29. The remainder of the data processing typically takes place in a centralized environment at the NSO’s headquarters. Automated coding systems may be used to reduce the time required to code questions with textual responses and to improve quality. Automated editing and imputation (E&I) of partial non-response and conflicting responses may allow the production of a “clean” response database, although for some surveys or certain survey
questions manual intervention by subject matter experts may be required. Record linkage to other datasets to extend the range of variables available for analysis may sometimes be used. Once the analysis database is constructed, the next step is generally the calculation of weights. The final steps before dissemination are the production of the survey estimates, their review and analysis by the relevant subject matter analysts, and the production of the survey reports for release.

30. NSOs are increasingly using the Internet as their medium of choice for disseminating results. In the case of survey results with the potential to affect financial markets (e.g., the monthly unemployment rate), care needs to be taken to ensure that the release takes place exactly at the pre-announced date and time. “Lockups” may be employed to permit access a short time before official release to let reporters prepare their stories and to permit government authorities to prepare for public reaction to the results, while ensuring the security of the data.

31. Data can be disseminated as aggregate tables or as public use micro-data files. In both cases, the NSO has a legal obligation to ensure the confidentiality of results. Compared to a census, a household survey has some inherent protection by virtue of the fact that it is based on a sample, and a potential intruder may not know whether a specific individual of interest is even in the sample. However for small or rare subgroups the risk of disclosure is greater and more attention to confidentiality protection measures is often needed.

III. HOUSEHOLD SURVEY METHODS IN SELECTED COUNTRIES

A. Canada

32. Statistics Canada’s household survey program consists of a mix of regular and ad hoc surveys, using a variety of frames, with varying degrees of frequency and timeliness.

33. One of Statistics Canada’s most important household surveys is the monthly Labour Force Survey (LFS) (Statistics Canada 2008). It is selected using an area frame that is newly-created following each decennial census, and uses PSUs and dwellings as its two stages of sampling. Since 2004, the Address Register, which was originally developed for the Census, has been used to replace or supplement field listing in most sample PSUs. The sample size is approximately 60,000 dwellings each month; a dwelling stays in the LFS sample for six consecutive months and is then rotated out. In urban areas the first month’s interview is conducted by telephone where possible; otherwise it is conducted in person using Computer Assisted Personal Interviewing (CAPI). Subsequent months’ interviews are generally conducted by telephone using a Computer Assisted Telephone Interviewing (CATI) capacity located in Statistics Canada’s Regional Offices. The LFS is Statistics Canada’s only household survey to which response is legally required, although proxy response is accepted. Estimation takes account of the sample design and non-response, and employs auxiliary information for individuals and households, as well as making use of composite estimation. The survey reference period is usually the week containing the 15th of the month, and the results are normally published on the first Friday of the following month.

34. The LFS is also used as a platform to conduct supplementary surveys. Once the interviewer has completed the LFS interview, the respondent may be asked additional questions. Some of these supplementary surveys may occur regularly, such as the Travel Survey of Residents of Canada, while others are conducted on an ad hoc basis, for example a
Survey of Older Workers. As few as one or as many as five of the six panels of the survey may be included in a supplementary survey; households in their first month in the LFS sample are excluded. Surveys may also be conducted using panels of households that have rotated out of the LFS. Because contact information for these households is already available and they have cooperated in the past, they tend to be less expensive to use than a completely new sample. However it is important to manage the respondent burden on them carefully.

35. Another major household survey is the Canadian Community Health Survey (CCHS). Approximately half of the sample is selected from the LFS frame, often in the same PSUs in which the LFS is active, but consisting of different dwellings. Interviews for this portion of the sample are generally conducted by CAPI. The other half of the sample is selected from lists of telephone numbers, and interviews are conducted by CATI. The data from the two samples are combined during estimation. This dual frame approach is a compromise between the higher coverage of the area frame portion and the less expensive telephone collection approach in the CATI portion. The total sample size is approximately 65,000 households each year. The annual sample is allocated to two-month collection periods, and for most estimates one or two years of data are accumulated. Like the LFS, the CCHS serves as the basis for supplementary surveys, usually on a health-related topic.

36. The Survey of Household Spending (SHS) collects detailed household-level expenditures as well as information on dwelling characteristics and household equipment. Results are used to calculate the basket for the Consumer Price Index and for the System of National Accounts. The SHS sample of approximately 20,000 households is selected from the LFS frame, and is separate from the active LFS sample (although often in the same PSUs). Data are collected monthly using a combination of personal interviews and respondent-completed diaries, with the collection method and reference period for expenditures dependent on the type of expenditure.

37. The Survey of Labour and Income Dynamics (SLID) is a longitudinal household survey that measures the economic well-being of Canadians over time, by producing information on labour market experience, income and its sources, educational activity, family status and related factors. A new panel of approximately 17,000 households, selected from the LFS frame, is introduced every three years. A panel is in the survey for six years, so that two panels are active in any given year. The survey collects data by CATI during the January to March period, with the reference period being the previous calendar year. SLID is also the official source of household income data. Respondents are asked for approval to access their tax returns for this purpose, and over 80% of respondents give permission to do so. When the original household composition changes or the household moves, the original longitudinal respondents are traced to their new household(s) and any additional persons they are living with (e.g., a new spouse) are also surveyed.

38. In addition to these four regular surveys, other surveys make use of the LFS frame, sometimes in combination with other frames. For example, the 2007-2009 Canadian Health Measures Survey (Cycle 1) used the LFS frame to delineate collection sites, which had to be compact enough for respondents to travel from their homes to a mobile clinic where the physical measures were taken. Within each of the sampled collection sites, the list of dwellings from the 2006 Census was used as a frame for the second stage of sampling. Dwellings were stratified according to the age groups of the occupants in the 2006 Census to increase the chances of obtaining sufficient numbers of persons by age group when the survey was actually conducted.
39. Several surveys make use of telephone frames. The most regular is the General Social Survey (GSS), which employs a sampling method known as “RDD with the elimination of non-working banks.” The GSS is conducted annually, with a sample size of approximately 25,000. It serves as a platform for regularly-recurring topics, such as criminal victimization, time use and social networks, as well as for ad hoc data needs. Another regular survey using RDD is the Canadian Tobacco Use Monitoring Survey.

B. Australia

40. The Household Survey Program (HSP) of the Australian Bureau of Statistics (ABS) consists of three parts – the Monthly Population Survey (MPS), the Multipurpose Household Survey (MPHS) and a program of Special Social Surveys (SSSs). The MPS is monthly and ongoing, with a rotating panel design, respondents included in sample for eight consecutive months, and the omnibus MPHS given to those in their eighth month. The SSS program includes both regular and ad hoc surveys, with selected respondents included in just the one survey.

41. The ABS has the legislated ability to direct people to respond to all its surveys, including household surveys, and achieves high response rates (97% for MPS, 80-85% for MPHS and 85-90% for most SSSs) after sample loss (ineligible/vacant households). Samples for all household surveys are selected via a multi-stage area-based approach. Following every five-yearly Census, a master sample of areas is selected, and household lists created for sampled areas using field- or office-based processes. Households are then subsampled from these lists in further stages of selection. Currently the one set of areas provides the household samples for the MPS/MPHS and program of SSSs. There are separate frames for selecting households from private (i.e., residential) dwellings, special (i.e., non-residential) dwellings and Indigenous communities.

42. The main purpose of the MPS is as a vehicle for the Australian Labour Force Survey (LFS), however it also includes short monthly supplementary surveys, and in their last time in sample, respondents are included in the MPHS. The MPS is a monthly survey with approximately 27,000 fully responding households per month. Computer Aided Interviewing (CAI) is used, with first-time households generally enumerated via Face-to-Face (F2F) and all other households over the telephone.

43. The LFS, focussed on establishing unemployment and labour force participation rates, is conducted on all eight rotation groups in a particular month. Every in-scope person within a selected household is enumerated via the Any Responsible Adult (ARA) method, where one adult self-nominates to respond on behalf of everybody in the household (i.e., a proxy response). Total interview time is approximately 13 minutes per household (6-7 minutes clerical/administrative information, 6-7 minutes actual interview), and slightly longer in quarter months due to the collection of occupation and industry information. Composite estimation is used in conjunction with Generalised Regression Estimation (GREG), to gain efficiencies from use of overlapping sample correlations and independent population estimates by age and sex. The survey reference period relates to the week prior to the interview, with interviews conducted in the middle two weeks of the month. Results are generally published on the second Thursday of the following month.

44. MPS supplementary surveys can be run in any calendar month (except typically December and January), and are almost always run on all rotation groups except the
outgoing rotation group (which is reserved for MPHS). Like the LFS, data are generally collected via ARA on all persons in a household, though a Personal Interview (PI) on one randomly selected person is allowed. Subject matter varies widely, from labour market (earnings, job search experience, and labour mobility), education and work, and environment among others. Interview time is normally around three to five minutes, but sometimes up to seven minutes.

45. The MPHS is given to only the outgoing rotation group with data collected over a 12 month period (maximum) to build sample size. It is a PI survey on one randomly selected person per household, and contains a number of different topics ranging from one to six minutes in length. The total MPHS interview currently lasts 16-20 minutes on average, and the PI nature of this survey lends itself to different (and sometimes more sensitive) subject matter, including crime victimisation, patient experience and barriers to labour force participation.

46. SSSs are large scale, and individually more expensive, surveys. SSSs have fully responding sample sizes ranging from 4,300 up to 35,000 households, with recent SSSs being at the higher end of this scale, driven by needs for improved jurisdictional estimates. SSSs are generally run on all in-scope persons in a household or one randomly selected person per household, with F2F interview times ranging from 45-90 minutes, and in one instance up to 103 minutes. Much more detailed information can be collected via a SSS compared to the MPS, and other sophisticated enumeration techniques (such as biomedical collection, skills testing on laptop computers, diaries) are sometimes needed.

47. A range of subject matter areas are covered by SSSs. Some surveys repeat regularly, for example every 2, 3, 4, 5, 6 or 10 years, with survey content including a fixed core to support comparisons over time, and sometimes a flexible component. Some of these surveys are described in the following paragraphs.

48. The General Social Survey (GSS) is run every four years, and measures basic demographic information (age, sex, household composition, income, education etc.,) as part of a core with rotating/changing additional content each cycle. The 2006 GSS focussed on family support networks, crime and safety, stressors and information technology. The 2010 GSS had a strong focus on social inclusion indicators. This focus was supported by a sample design that targeted areas likely to include high numbers of people living with multiple social disadvantages, based on an index created using proxy indicators such as Indigenous status, single parent families, low income, etc. New content for the 2010 survey included items related to homelessness, financial resilience and exclusion, social disorder and health care delays. The 2010 survey had an effective sample size of 15,000 households.

49. The National Health Survey (NHS) collects information on the prevalence of health conditions and risk factors and is run every three years. In 2011, the sample size was increased and two new components were added to the NHS, namely a nutrition/physical activity survey and a biomedical survey, the latter involving pathological blood and urine testing. The new survey is referred to as the Australian Health Survey (AHS) and is 26,000 fully responding households altogether; 16,000 receive the standard NHS, 10,000 receive the nutrition/physical activity component, and the biomedical survey is run as a voluntary subsample.
50. The Survey of Disability, Ageing and Carers (SDAC) is conducted every three years and focuses on people requiring or providing care, with the last cycle in 2009 involving 27,000 fully responding households, which resulted in 64,000 people due to selecting multiple people per household. The next cycle in 2012 is expected to be of a similar size.

51. The Survey of Income and Housing (SIH) is conducted every two years, and collects detailed information about household income, housing and characteristics from persons aged 15 years and over resident in private dwellings. The SIH also collects detailed information about household wealth and additional housing data in some cycles. The sample size of the SIH is approximately 15,000 fully responding households (containing about 29,000 persons aged 15 years and over), and is designed to produce reliable income and housing estimates for both capital city and non capital city households. The Household Expenditure Survey (HES) is currently conducted every six years, and is enumerated as a subsample of the SIH to collect detailed information about household expenditure (using a self-enumerated diary in addition to the interview) along with the SIH income, housing, wealth and characteristics information. The sample size of the HES is approximately 6,800 fully responding households (containing about 13,000 persons aged 15 years and over), and is designed to produce reliable expenditure estimates for capital city households to support updates of the products and weights in the basket of goods used in the Consumer Price Index (CPI). The most recent SIH and HES were conducted in 2009-10, and included the SIH wealth topic. The 2009-10 SIH and HES also collected information from an additional 3,000 HES households whose main source of income was a government pension, benefit or allowance, to improve estimates for the pensioner beneficiary households used in the Pensioner Beneficiary Living Cost Index (PBLCI).

52. The Work, Life and Family Survey (WoLFS) is conducted every six years, and collects detailed information about employment arrangements, working patterns, work and caring, retirement and retirement intentions, superannuation, paid and unpaid work, care arrangements, time use (using a self-enumerated diary in addition to the interview) and other characteristics from persons aged 15 years and over resident in private dwellings. The WoLFS sample size is 13,750 fully responding households (containing about 26,500 persons aged 15 years and over), with a subsample of 4,000 fully responding households (containing about 7,500 persons aged 15 years and over) who complete the time use diaries. WoLFS is next being conducted over the calendar year 2013.

53. The Survey of Education and Training (SET) is run every four years and collects information on how education relates to employment outcomes. All in-scope people in a household are selected, with fully responding sample sizes around 11,000 households and 22,000 persons.

54. Two SSSs, the Indigenous Health Survey (IHS) and the Indigenous Social Survey (ISS), relate specifically to the Indigenous population in Australia. The surveys are conducted every three years on an alternating basis and each survey aims for an effective sample size of 13,500 Indigenous persons. The surveys use area-based targeted samples due to the rarity of the population and the need to use special enumeration techniques for remote Indigenous communities.

55. The Longitudinal Study of Australian Children (LSAC) is a non-ABS survey, where the ABS provides strategic and methodological input into the design of the study. The ABS’ role in the study includes developing survey instruments and fieldwork protocols,
establishing relationships with study families as part of collecting information from those families and input and output processing of the data collected by the ABS for another government department.

56. In recent years the ABS has faced excess demand for topics on the MPHS, and this survey has grown in length, leading to unsustainable MPHS interview times. The question of what is the best way to increase ABS survey capacity into the future, in a cost effective way, has triggered an internal strategic review of household surveys. This review, together with recent experience, has highlighted the following drivers for change at the ABS: the need to improve responsiveness to new user needs; finding cost efficiencies, particularly in relation to contacting respondents; providing small area/population data; providing longitudinal data; fostering coherence across different sources; maintaining response rates; maintaining a skilled interviewer workforce; and maximising the use made of survey data through effective dissemination of micro-data and analytic outputs.

57. In line with these drivers, some developments underway in the ABS include: the development of web-based data collection for household surveys; testing of the use of Telephone Interviewing (TI) in the MPS for first-time households; testing of the impact of extending the number of times in survey for the MPS, to allow social data collection in later months; and investigation of the use of an address register to replace the current area sample approach that has traditionally been used by the ABS to select sample. In addition the ABS has been developing the Remote Execution Environment for Micro-data (REEM) as a tool for external users to gain better value out of ABS micro-data by creating a flexible yet confidential way for users to explore such data. Ensuring that the data are fully analysed and exploited by external users is important; micro-data are a standard output, but at present the data are not as extensively used by external analysts as one would hope.

58. Given the very high costs of household surveys, particularly if high response rates are to be achieved, another issue for the ABS is ensuring that the national program of surveys provides information to government and the public in key areas of policy concern, provides coherent information, manages respondent load and privacy concerns, and makes effective use of statistical and technical infrastructure. Influencing the efforts of both the government and non-government organisations engaged in undertaking household surveys to coordinate efforts and optimise outcomes is an area of concern for the ABS.

C. United Kingdom

59. The United Kingdom’s statistical system is decentralised, so some of the main social surveys are run by the Office for National Statistics (ONS), while others are undertaken by other Government departments. There is a mix of continuous surveys, surveys which are undertaken periodically several years apart, and ad hoc surveys. Most of these surveys use the Postcode Address File (PAF) as a sampling frame – the PAF is a list of small areas maintained for postal delivery purposes, but which has been extended to act as a list of addresses for sampling purposes.

60. The main continuous surveys covering the whole United Kingdom are the Labour Force Survey (LFS), supplemented by additional samples in some areas to form the Annual Population Survey (APS), the Living Costs and Food Survey (LCF) and the General Lifestyle Survey (GLF) (which does not cover Northern Ireland). These three surveys have included a set of common questions since April 2009 and responses to these have been
processed together as the Integrated Household Survey (IHS), providing an increased sample size and slightly wider topic coverage. Other surveys have also included the same questions and been part of the IHS, but have moved in or out of the sample. IHS outputs are currently experimental, which means that they are available publicly, but are still under development and primarily provided to enable users to help with their quality assurance. The production of IHS outputs is complicated by the inclusion of both clustered and unclustered samples.

61. The LFS is an unclustered survey with an achieved sample size of approximately 55,000 households each quarter. A selected household is surveyed each quarter for five quarters, and surveying is continuous, with 13 areas (“stints”) covered one by one by an interviewer in each week of a quarter. The first interview is face to face (CAPI), but follow up interviews are preferably by telephone using a CATI unit based in ONS’s Titchfield office. The reference week is the week before the interview should take place, and monthly estimates are produced using a rolling average of three months’ data. Estimation takes account of the non-response through calibration to population totals by age, sex and region. As well as its primary purpose for collecting labour market data, the large sample size of the LFS has made it attractive to users and it contains additional questions on a range of topics.

62. The APS provides annual outputs and consists of all the wave 1 and wave 5 LFS cases, and a supplementary survey which provides a minimum number of achieved interviews each year in each Local Authority (with the exception of Local Authorities in London where a similar supplementary sample was discontinued some years ago on financial grounds). The supplementary surveys have a different rotation pattern, returning to the same address each year for four years. The total annual sample size is around 160,000 households. The primary purpose of the APS is to provide a more detailed geographical breakdown of variables collected in the LFS.

63. The General Lifestyle Survey (GLF) is a clustered survey of around 8,000 households per year collecting information on a range of topics including smoking and drinking, health and income. It has recently been used to collect information to meet the European Union (EU)’s Survey of Income and Living Conditions (SILC) regulation, for which purpose it was made longitudinal in 2005. Currently wave 1 is in the process of being merged with the Family Resources Survey (which is run by a different department, the Department for Work and Pensions). The longitudinal follow up at annual intervals (each household is interviewed four times in total) will remain in ONS. There are some remaining topics which need to be transferred to another survey, probably a version of the Opinions Survey (OPN) which is a regular survey carrying ad hoc questions on a repayment basis.

64. The third of the main continuous household surveys is the Living Costs and Food Survey (LCF) which collects detailed information on household expenditure, including the completion of a diary of expenditure for one week. The LCF has a clustered sample of around 6,000 households per year, and provides the information on spending patterns and the cost of living that reflects household budgets across the country and from which the basket of goods and weights of the Consumer Price Index are derived. It also provides information about food consumption and nutrition.

65. There is then a series of continuous surveys on a variety of topics commissioned by different departments or sometimes consortia of departments and undertaken sometimes by ONS or sometimes by other organisations as the result of competitive tendering processes. These include Housing Surveys separately for England, Wales and Scotland which cover
information on home ownership, renting and house conditions. In England there is an occasional supplementary survey of landlords. There is a Wealth and Assets Survey (WAS) which has two-year waves, and is a longitudinal panel survey; the third wave is in the field from 2010 to 2012, and results from the two-wave longitudinal dataset are in preparation. WAS has a design which oversamples households that are likely to be more wealthy, to improve the accuracy of the results. The British Crime Survey (which despite its name covers only England) is commissioned by the Home Office (but is due to transfer to the ONS on 1 April 2012), and is a continuous survey of around 46,000 households per year collecting information on experiences of crime and victimisation. There is also a National Travel Survey, run by the Department of Transport and collecting information by personal interview and self-completion diary on personal travel patterns from around 8,000 households a year.

66. There are also occasional surveys on Dental Health, Psychiatric Morbidity and other specific topics which come around every 5 to 10 years on fairly regular cycles depending on when funding is available. A longitudinal survey collecting information on disability, the Life Opportunities Survey is also underway, with wave 2 in the field; it is not yet known whether this survey will continue into a third wave. There is an ongoing Opinions Survey (OPN), which carries questions on particular topics funded by other departments; this survey is unusual among official household surveys in the UK in sampling only one person in a household.

67. All household surveys have the same basic fieldwork approach, with the first contact normally face-to-face by CAPI and follow-up interviews by telephone using a CATI system wherever possible. Financial pressures are however causing the ONS to adopt cost saving measures, which currently include making the first approach by telephone where a telephone number can be identified, and pilots of collecting some information over the Internet. For the LFS the ONS has stopped following up households where all the inhabitants are aged 75 or over, who are now included in the survey only once.

68. Some survey editing is built into the data collection instruments, and there are further checks and processes to calculate derived variables which take place after collection. All surveys use some form of weighting to compensate for differential non-response and to provide consistency with published population totals, though there are differences in the level of aggregation by age, sex and geography depending on the size of the sample available. Some surveys (particularly the LFS) have more than one weight to allow estimates to be produced from different types of cases. For example there is a separate “income weight”, used with only wave 1 and 5 cases, which are the only interviews at which a question on income is asked.

D. Netherlands

69. In general, Statistics Netherlands’ household survey program consists of a mix of regular and ad hoc surveys, using a variety of frames, with varying degrees of frequency and timeliness.

70. One of Statistics Netherlands’ most important household surveys is the Labour Force Survey (LFS). The target population of the LFS consists of the non-institutionalised population aged 15 years and over residing in the Netherlands. The sampling frame is a list of all known occupied addresses in the Netherlands, which is derived from the municipal
basic registration of population data. The LFS is based on a stratified two-stage cluster design of addresses. Strata are formed by geographical regions. Municipalities are considered as primary sampling units and addresses as secondary sampling units. All households residing at an address, up to a maximum of three, are included in the sample (in the Netherlands, there is generally one household per address). Since most target parameters of the LFS concern people aged 15 through 64 years, addresses with only persons aged 65 years and over are under-sampled. Addresses with at least one person between 15-26 years of age, addresses with at least one person of non-national origin and addresses with at least one person who is registered at the job search administration, are oversampled.

71. The LFS is based on a rotating panel design. Each month a sample of addresses is drawn and data are collected of the residing households. The sampled households are re-interviewed by telephone four times at quarterly intervals. The sample size is approximately 6,000 dwellings each month; a dwelling stays in the LFS sample for four subsequent waves and is then rotated out. The first interview is conducted by telephone using Computer Assisted Telephone Interviewing (CATI) where possible (if there is a telephone number available). Otherwise it is conducted in person using Computer Assisted Personal Interviewing (CAPI). Interviews in subsequent waves are conducted by telephone using CATI. Responding to the LFS is, as to all Dutch surveys, voluntary. Proxy response is accepted. The survey reference period is the respondent’s situation at the moment of interviewing.

72. The monthly results are normally published on the third Thursday of the following month. Monthly figures are estimated using a structural time series model. Quarterly figures are published six weeks after the end of each quarter.

73. The Dutch LFS is also used to gather information for the European LFS. All European countries are obliged to deliver a database to Eurostat every quarter. In the quarterly datasets a fixed number of variables is demanded. To be able to deliver enough data for publication on a quarterly basis, the LFS is conducted as a rotating panel survey with five waves. The time between subsequent waves is three months (a quarter) for each respondent for each wave. Besides the quarterly data, Eurostat also demands a set of variables which only need to be published every year. The variables that are needed for the yearly publications are asked in the second wave of the LFS only. There is also a so called ad hoc module, which changes subject every year; Eurostat determines the subject for this ad hoc module.

74. The Dutch LFS is also used as a platform to conduct supplementary surveys. The respondent may be asked additional questions, for example at the request of the Dutch ministry of labour and social affairs. Most of these supplementary surveys occur regularly, every year or every two years. Examples are a yearly module in the LFS on membership of trade unions and a two yearly module on combining labour and family care. These modules are all integrated in the third wave of the Dutch LFS. The European survey of household and living conditions (EU-SILC) is a survey which is conducted using panels of households that have rotated out of the LFS. Because contact information for these households is already available and they have cooperated in the past, they tend to be less expensive to use than a completely new sample. Furthermore there is a lot of overlap in the questions for the LFS and for EU-SILC.

75. The objective of the Dutch Travel Survey is to describe the travel patterns of specific groups of the Dutch population. To this aim respondents are asked to describe their trips for
one predefined day. For each trip respondents are asked to fill in the origin and destination locations, the distance travelled, the purpose of the trip, the time of departure, travel time and the mode(s) of transport used. The survey is conducted continuously, so that information from more than 42,000 respondents is gathered, spread over all days in a year. Since 2010 the survey has been conducted by using a mixed mode design. The survey starts with web interviewing, but if respondents are not willing or not able to respond by web, they are re-approached by telephone if the respondent’s phone number is known; otherwise it is done by a face-to-face interview.

76. Statistics Netherlands conducts an annual Health Interview Survey (HIS) to collect data about health, care use and lifestyle. The target population of the survey is the total Dutch population, aged 0 and above, living in private households. The survey interviews approximately 10,000 respondents each year, with collection taking place throughout the year. To avoid an overly-long interview duration, the survey consists of two sub-surveys. Since 2010 the HIS is conducted in a mixed mode design, starting with web interviewing. Non-respondents are re-approached by telephone if the respondent’s phone number is known; otherwise a face-to-face interview is conducted. Sub-survey two is conducted partly by web interviewing and partly by a paper questionnaire.

77. The aim of the Dutch continuous Holiday Survey is to collect information on the holiday behaviour of the Dutch population, in particular the amount of spending on holidays. Every year about 6,500 panel respondents complete a questionnaire on a quarterly basis (January, April, July and October) reporting on their holiday behaviour during the three months prior to the interview. Respondents use their own personal computer (Computer Assisted Web Interviewing) to fill out the questionnaire. In order to reduce memory effects, respondents are asked to fill out a short form with some core information, such as spending, to be completed directly after the ending of the holiday. A distinction is made between short term (up to 4 nights) and long term (at least 4 nights) holidays and between domestic holidays and outbound holidays. Panel attrition is about 25% per year. The sample is reweighted to a number of population characteristics such as age, sex, urbanization and region. Furthermore the sample is also reweighted in order to correct for the exclusion of persons without a personal computer.

78. In the Netherlands, the former Safety Monitor (SM) survey measured actual and perceived safety. Respondents were asked to answer questions related to feelings of safety, opinions about police performance and crime victimization. Between 2006 and 2008 the SM was conducted with a national annual sample size of about 20,000 respondents aged 15 years of age or over, or roughly 750 respondents in each of the 25 police districts in the Netherlands. In the past, however, local parties conducted their own independent surveys in order to produce reliable figures on a local level. Because of this independence, the local figures could not be compared, nor could they be aggregated consistently on a national level.

79. To overcome these issues, a new Integrated Safety Monitor (ISM) was introduced in the last quarter of 2008. The ISM has a nationwide component, with about 20,000 respondents aged 15 years of age and over, but to allow police districts and other local parties such as municipalities to participate on a larger scale, the ISM has the flexibility to add both sample and customized content. Local parties can increase sampling fractions among specific regional and local areas, such as police districts or neighbourhoods. In 2008, 2009 and 2010 approximately 60,000, 200,000 and 40,000 respondents respectively took part in the ISM. The ISM questionnaire has a modular design, consisting of obligatory and
optional questionnaire blocks on specific themes, in a fixed order. In the nationwide sample, all respondents are presented with all questions; in the local samples, local authorities are free to choose optional blocks. ISM respondents are first asked to complete a questionnaire via a web survey, or can respond via a self completion paper questionnaire. If neither of these modes is responded, the respondent is approached via CATI (if the phone number is known) or else via CAPI (for the national sample only).

80. In the Netherlands the Survey on ICT usage by households and individuals has been carried out since 2005, using telephone interviews. Only people aged 12-74 are interviewed and the net sample size of the ICT survey is about 4,400 individuals. In prior years (2002-2004) ICT outcomes were taken from the former Integrated System of Social Survey (POLIS), which used face-to-face interviews.

81. The ICT survey is carried out within a European framework, in which all European member states ask comparable questions. The main reference period of this survey is the first quarter of the year. The international results cover households with at least one person aged 16-74, and individuals aged 16-74. Households are asked about computer and internet access by any member of the household at home. Individuals are asked about frequency of computer and internet use and about activities they had carried out on the internet in the last three months prior to the survey for private purposes, or in the last twelve months for e-government and e-commerce activities, at home or at any other location. The survey includes additional questions on one of the regular internet topics each year.

82. One of Statistics Netherlands’ new survey modules concerns social cohesion. It includes various indicators for measuring social capital, such as volunteering, social contacts and informal help, political participation, social trust, trust in institutions and political trust. Based on these indicators a social capital index has been constructed. Furthermore, indicators measuring both ‘bonding’ and ‘bridging’ capital were introduced, such as resources for getting help by others. In 2010 the module was linked as a follow up to the Health Interview Survey, with a sample size of about 9,000, in the setting of a mixed-mode design (Web/CATI/CAPI). In parallel, in order to define mode and other design effects, a traditional smaller CAPI-based survey was conducted, with a sample size of about 3,500. In 2012 the module will be implemented in the mixed-mode design, among some 10,000 people. In addition the survey will be linked to the Social Statistical Database (SSD) in which information based on the whole Dutch population is available, such as disposable household income, concentrations of ethnic minority groups, rented houses, and social benefits.

83. The Household Budget Survey (HBS) has been conducted yearly since 1978, with exceptions in 2001, 2002 and 2011. The HBS collects detailed information on expenditures, dwelling and household characteristics. The results are used, among other things, for the Consumer Price Index, the System of National Accounts and Eurostat publications.

84. The HBS consists of two modules. In Module 1, the households keep a paper diary for three months in which they record expenses of 20 Euros or more, as well as holiday expenditures. In addition, meter readings of gas, electricity and water are recorded at the beginning and the end of the period. Each household is contacted seven times by CATI to report the expenses; in one of these contacts the household characteristics are recorded. Every calendar month a new sample of 450 households participates in the module, for a total
net sample of about 5,500 households over 12 periods. The households are recruited by telephone or by letter if no telephone number is known.

85. In Module 2, households keep a paper diary for half a month in which they record all expenses. In addition, periodic expenses are recorded in a special paper questionnaire. Each household is visited three times by an interviewer. Each half month a new group of net 65 households participates in the module, for a total of 1560 households over 24 periods. The recruitment of households that have already participated in Module 1 is done by telephone, and if necessary new households are recruited by telephone (or face-to-face when no telephone number is known). For this additional recruitment a sample of addresses is drawn. The results of the two modules are combined to make consumption patterns for different household types.

86. Statistics Netherlands (CBS) conducts a number of other surveys for third public parties. Requests for surveys by third parties can be accepted if certain criteria are met: the survey does not conflict with CBS policy; the resources to conduct the fieldwork and to develop the survey are available and can be allocated to the survey without conflicting with the 'regular' surveys; and there are no negative effects on CBS surveys that are involved in the new survey. Most of the third party surveys are conducted in close collaboration with the organization that has commissioned the survey; such cooperation may extend to the publication of articles. Among the third party surveys currently conducted by the CBS, most are completely independent surveys, with a sample that is designed especially for the survey. However CBS also conducts third party surveys that use existing surveys as a platform. Once the respondent has finished a survey, he may be approached for additional questioning. This method is used in the Dutch Travel Survey.

87. A large current third party survey is the Time-budget survey (TBO). For this survey about 5,000 individuals are selected from the Dutch Municipal Population Register and asked to participate in a CAPI survey. When the respondent has finished this interview he is asked to complete a one-week paper diary, in which he is asked to record his activities for each 10-minute period for a week. If the respondent has an adult partner living in the same household, this partner is also asked to complete a diary. During the diary week the respondent is contacted by telephone about the progress of the survey and is motivated to continue. After the completion of the diary there is another CAPI interview. Because the TBO is a demanding survey for the respondents, CBS offers an incentive that consists of a 10 Euro voucher to be used at selected outlets in the Netherlands. Other third party surveys that CBS currently conducts are, among others, on the subjects of the informal economy, youth and housing.

IV. INTERNATIONAL INITIATIVES AND EFFORTS RELATING TO HOUSEHOLD SURVEY METHODS

A. United Nations Economic Commission for Europe/Conference of European Statisticians

88. The UNECE/CES, often in collaboration with other international organizations, has been active in organizing and steering several task forces on specific subject matter topics involving household surveys. Links to the activities and products of the initiatives described below are available on the UNECE website.
89. In October 2004, the UNECE, the World Health Organization and Eurostat, in partnership with the Washington Group on Disability Statistics, established a Steering Group and a Task Force to promote internationally comparable measurement of population health status within the framework of official statistics; since 2005 the effort has been known as the “Budapest Initiative.” Much of the effort has focused on developing a new common instrument for measuring health status in its multiple dimensions, to be included in population surveys as a recommended set of questions.

90. Also in 2004, the UNECE, in cooperation with the United Nations Office on Drugs and Crime (UNODC), formed a task force on victim surveys. The task force’s work to date has resulted in the publication in 2010 of a Manual on Victimization Surveys (UNODC/UNECE 2010). The objective of the manual is to provide methodological guidelines for the design of victimization surveys, with the ultimate goal of improving the international comparability of victimization surveys.

91. Another manual published in 2010 is Developing Gender Statistics: A Practical Tool (UNECE/WBI 2010). This manual was produced as part of the UNECE and World Bank Institute (WBI) project on engendering national statistical systems, and was prepared by the UNECE Task Force on Gender Statistics Training for Statisticians (formed in 2005), with contributions from various experts.

92. Also in the area of gender statistics, the UNECE Task Force on the Measurement of Gender-Based Violence (formed in 2005) has been active in the development of a survey module on violence against women. The module is designed for the collection of data on a set of indicators agreed on by the United Nations Statistical Commission.

93. The “Suitland Working Group” was formed in 2008 under the umbrella of the CES Work Plan to Improve International Migration Statistics, with the objective of improving migration and migrant data using household surveys. The Group was formed out of a meeting convened in 2008 by the U.S. Census Bureau, the UNECE and the World Bank to discuss the contributions that household surveys can make to the measurement of migration and remittances. The Group held its first official meeting in March 2009.

94. Finally, a Task Force for Updating the Canberra Group Handbook on Household Income Statistics (see United Nations Statistics Division below) has been formed.

B. United Nations Statistics Division

95. The United Nations Statistics Division (UNSD) has been active in the area of household surveys for several decades. A National Household Survey Capability Programme was established between 1981 and 1995 to support the development of household surveys in developing countries. As well, several so-called “city groups” on statistical methodologies for specific subject matter topics have been active under the auspices of the UN. The original Canberra Group on Household Income Statistics was active from 1996 to 2000; the Rio Group on Poverty Statistics was active from 1996 to 2006, and the Washington Group on Disability Statistics, established in 2001, is still active. Links to the minutes and reports of these groups are available on the Internet site of the UNSD.

96. The UNSD also makes a number of methodology handbooks available on its Internet site; see Section VIII for a complete list. However many of these documents are relatively
old, in one case dating to 1950; only two have been published since 1993. The 2005 publication *Household Surveys in Developing and Transition Countries* “…presents the ‘state of the art’ on several important aspects of conducting household surveys in developing and transition countries, including sample design, survey implementation, non-sampling errors, survey costs, and analysis of survey data.” *Designing Household Survey Samples: Practical Guidelines* was most recently published in 2008; it contains a chapter on the planning and execution of surveys, a chapter dealing with non-sampling errors in household surveys, and a chapter on data processing. Nevertheless, as the title suggests, the main focus of the document is on sample design and estimation methods.

C. **Other International Organizations**

97. Only one document related to household surveys was found on Eurostat’s Internet site: *Household Budget Surveys in the EU: Methodology and recommendations for harmonisation* – 2003. The World Bank’s Development Economics Research Group has posted materials under the Living Standards Measurement Study, including guidelines for carrying out such surveys and a description of Household Survey Clinics, which can be given on request. The Internet sites of the Organisation for Economic Cooperation and Development and the International Monetary Fund were also searched, but no documents relating to household surveys were found. An International Household Survey Network with numerous international organizations as participants was formed in 2004, although it focuses on promoting data access and use rather than survey methods.

D. **National Statistical Organizations**

98. NSOs have occasionally collaborated outside the framework of formal international organizations. In November 2010, the U.S. Committee on National Statistics of the National Academies sponsored a two-day *Workshop on the Future of Federal Household Surveys*. Participants came from several U.S. statistical agencies, the academic sector, private sector survey organizations, and some international NSOs, such as Statistics Canada, Statistics Netherlands and the Office for National Statistics. Slides from many of the presentations are available on The National Academies Internet site and a Workshop Report is now available (National Research Council 2011). Other conferences have been held on specific household survey methods topics, such as the *1999 International Conference on Survey Non-response* (Groves et al 2002), and *Statistics Canada’s International Methodology Symposia* on the topics of longitudinal surveys (Statistics Canada 2009) and the interplay among censuses, surveys and administrative data (Statistics Canada 2010).

99. Overall, compared to censuses and administrative data sources such as vital statistics, international efforts in the area of household survey methods appear to be more fragmented, being either oriented towards specific subject matter topics, oriented towards developing and transition countries, or somewhat dated. Recommendations for increasing the amount of international collaboration in the area of household survey methods are provided in Section VI.
V. ISSUES AND CHALLENGES

A. Declining response rates

100. The past twenty years have seen a downward trend in response rates for household surveys in most countries. For example, Statistics Canada’s LFS, although it is a mandatory survey, has seen its response rates slip from 95% in 1995 to 90% in 2010. Response rates to the General Social Survey (conducted by RDD) are now often in the range of 60%, compared to the 80% range from 1985 to 2004. Declining response rates have several effects: increased sampling error because the achieved sample size is smaller, a higher risk of non-response bias, and increased collection costs due to the increased effort needed to maintain high response rates.

101. Abraham (2010) cites two reasons for the decline. First, it is becoming increasingly difficult to contact survey respondents. Physical security barriers, telephone and voice-mail screening, more households with no landline telephone, and an increasing proportion of households (particularly those composed of young adults) where all members are away during the day make it increasingly difficult to make contact with the household. Second, respondents are more and more reluctant to cooperate with surveys, due to increasing demands on their time, confusion of legitimate survey requests with market research and sales solicitations, and concerns about privacy and confidentiality. While many of these reasons also apply to censuses, they can have a more severe effect in a household survey context, where the burden on a household may be higher yet the survey (unlike a census) may be voluntary.

102. NSOs have tried a number of steps to cope with declining response rates. Efforts to maintain response rates include:

(a) Improving survey introductions and questionnaire designs;

(b) Offering multiple response modes (e.g., Internet) to make it more convenient for the respondent;

(c) Increasing the amount of follow-up;

(d) Targeting survey contacts to the times the respondent is more likely to be home;

(e) Offering incentives (more often used in the private sector, but increasingly of interest to NSOs for surveys demanding unusual respondent effort, such as travelling to a mobile health clinic);

(f) Using administrative data to replace survey data collection for selected variables; and

(g) Improving interviewer training.

Efforts have also been made to improve the statistical methods for treating non-response after collection, such as using paradata in the imputation or estimation process, using administrative data for imputation, and taking account of imputation in the estimation of survey variance. With no end to the trend in sight, household survey non-response can be expected to be a growing field of study (Bethlehem et al 2011).
B. Resource constraints

103. In many countries, NSOs have been subject to budgetary cuts or freezes imposed by governmental funding authorities, yet the costs of conducting surveys in the traditional manner have often risen even faster than inflation. Higher transportation costs, increased interviewer wage rates, and the additional effort needed to maintain response rates have all contributed to higher costs per completed case. These cost increases have been offset to some extent by the automation of the collection, processing and dissemination processes, but not entirely. NSOs have therefore invested in research into the cost structures of the survey process, with a view to identifying what operations are less productive and can be dropped or modified. Other options may involve replacing surveys entirely with administrative data, where this is feasible.

C. Increasing user demand

104. The increasing role of statistical data in decision-making by governments, the private sector, and even the individual citizen has led to a constantly increasing demand from users. The demand has several dimensions. First, users want a wider variety of data than ever before, covering emerging topics or topics that were once considered too sensitive. Second, users expect more timely production of results with no loss in quality. Third, users want data that are more detailed, both in terms of small geographic areas and subgroups of the population. Fourth, as users become more sophisticated and have the ability to bring together and compare multiple sources of information, they are becoming more demanding of the quality of the data and the coherence of the data with other sources. At the same time, disseminating data primarily by the Internet reduces interaction with the user, making it difficult to understand his or her needs. NSOs have found that they must develop innovative ways to reach the users of their data, to measure user needs and expectations, and to manage the expectations that users have of the statistical agency.

D. Impact of new survey collection modes

105. Household surveys in many NSOs have seen a long-term trend away from personal interviews toward telephone interviews, primarily due to the expense of travelling to the respondent’s home. However the increasing use of call screening, the increased proportion of cell-phone-only households, and logistical and statistical difficulties in conducting surveys by cell-phone have led some NSOs to question the future of telephone surveys as a viable option for the future. On the other hand, for at least some simple surveys, the automation of the survey collection process can extend to methods such as automated survey calls with touch-tone response.

106. More recently, Internet penetration rates in many countries are at the point where there is much interest in using the Internet as a response mode. The Internet is seen as a way of reducing costs, improving data accuracy and addressing privacy concerns, and many countries now offer Internet as a response option in their censuses. For household surveys, the Internet is probably most appropriate in repeated surveys such as the LFS where, once contact has been established and cooperation obtained, the respondents can simply be sent an email each month with a link to the Internet site where they can record their answers.

107. There are many considerations in moving to the Internet as a response option. First and foremost, the NSO must ensure the security of the process, not only in reality but as
perceived by the public. Second, the questionnaire and its design must be suitable for self enumeration, and respondents must be able to request additional help if needed. Third, in household surveys with tight deadlines, respondents must be encouraged to reply promptly, and if they do not, the NSO must have the ability to quickly switch to telephone or personal interviews to collect the data. To date, the use of the Internet by most NSOs has been viewed as an additional response channel, rather than as a complete replacement for existing modes. The operational need to coordinate multiple response modes and the effects that different modes may have on the data are two of the major challenges facing the introduction of this new but promising collection technology. Whether to tailor the questionnaire to the collection mode or to try to standardize it across modes is another issue which has been the focus of much debate.

E. Sampling frames and survey capacity

108. The area frame approach has served well for several decades. Many NSOs without population registers foresee maintaining the area frame approach, while trying to make sampling frames more efficient by reducing the stages of sampling, reducing the costs of address listing, or including value-added information (e.g., telephone numbers) in their address lists. Several NSOs are also working on the convergence of their address lists for their census and household survey programs. Integration of the listing operations of the census and the household survey programs means that only one software application is needed in the field, only one database needs to be updated, and the scheduling of listing can be optimised between the census and household survey programs. Such developments may be incremental: as the coverage, quality and timeliness of master address lists improve, more and more parts of the area frame can use them directly. Technologies such as GPS and hand-held or tablet computers also hold promise as ways of making address listing more efficient and accurate.

109. Regularly repeated household surveys are often used as cost-effective platforms for conducting supplementary surveys, but their capacity to conduct “live” supplements is limited by the sample size of the main survey and the willingness of its respondents to answer additional questions. The frame of an existing survey can also be used to select separate samples of households or PSUs, at additional cost and complexity (although still much less than designing the survey from scratch). In many NSOs, however, the user demand for new and faster surveys has stretched existing survey vehicles and their frames to the breaking point. Many NSOs are struggling with the challenge of how to provide a household survey capacity that is cost-effective, is flexible enough to meet the needs of a wide variety of data demands, and can respond to new needs in a timely manner. The possibility of rationalizing their household survey programs by integrating existing surveys or by developing “Master Samples” is of interest to several NSOs.

110. The use of a recent census to select a sample of persons or dwellings may be considered as a way of increasing capacity. In the case of a post-censal survey planned in advance, individuals may be selected and interviewed just a few weeks after the census. In other cases the need for the survey may arise some time later, and the census may be used to select a sample of dwellings that contained persons with the desired characteristics at the time of the census. Such an approach can often take advantage of the tendency for out-movers to be replaced by in-movers with similar characteristics. In this case, however, measures may be needed to avoid the potential for bias due to frame under-coverage of new dwellings. In countries where the census is conducted on a continuous basis rather than at
one point in time, or is based on a population register, the design of the follow-on survey will be necessarily affected. A particular issue with using a census as a frame is that of privacy; respondents need to be informed at the time of the census that it may be used to select samples for other surveys. In some countries, such as the United Kingdom, legislation may actually prevent the use of the census for sampling. Despite the privacy issues, however, increasing user demand for data and the need to control costs has encouraged many NSOs to look to their censuses as an additional source of household survey capacity.

111. The rapid development of telephone technology has made the use of telephone sampling techniques extremely challenging. In particular, the growth of cellular telephones in the past 10 to 15 years threatens to disrupt the future ability to use telephone numbers as a sampling frame. A cellular telephone number tends to be associated with an individual rather than his or her household, yet not everyone has a cell-phone while some persons have more than one. More and more households have no landline telephone at all, and such households tend to have very different characteristics than households with a landline telephone, making it increasingly difficult to ignore them. Yet there are numerous challenges with conducting surveys by cell-phone: the respondent may not be willing to pay for the call, the respondent may be in a public place when contacted, or the respondent may be driving a motor vehicle, raising safety issues. From a sampling perspective, the complex relationships among telephone numbers, the household, and the persons within it may make it necessary to ask a series of additional questions so that the responses can be weighted properly.

112. At present, the use of Internet-based addresses (e.g., e-mail addresses, social networking sites such as Facebook or LinkedIn) as a general sampling frame for household surveys has challenges so extreme that it seems unlikely that NSOs will be able to use such frames for sampling any time in the foreseeable future. There is no standardization of e-mail addresses or other types of Internet addresses and thus no ability to associate them with a dwelling unit or a person in a particular geographic area. As well, any unsolicited contact made by e-mail is highly likely to be screened out by spam filtering software. The most promising approach is likely to add Internet addresses to existing frames and to exploit the Internet as a collection tool, rather than as a sampling frame. However, the use of e-mail addresses and social media sites in surveys that require tracing of respondents may be an area worth exploring.

F. Data for small domains

113. As noted above, a dimension of increasing user demand is that of data for small geographic areas and subgroups of the population. With a regularly repeated survey, one approach is to accumulate enough sample size to produce time-period moving averages, trading off detail in the time dimension for increased detail in the geographic or subgroup dimensions. The use of small area estimation (SAE) methods is another approach that has received much interest. Generally, SAE methods combine data from the household survey with auxiliary data, such as census data or administrative data, linked together by a model. However, if the model is not suitable, the associated small area estimates may be seriously biased. In practice there may be thousands of small area estimates produced, and it is likely that at least some local authorities will have sources of data that that contradict the NSO’s small area estimates, potentially calling the entire SAE approach into question. In addition to developing the methods themselves, NSOs must endeavour to educate the users of the data about the limitations of such methods.
G. Integration with censuses and administrative data

114. As administrative data sources (sometimes referred to as secondary sources) become more available at the same time that traditional household surveys and censuses become more challenging, both the need and the opportunities for closer integration of these three sources of data are growing. As previously described, censuses or administrative sources may be used as sampling frames for household surveys, and data derived from censuses or administrative sources may be used in estimation. A bigger challenge is to use administrative data as a substitute for survey collection. Initiatives such as the Dutch Social Statistics Database, which integrates administrative and household survey data at the micro-data level, may be the way of the future for many NSOs. However it does raise issues of the differences in concepts measured by different sources and the effects of different collection methods on the resulting data. Issues of privacy, where data collected for one purpose are used for another purpose, are also critical to consider. For a recent in-depth review of the issues surrounding the use of secondary and mixed sources for official statistics, see UNECE 2010.

H. Paradata and responsive designs

115. The automation of collection has made it possible to record a huge amount of information about the process, even as detailed as the number of seconds spent on each question during the interview. The challenges in using paradata are several. The first set of challenges is to determine what information should be collected and how to organize it most effectively for analysis. This is often an iterative process, and as experience is gained in analysing paradata and assessing their usefulness, one can expect the salient information to be identified. A second issue is that of privacy; interviewers and respondents need to be informed that such paradata are being collected and how they may be used. A third challenge is to identify where in the survey process paradata can be used; some paradata may be suited to identifying problematic questions, fine-tuning edits or improving interviewer training, while other paradata may be used in estimation to reduce non-response biases.

116. In cases where paradata can be collected and used in real time, so-called responsive designs can be employed. For example, it may be possible to identify subgroups of the sample that need additional follow-up, to monitor the costs of the collection operation, or to cut off the collection operation when additional effort is unlikely to affect the survey estimates. Such applications are relatively recent but will likely grow as experience is gained (Groves and Heeringa 2006).

I. Longitudinal surveys

117. Longitudinal surveys have several unique challenges; chief among these is keeping response rates high over several waves of the survey. Attrition in a longitudinal survey may be caused by an inability to maintain contact with persons or households who move, or by the eventual fatigue on the part of the respondent, resulting in a refusal. In some cases, however, a non-response at one wave may be followed by a response at the next wave. The resulting “Swiss cheese” patterns of non-response may be difficult to deal with, and depending on the survey may result in complex weighting adjustments. Another challenge with longitudinal surveys occurs when households dissolve and re-form; rules on whom to keep in the sample or to add to the sample must be developed. Third, some longitudinal
surveys attempt to provide cross-sectional as well as longitudinal estimates by the addition of a sample of births in the population at each wave; two sets of weights may be required in such cases.

J. Data analysis for complex surveys

118. Because sample designs and estimation methods for household surveys are often complex, there are special issues for the analysis of data that goes beyond simply the production of totals, means and percentages. For example, treating the data as if they came from a simple random sample can lead to severe underestimation of variances. During the past few decades, a considerable amount of research has focussed on methods for analysing data from complex surveys. One of the challenges is simply to educate data analysts that there are issues in dealing with data from complex surveys and that solutions are now available for many common problems. A second challenge is to develop methods for even more complex situations, such as data from longitudinal surveys.

119. As well, decreasing response rates have resulted in higher rates of imputation. Because imputation increases the variance of the estimates, there has been much interest in how to estimate the variance due to imputation and how to report it to users.

VI. CONCLUSIONS AND RECOMMENDATIONS

120. The household survey faces a series of methodological challenges over the next few decades. Principal among these are the effects of declining response rates on cost and quality, the deterioration of telephone frames due to rapid technological changes, and the increasing demands from data users. On the positive side, the automation of survey operations, the development of better address lists, the emergence of the Internet as a collection mode and the increasing availability of high quality administrative data show promise as ways to address these challenges.

121. Much of the methodological work on household surveys has been carried on within individual NSOs. Compared to censuses of population and housing and administrative data there has been relatively little international cooperation effort that has taken place outside of the context of specific subject matter topics. The CES Bureau is therefore invited to consider the following recommendations:

(a) Establish a task force of interested countries of the CES to develop a work program to address cross-cutting issues facing household survey methods in the UNECE region over the next decade;

(b) Request that the task force, in cooperation with the UNSD, review the existing UNSD handbook series to assess its future role and to make recommendations on how to modernize it where appropriate. The latter may involve updating some of the earlier handbooks on household surveys to reflect modern household survey methodologies, or developing new handbooks to fill gaps in the existing series. More specifically, the following are suggested as priorities:

(i) The 1991 handbook Follow-up Method in Demographic Sample Surveys be updated and expanded to cover the more general topic of Non-response in
Household Surveys, addressing methodologies for both controlling and treating non-response;

(ii) The 1986 handbook *Sampling Frames and Sample Design for Integrated Household Survey Programmes – Preliminary Version* be updated and expanded to cover frame issues more generally, including the rapidly evolving situation with telephone frames and the challenge of household survey capacity in the face of increasing user demand;

(iii) The 1982 handbook *Survey Data Processing: a Review of Issues and Procedures* be updated to reflect the use of modern technology, including topics such as CAI and the collection of data by Internet;

(iv) The other handbooks prior to the year 2000 be reviewed, any of their content that is still relevant be incorporated into newer handbooks, and the older versions archived;

(c) Request that the task force make recommendations at a future meeting of the CES Bureau on ways to improve the sharing of information on household survey methods among NSOs and researchers. Possibilities include the creation of an Internet knowledge base on household survey methods, participation in and promotion of conferences and workshops on the subject of household survey methods, and liaison with related task forces, such as those on the use of secondary sources or on specific subject matter topics, in order to identify cross-cutting issues that need to be addressed.

VII. BIBLIOGRAPHY


**VIII. UNITED NATIONS STATISTICS DIVISION HANDBOOKS**

The following UNSD handbooks are listed in reverse chronological order. All are available as PDF downloads, although older ones are PDF images only.

<table>
<thead>
<tr>
<th>Title</th>
<th>Year</th>
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<tr>
<td>Designing Household Survey Samples: Practical Guidelines</td>
<td>2008</td>
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<td>Household Sample Surveys in Developing and Transition Countries</td>
<td>2005</td>
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<td>Sampling Errors in Household Surveys</td>
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<td>Follow-up Method in Demographic Sample Surveys</td>
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<td>Measuring Literacy through Household Surveys: A technical study on Literary Assessment and related Education Topics through Household Surveys</td>
<td>1989</td>
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<tr>
<td>Sampling Frames and Sample Design for Integrated Household Survey Programmes – Preliminary Version</td>
<td>1986</td>
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<tr>
<td>Handbook of Household Surveys (Revised Edition)</td>
<td>1984</td>
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<tr>
<td>Non-sampling Errors in Household Surveys: Sources, Assessment and Control Recommendations for the Preparation of Sampling Survey Reports (Provisional Issue)</td>
<td>1982</td>
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<td>Preparation of Sampling Survey Reports</td>
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