

## ANNUAL REPORT

STATISTICS ESTONIA 2012



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## DEAR READERS!

The year 2012 and its projects are in the past now, but our work with the data collected continues. The keyword of 2012 was the population and housing census carried out in the first months of the year, with the census moment being 31 December 2011. The 2011 census was the eleventh census in Estonia's history. It stands out for the use of a combined method (survey plus register data). Also, a big share of the census questionnaires were completed online – Estonia achieved the highest rate of participation in the e-census (67%) recorded worldwide so far. Since the amount of information collected is huge, the processing of the census data is expected to take several more years.

In 2012, we also made significant progress in another census-related project. Namely, Statistics Estonia has already started preparations for the next census round. The next census in 2020 will hopefully be a register-based census, which requires extensive and thorough preparations, such as analysis of data availability and development of the methodology, followed by pilot censuses and methodological improvements.

One of the priorities of Statistics Estonia is to reduce the response burden of enterprises and other respondents. Therefore, a major achievement in 2012 was the use of the data of the Commercial Register in order to pre-fill EKOMAR questionnaires (a comprehensive annual questionnaire for enterprises). This is a significant achievement, because the EKOMAR questionnaire is very long and thorough, and thus the pre-filling is very helpful for enterprises. The pre-filling of this particular statistical questionnaire has reduced the time that enterprises spend on its completion by half.

Statistics Estonia has also paid increasingly more attention to the needs of statistics users. The organisation's blog is already three years old and is becoming more and more popular. In 2012, the blog set two new records: the highest number of visitors per year and the highest number of readers per blog post. The consumer price index calculator has also been well received by users. Two new tools were introduced in 2012 – the purchasing power calculator and the personal price index calculator, which are both available on Statistics Estonia's website.

I believe that Statistics Estonia will become an even better partner for both respondents and statistics users, as we continue to improve our cooperation.

Andres Oopkaup  
Director General



## MAIN EVENTS 2012

- The 2011 Population and Housing Census was carried out from 31 December 2011 to 31 March 2012. For the first time in history, Estonian residents had the possibility to enumerate themselves online. This option was used by very many people.
- On 15 June, Statistics Estonia unveiled a commemorative plaque on the former building of the State Statistical Central Bureau, located in Tallinn's Old Town. The State Statistical Central Bureau was the predecessor of Statistics Estonia and laid the foundation for official statistics in Estonia.
- On 25 July, at the Esri International User Conference in San Diego, Statistics Estonia was presented with the Esri Special Achievement in GIS Award for the effective use of geographic information systems during the 2011 Population and Housing Census.
- On 28 September, the cornerstone of Statistics Estonia's new office building, to be completed in autumn 2013, was laid in an official ceremony.
- On 1 November, Mr Andres Oopkaup took office as the new Director General of Statistics Estonia.

## FULFILMENT OF THE STATISTICAL PROGRAMME

The main task of Statistics Estonia is to provide reliable and objective information on the environmental, demographic, social and economic situation and trends in Estonia. For this purpose, Statistics Estonia performs statistical actions. The Government of the Republic of Estonia approves a statistical programme for each year. The programme is prepared for five-year periods and has five major sections: main statistics, non-regular statistics, development actions, statistical analysis and statistical registers. The programme also includes projects funded by Structural Funds and the European Commission.

In 2012, Statistics Estonia performed 206 statistical actions listed in the programme. The projected cost of these actions was 16.2 million euros. The 2011 Population and Housing Census was the most costly action with 9.9 million euros. The 206 statistical actions included 149 annual statistical actions (part of main statistics), 23 one-off or non-regular (carried out after certain intervals) statistical actions, 21 development actions, 11 statistical analysis actions and two statistical registers.

The most important and laborious action in the statistical programme of 2012 was the Population and Housing Census (PHC), which started with the e-census on 31 December 2011. Also, Statistics Estonia continued preparations for the next census – the Register-based Population and Housing Census (REGREL) to be conducted in 2020–2021.

In 2012, 12 statistical actions were left out of the statistical programme.

The statistical actions “Biodiversity” and “Hunting” were left out of the programme, because the data holder (the Estonian Environment Information Centre) publishes the data in full on its website and sends a part of the data to Statistics Estonia. The biodiversity indicators, which are included in the list of sustainable development indicators, are covered by the statistical actions “Indicators of sustainable development” and “Indicators of sustainable development (Dashboard of Sustainability)”. The aggregated data on wild game hunted in Estonia are included in the statistical action “Environmental trends”.

Statistics Estonia stopped the publication of data under the statistical action “Extraction of mineral resources”, because this action has been replaced by the statistical action “Material flow accounts”, where these data are aggregated using a different methodology and a different structure.

The development of the new domain of agri-environmental indicators was suspended for 2012, due to lack of funding. This action will be included again in the statistical programme for 2013–2016.

Another item left out of the programme was the statistical action concerning apple and pear trees grown in Estonia. The data were to be collected in 2012 and published in 2013, but Eurostat decided that Estonia does not need to carry out this survey.

The following actions had been planned for 2012 but were left out of the statistical programme due to lack of funds: survey on the coverage of municipal waste collection; development of a satellite account for pensions and research and development; implementation of a new data transfer program; and preparation of the statistical actions “Use of passenger cars”, “Foreign visitors in Estonia” and Border Survey.

There were 27 new actions in the statistical programme: 25 were featured for the first time ever and two were recurring actions (carried out at an interval of several years). Below, the new and recurring statistical actions in 2012 are outlined by subject area.

### Environment

In this subject area, Statistics Estonia added three new statistical actions to the programme.

Environmental tax accounting began in accordance with the requirements of the European Commission: the 2009 account was compiled. A grant has been received to finance the works in 2012–2014, but there is no financial coverage after that.

Another new statistical action stipulated by the European Commission is the action that provides information about the quantities of pesticides sold in Estonia. This information is required so as to make sure that the substances and products produced or marketed would not be harmful to human and animal health and would not have any undesirable environmental impact. The data have been published in the Statistical Database.

In 2012 and 2013, material flow accounts will be developed using the funds of a European Commission grant. The accounts for 2008–2010 are finished. The first data will be submitted to Eurostat in 2013.

### Economy

Four new statistical actions and one recurring action were added to the programme for 2012.

Statistics Estonia started preparations for the collection of 2012 data for the statistical action “Employer’s labour costs”. The data will be collected in 2013 and published in 2014. This action is carried out once every four years, with data last collected in 2009 (on the year 2008).

At the request of the Ministry of Social Affairs, the statistical questionnaire “Wages and salaries” for October was supplied with an annex to collect data about the wages and hours worked of men and women in enterprises. These data are used to calculate the gender pay gap (statistical action “Gender pay gap”). Data are collected on the periods 2011–2013 and 2015–2016, i.e. the years between the EU Structure of Earnings Surveys.

Statistics Estonia began preparations for the Farm Structure Survey. The survey will be conducted in 2013 and the data will be published in 2014. The data of the previous Farm Structure Survey referred to the census moment 11 September 2007.

To facilitate the estimation of land use and the number of livestock of agricultural holdings, the data of the 2011 Population and Housing Census were used for the calculations in 2012.

The results of the statistical action "Innovation" for the year 2010 were published; the data were collected and processed in 2011. Preparations were made for the next period. This statistical action is carried out every two years.

In 2012, Statistics Estonia had planned to make preparations for the calculation of the additional data of non-life insurance at the request of the Estonian Insurance Association. However, the action was postponed until the first half of 2013, because the European Union had not yet adopted the reporting regulations for insurance enterprises (stipulating the mandatory indicators, among other things).

## Population

There was one major action in population statistics: preparations were made for the use of the Population Register in population size calculation. The data of the 2000 Population and Housing Census were linked to the data on vital events and compared with the data in the Population Register. The action will be the basis for recalculations until the next census.

## Social life

12 new statistical actions were launched and one recurring action was added under social statistics.

Statistics Estonia began the development of the methodology for measuring child well-being. A working group was set up for this purpose. The concept of the action was defined and preparations were made for the analytical publication on child welfare to be published at the end of 2013. The working group also started to develop internationally harmonised well-being indicators – these will allow a comparison of Estonia and other European Union countries, and an in-depth assessment of changes in the population's well-being in Estonia. A pilot survey of the subjective well-being module was conducted, after which the results were analysed and proposals were made for the conduct of a base survey.

The Estonian Social Survey and Labour Force Survey were tested in the new data collection system. Over the period 2012–2015, an integrated social survey system will be developed, based on Eurostat's development plan for social surveys. In 2012, Statistics Estonia made preparations for merging three surveys (the Estonian Social Survey, the Household Budget Survey and the Labour Force Survey).

In order to get an overview of social exclusion in the society, Statistics Estonia launched the statistical action "Material deprivation". The available data sources were identified. Relevant indicators for Estonia were developed, based on an analysis of internationally used indicators of material deprivation. The first results of this statistical action will be published in December 2013.

In addition to the main part of the Social Survey, data are also collected with extra modules that vary each year. In 2012, the extra module focused on living conditions.

The tourism module survey was included in the 2012 programme – it is used to survey the population on domestic and international tourism in those years when the Household Budget Survey is not conducted.

To improve the collection of income data for the Household Budget Survey, Statistics Estonia started the linking of registers that contain income data. Statistics Estonia now uses the income data included in the administrative registers of the Estonian Tax and Customs Board, the Estonian Health Insurance Fund and the Social Insurance Board.

In order to obtain more detailed data on the social protection expenditure of local governments, Statistics Estonia determined the data sources and the data available from these. This work will be completed in 2013.

Preparations were made for collection of data with the "Accidents at work and work-related health problems" module of the Labour Force Survey in 2013.

The auxiliary indicators of labour reserves developed by Eurostat were implemented. The results were published at the end of 2012. Future results will be published as part of the statistical action Labour Force Survey.

The statistical action Safety Survey carried out in 2009 was included in the 2012–2016 statistical programme as a Council of Europe survey. The survey was scheduled for 2012–2014, but has been postponed until 2014 due to changes in Eurostat's programme schedule.

The development action "Production of statistics on living conditions through linking of registers" has been suspended until autumn 2013, when the interim report on the development of the methodology of the register-based population and housing census will be completed.

## Other areas

Statistics Estonia continued preparations for transition to register-based statistics production (ADAM). The goal is to consolidate the data collected in state registers (Commercial Register, Population Register, register of taxable persons) and in statistical registers, thereby creating a reference database for the production of register-based statistics and eliminating duplicate data collection. As a part of this project, the variables of the administrative data collected by the Centre of Registers

and Information Systems were described in iMeta, Statistics Estonia's integrated metadata management system. The description of the variables of administrative data will continue after the development of iMeta and the analysis system has finished.

Statistics Estonia also continued the development of a harmonised methodology for the use of administrative and accounting data in the production of enterprise statistics. Statistics Estonia is coordinating an international sub-project, the aim of which is to create an information centre for the management and online publication of all the project outcomes. The organisation is also testing methodology for two other sub-projects: the timeliness of administrative data and the quality checklist of administrative data. The final report has been prepared and sent to the coordinator of this international project for review.

Statistics Estonia continued the development of the data collection process: specifically the Survey Fieldwork Information System (VVIS) for the planning and conduct of surveys of residents and economic units of Estonia. Pilot surveys of the Estonian Social Survey, the Labour Force Survey and "ICT Usage in Households" were conducted. The organisation and system of pilot surveys will be analysed in order to collect data for the 2013 Farm Structure Survey, conduct a pilot survey of the Health Survey in the second half of 2013, and make the necessary preparations so that all the data for social surveys could be collected with VVIS starting from 2014.

As a new project, Statistics Estonia analysed the Statistical Database tables on social life and population in order to determine whether the statistics published satisfy the consumers' need for information. The tables were reviewed by analysts specialising in these subject areas and the database developments will be executed in 2013.

## Publications

In addition to the regular publications, in 2012 Statistics Estonia also issued the pocket-sized reference book "Ettevõtlus Eestis. Business in Estonia", the publications "Põllumajandusloendus. 2010. Agricultural Census", "Eesti rahvastiku ajakasutus. Time Use of the Population of Estonia" and the e-publication "Loomemajanduse näitajad. Indicators of Cultural Industries".

## Statistical actions not included in the programme

Statistics Estonia also performs actions that are not included in the statistical programme, but are requested by customers.

In 2012, the largest among these were the adult competencies survey "Tean ja oskan" (PIAAC) funded by the European Social Fund and carried out in cooperation with the Ministry of Education and Research (it started in 2010 and the total costs in 2012 were 318,200 euros); and the Household Finance and Consumption Survey requested by the Bank of Estonia, with 38,600 euros spent on preparations and a pilot survey in 2012.

In addition to that, Statistics Estonia fulfilled 262 non-programme orders placed by enterprises, institutions and private individuals. Most of these were small-scale orders for more detailed statistics than publicly available. More than 40% of these orders concerned foreign trade statistics and nearly 40% concerned financial statistics of enterprises. The remaining subject areas accounted for about 20% of all orders. Compared to 2011, there were 20% more orders in 2012. The total cost of the non-programme statistical actions (i.e. the total sum paid by customers) was 13,500 euros.

### International survey on adult competencies (PIAAC)

The survey "Tean ja oskan" (in English: I Know and I Can), internationally known as PIAAC (Programme for the International Assessment of Adult Competencies), is one of the most comprehensive surveys of adult skills in the world. PIAAC focuses on the population aged 16–65 and measures their key competencies (functional reading skills, numeracy and digital literacy). Respondents are also asked for information about their education, other training, employment, use of professional and everyday skills, social capital, health, family and social background. By measuring the key competencies and level of education of adults, the Survey provides a significantly better overview of adult competencies than the information previously available to policy-makers in the participating countries.

The data collection for PIAAC was carried out from August 2011 to May 2012, with more than 135,000 people from 24 countries (incl. Australia, Japan, Korea, USA, Russia and most EU countries) participating in the Survey. There had to be at least 5,000 respondents per language in each country and the required response rate was 70%. The number of participants was the smallest in Sweden (about 4,500 people) and the biggest in Canada (about 25,000 people). The response rate was the lowest in Sweden (45%) and the highest in South Korea (75%). Before the publication of the final results, Estonia was ranked 10th among the countries: there were 7,632 participants with a 63% response rate.

The Organisation for Economic Co-operation and Development (OECD) plans to publish eight reports in 2013–2015 on the basis of PIAAC data, with a part of the funding provided by the European Commission. The first two reports – the general OECD Skills Outlook and the methodological-technical report – will be released in October 2013. The other six reports on specific topics will be published in the following years.

The Nordic PIAAC Network (comprising Finland, Sweden, Denmark, Norway and Estonia) will prepare a Nordic report to be completed in 2014.

Estonia plans to first prepare a general report titled "How smart are we? Adult skills in Estonia and in the world". This report will be released at the same time as the OECD Skills Outlook (i.e. in autumn 2013) and reports on specific topics will be published over 2014–2015.

## 2011 Population and Housing Census – the first paperless census in Estonia

The Population and Housing Census (PHC) was conducted in Estonia from 31 December 2011 to 31 March 2012. The census moment was at 00:00 on 31 December 2011, in accordance with the EC regulation on the reference date. For the first time in Estonia, registers were used for the preparation and organisation of the census and for data processing. Other innovations included the e-census, the use of laptops for the interview census and the use of GPS to determine the spatial coordinates of dwellings (using a map application developed for this purpose). A big challenge was the development of a validation controls system in order to ensure the quality of the data collected.

The census was preceded by a publicity campaign which promoted the e-census and encouraged the public to enumerate themselves online. A census leaflet was posted to every mailbox and a special website was launched at <http://www.stat.ee/rel2011>. Information was provided in Estonian, Russian and English.

The census questionnaire contained obligatory questions, which have been internationally approved, as well as many questions only asked in Estonia and several new questions proposed by stakeholders. For the first time, the questionnaire (with help materials) was available in three languages. Most of the e-census participants were able to complete the questionnaire in their mother tongue or their everyday language. In Estonia, 76% of the e-census questionnaires were completed in Estonian, 23% in Russian and 1% in English.

### E-census

The first stage of data collection – the e-census – began on 31 December and ended on 1 February. People showed great interest in the number and share of e-census participants by county (these figures were published on the census website and updated hourly). The participation in the e-census was very high on the final days; therefore, the period of online enumeration was extended by one day, until 2 February. 67% of all enumerated persons completed the e-census. One of the keys to the success of the e-census was the cooperation with banks in user identification and in directing people to the census (via e-services), since the ID card and Mobile-ID were not used much for user identification.

The good quality of the data was ensured by good public communication and efficient customer support, who answered questions by phone and e-mail. The questionnaire was long, but this did not appear to have any influence on participation in the e-census or the census as a whole; there were no problems with understanding the questions. Nevertheless, respondents with a more mobile lifestyle had difficulties in determining their place of usual residence and the members of their respective household.

Among the permanent residents aged 15 and over, 80% completed the Personal Questionnaire themselves and 55% entered the census environment themselves. Women had a higher participation rate since as much as 61% of those who logged into the census environment were women. Only 38% of the men whose Personal Questionnaire was completed online had logged into the census environment themselves. In case of incorrectly completed questionnaires, the respondents were interviewed – their share was under 1%.

The e-census was followed by data revision – the enumeration lists prepared for enumerators on the basis of the Population Register were corrected by removing the dwellings and persons that had been correctly enumerated online. After the e-census, the workload of the enumerators decreased by at least a third, on average, compared to the original estimate.

### Interview census

The interview census took place from 20 February to 31 March. Estonia was divided into three regions, which were further divided into districts, supervision areas and enumeration areas. Each enumerator had their own enumeration area. The interview census was conducted in 2,000 enumeration areas. The enumeration lists were prepared on the basis of the address records of the Population Register. The enumerators' job was to enumerate all non-enumerated persons, dwellings and households, and to determine the spatial coordinates of all dwellings (incl. those enumerated online) using GPS. Enumerators also had to check the e-census questionnaires and correct possible errors. There were problems with data transmission during the interview census and the enumerators' training, since reliable and fast data communication is not yet available all over Estonia.

Each day the enumerators sent the collected data to Statistics Estonia's database using special software. During the interview census, enumerators could use a support system and they completed a questionnaire almost twice as fast as e-census participants. On the other hand, enumerators spent more time on other activities, such as contacting and persuading the respondents and scheduling and conducting interviews. The census results were presented on the census website, although the published figures were incorrect on some days (which was also noticed by the media).

Active communication continued during the interview census. A special publicity campaign called "Don't be left out of the picture!" was organised towards the end of the interview census, from 20 to 28 March.

The 2011 census was almost totally paperless. According to the census satisfaction survey, more than 90% of the respondents found the enumeration process very nice or nice, and only a few said that it had been unpleasant or very unpleasant. 8.41 million euros in total was spent on data collection.



## Quality of collected data

As an organisational innovation, data revision (incl. coding) took place simultaneously with the data collection – this work was carried out until 23 April in the Survey Fieldwork Information System (VVIS). The next stage of data processing was more complicated; it was carried out in the new Survey Analysis Information System (VAIS). The processing of census data was completed by 31 October.

The biggest problems in ensuring data quality were related to the recording of addresses. This was the first time in Estonia that respondents could write their address themselves. Although the address system ADS had been created right before the census, it had not been fully adopted yet and people were not familiar with this standard. Therefore, the revision of address data required a lot of work from Statistics Estonia's operators and hindered the quick publication of the census results.

Another major problem was that, for several reasons, personal identification codes had not been specified for 10% of respondents in the e-census and about 40% of respondents in the interview census. It was very time-consuming for the operators to assign the right codes.

The general quality of the census data is good, because a great number of logic controls were used both during the e-census and the interview census. These controls disallowed any inconsistent or implausible answers. Non-response was also impossible (or difficult to achieve) in case of most questions, which ensured very good coverage for most variables. There were few contrived or silly answers according to the coders. Missing or incorrect answers could usually be replaced with information from other data sources.

The most obvious and immediate indicator of census quality is the census coverage rate. The criteria for assessing census coverage were developed and established before the census, and the census team made great efforts to achieve the best quality. The extensive publicity played an important role, as it ensured that people had a positive attitude towards the census. A mathematical method was developed to assess coverage. With this method, the information available in registers can be used to decide whether the persons who were not enumerated but are registered in the Population Register as permanent residents are actually living in Estonia or are living abroad.

In December, Statistics Estonia published the estimated number of non-enumerated permanent residents – their share was 2.1% of the enumerated permanent population.

## Publication of results

Several changes have been made compared to the publication of the results of the 2000 census. The most important change is that there are more tables on the 2011 census and these tables contain more data. All the census results, broken down by the main indicators of subject areas, will be published in the Statistical Database.

Other innovations include the possibility to supplement the census tables with visualised statistics using Statistics eXplorer, and the web map application (to be launched in 2013) for exploring geo-referenced census data.

As new census statistics become available, the results will also be published in the regional statistics portal. The census results can be published faster than during the previous censuses thanks to the use of IT tools and solutions.

The preliminary results of the 2011 census were published on 31 May 2012: the age-sex distribution of the population and population figures by county. On 17 August, the number of enumerated permanent residents by citizenship and sex was published. On 30 August, Statistics Estonia published the number of enumerated permanent residents by mother tongue and sex, and the number of permanent residents with Estonian as their mother tongue by ability to speak a dialect and sex.

There has been great interest in the census results. Statistics Estonia has been asked to present the results to the members of the Government and the parliament, to the heads of local government units of Harju county, to scientists and others at various events. The media also reported on the final census results published on 12 December: the population of small settlements and the geographical distribution of the population, including the age-sex distribution in counties, cities and rural municipalities and the changes since the previous census. There was especially great interest in the information published on 19 December, i.e. the main flows of labour migration in Estonia and the socio-economic indicators of the population.

The census year was full of exciting activities, and some achievements were even noticed and recognised on the international level. The utilisation of geographic information systems (GIS) during the 2011 census in Estonia was recognised with the global Esri SAG Award. The data collection application was presented at the United Nations Economic and Social Commission for Asia and the Pacific (ESCAP) seminar "Supporting effective use of information and communication technology in population census operations", attended by methodology and IT executives from 13 countries. In autumn, information seminars were organised for statistics officials from Finland and Russia, focusing on the e-census solutions and other innovations in the census organisation.

## Preparations for transition to register-based population and housing censuses are going according to plan

Since 2010, Statistics Estonia has been preparing for the transition to Register-based Population and Housing Census (REGREL) in the next census round of 2020–2021. In 2012, the main focus of the preparations was still on the development

of the census methodology and the analysis of the data collected in state registers. An interim report will be completed in autumn 2013, which will outline the possibilities, prerequisites and obstacles related to the transition to register-based censuses as well as the necessary actions and measures to make this census possible.

The analysis of registers and the development of methodology will last until August 2013, pursuant to the contract concluded in 2010 with AS Ernst & Young Baltic and the Estonian Institute for Population Studies at Tallinn University. The work is based on the mandatory census variables of the European Union. The analysis is carried out in three stages.

1. During the meta-analysis, the team will analyse the definitions of the census variables and compare these with the data available in state registers, in order to assess the possibility of creating a census variable.
2. For the detailed analysis, the terms of reference will first be defined – the goal of this analysis, the datasets to be used and the methods of analysis.
3. During the detailed analysis, the team will compare state registers with each other and with Statistics Estonia's data, in order to assess the quality of data and the operation of the algorithm.

By the beginning of 2012, most of the variables were in the second stage of analysis (i.e. detailed analysis). As of the end of 2012, the team had completed the detailed analysis of 14 census variables (sex, age, marital status, place of birth, citizenship, level of education, year of arrival in the country, technical characteristics of dwellings), and is now discussing the results of the analysis with the administrators of the registers and preparing relevant proposals. Four variables (place of usual residence, previous place of usual residence, economic sector, subdivisions of current labour status) are currently in the stage of detailed analysis, and preparations are being made for the detailed analysis of the remaining variables. Two variables (occupation and local unit) are not found in databases and registers; the team has submitted its proposals for these variables and negotiations with the Estonian Tax and Customs Board and the Centre of Registers and Information Systems are ongoing.

The final stage of the project in the first half of 2013 will comprise the analysis of the most difficult variables:

- variables requiring the combination of data from different registers (Population Register, State Register of Construction Works, land register) – composition of households and families, property ownership, living conditions;
- complex variables that are related to many registers – current labour status (whether a person is economically active) and the related determination of the employment status (whether the person is an employee or an entrepreneur).

More than 20 databases and registers have been analysed during the development of the methodology.

The development of the REGREL methodology is funded from the state budget and the EU Structural Funds. The main aim is to analyse the suitability of register data for the production of official statistics and to make suggestions for modifying the data structure of registers so that the data necessary for the population and housing census or other statistical actions could be collected from registers.

## Pre-filling reduces the time spent on the completion of statistical questionnaires

For years, Statistics Estonia has worked on reducing the response burden and has been able to find some obvious and some less obvious ways to lower the burden. In 2012 a huge step was taken towards reducing the response burden: Statistics Estonia stopped the collection of duplicate data with annual reports (AR).

The termination of duplicate data collection was preceded by four years of systematic work. In the first years, the list of AR elements was negotiated with the Centre of Registers and Information Systems, the Ministry of Finance and other institutions. The creation of this list was primarily based on the accounting regulations prescribed by the Commercial Code, the Accounting Act and the accounting standards of the Estonian Accounting Standards Board. Where possible, the needs of official statistics were also considered. This was followed by several projects at Statistics Estonia concerning the use of AR data in the production of official statistics. After the implementation of the first taxonomy on 1 January 2010, Statistics Estonia harmonised the statistical questionnaires that ask for some of those indicators that economic units can also submit in their AR. The goal of the harmonisation was to make sure that the definitions and order of the variables asked in questionnaires are as similar to the AR forms as possible. Thus, since 2010, the modified version of the statistical questionnaire EKOMAR (comprehensive annual questionnaire for enterprises) – which has the biggest number of respondents (10,600 economic units in 2011) – has been used. The following sections of EKOMAR have been updated: income statement and net profit well as assets, liabilities and equity. In parallel with that, Statistics Estonia developed its IT systems for the receipt of AR data and for the pre-filling of statistical questionnaires in the electronic data transmission channel (eSTAT).

In order to do away with duplicate data collection, Statistics Estonia started to pre-fill those variables in official statistical questionnaires which, according to the taxonomy, have been submitted to the Commercial Register as part of the annual report. Pre-filling was chosen for the reason that, due to the principle of relevance, Statistics Estonia does not know which variables are specified in the AR and which are not – until the AR has been submitted. The EKOMAR questionnaire could be pre-filled only in slightly more than half of the cases (52.5% of the submitted questionnaires). Above all, the pre-filling rate depended on the time of submission of EKOMAR. Questionnaires submitted after the deadline (1 July) had a higher pre-filling rate than the questionnaires submitted before the deadline. One of the reasons was that the annual reports were not sent to the Commercial Register by the required date. In 2011, only about 60% of enterprises submitted their AR by the deadline,

and about 10% submitted the AR within a few weeks after the deadline. The pre-filling rate was also slightly influenced by the fact that accountants were not sufficiently aware of the pre-filling of statistical questionnaires and submitted the questionnaire earlier than their annual report. The pre-filling of statistical questionnaires with AR data was carried out once every hour, e.g. if the AR was submitted at 9:00, the pre-filled questionnaire was available in eSTAT at 10:00 the latest.

In case of pre-filled EKOMAR questionnaires, 80% of the indicators on average were pre-filled with AR data and respondents had to provide data for the remaining 20% of indicators. The share of pre-filled indicators among all indicators was slightly bigger in case of small enterprises and smaller in case of large enterprises.

Since Statistics Estonia measures the time taken to complete a statistical questionnaire, it is also possible to assess the impact of pre-filling on the enterprises' response burden. According to the respondents, pre-filling had a significant impact on the amount of time they spent on completing the EKOMAR questionnaire. If we compare the same enterprises (who completed the EKOMAR questionnaire) in 2010 and 2012, the median of the time taken to complete a non-pre-filled questionnaire was the same in both years – 3 hours. In case of pre-filled questionnaires, the median time decreased two times – from 3 hours in 2010 to 1.5 hours in 2012.

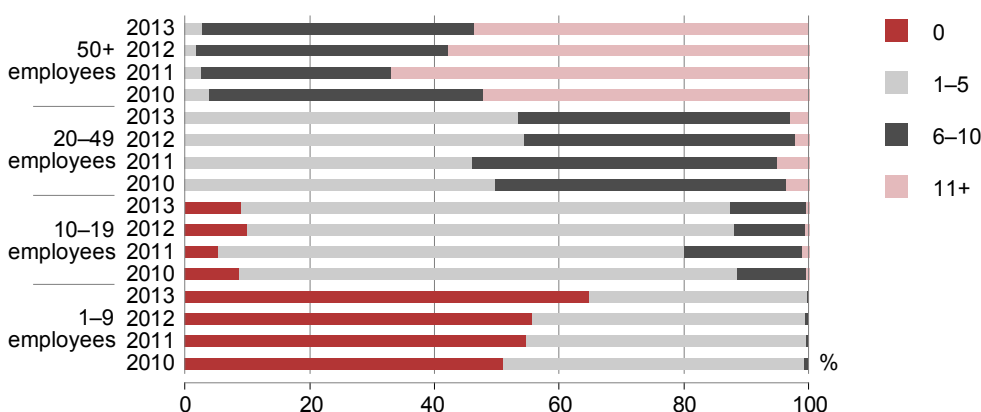
Statistics Estonia wants to reduce the response burden even further, by freeing micro- and small enterprises from the obligation to submit statistical questionnaires that overlap (partially) with the AR taxonomy. To achieve this, Statistics Estonia has started a project that will hopefully help to reduce sample sizes, i.e. the number of enterprises required to complete statistical questionnaires, and utilise AR data to the maximum extent possible. However, the implementation of the project outcome will depend greatly on whether enterprises submit their AR forms by the deadline stipulated in the Commercial Code or not.

## The response burden of enterprises decreased also in 2012

Statistics Estonia uses two indicators to assess response burden: the number of questionnaires per respondent and the time spent on completing a questionnaire. To achieve a more even distribution of the burden between respondents, sample surveys are used if possible (i.e. the questionnaires are completed by only a part of the reference group). Also, survey samples are coordinated, which prevents an overlap between survey samples. Enterprises bear the largest response burden. In 2012, 36,474 enterprises (49% of active enterprises) were required to submit statistical questionnaires – this was 1,700 more than in 2011. The number of entities who are required to complete questionnaires increases as the number of active enterprises increases.

Samples can be coordinated better in the group of small enterprises (1–9 employees), where the number of enterprises is big and relatively small samples will suffice. In 2012, 56% of small enterprises did not have to submit any questionnaires, while 44% submitted 1–5 questionnaires and only a small proportion had to submit more than 5 questionnaires. The average number of questionnaires in this group was 1.8 per respondent. In the next group by size (10–19 employees), almost 90% of enterprises were required to complete a questionnaire of some kind. The burden is considerably bigger for enterprises with 50 or more employees: 58% of these enterprises submitted more than ten questionnaires to Statistics Estonia. In 2012, the response burden was smaller than in the previous years in all enterprise size classes.

### Enterprises by size and number of questionnaires submitted, 2010–2013



The average number of questionnaires per respondent was 2.5, which is smaller than in 2011 (2.6). One enterprise had to submit 25 statistical questionnaires at most. If we consider the frequency of questionnaire completion – 12 separate completions for monthly questionnaires and four completions for quarterly questionnaires – the average number of questionnaires to be completed is 8.6 per enterprise. The response burden depends on the size of the enterprise. Enterprises with 1–9 employees submit fewer than six questionnaires per year on average, while enterprises with 50 or more employees have to complete more than four questionnaires per month on average.

**Enterprises by size, number of questionnaires submitted and reporting frequency, 2012**

Number of persons employed	Average		Maximum	
	Number of questionnaires	Reporting frequency	Number of questionnaires	Reporting frequency
1–9	1.8	5.7	18	94
10–19	3.1	10.8	13	74
20–49	5.5	21.2	17	99
50+	11.5	51.4	25	149
TOTAL	2.5	8.6	25	149

In 2013, the overall response burden of enterprises will be influenced by the non-regular statistical actions “Employer’s labour costs” (carried out every four years) and “Innovation”. At the same time, the response burden of enterprises with 1–9 persons employed has decreased: only a third of active enterprises are required to complete questionnaires. The number of questionnaires to be submitted in 2013 is a preliminary estimate, because over the course of the year new entities will be subjected to reporting (for example, an enterprise may be added to the Intrastat samples if the enterprise’s exports or imports turnover exceeds the set threshold). Also, the samples for some questionnaires are drawn at a later time.

To assess response burden, Statistics Estonia has since 2008 asked respondents to indicate the time spent on completing a questionnaire – this question is included in the questionnaires submitted through the electronic data transmission channel eSTAT. Since the response rate for this question has been relatively low (10–20%), Statistics Estonia uses imputation to calculate the total burden. Questionnaires are grouped by the volume of the questionnaire, and the time spent on the completion of each questionnaire submitted is estimated. Intrastat forms are an exception, because a major share of these questionnaires are received through a special channel where respondents are not asked to specify the time spent on completion. The total time spent on completing Intrastat forms has been estimated based on the Intrastat burden survey conducted in 2007 as well as on the number of questionnaires received and the number of records. From 2008 to 2010, there was a steady decrease in the response burden, whereas in 2011 the average time spent on completing a questionnaire and the aggregated burden increased (compared to 2010). In 2012, the values of both indicators fell again.

**Average time spent on completing a questionnaire by reporting frequency, 2008–2012**

(minutes)

Reporting frequency	1–2 times per year	4 times per year	12 times per year	Total
2008	161	53	120	112
2009	173	47	110	104
2010	142	37	114	99
2011	165	38	125	110
2012	120	34	123	100

On average, the completion of a questionnaire took one hour and 40 minutes in 2012. Annual questionnaires take more time, while quarterly questionnaires are less time-consuming. The average time spent on completing monthly questionnaires is primarily influenced by the extensive Intrastat forms. All in all, Estonian enterprises, agencies and organisations spent 60,100 working days on completing statistical questionnaires in 2012.

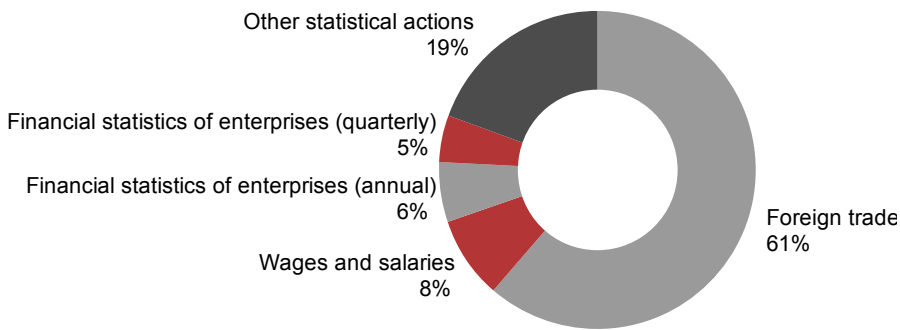
**Total time spent on completing statistical questionnaires, 2010–2012**

(working days)

	Main statistics	of which Intrastat	Non-regular statistics	Total
2010	56 000	30 000	1 200	57 200
2011	61 000	35 000	6 200	67 200
2012	59 900	36 900	200	60 100

In case of the Intrastat forms, the upturn in the economy has meant an increase in the number of respondents and in the volume of the questionnaires, which in turn causes an increase in the response burden of Intrastat. The overall burden has decreased thanks to the use of annual report data for pre-filling the EKOMAR questionnaire and other similar questionnaires. Pre-filling has reduced the time taken to complete EKOMAR questionnaires by half. The following figure outlines those statistical actions which in 2012 had a burden exceeding 1,500 working days.

### Distribution of response burden by statistical action, 2012



In terms of economic activities, the response burden is the biggest for mining and quarrying enterprises, manufacturing enterprises and public administration agencies – they spend more than 1,000 working hours per year on average on the completion of questionnaires. The response burden is the smallest for real estate enterprises and other service enterprises – 200 hours per year on average. The average response burden depends on the size of the enterprise/institution: the average burden of large enterprises/institutions (50 or more employees) is more than ten times higher than the burden of small enterprises/institutions (1–9 employees).

### Data quality in registers in 2012

Statistics Estonia analysed several registers and databases in 2012, as part of the development of the methodology for register-based population and housing censuses (REGREL). The final analysis together with proposals for quality improvement will be completed in summer 2013. The following three analyses were the most important in 2012: analysis of the technical characteristics of dwellings included in the State Register of Construction Works; analysis of data on place of usual residence found in different registers; and re-analysis of the data quality of the 'marital status' variable in the Population Register.

The data in the register of taxable persons of the Estonian Tax and Customs Board were analysed in connection with the publication of the revenue and expenditure of sole proprietors.

#### State Register of Construction Works – technical characteristics of dwellings

Based on data of the State Register of Construction Works as at 31 December 2011, Statistics Estonia analysed the possibility of compiling the following indicators describing dwellings: dwellings by type of building, dwellings by time of construction, useful floor area, number of rooms, water supply system, toilet facilities, washing facilities, central heating.

In case of building type and useful floor area, the data coverage was very good – these variables are undefined for less than 0.04% of dwellings included in the register. On the other hand, the time of construction is unknown for about 32% of buildings (this includes possible data entry errors: buildings with the first year of use specified as before 1800 or after 2015). The quality of the data regarding water supply, central heating and washing facilities available in the main file of the dwelling stock is poor, as it is not possible to distinguish whether there are no facilities or whether their availability is unknown. However, after the inclusion of additional files, the coverage of these variables is over 98%. The same does not apply to the variable 'equipment with lavatory', since even after the inclusion of additional files the existence of a lavatory is unspecified for 22% of dwellings in the State Register of Construction Works. The output files of the register may contain some inconsistencies (regarding equipment with lavatory, washing facilities and central heating) – for example, there may be centrally heated apartment buildings containing apartments without central heating, and vice versa.

#### Coverage of the variable 'place of usual residence' in registers

In 2012, as part of the development of the REGREL methodology, Statistics Estonia assessed the availability of data on place of usual residence in registers and databases. The analysis was based on data available in the registers as at 1 January 2012.

The Population Register (PR) is the most important source of information on place of usual residence. According to the PR, the place of usual residence is located in Estonia for 1,365,538 persons (according to the preliminary results of the 2011 census, the population of Estonia was 1,294,455 as at 31 December 2011). In case of 63,376 persons (4.64%), the PR does not include the full address – some address levels have not been specified.

**Permanent residents by county, 2012**

County	Persons whose place of usual residence is in Estonia	of which those without a full address	%
Harju	569 818	17 036	3.0
Hiiu	10 125	453	4.5
Ida-Viru	161 986	5 241	3.2
Jõgeva	34 330	2 042	5.9
Järva	33 883	2 204	6.5
Lääne	26 872	855	3.2
Lääne-Viru	64 627	3 789	5.9
Põlva	30 465	6 332	20.8
Pärnu	88 965	6 736	7.6
Rapla	36 515	1 210	3.3
Saare	35 590	2 028	5.7
Tartu	149 787	7 134	4.8
Valga	33 288	1 782	5.4
Viljandi	52 166	2 501	4.8
Võru	37 121	4 033	10.9
<b>Total</b>	<b>1 365 538</b>	<b>63 376</b>	<b>4.6</b>

As at 1 December 2012, 92% of the Estonian addresses in the Population Register match the records of the address data system.

In the register of the Estonian Tax and Customs Board, the contact address of a person consists of four parts: country, county, address on a single line (not in the standard format) and the postal code.

In the Estonian Medical Birth Registry, the address codes of a newborn child's parents are provided with three levels (i.e. country, county and local government unit), according to the classification of Estonian administrative units and settlements.

The structure and quality of the addresses in the information system of the Citizenship and Migration Board are similar to the records of the Estonian Tax and Customs Board.

In the social services data register (STAR), address data are available for 7% of the records. Address data are available if the address differs from the address specified in the Population Register and consists of the following fields: county, local government unit, street, building number, apartment number.

The addresses of places of residence recorded in the Population Register, the Estonian Medical Birth Registry and the Tax and Customs Board's register were compared with the addresses in Statistics Estonia's survey database. The address match analysis showed that the quality of address data is the best in the Population Register, although there are problems.

**Re-analysis of the Population Register**

During the development of the methodology for register-based population and housing censuses, Statistics Estonia reviews any previously detected problematic issues when the next data outputs from registers are generated.

The re-analysis of the Population Register showed that the coverage of the 'marital status' variable in the output generated on 1 January 2013 was better than in the previous output (generated a year and a half earlier). At the moment, marital status is specified (based on documents) for 91% of the registered population (compared to 87% a year and a half ago). A year and a half ago, 88% of the population aged 15 and over had a documented marital status, whereas by now marital status has been specified for 90% of the registered population aged 15 and over. The people who do not have a documented marital status in the Population Register can be divided into two groups: for half of them, marital status is undefined, and the marital status specified for the other half is undocumented and may thus be incorrect. In the future, the availability of documented (and thus correct) data on marital status is expected to increase further.

**Analysis of data on sole proprietors**

Sole proprietors report their business income and expenses by completing Form E of the income tax return of natural persons, whereas income from agriculture and forestry must be reported separately. In order to publish the income and expenses of sole proprietors in the Statistical Database by economic activity, Statistics Estonia analysed whether the main economic activity specified by sole proprietors matched the income data in Form E. Data on income from agriculture and forestry and on other income were compared based on the following information: the economic activity specified in the Business Register for Statistical Purposes and the register of taxable persons of the Estonian Tax and Customs Board, and the sole proprietor's activity according to the statistical register of agricultural holdings. Special attention was paid to the sole proprietors whose income fell into the top quartile. Based on the comparison of data sources, rules for determining a sole proprietor's main economic activity were defined.



## Consumers are showing increasing interest in statistics

All the information published by Statistics Estonia is available for free on the organisation's website [www.stat.ee](http://www.stat.ee). The number of visitors to Statistics Estonia's website has increased with each year, but in 2012 the growth was especially great due to the census: in 2012, there were more than 860,000 visits to Statistics Estonia's website, which is 54% more than the year before. Although more than half of these visits occurred in the first two months of the year and were related to the census, there has also been an increase in the use of statistical information.

The e-publication "Piirkondlik portree Eestist" (Regional Portrait of Estonia) on regional statistics has become especially popular – its views grew 46% compared to 2011 and reached 163,200. This shows that users need statistical information about counties, cities and rural municipalities in this format. There has also been a slight increase in the use of the regional statistics portal. The visitor statistics of the portal confirm the findings of user surveys: the need for regional statistics is growing.

The pre-defined tables with domestic or international statistics and the consumer price index calculator are also used more often. This shows that many users prefer to use information presented in a simple format with pre-defined content rather than use the Statistical Database (which contains extensive information and allows users to generate their own tables). Use of the Statistical Database has increased slightly, but the number of users is smaller than in the previous years – it is likely that non-regular users prefer the pre-defined tables to generating tables themselves. At the same time, Statistics Estonia has received fewer requests for information and the requests have become more complex, which indicates that the users of main statistics can find the necessary data themselves.

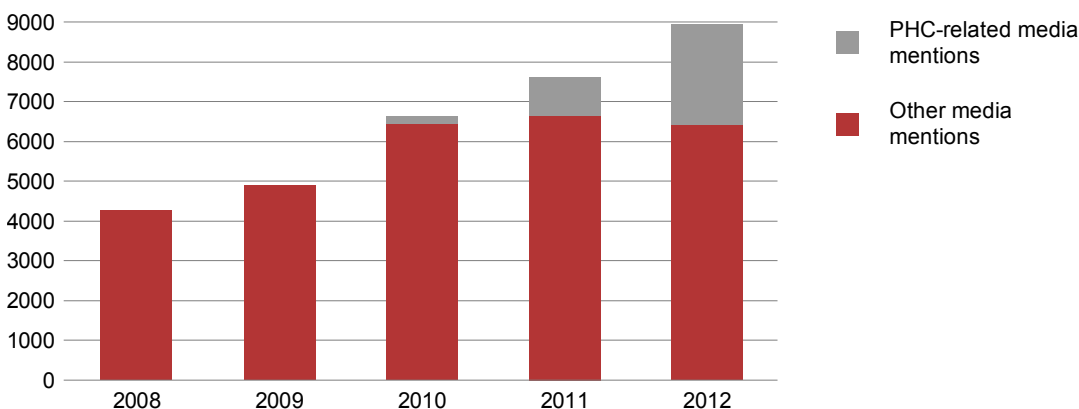
## More than a quarter of media mentions concerned the census

Since the 2011 Population and Housing Census (PHC) was carried out over the first three months of 2012, the media's interest in Statistics Estonia was bigger than usual. In 2012, media channels reported on official statistics or Statistics Estonia's activities on more than 8,900 occasions, which is 18% more than in 2011. On average, there were 24 media mentions per day based on or discussing official statistics – up from 21 mentions per day in 2011.

Census-related media mentions accounted for 28% of the total number of mentions. If we disregard the census-related mentions, the number of media mentions has remained stable in the last three years, around 6,400–6,600.

In 2012, the number of media mentions was the biggest in January (nearly 1,100). The main reason for this new record was the beginning of the census – census-related reporting accounted for two thirds of media mentions in January, for almost a half of media mentions in February and for a third in March. On average, there were 745 media mentions per month in 2012, and the number of mentions was above 500 in every month.

Media mentions, 2008–2012



In 2012, Statistics Estonia issued 163 news releases that were all covered in the media. According to media monitoring data, each news release received 26 media mentions on average (25 in 2011). The media was most interested in news releases concerning the preliminary and revised population size according to the 2011 census, and also in the trends of wages and salaries. Many people viewed the news releases on Statistics Estonia's website – in 2012, the view count exceeded 223,400, which means more than 600 views per day (in 2011, the corresponding figures were 172,700 and 470).

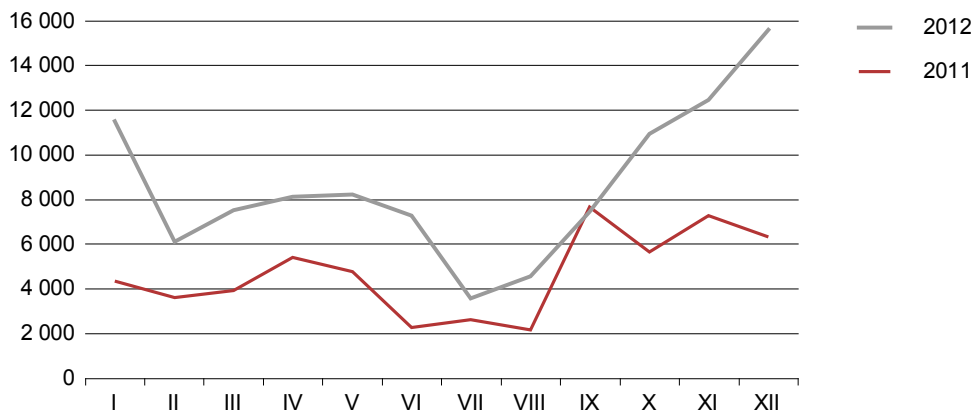
In previous years, media reporting on news releases accounted for more than a half of all media mentions, whereas in 2012 this share was 48%. The reason for this decrease was the rise in other kinds of media mentions. Compared to 2011, the number of media mentions based on Statistics Estonia's blog posts increased and there were more articles by Statistics Estonia's employees published in the media (19 articles, up from 9 articles in 2011). There were also more press events in 2012 (11 in total). Nine of the events were related to the population and housing census, with the topics ranging from census organisation to the preliminary and final census results. Statistics Estonia also held press launches for two publications – "Eesti rahvastiku ajakasutus. Time Use of the Population of Estonia" in May and "Eesti statistika aastaraamat. 2012. Statistical Yearbook of Estonia" in July.

### The statistics blog has been well received

Statistics Estonia's blog (now three years old) has been well received by the public and is becoming increasingly popular, which proves that users are satisfied with the blog. Last year saw two new records in the blog traffic: the highest annual number of visitors and the highest number of readers per blog post. In 2012 the blog received more than 103,000 visitors and the blog post about shortage of brides, written by Statistics Estonia's principal analyst Mihkel Servinski, was read more than 6,100 times of the day of publication.

The blog had 47,000 visitors more than the year before. The average number of visitors per month was 8,600, up from 4,700 in 2011. In 2012 there were 65 blog posts in total. There were nearly 570 media mentions based on the blog posts, which is 30% more than in 2011. The blog has received excellent feedback in the media. The articles published in the blog are more accessible than the traditional analytical overviews. This helps Statistics Estonia to reach target groups that are not regular statistics users – for example, the blog posts have been mentioned on popular women's sites and in the forums of these sites.

**Visitors to Statistics Estonia's blog by month, 2011 and 2012**



### Micro-data collected for statistical purposes are used for research

Since the end of 2010, Statistics Estonia has a new solution for offering research institutions the possibility to use the micro-data at Statistics Estonia's disposal for research purposes. It is important to allow scientists convenient access to data – this way, the data collected as part of the official statistical programme can be used for maximum public benefit. For the use of confidential data for scientific purposes, safe centres have been set up on the premises of Statistics Estonia in Tallinn as well as in Tartu. To offer users greater convenience, the safe centres can also be used via a VPN connection – this way, the number of users is not limited to the number of safe centres and the data on Statistics Estonia's server can be accessed remotely. Very sensitive data (e.g. census data) can only be accessed at a safe centre on Statistics Estonia's premises.

Research institutions have shown increasing interest in the use of micro-data – the number of agreements concluded for use of micro-data was seven in 2010, 13 in 2011 and 27 in 2012. In 2012, the University of Tartu was the most active applicant for use of micro-data, as five agreements were concluded with that institution. Statistics Estonia has accepted most of the applications requesting access to micro-data. All in all, 37 applications for use of micro-data for scientific purposes were received in 2012, with three of these rejected by Statistics Estonia (the purpose of data use was not research-related or the applicant requested data which are also available from another data source not governed by the restrictions prescribed by the Official Statistics Act).

So far, the following data have been used most often for scientific purposes: social statistics (e.g. the Estonian Social Survey, Labour Force Survey, Time Use Survey, Work-life Survey), innovation survey data, foreign trade data and financial statistics of enterprises (EKOMAR questionnaires).

In addition to the safe centres, the data can also be used via a remote execution service. In case of this service, the access rules are not as strict, since the user will not see the data processed.

The research based on the micro-data collected by Statistics Estonia is made available (subject to the author's permission) on Statistics Estonia's website at <http://www.stat.ee/teadustood> (only in Estonian).

### New tools for users: purchasing power calculator and personal price index calculator

The consumer price index calculator – which has become popular among users – was developed further in 2012 with the launch of two new calculators, available on Statistics Estonia's website. The purchasing power calculator allows a comparison of the purchasing power of any sum in different years – the user must enter the sum to be compared (e.g. wages, pension) and select the years to be compared, after which the calculator will calculate the change in purchasing power.



The personal price index calculator is different from the regular consumer price index calculator, since it calculates the change in the price index based on each user's personal expenditure. Since the expenditure structure is different for each person and the statistical average consumer does not exist in reality, it is likely that the change in the personal price index is slightly different from the change in the general consumer price index. With the personal price index calculator, each user can define the expenditure weights based on his/her consumption, and the calculator will calculate how much the user's personal price index has changed.

### New publication on the time use of the population

Once every ten years, Statistics Estonia analyses people's time use. The publication "Eesti rahvastiku ajakasutus. Time Use of the Population of Estonia" published in 2012 is based on the results of the Time Use Survey conducted in 2009–2010. A press launch was held to promote the publication on a wider scale – attendants were given an overview of time spent on paid work and the length of the working day, of volunteer work and of the time use of people with disabilities. Time use was also discussed on the statistics blog and covered extensively in the media.

### The analytical publication on the Agricultural Census was published

Statistics Estonia published the results of the 2010 Agricultural Census already at the end of 2011, but in 2012 the results were analysed in more detail. The special publication "Põllumajandusloendus. 2010. Agricultural Census" was published. It outlines the development of agriculture in Estonia between the two censuses. The topics covered include agricultural land use, crop and livestock farming, use of production methods, and differences by county. There is also a thorough overview of the labour force in agriculture and of rural development. Users who need a quick overview of agriculture in Estonia can refer to the annexes which contain maps and tables with the main indicators.

### New statistical actions in 2013–2017

No.	Name of statistical action	Estimated cost, thousand euros					Reason for inclusion of the action	Type of statistical action
		2013	2014	2015	2016	2017		
1.	Energy accounts	2.8	2.8	2.8	2.8	2.8	EC regulation(s)	Development
2.	Accounts of the environmental protection services and products sector	2.8	2.8	2.8	2.8	2.8	EC regulation(s)	Development
3.	Agri-environmental indicators	25.3	25.3	25.3	25.3	25.3	EC regulation(s)	Main statistics
4.	ESSnet project on the consistency of concepts and methods for business and trade-related statistics	27.3	–	–	–	–	EC regulation(s)	Development
5.	Business services	23.8	–	–	–	–	EC regulation(s)	Development
6.	House price index	23.1	23.1	23.1	23.1	23.1	EC regulation(s)	Main statistics
7.	Producer price index of business services	26.5	26.5	26.5	26.5	26.5	EC regulation(s)	Main statistics
8.	Input-output tables	3.7	–	–	–	–	EC regulation(s)	Non-regular statistics
9.	Restoration of the time series of population statistics	4.5	2.9	–	–	–	Improvement of statistics	Non-regular statistics
10.	Population of Estonia based on census data	–	30.1	–	–	–	Requested by the Ministry of Social Affairs	Statistical analysis
11.	Social trends	22.5	–	–	17.8	–	Requested by the Ministry of Social Affairs	Statistical analysis
12.	Module "Social participation" of the Social Survey	–	36.1	4.0	–	–	EC regulation(s)	Non-regular statistics
13.	Child welfare	25.0	–	–	–	–	Requested by the Ministry of Social Affairs	Statistical analysis
14.	Module "Well-being" of the Social Survey	36.1	1.5	–	–	–	EC regulation(s)	Non-regular statistics
15.	Absolute poverty	22.3	22.3	22.3	22.3	22.3	Requested by the Ministry of Social Affairs	Development in 2013, main statistics starting 2014
16.	Projection of consumption expenditure	6.1	1.0	1.0	–	–	Requested by the Ministry of Social Affairs	Non-regular statistics
17.	Methodology report of the Household Budget Survey	7.3	–	–	–	–	EC regulation(s)	Publication
18.	Success in the labour market	5.7	5.7	5.7	5.7	5.7	Requested by the Ministry of Education and Research	Development in 2013, main statistics starting 2014

**New statistical actions in 2013–2017**
**Cont.**

No.	Name of statistical action	Estimated cost, thousand euros					Reason for inclusion of the action	Type of statistical action
		2013	2014	2015	2016	2017		
19.	Participation in cultural activities	21.7	–	–	–	21.7	Requested by the Ministry of Culture	Non-regular statistics
20.	European health survey	12.5	200.0	63.3	–	–	EC regulation(s)	Non-regular statistics
21.	Welfare and social integration of people with disabilities	–	21.7	–	–	–	Requested by the Ministry of Social Affairs	Main statistics
22.	Module “Immigrant population” of the Labour Force Survey	73.9	11.6	1.9	–	–	EC regulation(s)	Non-regular statistics
23.	Module “Adapting to employment and work organisation” of the Labour Force Survey	–	5.7	1.6	1.9	–	EC regulation(s)	Non-regular statistics
24.	European Safety Survey	–	219.8	60.0	2.0	–	EC regulation(s)	Non-regular statistics
25.	Work-life Survey	6.5	98.0	1.9	–	–	Requested by the Ministry of Social Affairs	Non-regular statistics
26.	Labour market	–	26.0	–	–	–	Requested by the Ministry of Social Affairs	Statistical analysis
27.	Urban Audit	11.4	5.6	–	–	–	EC regulation(s)	Non-regular statistics

– action not scheduled

## WEB AND TELEPHONE INTERVIEWING USED FOR SOCIAL SURVEYS

Since 2003, Statistics Estonia has collected data from the population electronically, meaning that the interviewers enter the data provided by the respondent on a laptop. So far, face-to-face contact between Statistics Estonia's interviewer and the respondent has always been necessary to obtain the data; this contact has usually taken place at the respondent's home. The samples of social surveys include about 70,000 households each year, and in most cases both the main respondent and other members of the household are surveyed. Each year, about 120,000 persons aged over 15 are surveyed in Estonia as part of the social surveys.

In the last decade, the mobility of the population has increased and access to computers and the Internet has improved significantly. Online services (e-Tax Board, State Portal) are used by the majority of Estonian residents, and people's expectations and habits have changed as concerns their dealings with public authorities. In order to achieve a better contact with respondents, Statistics Estonia has to keep up with the general trends and adopt new data submission solutions that are up to date, more convenient for the respondents and less expensive for the state.

In order to modernise the data collection process, Statistics Estonia developed new software for the 2011 Population and Housing Census: the survey fieldwork information system (VVIS), which is a part of eSTAT. This universal software is designed for the collection of data from private individuals and for managing the data collection process. The software allows respondents to choose whether they want to provide the data online or via a face-to-face or phone interview.

The system was first used for data collection during the 2010 Agricultural Census. After slight modifications, it was also used during the population and housing census at the start of 2012. During the Agricultural Census the share of online respondents remained quite low (this option was used by nearly 14% of the listed holders of agricultural holdings), whereas during the 2011 Population and Housing Census the rate of participation in the e-census was very high (67% of the population) – this shows that the Estonian residents can quite easily handle the completion of a relatively long and complicated questionnaire.

The implementation of the new data collection system at Statistics Estonia means significant changes in the collection of data from private individuals. By using new means of data collection, Statistics Estonia hopes to decrease the share of face-to-face interviews, which in turn will reduce the cost of data collection. In addition to face-to-face interviews, online and telephone interviews are also used to collect data in surveys focusing on private individuals. In 2012, Statistics Estonia conducted preliminary pilot surveys for the following surveys: Labour Force Survey, Social Survey and the survey on ICT usage in households.

Since January 2013, Statistics Estonia uses the VVIS information system for the telephone survey to collect data for the population module survey. In the autumn, data for the Farm Structure Survey will be collected online. Statistics Estonia will conduct phone interviews with the respondents who cannot or do not want to complete the questionnaire online.

The new software will be implemented fully (i.e. for all social surveys) in 2014. The methodology of each particular survey determines whether the survey questionnaire can be completed online or via a phone or face-to-face interview. Respondents will be notified of their options in advance.

## STATISTICS ESTONIA RECEIVED AN AWARD FOR EFFECTIVE USE OF GIS TECHNOLOGY

On 25 July 2012, at the Esri International User Conference in San Diego, USA, Statistics Estonia was presented with the Esri Special Achievement in GIS (SAG) Award for the effective use of geographic information systems (GIS) in the 2011 Population and Housing Census (PHC 2011). Esri, one of the world's biggest GIS software companies, recognised Statistics Estonia's efforts in the implementation and use of GIS technology.

GIS technology was used in various stages of the census (mainly for map applications): in the recruitment of enumerators, in the e-census, in the interview census, in the management of the census and in data revision. The GIS specialists were responsible for the proper operation of all the map applications.

The HR specialists of PHC 2011 used a web-based map application (also developed by the GIS staff) in the recruitment of enumerators: the application allowed them to view enumeration areas and the respective workloads (the estimated number of residents and dwellings). The map application was interactive, allowing users to add or remove map layers, depending on the information and level of detail that the user needed.

Address search and map components were used in the e-census questionnaire and in the enumerator interface, in order to collect geo-referenced statistical data. The address search in the e-census environment allowed the user to search for and enter the address of his/her place of residence. In case of any errors (e.g. the address search yielded no results or the location of the address on the map was wrong), the user could mark his/her place of residence on the map. The map application in the enumerator interface was used by enumerators to view and enter the attributes of the object (building), determine the location of new buildings, enter information about any perished buildings and view the updated information on the map. If necessary, the enumerators could use the map application to search for a data object based on the address, to plan the best route considering the landscape and to measure the distance to the next object.

There was also a map interface in the management system of the data collection process. It allowed the enumerator's supervisor to help the enumerator find the location of the data object on the map and to see all the buildings related to the enumerator's data objects (i.e. in the specific enumeration area) as well as the status (not started, incomplete or finished) of the data objects in these buildings all at once. It was also possible to monitor deadlines for each building, in order to assess whether work was on schedule. Through the supervisor's map interface, the fieldwork manager and the census project manager could monitor the progress of the enumeration, based on the levels of the classification of Estonian administrative units and settlements or on the structural division.

The GIS specialists created a web-based map application for the review and revision of the address data collected during the census. This application was useful for the PHC operators, as it allowed them to solve all kinds of address-related tasks. The GIS specialists were also tasked with further revision of the address data, such as assigning unique codes (building IDs) to buildings.

## A BUSY YEAR FOR INTERNATIONAL COOPERATION

As a rule, the Director General of Statistics Estonia is the most prominent on the international level. In 2012, the previous Director General Mr Priit Potisepp attended all the traditional events – the four annual meetings of the European Statistical System Committee in Luxembourg, the 43rd session of the UN Statistical Commission in New York, the meeting of the Baltic Steering Committee held near Vilnius, the meeting of the statistical committee of the Organisation for Economic Co-operation and Development (OECD), the 60th plenary session of the Conference of European Statisticians (CES) in Paris, and the conference of the Director Generals of National Statistical Institutes (DGINS) in Prague. Mr Priit Potisepp was also appointed a member of the Bureau of the Conference of European Statisticians, based on his long-term commitment to the development of the statistical system. The mission of the CES Bureau is to identify any duplication or gaps and thereby improve the coordination of the statistical activities of the member states of the United Nations Economic Commission for Europe (UNECE). The Bureau also prepares the annual plenary sessions. In 2012, the Director General represented Statistics Estonia at a meeting of the CES Bureau and also at two major international conferences.

The annual conference of the International Association for Official Statistics (IAOS) was held in Kiev on 12–14 September. The theme of last year's conference was "Getting our Messages across: Strategies and Best Practices to Ensure the Use of Statistics in Decision Making". Among other things, the conference covered topics such as statistical and graphical presentation techniques, marketing of statistics, statistical literacy, and building and maintaining relationships with customers. Mr Priit Potisepp was invited to make a presentation at one of the parallel sessions; his presentation focused on the competitiveness of national statistical institutes (NSIs) in the production and dissemination of statistics. The main message of the presentation was to encourage the producers of official statistics to keep up with the times, to consider the organisation's future and external developments, and to offer statistics as well as analysis based on these statistics.

From 3 to 5 October, there was a high-level seminar in St Petersburg, focusing on the production of statistics and the modernisation of statistical services. Priit Potisepp made a presentation about new methods of data collection. In his presentation, he discussed Statistics Estonia's experience in the implementation of new technologies for production of statistics.

At the beginning of last year, Statistics Estonia attracted attention for its system of access to statistical micro-data for scientific purposes. Statistics Estonia's Deputy Director General Ms Tuulikki Sillajõe made a presentation on this topic at the seminar "Access to official micro-data for scientific purposes in Eastern European countries" in Bucharest. The presentation attracted so much attention that Ms Sillajõe was invited to speak about Estonia's experience to a wider audience, at the European Data Access Forum in Luxembourg in March. In May, Tuulikki Sillajõe made a presentation about Statistics Estonia at the seminar "Statistics for policymaking: Europe 2020" in Brussels. At the UN seminar on "New Frontiers for Statistical Data Collection" held in Geneva in October, Tuulikki Sillajõe organised the session "Economies of scale from using common tools and methods" and made a presentation about Statistics Estonia's experience in this field. The seminar participants gave this session the highest rating (there were five sessions in total).

The 2011 Population and Housing Census – the most important topic for Statistics Estonia in 2012 – also gained international attention. On 19 April in Moscow, Ms Sillajõe gave an overview of electronic data collection in the Estonian census and conducted a seminar on the questions and controls used in the questionnaire, after which all the participants (from 13 different countries) could complete the e-census questionnaire in Russian or English.

In 2012, there were 28 presentations about the census made by 17 Statistics Estonia's employees at international events and meetings.

But international cooperation is also possible without leaving the country. For example, Statistics Estonia hosted international visitors in Tallinn and contributed to the work of an intergovernmental committee. The study visits by Finnish statisticians in September and Russian colleagues in November were directly motivated by the desire to hear more about Statistics Estonia's solutions for the 2011 census, especially considering the spectacular success of the e-census.

During the third session of the Joint Committee of the Estonian and Kazakhstan Governments held in Tallinn on 27 and 28 August, Statistics Estonia was visited by Ms Zifa Jakupova, the head of the services statistics department of the Agency of Statistics of the Republic of Kazakhstan. Ms Jakupova was mostly interested in our experience in connection with foreign trade and innovation statistics. On 28 August, the third plenary session of the Joint Committee of the Estonian and Kazakhstan Governments was attended by Mr Meelis Somelar, the head of the Planning and International Cooperation Service at Statistics Estonia. Among other things, the parties added a special item to the minutes on the need for closer statistical cooperation between the two countries.

In 2012, Statistics Estonia also organised an international event with many participants. It was an international seminar on the EuroGroups Register held in May and attended by 54 people from 25 EU NSIs and Eurostat. The goal of the EuroGroups Register (EGR) project, launched by Eurostat in 2006, is to collect and consolidate data on multinational enterprise groups and thereby create a reliable and relevant basis for the production of globalisation statistics. In the period 2008–2012, Statistics Estonia participated in the development of the EGR methodology together with colleagues from Italy, the Netherlands and the United Kingdom. At the Tallinn seminar, the achievements so far and future directions were discussed. The project team's efforts and the NSIs' cooperation in the development of EGR were praised by the project leaders and Eurostat.

All of the above shows that in 2012 Statistics Estonia was quite busy on the international level and a good foundation was laid for successful and mutually beneficial projects in 2013 as well.

## PERSONNEL

### The number of employees is stable

At the end of 2012, Statistics Estonia had 357 staff positions. In 2012, an average of 432 public servants (incl. 81 persons in support staff positions and 51 non-staff public servants) worked for Statistics Estonia. The annual average number of public servants was the same as in 2011. Most of the public servants employed for the conduct of the 2011 Population and Housing Census left by mid-2012, but some of them have stayed on to make preparations for the Register-based Population and Housing Census (REGREL).

As in the past, most of the officials working at Statistics Estonia are women, who account for 83% of the staff (83% in 2011, 84% in 2010, 86% in 2009). The majority (84%, like in 2011) of officials have higher education (of these, 19% have a Master's degree or equivalent and 2% hold a doctoral degree), 6.5% have professional secondary education and 10% have secondary education. Compared to 2011, the share of officials with a Master's degree was 3% higher in 2012.

The age distribution is similar to 2010 and 2011: 51–60-year-olds hold the biggest share among both officials and support staff (23% and 26%, respectively). Compared to 2011, the share of 51–60-year-olds among support staff decreased by 12% (from 38% to 26%). At the same time, there was an 8% increase in the share of 21–30-year-olds (from 9% to 17%) and 31–40-year-olds (from 10% to 18%) among the support staff. There were no such big changes in the age distribution of public servants. There was a slight increase in the share of 61–65-year-old public servants (from 11% to 15%) and a small decrease (5%) in the share of 21–40-year-old public servants (from 46% to 41%). In case of public servants, there were no changes in the other age groups.

In 2012, the labour turnover at Statistics Estonia decreased in every group of public servants. Compared to the previous years, it is clear that the labour turnover of senior officials – which rose in 2011 – started to slow down in 2012.

### Labour turnover<sup>a</sup>, 2007–2012 (percentages)

Group of public servants	2007	2008	2009	2010	2011	2012
Higher officials	12.0	11.1	0.0	6.4	4.2	2.1
Senior officials	16.0	17.1	5.6	7.1	9.2	6.0
Junior officials	0.0	0.0	0.0	0.0	0.0	0.0
Support staff	25.6	20.7	9.6 <sup>b</sup>	... <sup>b</sup>	... <sup>b</sup>	... <sup>b</sup>
Non-staff (NS) officials (excl. NS support staff)	37.5	50.0	23.5	7.1	23.3 <sup>c</sup>	11.8 <sup>c</sup>
Total of regular staff and NS officials (excl. NS support staff)	17.6 <sup>d</sup>	17.7	6.3	5.7	8.4	5.1
Regular staff	16.9	16.6	5.6	5.6	6.7	4.2

<sup>a</sup> The number of persons who have resigned from the service is divided by the average number of employees and multiplied by 100. Only the persons who have resigned from the service on their own initiative are included. The table does not include those who have been dismissed, i.e. employees who have resigned from service by agreement of the parties or due to the expiry of a term, unsatisfactory performance in the probationary period or unsuitability for the position (qualifications, health); and deceased persons.

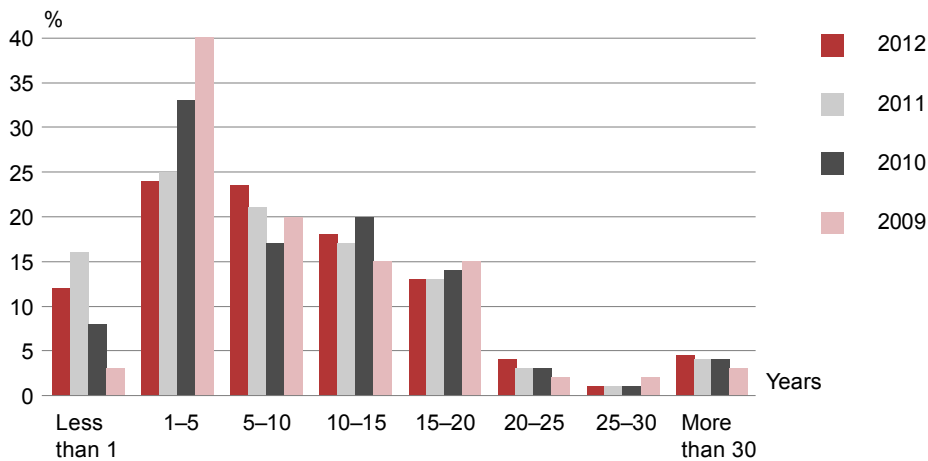
<sup>b</sup> The new Employment Contracts Act, which entered into force on 1 July 2009, no longer provides for resignation on one's own initiative. Therefore, data comparable to the earlier years are not available.

<sup>c</sup> Non-staff officials do not include the employees hired for PHC 2011 (operators, personnel specialists, supervisors, district heads, regional heads, data collection consultants, data revision specialists) and non-staff interviewers (hired for PHC 2011, PIAAC etc.). Specialists hired under contracts of employment are included.

<sup>d</sup> Compared to the data published in Annual Report 2007, the labour turnover calculation methodology has been revised and, for the purpose of accuracy, non-staff officials who have worked for Statistics Estonia temporarily (i.e. for some months) under a contract of services have been excluded from these turnover calculations in 2007 and onwards.

As of 31 December 2012, the biggest share of officials (24%) had 1–5 years of in-house service. Compared to 2011, the share of this group has decreased by 1%. There has also been a decrease in the share of staff with less than one year of in-house service (from 16% to 12%). The share of officials with 5–10 years of in-house service has increased (from 21% to 23.5%). There have been no changes in the other groups, or the change has been under 1%.

### Distribution of Statistics Estonia's officials by length of in-house service as at 31 December, 2009–2012



### Changes in structure

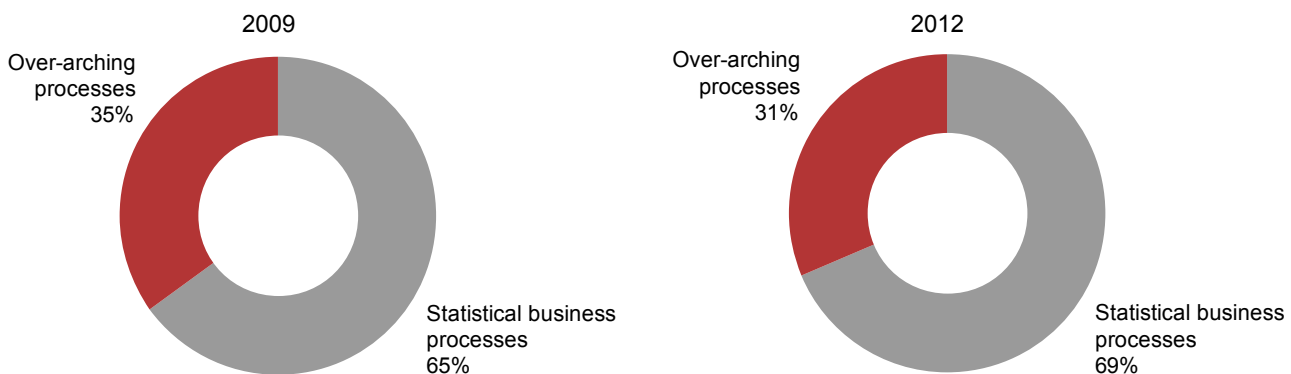
There were no significant changes in Statistics Estonia's structure in 2012. The changes made concerned only some specific staff positions.

### Working time analysis allows activity- and product-based cost accounting

In order to make Statistics Estonia's activities more transparent and comparable and to increase work efficiency, Statistics Estonia has since 2009 used the Timelogic software to track working time. It is a program where all office-based employees mark their everyday working hours, broken down by specific actions and activities. Statistics Estonia uses the working time data for activity- and product-based cost accounting, for calculating the cost of statistical actions and for analysing the production process (to assess process performance, get an overview of resource utilisation, measure efficiency and the related changes, and plan resources).

At Statistics Estonia, activities are divided into two groups according to the UNECE Generic Statistical Business Process Model (GSBPM): statistical business processes and over-arching processes (development, management, administration etc.).

### Division of Statistics Estonia's activities, 2009 and 2012



### Focus on mentorship and supervision skills

In 2012, like in several previous years, the main focus of the training offered to Statistics Estonia's employees was on the production of high-quality statistics. Statistics Estonia's officials mostly attended specialised training courses held outside of Estonia. 15 officials attended training courses offered by the European Statistical Training Programme (ESTP) and two officials attended training courses funded by the International Monetary Fund.

In 2011, Statistics Estonia launched the project "Development of the mentorship and supervision skills of Statistics Estonia's executives", which is funded from the European Union Social Fund's measure "Training and development of employees of the State, local authorities and NGOs". The aim of the project is to offer more support to new employees and implement a systematic and effective settling-in process. In 2011, a two-day training course was organised for 30 mentors and content supervisors and the preparation of guidelines began (with input from external consultants). In 2012, there were seminars to share the experience and participants implemented mentorship and supervision in their everyday work. The newly trained mentors put their new skills and knowledge into practice. At the end of the year, HR specialists met with all the mentees (new



employees; employees whose position and duties had changed significantly; employees who had been on an extended leave from Statistics Estonia) in order to get feedback about the mentors' performance and any additional needs. At the start of 2013, there were meetings with all the mentors to ask for their feedback about their activities. Based on the results, Statistics Estonia will continue to develop the mentorship system.

In 2012, there were also several in-house training seminars focusing, for example, on the procedure for requesting administrative data, on the use of the system of statistical registers, on the new features of eSTAT, and on the seasonal adjustment of time series with the Demetra+ interface. At SAS Enterprise Guide's basic training, participants were taught about standard error and its application. The year 2012 began with the training programme for the enumerators of the 2011 Population and Housing Census (PHC). Statistics Estonia's own employees played a big role in the programme as lecturers. These are just a few examples of in-house training. All the in-house lecturers deserve praise, since in addition to their main job they have found the time to prepare and organise training for Statistics Estonia's employees.

### **Staff events**

The Summer Days 2012 took place at the Paunküla holiday centre. Statistics Estonia's employees could use various facilities (cottages with saunas, courts for ballgames, a large roofed terrace, a children's playground, boats and a raft sauna), go swimming and fishing.

The team games organised by the host created a lot of excitement and required the teams to help each other and work together in order to do well. There was a dance party in the evening and a show dance group performed. The evening ended with a firework display and a huge cake with the PHC logo.

The second day was all about the enumerators' Olympics "Everyone Counts!", which included a quiz, a volleyball match and a relay race. There was a separate programme for children.

The Christmas party of 2012 was held in the lobby of Statistics Estonia's building. The party served as a kind of farewell to the building where Statistics Estonia has been located since 1965 (Statistics Estonia is expected to move into a new building in 2013).

The festivities began already at noon with a game where teams of employees had to locate rooms they do not normally visit and find answers to a list of questions.

Before the party, each department was asked to bake a large gingerbread (to represent a specific art movement) and to mix their own holiday beverage. Both the gingerbread and the beverage had to be presented at the party, after which all guests could have a taste. The new Director General gave a stirring speech at the party. Statistics Estonia's amateur actors performed a piece of forum theatre and there were music and folk dance performances. The party decorations caught a lot of attention – they had mainly been made from used office paper and other recycled materials. The entire party was organised by Statistics Estonia's own staff.

There was another important event during the Christmas party – the statistics museum was opened. The museum does not have its own premises yet. The first exhibition (open until the end of 2012) was put on in the information centre.

The Christmas party for the children of Statistics Estonia's employees was held at the Nõmme cultural centre. The children saw a short Christmas play, after which they received sweet presents from Santa Clause and his helpers. A buffet table was set up in one room, where the children could decorate gingerbread cookies.

The children also helped to decorate the party room, as they had been invited to draw a picture about Christmas. The submitted drawings were displayed at the cultural centre and in Statistics Estonia's lobby after the party.



## FINANCING

### Statistics Estonia's operating expenses and investments, 2008–2012 (thousand euros)

	2008	2009	2010	2011	2012
<b>Total expenses</b> (excl. PHC 2011 and REGREL expenditure)	<b>7 848.0</b>	<b>6 246.6</b>	<b>6 285.2</b>	<b>6 307.6</b>	<b>6 245.4</b>
Operating expenses	7 278.7	5 958.3	6 132.9	6 201.4	6 245.4
IT investments	569.3	288.3	152.3	106.2	0.0
<b>Expenditure from the state revenue</b>	<b>7 268.6</b>	<b>5 730.2</b>	<b>5 359.2</b>	<b>5 229.4</b>	<b>5 181.5</b>
Operating expenses	6 699.3	5 441.9	5 322.1	5 229.4	5 181.5
personnel costs	5 380.3	4 444.4	4 180.8	4 138.4	4 093.6
administration costs	1 319.0	997.5	1 141.3	1 091.0	1 087.9
IT investments	569.3	288.3	37.1	0.0	0.0
<b>Expenditure from the revenue of economic activities</b>	<b>39.9</b>	<b>38.0</b>	<b>62.7</b>	<b>34.1</b>	<b>98.4</b>
Operating expenses	39.9	38.0	62.7	34.1	98.4
personnel costs	17.9	9.5	52.3	33.7	76.5
administration costs	22.0	28.5	10.4	0.4	21.9
<b>Expenditure from supports received from the EU and Structural Funds</b>	<b>539.5</b>	<b>478.4</b>	<b>863.2</b>	<b>1 044.1</b>	<b>965.5</b>
Operating expenses	539.5	478.4	748.0	937.9	965.5
personnel costs	249.2	286.0	524.8	659.5	704.8
administration costs	290.3	192.4	223.2	278.4	260.7
IT investments	0.0	0.0	115.2	106.2	0.0
<b>PHC 2011 expenditure</b>	<b>424.1</b>	<b>1 196.8</b>	<b>1 156.2</b>	<b>4 557.2</b>	<b>8 132.1</b>
Operating expenses	306.9	604.2	875.2	1 823.2	8 086.4
personnel costs	158.4	296.4	559.7	970.2	5 785.1
administration costs	148.5	307.8	315.5	853.0	2 301.3
IT investments	117.2	592.6	281.0	2 734.0	45.7
<b>REGREL expenditure</b>	<b>0.0</b>	<b>0.0</b>	<b>27.9</b>	<b>185.3</b>	<b>501.0</b>
Operating expenses	0.0	0.0	27.9	185.3	333.8
personnel costs	0.0	0.0	22.4	140.9	299.6
administration costs	0.0	0.0	5.5	44.4	34.2
IT investments	0.0	0.0	0.0	0.0	167.2

The funds allocated to Statistics Estonia from the state budget have steadily decreased since 2008. Compared to the 2008 budget, the budget for 2012 was 28.7% smaller. At the same time, the use of foreign funding has increased. The foreign funds have mainly been used for the development of the methodology of new statistical actions, for the development of new IT solutions and for social surveys.

Population and housing censuses receive separate funding from the state budget – this includes the costs of the 2011 Population and Housing Census (PHC 2011) and the costs of the new statistical action connected with preparations for the Register-based Population and Housing Census (REGREL).

## PUBLICATIONS 2012

"Eesti piirkondlik areng. 2012. Regional Development in Estonia"

"Eesti rahvastiku ajakasutus. Time Use of the Population of Estonia"

"Eesti statistika aastaraamat. 2012. Statistical Yearbook of Estonia"

Eesti Statistika Kvartalikiri. Quarterly Bulletin of Statistics Estonia

"Eesti. Arve ja fakte 2012"

"Estonija. Faktõ i Tsifrõ 2012"

"Ettevõtlus Eestis. Business in Estonia"

"Loomemajanduse näitajad. Indicators of Cultural Industries" (e-publication)

"Mini-faits sur l'Estonie 2012"

"Minifacts about Estonia 2012"

"Põllumajandus arvudes. 2011. Agriculture in Figures"

"Põllumajandusloendus. 2010. Agricultural Census"

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