

## **Gender issues in the measurement of paid and unpaid work**

Expert Group Meeting on

Methods for Conducting Time-Use Surveys

23-27 October 2000

New York

### **Methodological guidelines on harmonised European time use surveys—**

**With reference to experiences of the**



EUROPEAN COMMISSION  
EUROSTAT

Directorate E: Social and regional statistics and geographical information system  
Unit E-2: Living conditions



# **Methodological Guidelines on Harmonised European Time Use Surveys - with reference to experiences of the European Time Use Pilot Surveys**

**Christina Österberg\***  
**Eurostat**

UN Expert Group Meeting on Methods for Conducting Time-use Surveys

New York, 23-27 October 2000

\* Important sources for this paper are:  
*Evaluation of the European Time Use Pilot Survey* by Klas Rydenstam and Anders Wadeskog,  
Statistics Sweden, and

*Proposal on harmonised basic statistics and other actions for promoting international comparisons of time use statistics* by Klas Rydenstam, Statistics Sweden

## Content

1	BACKGROUND.....	5
2	EUROPEAN TIME USE PILOT SURVEYS .....	6
3	HARMONISATION APPROACH .....	7
4	GUIDELINES ON HARMONISED EUROPEAN TIME USE SURVEYS .....	8
4.1	Sample design.....	8
4.2	Diary days .....	10
4.3	Survey forms .....	12
4.4	Activity coding list .....	14
4.5	Fieldwork.....	15
4.6	Data entry.....	15
4.7	Basic tables.....	16
4.8	Estimators .....	17
4.9	Required meta-information.....	17
5	FURTHER WORK IN THE EUROSTAT TIME USE PROJECT.....	18
5.1	Actions for promoting international comparisons of time use statistics.....	18
5.2	A satellite account of household production.....	21
5.3	Other work.....	21
6	NATIONAL PLANS TO CARRY OUT TIME USE SURVEYS .....	23

# 1 BACKGROUND

The potential value of time use data has long been recognised. Time Use Surveys based on a comparable survey design have been conducted in the past in most European countries, but the international comparability has been low due to national variants in the design.

In the early 1990s the need for increased comparability between national Time Use Surveys became recognised by Eurostat. The potential uses of Time Use Surveys were discussed in March 1992 by the Social Indicators Working Party, resulting in the setting up of a project for harmonising European Time Use Surveys, co-ordinated by a group of experts from EU and EFTA countries.

A Time Use Survey design was developed. It was based on detailed analysis of national Time Use Surveys carried out in EU and EFTA countries. Workshops were arranged and comments from international organisations (ILO, OECD, UNESCO, FAO, UN/INSTRAW and UN/Statistical Office) as well as from time use researchers around the world were taken into account.

In December 1994 the Statistical Programme Committee (SPC), representing the National Statistical Institutes (NSI) of the Member States and EFTA countries, reached a conclusion to support the proposal of harmonised co-ordinated Time Use Surveys. The SPC also supported the carrying out of Time Use pilot Surveys in all Member States in order to increase the comparability of future national statistics on time use within the European Community.

A series of pilot surveys, supported by Eurostat, were conducted in late 1996 and early 1997 in nine Member States and nine Central Eastern European (Phare) countries. The overall conclusion from these studies, presented at the SPC meeting in March 1998, was that harmonisation of time use data was feasible despite apparent differences between countries.

The SPC rated the Time Use project as low priority in the context of the 1998-2002 five-year Working Programme, and no Eurostat funding would be possible for countries launching full Time Use Surveys.

However, Eurostat was mandated by the SPC to develop recommendations for harmonised European Time Use Surveys in order to ensure that Member States were in a position to implement Time Use Surveys on a comparable European basis.

The purpose of the guidelines on harmonised European Time Use Surveys, presented by Eurostat in September 2000, is to provide a solid methodological basis for countries intending to carry out Time Use Surveys, which will ensure that the results are comparable between countries and therefore greatly increase the value of the data obtained. The guidelines are based on the recommendations put forward in the final report on the pilot surveys, together with discussions and comments given in Time Use Surveys Task Force meetings, the further development work in co-operation with Statistics Finland and Statistics Sweden and last but not least, the valuable comments on draft versions from NSIs in Member States, EFTA countries and Phare countries.

Many have contributed to the development of the guidelines, but in particular I would like to mention Dr. Manfred Ehling of the German Federal Statistical Office, Prof. Jonathan Gershuny of the University of Essex in the UK, Ms. Iiris Niemi of Statistics Finland, Mr. Klas Rydenstam of Statistics Sweden, Ms. Bettina Knauth of Eurostat and Ms. Karen Blanke, formerly of Eurostat

## **2 EUROPEAN TIME USE PILOT SURVEYS**

Eurostat implemented the pilot surveys in order to improve survey tools and to identify possible shortcomings of the survey design. The feasibility of the survey design had to be verified; including unit of study, concept of reported days, contents and layout of the diary, the hierarchical activity coding system and the questionnaires.

Participating countries also got the possibility of becoming more experienced in conducting Time Use Surveys; to get used to the procedure and be aware of problems which may arise on each step of the data collection and processing phase.

The survey design was essentially an amalgamation of the main features of Time Use Surveys previously carried out in a number of EU and EFTA countries. The planning of the pilot surveys was mainly carried out in co-operation with Finland, Germany, Sweden and the UK.

The survey process included the following elements:

- All members (10 years or older) of the sampled households were requested to fill in time diaries for two randomly designated diary days.
- Some time before the first of these days the sampled household was contacted by an interviewer. A face to face interview concerning household circumstances was carried out with a representative of the household (household questionnaire). The household members could either be interviewed or receive an individual questionnaire to be filled in later.
- Two time diaries (and a week diary for recording working hours) per household member were left behind to be filled in during the designated days. The interviewers were instructed to introduce the diary to the household and to demonstrate how to fill it in.
- After the diary days the diaries and the other material were sent back to or picked up by the interviewer
- The interviewer delivered the material to the survey agency.
- Activities and other information in the diaries were coded by coding personnel.
- The information in questionnaires and diaries was coded and entered into the computer.
- The data files were transformed into a common Eurostat format. Eurostat also provided a modulated BLAISE application for data entry.

The samples in the pilot surveys were not representative of the populations, but supposedly problematic groups were over-represented. The pilot surveys could not prove that data is reliable – only the opposite. An objective was to use the pilot surveys in search for problems that can occur in this kind of surveys.

The Eurostat report *Evaluation of the European Time Use Pilot Surveys*, by Klas Rydenstam and Anders Wadeskog of Statistics Sweden, presents the background of the

European Time Use project, the design of the pilot surveys, an overall description of data from 12 participating countries, analysis of data obtained by means of time diaries, and possibilities of using time use data to capture part of the shadow and household economies otherwise often neglected.

### **3 HARMONISATION APPROACH**

The general idea recommended in the pilot evaluation report, and agreed on in the Time Use Task Force was to keep to the pilot design, and only change those things that did not function well. It was also agreed on that the Eurostat guidelines for harmonised European Time Use Surveys should be in the form of a number of recommendations and – if relevant – a minimum requirement for each recommendation.

It was pointed out by the Task Force that the guidelines had to be worked out in close co-operation between Eurostat and the National Statistical Institutes (NSIs), as it is the NSIs that are to apply the guidelines and besides it is the NSIs that have the practical experience of carrying out Time Use Surveys.

The recommendations for harmonised European Time Use Surveys (HETUS) primarily concern design elements that often unintentionally differ between survey designs, and that are regarded as crucial to the TUS results.

The pilot surveys showed that there is a non-response threat, and that response problems are definitely greater at household level than at individual level. In order to minimise non-response we have to consider: unit of study, limiting the respondent burden, and national freedom of action (not prescribing more than necessary).

The chosen harmonisation approach is a mix of input and output harmonisation, giving each Member State space to solve problems that might threaten the outcome of the national survey, while applying a harmonised design as to survey attributes that particularly affect the international comparability of time use statistics.

On the input side, a diary format, some procedures for the data collection and a common activity coding list are strongly recommended. The time diary is self-administered with fixed 10-minute intervals to be filled in during randomly designated diary days. The respondents record the activities in their own words. Diary instructions and examples are also recommended for use in national TUS. Furthermore, a set of common questions are recommended for the interview questionnaires to make possible the breakdown of the national populations into the same domains for analysis of time use. Several of these questions have previously been used in other surveys, e.g. the Labour Force Survey (LFS) and the European Community Household Panel (ECHP).

Other aspects of survey design and survey realisation are left open for the national statistical institutes (NSI) to decide on. This gives the opportunity to use best possible practices for survey organisation and data collection efforts at national level. However, some restraints are essential in order to bring about survey data on which similar and comparable statistics can be estimated (e.g. population delimitation, survey period, randomisation of diary days). The Eurostat project has focused on this.

It is a general presumption for comparability that the estimates refer to well-defined and corresponding populations and population domains. It is agreed that the survey samples should be representative to the population of the respective countries and that persons in institutions and military service are to be excluded.

National samples will not be uniform. Some countries will draw household samples. Other countries will use the individual as sampling unit. All members of the sampled households or the other members of the sampled persons' households may or may not be included in the sample. Sample designs will differ between countries also in other respects.

To survey entire households offers an 'extra' unit for - very interesting - analysis. However, the statistics and tables with the highest priority are based on individual data and concern individuals.

Time is a second sampling dimension. Not only households/individuals but also days are sampled. It has been agreed that the sampled days should cover 'a year'. The suggestion is that 'the year' is equivalent to 12 months, starting any day during the calendar year. It is however unrealistic to hope for an even coverage and an even quality in the measurement of all days and seasons throughout the year. It will probably be particularly difficult to obtain a good measurement that is equally representative of the actual time use during all partitions of the year e.g. Christmas, New Year, Holiday seasons, etc.

If the aim is to set up satellite accounts, data on totals for the productive activities carried out by the whole population during a whole year is required. Productive activities performed during holidays should then be included in the estimates. In other analysis focusing on everyday life, these might be excluded. An analysis could also focus on a specific season.

To make it possible to meet these alternative needs, the date of the diary day has to be retained in the data. A general requirement in this connection is that populations and samples are fully specified and documented, and that the necessary information is merged with the time use data obtained from the respondents.

Achieving internationally comparable time use statistics is associated with great potential rewards, but also with a few possible sacrifices. Backward national comparability might decrease to some degree. The chosen survey design is rather expensive, and in some cases it might be somewhat more expensive than a non-harmonised national design would have been. On the other hand the value of the individual national Time Use Survey increases substantially as results become internationally comparable, not to mention the extra value of all surveys taken together.

## **4 GUIDELINES ON HARMONISED EUROPEAN TIME USE SURVEYS**

### **4.1 Sample design**

Questions concerning sample design were discussed and decided on in the Time Use Task Force meetings in November 1998 and December 1999. The recommendations agreed on are given below.



## Population

The survey is intended to cover the whole of the resident population. However for technical and methodological reasons it is not possible in all countries to include the population living in different kinds of collective households etc. Consequently for the purpose of harmonising the field of survey:

**It is recommended** that the TUS are restricted to persons resident at domestic addresses. This means that persons in institutions (military service, hospitals, prisons etc.) or with no regular abode are not to be included in the TUS.

In the pilot surveys, individuals 10 years and older were included in the samples. In some national reports it was reported that young and elderly people, to some extent, felt overburdened and that the young had more problems than others in filling in the diary. However, the overall impression is that both groups fill in and complete diaries to about the same extent as other age groups, and that they don't experience more problems than others when filling in diaries. The TUS Task Force concluded that:

**It is recommended** that persons of 10 years and older are included in the Time Use Surveys. If that recommendation can not be followed the minimum age limit is 15 years and older.

## Sample

In the pilot survey design the household was adopted as unit of study, meaning that all individuals in the households (10 years and older) were to be included in the survey.

Major arguments for including all household members were that:

- It is costly to collect time use data. One way to limit the cost per collected diary is to maximise the number of diaries resulting from the interviewers' visits to the households.
- It is important to minimise non-response. Individual non-response might decrease if all members of the selected households are included in the survey.
- In almost all statistical tables, analysis and comparisons based on data from earlier Time Use Surveys, the individual is used as unit. However, in order to make it possible to analyse intra-household dependencies, data on time use of all household members are required.
- The household approach contains the individual approach, and it also allows data to be analysed at the individual level.

In the pilot evaluation report it is pointed out that there is little doubt that the individual will be the unit of study also in future international comparisons based on national time use data, meaning that most estimates will concern individuals. The TUS Task Force concluded that:

**It is recommended** that highest priority be given to individual observations and to low individual non-response.

If analyses of different perspectives of intra-household dependencies are also to be possible, data on the time use of households is required, i.e. there has to be data concerning all household members. The TUS Task Force concluded that:

**It is recommended** that all members of the household are included in the sample.

In countries where there are population registers, these will probably be used as frames for drawing probability samples of individuals. To achieve a sample of households, the households of the sampled individuals are generally included in the sample.

In countries where there are no population registers the household is generally the primary sampling unit in social surveys. To achieve a sample of individuals either one individual of the household could be sampled in a second stage, or all individuals of a sampled household could be included.

## 4.2 Diary days

### Number of diary days

In the pilot surveys each household member (10 years or older) should fill in a diary for each of two randomly selected, designated days, one weekday and one weekend day. In a week diary those who were gainfully employed should record their working hours.

Multiple diary days open for a wider range of analyses than a single day. There is an intra-person variation in allocation of time over days. Surveying multiple days e.g. 7 days, or a week, would make data more representative for the individual (or household) and also open for analyses, which could not otherwise be carried out. As the gains in analysis might be significant the recommendation put forward in the evaluation report is that the number of diary days should be increased to three, including a weekday, a Saturday and a Sunday, provided that the risk for non-response is small or negligible.

The question concerning number of diary days was discussed and decided on in the Time Use Task Force meeting in November 1998. The TUS Task Force concluded that:

**It is recommended** to use two diary days, i.e. one weekday (Monday-Friday) and one weekend-day (Saturday and Sunday). The use of only one diary day will also be acceptable, but with only one diary day it is impossible to get any idea of the intra-personal variation. The general rule from this point of view is that the more diary days the better. Considering also the problem of increasing non-response with increasing respondent burden a reasonable choice is two or three diary days.

### Selection of diary days and coverage of the year

In the pilot surveys, various approaches to allocating diary days/dates to individuals/ households were applied. In most instances *dates* were assigned to households at random. If the interviewer for some reason could not get in contact with a sampled household in due time before the first of the assigned diary dates occurred, the diary days could be postponed according to a set of predefined rules. Such a procedure causes decreasing control of the

inclusion probabilities, and therefore it is very important to organise the data collection so that postponing is reduced to a minimum.

In an alternative approach, sets of *days* (e.g. a Thursday and a Saturday) were allocated to households. The interviewers were free to decide which *week* (within a limited range) to assign to the households, but when the first contact had been made with a household the diary dates were set. The rationale for this procedure was to increase the flexibility in the interviewers' work situation, assuming that it might have positive influence on the non-response rate. The downside includes *generally* decreasing control over the sampling procedure, and therefore the inclusion probabilities cannot be calculated correctly. That is the reason why this approach is not recommended.

In the pilot evaluation report it was presumed that the diary days are to be selected at random, covering a time period that is agreed on, preferably a year, and that diary days are assigned in a way that minimises postponing. It was pointed out that how to assign diary days to the households needed to be further discussed.

Under a contract with Eurostat Mr Klas Rydenstam of Statistics Sweden has produced a proposal for recommendations on selection of diary days to be included in the HETUS Guidelines. These recommendations have been approved of by the members of the TUS Task Force.

In the proposal by Mr Rydenstam it is pointed out that multidimensional probability samples are required in Time Use Surveys. Not only households/individuals are sampled, but also the days/dates when the time use of the sampled objects is to be recorded. The general requirement for a probability sample is that all objects in the population have a known probability ( $> 0$ ) to be allocated to the sample. In the case of Time Use Surveys this means that each combination of individuals/households and all days/dates within the surveyed time period has a known probability ( $>0$ ) to be allocated to the sample.

Therefore not only the inclusion probability for each individual/household must be known, but also the probabilities that the assigned days/dates are allocated to the individuals/households.

**It is strongly recommended** that diary days/dates be allocated to households/individuals by a controlled random procedure.

Furthermore, if dates are assigned independently to individuals/households according to a probability sampling design, the variance estimation is simplified. The requirement here is that there is no interdependence between the dates allocated to individual/household *i* and *j* respectively. A slight drawback could be a somewhat uneven distribution of diaries over days, months and seasons. However, this could be taken care of in the estimation.

The survey field work should be spread over 12 consecutive months as average time use over a year is estimated for very different activities, and different seasonal patterns probably exist in many of the activities on which people spend time.

**It is recommended** that the survey days/dates are representative of, and cover a full 12 months period, i.e. 365 consecutive days, preferably including potentially problematic days and periods, e.g. Christmas, New Year, and Easter.

If postponing is necessary it is recommended to apply the rules for postponing given in the *HETUS Guidelines Annex VII Fieldwork*.

### 4.3 Survey forms

In the pilot surveys, information about the household and household members was collected by means of different instruments:

1. *Household questionnaire*
2. *Individual questionnaire*
3. *Diary*
4. *Week diary*

#### Questionnaires

The pilot survey *household questionnaire* was used in a face to face interview, with the purpose to provide information about the household on e.g. household composition, housing and living conditions, and income.

The pilot survey *individual questionnaire* was to be used in a face to face or a telephone interview, or it could be left behind to be filled in by household members 10 years or older. The individual questionnaire was intended to provide information about the individual on e.g. employment and education.

The household and individual questionnaires are not specifically treated in the pilot evaluation report. The full content of the questionnaires has been discussed and decided on in the Time Use Task Force meetings in November 1998 and December 1999. Draft documents have also been sent for comments to the TUS contact persons in Member States, EFTA countries and Phare countries. The TUS Task Force has agreed on the recommendations given below.

The *household* and *individual questionnaires* contain core variables, which are already included in the LFS and/or the ECHP. In order to ensure comparability of basic data characteristics, the same definitions as in the LFS and the ECHP should be used.

**It is recommended** that questions in the TUS questionnaires, which measure variables also measured in the LFS and the ECHP, are adapted to already existing questions in these two surveys.

In order to ensure that data collected in Time Use Surveys carried out in different countries will be comparable, it has been decided to include *Directions for the Survey Forms* as an annex to the HETUS Guidelines. The directions contain definitions and explanations concerning the survey forms, i.e. the household questionnaire, the individual questionnaire and the time diary.

**It is recommended** to use the definitions given in the *Directions for the Survey Forms* in the *HETUS Guidelines Annex I*, and to include in the household questionnaire and the individual questionnaire the questions that are marked 'mandatory'.

**It is recommended** to use the *Household Questionnaire* in the *HETUS Guidelines Annex II*.

**It is recommended** to use the *Individual Questionnaire* in the *HETUS Guidelines Annex III*.

## **Diaries**

The pilot survey *diary* was left behind to be filled in by household members 10 years or older. The *diary* was intended to provide information on the individual's

- main activities
- for two randomly selected, designated days, one week day and one weekend day
- with 10 minutes time-slots
- using his/her own wording

and also to provide additional information on

- parallel activities, if any
- together with whom the activity was performed
- who he/she was helping, if any
- location (coded from information on other variables in the diary) , and
- means on transport (in case of transport)

The respondents did not express that they had problems filling in the left behind diaries. The respondents seemed to record main activities in a reasonable manner, and the information on main activities in the diaries did not seem to be connected to any general or severe problems.

Asking for secondary activities was somewhat more problematic, and they are probably measured with less accuracy than main activities. Nevertheless for several reasons it is important to include secondary activities in the diaries. It makes it easier to fill in the diary for respondents doing more than one activity at a time. Also the information on secondary activities often facilitates the coding of the diaries.

The 'together with whom' question adds important information on the social context of activities, and it is recommended to keep this question.

Collecting information on help to others seemed problematic, and the pilot evaluation report questions its place in the diary.

Location is special as it was not specifically asked for in the diary, but it was coded from information on other variables in the diary. It was regarded satisfactory that more than 90 per cent of the time was coded with regard to location.

Although the respondents were asked to record means of transport, a large proportion of travel time lacks this information.

In principle it was recommended in the evaluation report to keep the design of the diary, but the need for certain improvements was pointed out.

There was also a *week diary*, covering one week, which was used for recording working hours for those who were gainfully employed. A main reason for including the *week diary* in the pilot surveys was to evaluate a parallel instrument registering working hours for a whole week.

The *week diary* provided some interesting information on working hours, but the evaluation report does not conclude that this instrument should also be included in regular Time Use Surveys.

The diaries have been discussed and decided on in the Time Use Task Force meetings. The TUS Task Force concluded that there was no reason to alter the design of the 24-hour diary, but that certain improvements should be introduced according to the proposals given in the evaluation report. The TUS Task Force agreed on not to give any recommendation concerning the inclusion of a week diary.

The Guidelines contain recommendations concerning an *Adult Diary* and a *Child Diary*. The actual diary part is the same in both diaries. They only differ in introductory texts and examples showing how to fill in the diary. The *Adult Diary* also includes an additional example to be handed over to elderly respondents. The diaries have been approved of by the members of the TUS Task Force.

**It is recommended** to use the *Adult Diary* in the *HETUS Guidelines Annex IV*.

**It is recommended** to use the *Child Diary* in the *HETUS Guidelines Annex V*.

If national adaptation of the diary will be made it is important to follow the recommendations below, which were adopted in the Time Use Task Force meeting in November 1998.

**It is recommended** to use fixed 10 minutes time-slots.

**It is recommended** to keep the 'secondary activities' column in the diary.

**It is recommended** to keep the 'with whom' column in the diary.

**It is recommended** that information on location at least be coded by using other diary information on activities. The interviewers could also be trained to give special instructions when introducing the diary to the respondents and/or to call back to the respondents when the diary information is insufficient for coding of location.

#### **4.4 Activity coding list**

One of the objectives of the pilot survey was to check the *hierarchical activity code system*. The activity code system used had three levels, and the number of categories increase with level. The first level contains 10 categories, and at the third level there were more than a hundred activity categories.

The ultimate task in the coding process is to transfer the respondents' written descriptions of their activities into a common activity classification system, so that the same activities are coded to the same categories regardless of who is coding.

Variables in the diary that were coded were main activity, secondary activity and location. In the coding process countries could come across activities not listed in the activity coding list. If the activity was country specific the respective countries were supposed to insert a new code, otherwise the most suitable code was to be chosen. The countries were supposed to document descriptions of all activities that were not mentioned in the original activity coding list, i.e. keeping a *Coding Index*.

From the evaluation report it is seen that a great number of third level categories captured very little time, and a few no time at all. For a number of secondary categories the proportion of time falling in the 'other' category is disproportionately large.

Some countries, mostly eastern European ones, had problems in coding e.g. farming activities, especially when the respondent had not reported farming as a first or second job.

The evaluation report recommends that improvements of the coding system should be discussed and implemented. The coding list has been discussed in the Time Use Task Force meetings, and the experiences from the pilot surveys have been used for revising the activity coding list. The different draft coding lists have continuously been sent to the TUS contact persons for comments. The final activity coding list has been approved of by the members of the TUS Task Force.

**It is recommended** to use the *Activity coding list* in the *HETUS Guidelines Annex VI*. This list should be used for the coding of main activities as well as secondary activities.

## 4.5 Fieldwork

The organisation of fieldwork is not specifically treated in the pilot evaluation report, but it is pointed out that the fieldwork should be organised so that instructions on diary keeping etc. could be given to the respondent in person, and that incomplete diaries could be completed through a renewed contact with the respondent. The importance of timely diary keeping is also stressed.

Under a contract with Eurostat Ms Iiris Niemi and Mr Hannu Pääkkönen of Statistics Finland have produced a proposal for recommendations on actions in connections with TUS fieldwork to be included in the HETUS Guidelines. The proposal is based on experiences from earlier Time Use Surveys carried out in different European countries. The proposed recommendations have been approved of by the members of the TUS Task Force.

**It is recommended** to include actions concerning recruitment and training of interviewers, planning and supervision of interviewer work, keeping the diary, training coders, and the supervision of coding as described in the *HETUS Guidelines Annex VII Fieldwork*.

## 4.6 Data entry

Considering the complexity of the survey forms (mainly the diary) and the importance of receiving harmonised micro data of high quality from the participating countries, EUROSTAT decided to develop a dedicated application for the collection of the harmonised and fully checked pilot Time Use data. For the development of this Time-Use data entry application the software Blaise III version 1.1 was chosen.

The kernel of the application consisted of the data entry programs for the three different survey forms, i.e. the household and the individual questionnaires, and the time diary. These data entry programs were responsible for the creation of the actual survey micro data. Besides these three data entry programs there were maintenance programs which mainly provided the means for translation of reference data into the locally required language.

The participating countries were invited to use this Blaise application. However, they were still free to collect and enter their data in the way they wanted.

For some countries, which chose to use Eurostat's Blaise data entry, data checking using other applications would have taken as long as up to one month while it on average only took a few hours when using the Blaise application. Other countries experienced that the Blaise application did not make data entry any easier. It turned out that the use of the Blaise application was not a guarantee for getting data that were ready to use for tabulations with a computer program.

The pilot evaluation report concludes that an important task should be to work out a set of rules for control of household, individual and diary data respectively, which could be used by all countries conducting time use surveys. The Blaise application seems to be most advantageous to use in connection with the diaries. Household questionnaires and individual questionnaires might differ between countries while diary forms should be the same. If the Blaise application should be used in future main surveys, the evaluation report recommends that the system should be broken up so that the data entry program for the diary forms can be used separately. This is a matter for further analysis and discussion.

In the HETUS Guidelines there are no recommendations concerning *data entry*. There have been no resources made available by Eurostat to further develop the Blaise application. Some of the countries carrying out a harmonised Time Use Survey use the Blaise application from the pilot surveys, but it is not known to what extent they have modified it according to their own needs in connection with the full-scale survey.

## **4.7 Basic tables**

The Time Use Task Force in December 1999 decided that the *Guidelines on Harmonised European Time Use Surveys* should include recommendations concerning a very limited set of specified basic statistics and tables. The Task Force was also in favour of the development of a more comprehensive system, but at a later stage when more countries have carried out harmonised Time Use Surveys.

Under a contract with Eurostat Mr Klas Rydenstam of Statistics Sweden has produced a proposal for recommendations on *basic tables* to be included in the HETUS Guidelines. These recommendations have been approved of by the members of the TUS Task Force.

Whenever a Time Use Survey is carried out in accordance with the harmonised design, a set of standardised tables should be compiled and stored in a database. As more countries conduct



Time Use Surveys, the database will grow, containing an increasing number of comparable tables.

It should be noted that even the limited set of basic reference tables approach will require an organisation for co-ordinating the work, providing support, taking responsibility for the calculation of statistics and tables being uniform, and for compiling and disseminating the tables and the necessary meta-data.

There is no general and limited set of tables that will satisfy anything but the most superficial comparative purposes, and this way of action can only satisfy the most general, unspecified and vague demands on time use statistics. The basic tables aim at awakening interest and indicating the potential utility of the statistics/data, though still illustrating some fundamental national and gender differences in time use and structure of everyday life.

**It is recommended** to produce basic time use tables according to the specifications given in the *HETUS Guidelines Annex VIII Basic tables*, and to deliver these tables electronically to Eurostat.

## 4.8 Estimators

Estimation in Time Use Surveys needs some special steps due to the diary approach and the household sample, and estimators of time use variables may be rather complicated. For instance, the allocation of diary days affects the weighting. Means are calculated in different ways, and in many cases means are calculated by using a ratio estimator composed of estimated total time use and domain size.

Under a contract with Eurostat Mr Paavo Väisänen of Statistics Finland has produced a proposal for recommendations on *estimators* to be included in the HETUS Guidelines. These recommendations have been approved of by the members of the TUS Task Force.

**It is recommended** to follow the guidelines on weighting, non-response adjustment and estimators given in the *HETUS Guidelines Annex IX Estimators*, when producing basic time use tables according to the specifications given in *Annex VIII Basic tables*.

## 4.9 Required meta-information

Meta-information defining the national Time Use Survey, needs to be published together with the results of the survey. This information should be sufficient for understanding how different national surveys relate to one another and to the European guidelines.

**It is recommended** that meta-information is published together with the results of each national Time Use Survey.

The meta-information should include:

- Data on national contact persons
- Main concepts and definitions
  - Population
  - Household
  - Sample

Sample size  
Coverage and sampling frame  
Sample design and selection

- National adaptations of survey forms
- Data collection
  - Fieldwork period
  - Interviewers
  - Contacts with the households
  - Data collection work
  - Response rates
- Data quality
  - National activity coding list
  - Coding staff
  - Data checking and validation
- Estimators
  - Estimators; including calculation of weights, adjustment of weights, variances, formulae, data programs.

## **5 FURTHER WORK IN THE EUROSTAT TIME USE PROJECT**

### **5.1 Actions for promoting international comparisons of time use statistics**

#### **Background**

The Time Use Task Force in December 1999 decided that a very limited set of basic statistics and tables should be specified and included in the *Guidelines for Harmonised European Time Use Surveys*. The Task Force was also in favour of the development of a more comprehensive system, but at a later stage when more countries have carried out harmonised Time Use Surveys. In the earlier mentioned work, done under a contract with Eurostat, Mr Klas Rydenstam of Statistics Sweden has produced a proposal not only for recommendations on *basic tables* to be included in the HETUS Guidelines but also on

- A comprehensive system enabling clients to operate menus in order to design their own tables.
- Merging national micro data files into a common micro database.

#### **A comprehensive system enabling clients to operate menus in order to design their own tables**

One alternative would be to store a large quantity of pre-prepared tables in a database. The system offers guidance for selecting the most relevant statistics. Another alternative would be to build a micro-data base. The client designs the tables by operating a menu system. A choice of analysis variables, domains, estimators, etc. could be offered. The system produces the relevant code, executes the commands, produces the table and delivers it back to the user.

The both alternatives could also be combined. The system then offers multiple entries; one giving access to frequently requested pre-prepared tables, and one giving access to the dynamic menu system for producing user defined ad hoc tables. As the demands on the system changes, it could be developed and adjusted. More pre-prepared tables could be added, new measures, estimators and other options could be introduced for producing ad hoc tables.

The common denominator for the two alternatives would be to use an interactive digital network for dissemination of the statistics. Recent development of software and infrastructure speak in favour of using Internet for such a system.

The comprehensive system approach would require sufficient information for the construction of analogous micro-data files, which includes Horwitz-Thompson weights, calibrated weights, information on diary dates, and all other required information.

### **Merging national micro data files into a common micro database**

The approach with a common micro database should be used for in depth, comparative analysis of the kind that requires direct access to micro data. Confidentiality has to be considered with this approach.

The micro data have to be anonymised, so that there is no risk that an individual statistical unit could be identified through 'all the means that might reasonably be used by a third party to identify the said statistical unit' (EU Council regulation N° 322/97 on Community statistics). Provided that this condition is fulfilled, data could be made more widely available, although direct access to such anonymised data should be restricted by means of research contracts stipulating the strict conditions of data use and access. In particular, micro data should be used exclusively for scientific purposes.

Positive experience with such anonymisation and dissemination of micro data has been gained within the ECHP.

Since January 1999, the Eurostat *ECHP users' database*, currently containing data from all EU Member States except Sweden, is indeed disseminated in the context of research contracts signed with Eurostat. The anonymised and user-friendly micro database may only be used for the purposes specified in the contract. None of the data may be distributed to third parties, and there may not be any attempt to identify any statistical unit. Any data recipient is required to provide Eurostat with a copy of each report produced using ECHP micro data. Any research beyond what is specified in the contract requires Eurostat's written consent.

Eurostat, together with NSIs and the scientific community, is currently drafting a regulation aiming at providing a legal framework that would extend this possibility to other data sources. This regulation would establish, for the purpose of granting access for

scientific purposes to confidential data transmitted to the Community authority, the conditions under which that access will be granted and the rules of co-operation between the Community and national authorities in order to facilitate such access.

The possible dissemination of Time use micro data should be in line with the expected regulation.

## **Who should be responsible for building and running the system?**

### **Comprehensive system**

The feasibility of the comprehensive system approach is indeed depending on the availability of adequate computer systems and software. Systems of the kind do exist, and additional systems are under development. A brief preliminary investigation indicates that *this* is presumably not a narrow sector.

The problem is rather who can and will take responsibility for building and running the system, and how to raise the necessary funding.

It should be noted that in the dynamic part of the comprehensive system which requires access to micro-data, the data does not have to be stored in one, centrally located server. The data may be stored on different servers located at the NSIs, or elsewhere. It should also be noted that the client or user would not necessarily need to have direct access to the micro data. The micro data are blocked for any other access than via a menu system, which only offers pre-defined alternatives.

It is presumably reasonable not to give every interested, potential user access to all parts of a possible comprehensive system. There are strong reasons to reserve the dynamic part of it to a limited, professional group of users who can take responsibility for the output they produce and use. Otherwise there is a risk for incompetent (massive) production of disinformation.

Organising a comprehensive system and taking responsibility for building and running the system is a task that very well could be taken on by some institution outside Eurostat, e.g. a national statistical institute or a university. This has to be further looked into, together with the question of the funding of a comprehensive system.

### **Micro database**

The responsibility for building and maintaining a thoroughly documented, anonymised and user-friendly micro database and for diffusing it could be with Eurostat, with a national statistical institute or some other institution (e.g. data archives). Eurostat tends to be in favour of externalising this responsibility to an NSI or some other institution.

### **Member States opinion**

In the meeting of the Directors of Social Directors in June 2000 the merging of national micro data files into a common micro database, to be used for in-depth comparative analysis, was considered important for research purposes. It was agreed that this option needs further analysis, to determine how the responsibility for building and maintaining a TUS micro database should be allocated.

## **5.2 A satellite account of household production**

In 1997, once pilot time use data had been obtained from four countries (Finland, Italy, Luxembourg and Slovenia) research work in a Household Satellite Accounts project got under way. The aim of this project launched by Eurostat and carried out by Statistics Finland, was to develop a harmonised satellite system on household production and to evaluate the quality and applicability of data from the Time Use pilot Survey for the calculation of unpaid household work. The purpose of a household production satellite account is to bring into a single integrated system the goods and services produced by households for their own use; both those already included in the current accounting system and those that remain excluded.

The report by Statistics Finland on a *Proposal for a Satellite Account of Household Production* was presented and discussed in the TUS Task Force meeting in November 1998. In the discussion it was pointed out that the topic of household satellite accounts must be made more visible in connection with Time Use Surveys as they impose some special demands for the collection of Time use data.

Harmonised European Time Use Surveys will make it possible to construct a satellite account on household production in each country conducting a national survey. The comparability and usefulness of such household satellite accounts calls for uniform rules and procedures in their construction. Proposals for such rules and procedures are included in the Finnish report.

In this meeting it was also clear that the Eurostat unit for National Accounts is interested in this kind of expanded accounts, and finds it feasible that good Time use data should be used as input to a household account. Also SNA's new recommendations from 1993 bring up the division of the System of National Accounts into central framework and satellite accounts. It was expressed that it is important to associate National Accounts and Time Use to find a way forward.

After that the topic of household satellite accounts has been included in the Eurostat Annual Work Programme 2000, where it is stated that "the EU methodology for a satellite account on household production in agreement with national accounts, and based on time use data, will be developed by Eurostat". In order to produce the methodology Eurostat will set up a Household Satellite Accounts Task Force with representatives of Time Use and of National Accounts. To facilitate the work of the Task Force a Eurostat grant is planned for the year 2001.

A first Task Force meeting is intended to take place in December 2000. The work should be finished by the end of 2001, and there will probably be a total of 3-4 Task Force meetings.

## **5.3 Other work**

Besides developing a system for rational dissemination of time use statistics, which also fulfils the needs of time use researchers and analysts, and developing EU methodological guidelines for household satellite accounts, some other work also needs to be done.

### **A Time Use expert group at European level**

Conducting a Time Use Survey, i.e. designing the survey, organising the fieldwork, training interviewers and coding personnel, collecting data, coding, data entry, cleaning the data and calculating estimates for reference and other tables, etc., is not an elementary task.

Mistakes are likely to occur at some stage of the process and no guidelines could ever foresee, and suggest solutions to every possible situation. To somewhat reduce the risk of unintentional deviance from the recommended survey design, to gather experiences of conducting Time Use Surveys, and finding solutions to problems etc., it could be advantageous and perhaps even necessary to appoint a *Time Use group at European level*, which can co-ordinate and, if necessary, give support to countries carrying out Time Use Surveys. Calculating the basic tables recommended in the guidelines will not be a trivial and straightforward task, and there will probably also be need for some support at this stage of the Time Use Survey, ensuring that calculations of statistics and compilations of tables are uniform.

In the meeting of the Directors of Social Directors in June 2000, Member States welcomed the idea of appointing a Time Use group at European level to give support to countries carrying out Time Use Surveys. It was agreed that this group should consist of persons with previous experience and expertise in Time Use Surveys.

### **Special training for coding supervisors**

The *Time Use Activity coding list* is an important tool in the process of harmonising Time use data. To ensure that the coding of activities is done in the same way in all Member States carrying out Time Use Surveys, *special training for coding supervisors* should be considered.

### **Working Group on Time Use Surveys**

There will probably also be a need for annual meetings of the *Working Group on Time Use Surveys* in order to give all Member States the possibility of sharing experiences and discussing improvements of the guidelines for harmonised European Time Use Surveys. Great demands need to be put on the guidelines. Most probably they will have to be revised as problems occur, and it is also important to keep them in line with development of society.

### **Time Use Surveys CIRCA group.**

For less formal communication among TUS contact persons, the first steps have been taken to create a *TUS CIRCA group*. CIRCA will make it possible for members of the group to have access to Time use information and documents over Internet, and also to participate in virtual meetings.

### **Other**

At some point, when a few harmonised Time Use Surveys are completed and the data are registered and cleaned, it would be of great value to carry out an *evaluation* aiming at setting and testing standards for whichever *approach for analyses and comparisons* that will be the chosen outcome of the project on harmonised European Time use statistics.

Another meaningful task would be to carry out an *analysis of Time use data* for one or a few countries in order to *illustrate how the data could be 'better' utilised*. The starting point for such an analysis could be an appropriate policy or research question of current

interest. The results could be published in connection with other output from the harmonised surveys, preferably on an Internet web site to reach a broad audience. A prominent purpose would be to attract the interest from potential users in order to increase the utilisation of the harmonised statistics.

## 6 NATIONAL PLANS TO CARRY OUT TIME USE SURVEYS

The information on national plans to carry out Time Use Surveys has been regularly updated since March 1998.

In March 1998 only two Member States reported that they were to carry out a main Time Use Survey in the near future. In November 1998 this number had increased to five. About one year later, in December 1999, eight Member States reported that they had recently carried out or were to carry out a Time Use Survey very soon. According to the latest plans reported in April 2000 more or less harmonised time use data should be available for ten out of 15 Member States in a few years time.

### National plans to carry out Time Use Surveys by April 2000

Country	Participation	Remarks on funding	Other remarks
Belgium <sup>1</sup>	Ensured		Conducted a TUS in 1999, linked to the HBS. S.s.: 3 000 hh; 2,5 ind/hh.
Denmark <sup>1</sup>	Not ensured	Statistics Denmark will not be able to carry out a TUS without funding from Eurostat or the European Commission.	Denmark has no plans to carry out a TUS in the coming years.
Germany <sup>1</sup>	Ensured		Germany will carry out a TUS in 2001.
Greece <sup>1</sup>	-		No information available from Greece.
Spain <sup>1</sup>	Ensured		Plans to carry out a TUS in 2002.
France <sup>1</sup>	Ensured	Joint funding by the Ministry of Employment and Solidarity.	France carried out a TUS in 1998/99. One diary day, and 'lower age limit' 15 years.
Ireland <sup>1</sup>	Not ensured	The Irish Government has to reach a decision on the funding. However, the absence of joint funding from the European Union could have a negative impact on the decision. Same position as in March 1998. No main survey currently planned.	Execution of a main TUS will depend on the feasibility analysis for a main survey, the availability of resources (human and financial) and the priorities of the CSO.

---

<sup>1</sup> EU Member State

Country	Participation	Remarks on funding	Other remarks
Italy <sup>1</sup>	Ensured		Italy will carry out a TUS in 2001. S.s.: 20 000 hh.
Luxembourg <sup>1</sup>	Conditional	Will carry out a TUS if funding can be solved.	TUS could be linked to the Household Panel.
Netherlands <sup>1</sup>	Conditional	Discussions with the Ministry of Social Affairs	Pilot in Oct. 99 linked to HBS. S.s.: 2 000 hh. Not sure about main TUS.
Norway <sup>2</sup>	Ensured	Financial support from 6 ministries: Culture; Children and Family; Labour and Administration; Environment; Social and Health; Church, Education and Research. Support also from LO and Telenor.	The fieldwork started in February 2000. S.s.: 5 500 ind.
Austria <sup>1</sup>	Conditional	Decision on funding in 2000.	Hopes to conduct a TUS in 2000/01.
Portugal <sup>1</sup>	Ensured	Funding from several organisations: Public Administration, Private Sector, Non Profit Institutions.	The fieldwork was carried out in October/November. 1999. The survey design has been simplified and not all Eurostat guidelines have been followed. S.s.: 5 500 hh
Finland <sup>1</sup>	Ensured	Joint funding from 9 partners.: Ministries of Education; Labour; Agriculture and Forestry; Transport and Communications; STAKES; The Social Insurance Institution; National Consumer Research Centre; The Finnish Broadcasting Company; ETLA	Finland carried out a TUS in March 1999-February 2000. S.s.: 5 000 hh.
Sweden <sup>1</sup>	Ensured	The Government has declared that they will provide funding. Searching for additional funding from other organisations.	The fieldwork will start in early autumn 2000.
Switzerland <sup>2</sup>	Conditional	Political intervention about TUS in summer 1999.	Will find out if it is possible to carry out a less expensive survey.
United Kingdom <sup>1</sup>	Ensured	Joint funding by a consortium of government departments and the Economic and Social Research Council (ESRC). Partners (i.e. sponsors) are interested in international comparisons.	The fieldwork for a pilot TUS started in autumn 1999. Main survey will start in March 2000.

---

<sup>1</sup> EU Member State

<sup>2</sup> EFTA Country



<b>Country</b>	<b>Participation</b>	<b>Remarks on funding</b>	<b>Other remarks</b>
<b>Albania</b> <sup>3</sup>	Conditional	Some money allocated from the HBS? Maybe also some Phare money could be used.	S.s.: 2 000 hh (appr. 8 000 ind.) The TUS might be linked to the HBS.
<b>Bulgaria</b> <sup>3</sup>	<b>Ensured</b>		The fieldwork will start in October 2001. S.s.: 3 000 hh. Persons age 7+ will be covered.
<b>Estonia</b> <sup>3</sup>	<b>Ensured</b>	Government budget. Interest in internationally comparable Time Use data	Fieldwork April 1999 – April 2000. S.s.: 3 500 hh.
<b>Hungary</b> <sup>3</sup>	<b>Ensured</b>		Fieldwork September 1999- September 2000. S.s.: 3 500 hh.
<b>Latvia</b> <sup>3</sup>	<b>Ensured</b>	The TUS is included in the statistical programme.	The fieldwork will start in 2001.
<b>Lithuania</b> <sup>3</sup>	Conditional	Waiting for governmental decision.	Plans to start the fieldwork in 2000.
<b>Macedonia</b> <sup>3</sup>	Conditional	-	Plans to carry out a TUS in 2003, after the 2001 Census.
<b>Poland</b> <sup>3</sup>	Conditional	The funding will probably come from government budget	Ready to carry out a TUS in 2002. S.s.: About 10 000 hh.
<b>Romania</b> <sup>3</sup>	<b>Ensured</b>		A TUS to be carried out April May 2000.
<b>Slovak</b> <sup>3</sup>	Conditional	Financing will be a big problem. Attempt to carry out TUS in co-operation with Ministry of Social Affairs and Family, Ministry of Culture, Ministry of Education, and Ministry of Health	Plans to carry out a TUS in 2002/03
<b>Slovenia</b> <sup>3</sup>	<b>Ensured</b>	Funding by Government, National Telephone Company, Institute of Social Sciences	Fieldwork: 1 April 2000- 31 March 2001. S.s.: 4 500 hh.

---

<sup>3</sup> Phare Country