

THE  
ESS  
REPORT

2017



EUROPEAN  
STATISTICAL  
SYSTEM

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# THE ESS REPORT

# 2017



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STATISTICAL  
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# FOREWORD



MARIANA KOTZEVA  
Director-General,  
Eurostat,  
European Commission

Dear readers,

2017 was a significant year for the European Statistical System (ESS). It saw notable progress in a number of areas jointly explored by ESS partners, starting with the latest revision of the European Statistics Code of Practice.

That document first set the standards for developing, producing and disseminating European statistics in 2005. Last year's revision included important updates to reflect the developments of recent years, such as the amendment in 2015 of the Statistical Law and access to new data sources for statistical purposes.

In parallel, progress was made with pilot projects dealing with Big Data to support and complement the production of official statistics. These included looking into the use of Big Data sources, such as smart meters for the calculation of energy consumption, the analysis of vessel information data for transport statistics, the use of mobile phone data to produce population estimates, and 'web scraping' techniques to analyse data from different sources on job vacancies and enterprise characteristics.

The issues related to data privacy were scrutinised throughout 2017 in the course of extensive preparatory work for the 2018 launch of the EU's General Data Protection Regulation (GDPR). The GDPR has important implications for civil society, as it allows citizens to become owners of the data they 'produce' on a daily basis. It will also have a direct impact on the production of official statistics in the future and maintaining the confidence of respondents, who provide their personal information for statistical purposes.

Additionally, in November, members of the European Statistical System agreed on a list of strategic priorities to pursue beyond the year 2020. For the very first time, all Member States were involved in the early stages of these discussions. This inclusive process was a great exercise in collaboration for the whole ESS, which makes us both happy and proud.

The ESS priorities support the next Multiannual Financial Framework of the European Union for the years 2021-2027. Among them are greater user satisfaction through improvements to data quality and communication, more efficient use of resources and modern technologies, as well as investments in new and existing partnerships, including those with the private sector.

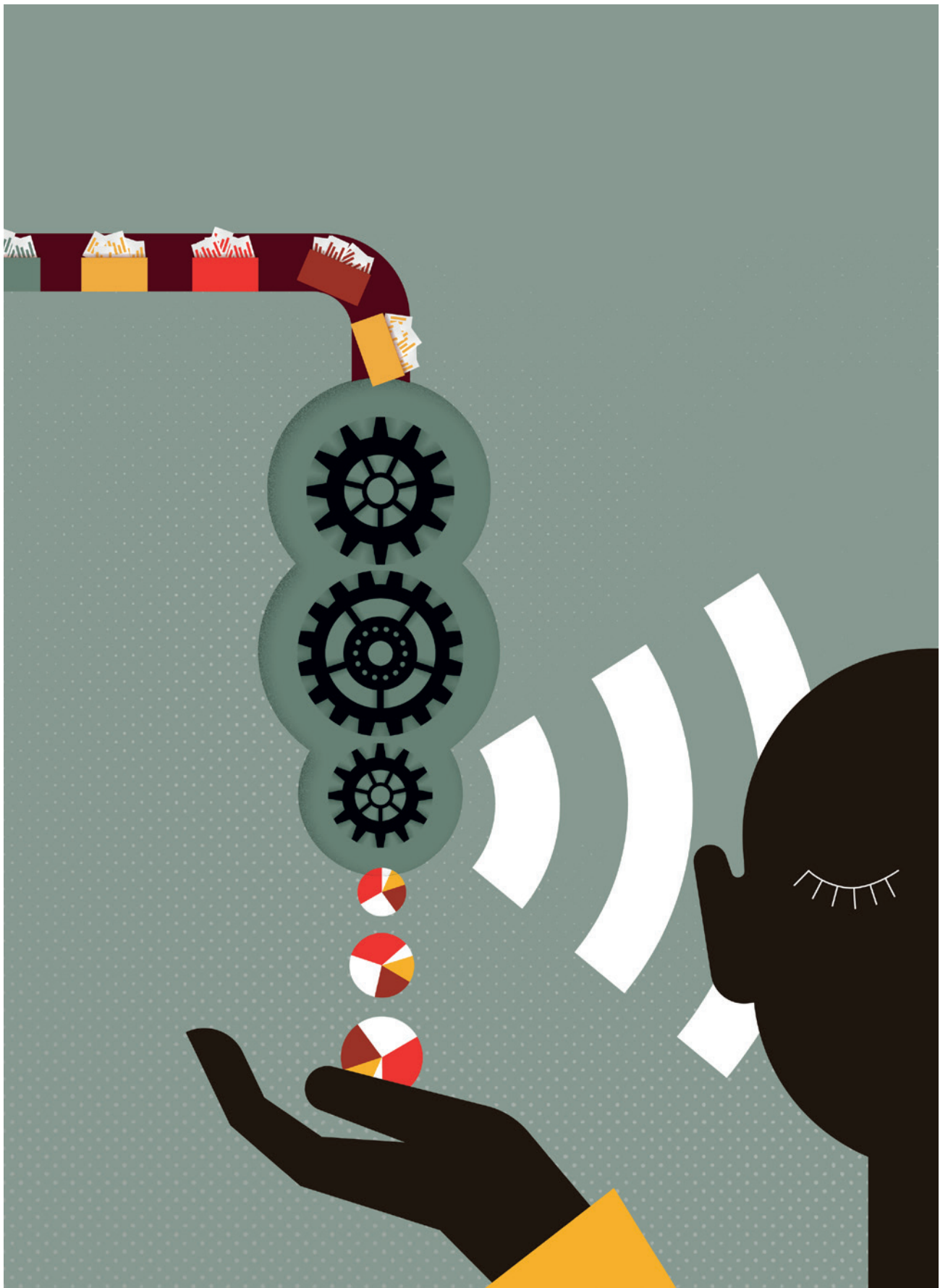
A common thread running through all of these examples is that reliable and trustworthy European statistics are needed more than ever. And not only for use by EU and national policymakers, whose policies shape millions of lives on our continent. Perhaps even more importantly, they are of ever greater significance for European citizens, who need a clear and understandable description and explanation of trends and phenomena, at a moment when post-truth issues dominate so many public debates.

In this issue, you will be able to find out about the organisation and structure of the ESS, and learn, in a separate article, about some of its key achievements in 2017. We also feature an interview with Roberto Gualtieri, Chairman of the Economic and Monetary Affairs Committee at the European Parliament. The role of the rotating Presidency of the European Council is explained, with Malta and Estonia summarising in a joint interview the main results of their 2017 statistical



Council Presidencies. The Report also presents a review of the 20 years of the Harmonised Index of Consumer Prices, with articles from the statistical offices of Ireland and Italy. Finally, it tackles the subject of the circular economy with contributions from France and the Netherlands.

We hope that this issue of the ESS Report will bring the European Statistical System closer to you and help you to better understand changes and statistical trends in today's complicated world. ■





# WHAT IS THE EUROPEAN STATISTICAL SYSTEM?

Statistics have played a significant role in the European Union since its inception. A statistical service of the European Coal and Steel Community was first established in 1953. Its tasks broadened over the years, and when the European Community was founded in 1958, it became a Directorate-General of the European Commission.

The expansion of the European Union and the development of new community policies led to growing demand for high-quality, comparable European statistics. This required closer cooperation between Eurostat and the National Statistical Institutes (NSIs), and paved the way for the foundations of the European Statistical System (ESS) in the early 1990s.

The ESS was established as a partnership between Eurostat, the National Statistical Institutes and Other National Authorities (ONAs), which were the institutions producing European statistics. Today, the ESS includes the 28 EU Member States and the members of the European Free Trade Association (EFTA): Iceland, Liechtenstein, Norway and Switzerland.

The mission of the ESS is to provide all EU citizens with independent, high-quality information on the economy and society at European, national and regional levels, to create the conditions for informed decision-making, research and democratic debate. The Member States collect data and compile statistics, while Eurostat takes the lead in harmonising those statistics, in close cooperation with the national statistical authorities.

## **What does the ESS do?**

Eurostat, together with representatives of the relevant national statistical authorities, develops proposals for new or updated data collections and prepares new statistical methodologies. Years of intensive discussions and fine-tuning can be required to ensure that all Member States' points of view are taken into account and, ultimately, reach the best solution for the whole European Statistical System.

The proposals agreed on are then submitted to the European Statistical System Committee (ESSC), which is the ESS' highest authority. It comprises the Heads of the Member States' NSIs and is chaired by the Director-General of Eurostat. Liechtenstein, Iceland and Norway, through the Agreement of the European Economic Area (EEA), and Switzerland through the Agreement between the EU and the Swiss Confederation on cooperation in the field of statistics, fully participate in the ESSC but do not have the right to vote. Other participants are observers. The ESSC meets four times a year and its purpose is to provide professional guidance for developing, producing and disseminating European statistics, and to discuss strategic issues for the development of the ESS.

## **Who supervises the ESS?**

Both Eurostat and the national statistical authorities of the ESS follow the principles set out in the European Statistics Code of Practice (CoP). The Code of Practice contains a set of 16 principles that guide European statistics, including

Meeting of the Directors-General  
of the National Statistical Institutes  
and Eurostat, Budapest, September 2017



professional independence, impartiality and objectivity, limited burden on respondents, cost effectiveness, accessibility and clarity. The ESS is committed to quality, and the Code of Practice is an important tool to enhance the quality of statistics.

The European Statistical Governance Advisory Board (ESGAB) was created in 2008 to support implementation of the CoP. It is an independent advisory body composed of experts with outstanding skills and experience in the field of statistics. Its task is to provide an overview of the ESS in regard to the implementation of the Code of Practice.

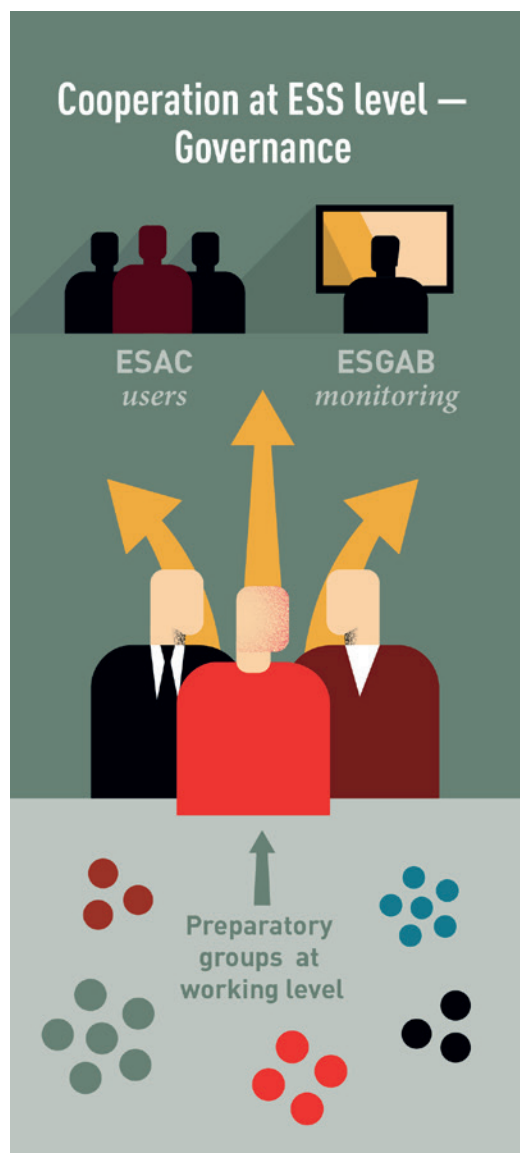
### What is the involvement of data users?

Statisticians strive to produce statistics that satisfy the needs of their users. Regular dialogues with data users take place during the process of preparing statistics at national and European level. The European Statistical Advisory Committee (ESAC) was created in 2008, and represents users and other stakeholders of European statistics, such as the scientific community, social partners and civil society as well as institutional users, such as the Confederation of European Business, Committee of the Regions and the European Parliament. The role of the Committee is to ensure that user requirements are taken into account in the process of developing the Statistical Programmes across the ESS.

### International cooperation

At European level, the ESS works in coordination with other Commission services and agencies, and cooperates with the European System of Central Banks (ESCB).

The ESS also collaborates with international organisations such as the Organisation for Economic Cooperation and Development (OECD), the United Nations, the International Monetary Fund and the World Bank. ■



**Legend:**  
 ESAC = European Statistical Advisory Committee  
 ESGAB = European Statistical Governance Advisory Board  
 ESSC = European Statistical System Committee



# INTERVIEW WITH ROBERTO GUALTIERI

CHAIRMAN OF THE ECONOMIC AND MONETARY  
AFFAIRS COMMITTEE, EUROPEAN PARLIAMENT



Roberto Gualtieri is prominent on the European Statistical System scene. As chairman of the European Parliament's Economic and Monetary Affairs (ECON) committee, he was instrumental in examining, enhancing and passing the extension of the European Statistical Programme 2018-2020 of which he was also the rapporteur. He has been a Member of the European Parliament since 2009 and was elected chair of the Economic and Monetary Affairs Committee in 2014. Mr. Gualtieri is also member of the Brexit Steering Group of the European Parliament and Sherpa for the S&D Group in the Brexit negotiations. He holds a PhD in contemporary history, and he is an associate professor of contemporary history at 'La Sapienza' University, Rome.

**As a member of the European Parliament, what are the main issues for which statistics have played a key role in your work?**

**M**y time in the European Parliament has been fascinating and right from the beginning I have been confronted by the power statistics have in backing-up or refuting an argument. My chairmanship of the ECON committee, in particular, has brought me into nearly daily contact with statistical information and I have been an enthusiastic recipient of the ESS's body of wisdom on a number of cases.

To give an example, the ECON Committee was involved in a major review of the financial assistance the EU gives to Greece, following the crisis. Eurostat and its staff were very much involved in reviewing the Greek statistics. The expertise of the statisticians and the solid data, backed up by detailed methodologies and explanations, helped us to understand the changes underway in the Greek economy and allowed us to navigate these choppy waters with some assurance that our boat would not capsize.

**Can you tell us more about your role in the extension of the European Statistical Programme?**

Our role, together with the Council, was to examine the Commission proposal to extend the initial programme, which ran from 2013-2017, to 2018-2020. The Commission thought that the existing statistical infrastructure was not flexible enough and that the European Statistical System partnership had not yet delivered sufficient cost savings due to a lack of investment.

We looked at the programme in the context of the ten priorities of the Juncker Commission, and we made amendments to enrich the statistics used to implement the programme with statistics capturing employment, quality of life, gender inequality, the situation of migrants, education and healthcare. We also agreed on the need to increase funding for the programme in order to make sure that the

statistics required for monitoring EU policies are available when needed.

The Council was also involved in suggesting amendments to the initial proposal. In the end, the outcome was extremely satisfactory and was adopted at the first reading.

**On a more personal note, how do your studies in history help with your parliamentary work in economics and statistics?**

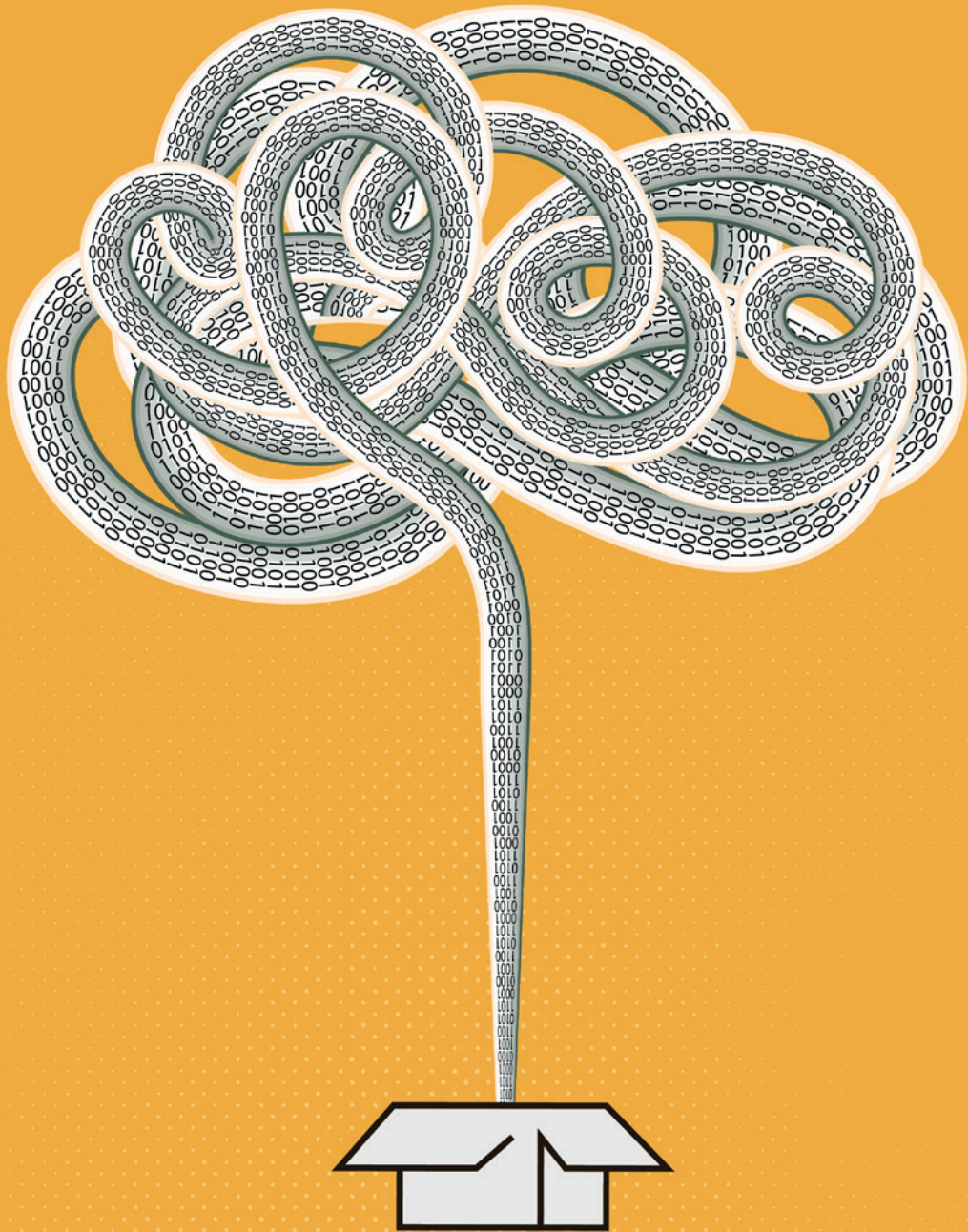
History and politics are my passions. I have not yet mentioned that I have another role in the European Parliament as a member of the Brexit Steering Group and Sherpa of the European Parliament for the Brexit negotiations.

In this regard, I would like to offer you a quote. William Playfair wrote in 1801: "Geography is only a branch of statistics, a knowledge of which is necessary to the well-understanding of the history of nations, as well as their situations relative to each other."

I have sympathy with Playfair's sentiments as they appeal to my personal conviction that good statistics, together with historical knowledge, are an invaluable tool for understanding the reality and to consciously take political decisions. Unfortunately, Brexit has shown us the sad reality that sometimes we do not seem to be able to take these lessons on board. However, my job is to try to ensure that the outcome of these negotiations will provide the best possible solution for all of Europe.

**Do you have a message for the European Statistical System?**

I would like to say that we should all be proud of the quality and the efficiency of the European Statistical System. Your competencies are remarkable and I am sure that, in spite of all the pressures statisticians face, you will continue your excellent work, providing us in Europe with the facts we need to allow us to devise and follow up the policies we make. ■





# THE ESS IN 2017

European statistics produced by members of the European Statistical System (ESS) play a major role in the design, monitoring and assessment of all EU policies. 2017 saw a continued deepening of cooperation between ESS members. This section offers a snapshot of a few of the important themes and statistical initiatives undertaken by ESS partners.

## ESS Vision 2020

The ESS Vision 2020 helps the European Statistical System deal with some of the challenges that official statistics is facing. These challenges include the data revolution – the growing mass of data and data providers; globalisation – how to organise and measure production; the price of statistics – how to produce quality products with reduced budgets; and the future of Europe – the need to base policy on quantitative objectives and high quality indicators.

In 2017, the Vision 2020 continued to deliver concrete results and tools based on the work done in previous years.

At the beginning of 2017, the first EU Big Data Hackathon took place in Brussels. Over 22 teams from European National Statistical Institutes competed to develop the best data product combining official statistics and big data, to support policymakers in tackling challenges in the areas of jobs and skills. The winner was the team from Croatia, with France and Estonia the runners-up. These and other teams took part in a follow-up event in September 2017, giving live demonstrations and presentations of their innovative statistical IT solutions. The teams also offered ideas and suggestions on how to take the work further.

The Big Data project was also the driver behind two pilots, launched in 2017, involving web scraping. For the statistical domains of job vacancies and enterprise characteristics, additional information is gathered by software, which ‘surfs’ the internet collecting specified bits of data from various websites. The legal situation around web scraping techniques is also being examined, as well as ways in which the unstructured information gathered can be turned into meaningful data.

A business case for ‘Smart statistics and Big Data’ was developed in 2017. The aim is to examine the future of statistics in a multi-connected world dominated by the ‘Internet of Things’ and a variety of other smart systems, such as smart devices and sensors. These all produce huge amounts of machine-generated data in real-time.

Work also continued on the use of mobile network data.

A number of NSIs were able to access mobile phone data and are now analysing whether this data can be used to produce population estimates. The ESS partners also developed a number of ideas for short-term indicators and the integration of different data sources into one statistical domain. These ideas were launched as a second phase of the project, which concentrates on the practical aspects of the use of Big Data.

The European System of interoperable statistical Business Registers (ESBRs) successfully set up a methodology and tool



that has allowed the profiling of around 300 multinational enterprise groups present in the EU. Twenty-two ESS Member States agreed to take part in pilot projects to further consolidate ESBRS, increase the efficiency of statistical production and improve the quality of business registers and ultimately business statistics.

From another Vision 2020 project, a static version of the Service Catalogue was released in the autumn. This catalogue contains statistical services, such as software solutions, that can be shared across the ESS. The catalogue will be updated regularly and become interactive in the course of 2018.

In November 2017, the European Statistical System Committee approved the revision of the European Statistics Code of Practice. The Code of Practice is based on 15 principles that apply to all statistical authorities in the European Union. These principles cover the institutional environment, statistical processes and outputs. Among the changes made was reference to the use of multiple, often new, data sources by ESS members. Dating originally from 2005, the Code was last updated in 2011.

2017 was a year to consolidate and push towards finalising several key deliverables in the Vision 2020 Admin project. In particular, the lessons learned and best practices from different work packages are now being distilled into clear guidelines for general reference in the ESS. For instance, the guidelines on statistical methods for the integration of administrative data sources are well advanced. The focus is now gradually shifting to communicating and advertising the outputs. For example, the ESSnet on 'Quality of Multisource Statistics' gave a presentation at the ISI conference in Marrakech in July 2017.

The Vision 2020 DIGICOM project continued to produce tangible output. Among the many highlights of 2017 was the flagship digital publication, 'The life of women and men in Europe', mentioned separately in this section, as well as the extension of the pilot ESS Facebook page 'European Statistics'. Participation in this Facebook page was opened to all ESS National

Statistical Institutes, and it is gaining an enthusiastic following.

The Power from Statistics conference, held in October 2017, was a further highlight. Under the theme 'delivering the evidence of tomorrow', it brought together a diverse group of high-level speakers to discuss topics of relevance to decision-makers and citizens in the future and find out how official statistics could best deliver this information to them.

DIGICOM was also behind the launch of the European Statistics Competition in October. Involving 12 NSIs, it aims to raise interest and promote the ESS within the educational sector and help young people to interpret statistics. National winners will compete in a European final to take place at the end of the school year in 2018.

Finally, in June 2017, Eurostat launched a new section on its website dedicated to experimental statistics. Experimental statistics are compiled from new data sources, such as big data, using new methods and innovative techniques, for instance advanced modelling. Experimental statistics are in the research and development phase. However, once they have been properly tried and tested, they may become official European statistics. By the end of 2017, seven datasets had been published under the 'experimental statistics' heading, ranging from data on world heritage sites to income inequality and poverty indicators.

### **Main legal acts adopted in 2017**

At the beginning of the year, the Commission adopted three regulations relating to the preparation of the 2021 population and housing census. The purpose of this legislation is to ensure that all Member States run their population and housing censuses in the same year, using the same definitions, topics and breakdowns, so that the resultant data are comparable, allowing reliable EU-wide comparisons to be drawn up. The measures are in accordance with the opinion of the European Statistical System Committee.



Another important piece of legislation adopted in 2017 is the extension of the European statistical programme to 2020. The programme originally covered the period from 2013-2017. However, the European Union's multiannual financial framework runs until 2020, as do some of its main strategies, such as Europe 2020 and the Commission's Agenda for Jobs, Growth, Fairness and Democratic Change. The extension thereby ensured that the programming framework for the development, production and dissemination of European statistics would continue until 2020. An appropriate financial envelope for the implementation of the programme from 2018 to 2020 was duly agreed.

Finally, at the end of 2017, the European Parliament and the Council amended the common statistical classification of territorial units (NUTS) as regards the territorial typologies (Tercet). This amendment allows European statistics to be collected, compiled and disseminated at different territorial levels of the European Union. It also allows Eurostat to amend the list of local administrative units if these change in one or more Member States. Eurostat also agrees to publish and maintain all the Member States' typologies using a system of statistical grids of one square kilometre.

In 2017, the Commission also adopted other acts in different statistical domains related to statistics on Energy, Population, Pesticides, Prodcum (industrial production statistics) and Information Society.

### **New European statistical programme 2018-2020 adopted**

The Regulation extending the European Statistical Programme (ESP) for the period 2018-20 was published in the Official Journal on 31 October. This marked the end of a long process, which started in 2014 and involved many consultations and several rounds of discussions within the ESS Committee. The Slovak and Maltese Presidencies were involved in the negotiations with the Council and the European Parliament in 2017, which were successfully concluded in first reading.



The extended programme lays down the objectives, measures and budget for European statistics in the period 2018-2020. It aims to further modernise statistical production, making the statistical infrastructure more agile and strengthening the ESS' capacity to provide more timely data and to bridge certain statistical gaps.

The ESP was granted an increase of EUR 25.2 million to its operational budget over three years to allow it to implement new measures.

The European Parliament and the Council made some amendments to the original proposal. These related mainly to the annex of the regulation, which sets out the statistical infrastructure and objectives of the ESP. New measures include further developing statistics on employment, quality of life, gender inequality, and the situation of migrants.

In the debate on the ESP, the European Parliament underlined that it had always been supportive of the ESS and highlighted the need for European statistics to be as comprehensive, comparable, accurate and timely as possible. The rapporteur in the Parliament, Mr Roberto Gualtieri, emphasised the excellent collaboration with Eurostat and the Presidencies during the negotiations and stressed that the increased budget for European statistics will bring significant added value in terms of outputs and will also benefit Member States' statistical systems.

The extended European Statistical Programme 2018-20 applied as of 1 January 2018.

### **10 years of the EU-Switzerland statistical agreement**

A bilateral agreement between the European Union (EU) and Switzerland on cooperation in the field of statistics came into force on 1 January 2007. The purpose of the agreement is to ensure harmonisation of a range of statistics between Switzerland and the EU so that international comparisons can be made.

To that end, Switzerland agrees to develop, produce and transmit to Eurostat several

European statistics according to EU rules. For its part, Eurostat agrees to store, process and disseminate the data from Switzerland, together with those of the EU Member States and the EEA EFTA States (Iceland, Liechtenstein and Norway).

In addition, the agreement entitles Switzerland to participate in the European Statistical System (ESS) and in the European Statistical Programme. Swiss experts can attend ESS meetings at committee, working group and task force level. The European statistical training courses and statistical programmes and projects managed by Eurostat are also open to Swiss experts.

The agreement has had advantages for both Switzerland and the EU. For Switzerland, the agreement increases its statistical visibility in Europe and allows it to participate in shaping ESS decisions. In addition, Swiss experts benefit from the exchange of knowledge and experience with their colleagues from Eurostat, the EU and the EEA EFTA States, for example concerning the modernisation of European statistical production.

From the EU perspective, the agreement also brings benefits. Upon signature, Switzerland also signed up to parts of the *'acquis communautaire'*, meaning that it agreed to abide by a range of EU legal acts in the field of statistics. Switzerland also makes an annual financial contribution to the European Statistical Programme to cover all the costs of Swiss participation, and regularly sends national experts who are seconded to Eurostat for a period.

Over the ten years, the EU-Swiss relationship in the field of statistics has continued to grow. The agreement was extended to cover additional European statistics, such as balance of payments statistics, economic accounts for agriculture, and livestock and meat statistics.

All in all, the statistical cooperation between the EU and Switzerland has resulted in more coherent and comparable Swiss data. This allows regular, detailed statistical comparisons to be made across the ESS, to the benefit of users both in Switzerland and in the EU.

## Launch of two new interactive digital publications

Eurostat launched two new digital publications in 2017: ‘Digital economy & society in the EU’ and ‘The life of women and men in Europe’.

Eurostat created digital publications as a new and innovative way of publishing statistics, complementing its traditional printed and PDF publications. Both publications combine a wide range of digital tools, such as interactive visualisation tools, infographics, videos and animations, with short and easily understandable texts.

These publications allow Eurostat data to be presented in an attractive and understandable way to all types of users, from citizens to journalists, researchers to decision makers. They



also offer a way of reaching new types of users, in particular young people.

Producing digital publications is truly a multi-disciplinary team effort, involving statisticians, communication experts, IT staff, web and graphic designers, and video producers.

‘Digital economy & society in the EU’ was launched in June. The aim of the publication is to help EU citizens understand the challenges our digital society is facing by presenting easily understandable statistics on ICT-related topics in various ways.

‘The life of women and men in Europe – a statistical portrait’ was released in October. It compares women and men in their daily lives and shows how similar or different their everyday lives are. This publication was produced in collaboration with the National Statistical Institutes of the EU Member States and the EFTA countries and is available in most of their official languages.

The feedback received for both publications has been very positive and has helped with our efforts to make statistical information accessible to all.

## New EU 2030 Agenda for Sustainable Development Indicators

Sustainable development has been at the heart of European policy for a long time, firmly anchored in the European Treaties. The EU is committed to development that meets the needs of the present without compromising the ability of future generations to meet their own needs. Sustainable development is a vision of progress that reconciles economic development, protection of the environment, peaceful societies and social inclusion.

The UN 2030 Agenda for Sustainable Development, with its 17 Sustainable Development Goals (SDGs), builds on the experience of the Millennium Declaration and Millennium Development Goals, which expired at the end of 2015. The EU is committed to playing an active role in maximising progress

towards the SDGs, as outlined in the European Commission's Communication 'Next steps for a sustainable European future: European Union action for sustainability'.

Regular monitoring of progress towards the 17 SDGs and their 169 targets is essential. The ESS is already contributing to global monitoring and reporting of the SDGs, and the National Statistical Institutes are at the heart of monitoring national progress towards the SDGs.

At EU level, Eurostat coordinated the development of an EU SDG indicator set to monitor progress towards the SDGs in an EU

context, in cooperation with other Commission services and Eurostat's partners in the ESS. The indicator set received the favourable opinion of the European Statistical System Committee in May 2017, and comprises 100 indicators, structured along the 17 SDGs. Of these indicators, 41 are 'multi-purpose', meaning they are used to monitor more than one goal.

Most of the data used to compile the indicators stem from the standard Eurostat collection of statistics through the European Statistical System (ESS), but a number of other data sources were also used. Eurostat released the first yearly monitoring report in November 2017, based on the EU SDG set. The data presented in the report were mainly extracted in late October 2017.

The EU SDG indicator set will be reviewed annually to take into account new indicators as methodologies, technologies and data sources evolve over time, and to factor in policy developments. A review is currently ongoing and National Statistical Institutes have been consulted. The expectation is that the review will lead to a limited number of modifications. It should be completed in March 2018 to allow time for preparation of the 2018 edition of the EU SDG monitoring report, which is expected to be published in September.

### **Power from Statistics: delivering the evidence of tomorrow**

The 'Power from Statistics' initiative arose from the growing need of both the public and private sectors to have solid evidence on which to base the design and monitoring of policies and informed decision-making. The initiative, which was jointly organised by Eurostat and the European Political Strategy Centre, aimed to identify which topics will be relevant to decision-makers and citizens in the future and how official statistics could best deliver this information.

At a first stage, five individual thematic Round Table events were held. Experts from various stakeholder groups discussed trends in migration, globalisation, new economic and





business models, sustainable development and science, and statistics and society.

The Round Table participants wrote a number of articles which were compiled in the Power from Statistics Outlook Report. These articles contain their personal reflections and ideas on the future of European statistics.

The report was a key input for a two-day high-level conference held in October 2017, entitled “Power from Statistics: delivering the evidence of tomorrow”.

A multidisciplinary audience, consisting of policymakers, journalists, business leaders, academics and official statisticians from Europe and beyond, gathered to discuss the future needs for evidence to inform policy. They brainstormed the ways in which the European official statistics community could meet the future information needs identified.

The highlights and accompanying ideas collected from the Round Tables and conference have been compiled into a Guidance Report, due to be published in summer 2018. The Guidance Report offers a succinct overview of the wide range of discussions which took place. It includes video links and visual summaries of audience opinion on selected topics, as well as further reading stemming from the original round tables.

### **European Statistics Code of Practice revised**

2017 was another landmark year for the European Statistics Code of Practice. The Code is based on 16 principles concerning the institutional environment, statistical processes and outputs. It aims to ensure that statistics produced within the ESS are not only relevant, timely and accurate but also comply with principles of professional independence, impartiality and objectivity. A set of indicators of good practice for each of the 16 principles provides a reference for measuring the implementation of the Code.

Beginning in 2005, the Code was last revised in 2011, to include updates relevant to the statistical law of 2009. The 2017 revision is again due to



an amendment of the statistical regulatory framework in 2015, as well as the lessons learned from the second round of ESS peer reviews and the use of new data sources.

A High Level Group on Quality was mandated to revise the Code, ensuring that it be kept as general and as wide-ranging as possible to encompass developments such as the emergence of new data sources, while limiting the changes to the necessary minimum.

The Group drew up a new principle, along with three new indicators covering coordination and cooperation. This principle, stemming from the amended statistical law, reflects the roles of the National Statistical Institutes and Eurostat in the coordination of all activities for the development, production and dissemination of European statistics.

Two new indicators were also added, again in response to the new developments and regulatory environment. They deal with the access for statistical purposes to other data, such as privately held data and the use of open data standards and open sources. Other indicators were revised reflecting the modernised statistical processing and dissemination chains currently used and envisioned for the future. ■

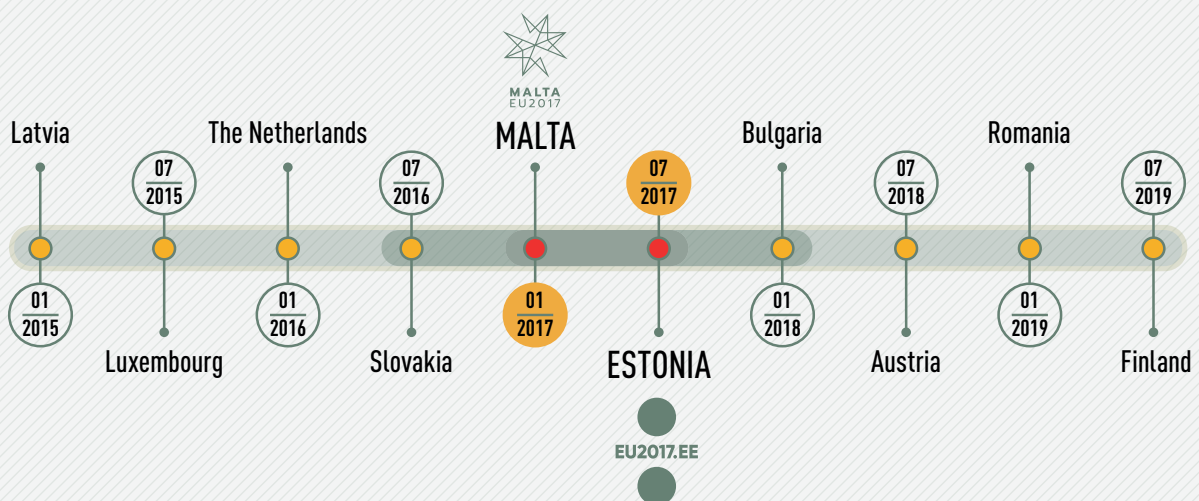
# ROLE OF THE PRESIDENCY OF THE COUNCIL

The role of the Presidency of the Council is to set up a detailed work programme to drive forward different European policy areas, including statistics, plan and chair Council meetings, and facilitate cooperation with other EU institutions. The latter task means that the Presidency represents the Council in negotiating with the European Parliament on legislative initiatives.

The work of the Presidency of the Council is important for the European Statistical System, as its functioning is largely based on EU legislation adopted jointly by the European Parliament and the Council in the so-called co-decision procedure.

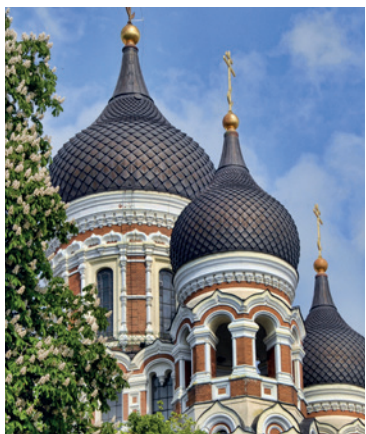
The Presidency function rotates among Member States according to a schedule defined well in advance. Each country holds the Presidency for a period of six months. To improve coordination and ensure continuity of the Council's work, countries set up so-called 'trio Presidencies', meaning that the three countries holding the three successive Presidencies cooperate on a common political programme with shared priorities.

The country holding the Presidency plays an important role and has the opportunity to influence developments at European Union level. This is illustrated, for instance, by privileged access to information, a prestigious position as the immediate interlocutor of the Commission services and the European Parliament, as well as the possibility to steer discussions.





*Insights from Malta*



*... and Estonia*



# 2017 COUNCIL PRESIDENCIES IN STATISTICS

# MALTA AND ESTONIA

In the first six months of last year, Malta held the Council Presidency, followed by Estonia in the second half of 2017.

This meant that the EU Council Working Party on Statistics was chaired, in turn, by the Heads of the National Statistical Institutes of these countries.

For Malta the role was taken by Etienne Caruana, acting Director General of Malta's national statistical office. Estonia was represented by Tuulikki Sillajõe, Deputy Director General of Statistics Estonia.

Both spoke to 'The ESS Report' about their work and the importance of the Presidency role.

**How would you assess the significance of holding the Presidency as opposed to being a member of the Council Working Group?**

*Etienne Caruana:* The Member State that holds the EU Presidency is responsible for working towards and getting all Member States to, agree on legislation at the Council Working Party. The Presidency holder then goes on to negotiate that compromise with the European Parliament.

This work makes the role of the Presidency more onerous than membership of the Council Working Party on Statistics. That said, both roles are inherently linked, as national positions provide the basis on which the Presidency can base its negotiations with the other EU institutions. So one role feeds into the other.

*Tuulikki Sillajõe:* We always tried to contribute actively to the work of the Council Working Party on Statistics, and committed ourselves to finding solutions acceptable to the majority of the Member States. This was Estonia's first Council

Presidency and it was abundantly clear to us that being a member of the Council Working Party and holding the Presidency of the Council are two completely different things in practice.

Holding the Presidency is a challenge. It is not easy to help the 28 Member States reach a common understanding on any given regulation. But finding common ground between the Member States is not enough. Any solution also needs to be acceptable to the Commission and the European Parliament. On top of this, Parliament itself is not a homogenous group, but made up of different stakeholders. Dealing with these interests necessitates strategic foresight from the Presidency.

At the same time, holding the Presidency is also an opportunity to both understand and get a feel for how the EU system works. Sometimes we complain that it takes time to pass a regulation. But this is how democracy should work – everybody should have the right to speak out! What is the faster alternative – someone giving orders? Would we want that? In my opinion, it is a brilliant idea that the Presidency rotates between different countries.

From a personal perspective, Estonia's Presidency was a unique opportunity, considering that each country holds the Presidency only once every 15 or so years, due to the large number of Member States.

**What about the main challenges to meet your goals?**

*Etienne Caruana:* Our overriding goal was to make progress on all the statistical dossiers that were before the Council Working Party on Statistics. We understood that we had to move





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towards identifying and reaching compromises on the legal packages at Council level.

To manage this best, we found that we had to add an extra meeting of the Council Working Party to the original planned timetable. Given that we deliberately focused on a long-term strategy, we believe that during our Presidency we achieved meaningful progress.

*Tuulikki Sillajõe:* At Statistics Estonia, we started to prepare intensively for the Presidency in spring 2016. Some former Presidencies, the Council Secretariat and others viewed our initiatives as premature. But then Britain voted to leave the EU and we had to take over the Presidency half a year earlier than originally scheduled. Thanks to our preparations, we were ready just in time.

Together with the statistical offices of Bulgaria and Austria, we planned the statistical aspects of the Estonian Presidency in detail. Thanks to this, during the Presidency we managed to do exactly as we had planned, and at times thought we could do more.

We wanted to reach an agreement with the Member States about two regulations: Integrated Farm Statistics and Gross National Income (GNI). We aimed to start and finish trilogues on the

territorial typologies regulation, Tercet, continue discussions on the social statistics framework regulation and to launch discussions on the enterprise statistics framework regulation.

Beyond the scope of the Council Working Party on statistics, we also planned to consolidate the Member States' opinions on the Omnibus regulation, which amended 24 statistical regulations in total. We are proud that we achieved what we set out to do.

#### What were your main achievements?

*Etienne Caruana:* The Maltese Presidency had a number of achievements. We managed to propose two compromise texts on the Integrated European Social Statistics package as well as a text on Intergrated Farming Statistics.

Without a doubt, these texts helped to smooth the discussions towards reaching the necessary compromises for a final Council position. We also could agree the text of the Council's General Approach for the Tercet regulation, which aims at integrating territorial typologies into the Nomenclature of Territorial Units for Statistics (NUTS) regulation. We were also satisfied that we could initiate and conclude the Trilogues with

the European Parliament on the extension of the European Statistical Programme to 2018-2020.

The extension of the European Statistical Programme not only extends the timeline of the programme and includes some substantive changes compared with the previous ESP, but also ensures that statistical activities are funded until 2020.

Therefore the Statistical Programme is an essential legislative tool for producers as well as users.

The Integrated European Social Statistics framework regulation will be the first to provide a clear legal framework to allow seamless updates to and implementation of social statistics. This will better meet user needs.

The amendments to the territorial typologies regulation, Tercet, are also driven by producer needs. Tercet aims to reduce the administrative burden involved whenever elements of the Nomenclature of Territorial Units for Statistics (NUTS) regulation need to be updated.

Finally, the integrated farming statistics regulation will also provide the framework that contributes to the modernisation of this domain. Importantly it will provide funding for pilot studies and for the Agriculture Census 2020.

*Tuulikki Sillajõe:* Two statistical regulations were published during the Estonian Presidency: the extension of the European Statistical Programme (ESP) to 2018–2020 and the territorial typologies regulation, Tercet.

The ESP regulation is an excellent example of the interdependency of the results of Council Presidencies. The agreement between the Member States, the General Approach, was reached during the Slovak Presidency, the trilogues were held by the Maltese Presidency, and the regulation was signed and published under the Estonian Presidency. The regulation itself is important for all the Member States, because it matches the multiannual statistical planning with the rhythm of the EU's financial planning. It also helps with the production of new statistics for new data needs such as Europe 2020, the Energy Union, employment and social policies, and the digital single market.

Without a doubt the greatest achievement of the Estonian Presidency was finalising discussions on Tercet. Tercet is a very technical regulation, which integrates different levels of territorial classifications into one regulation. While the Parliament made no amendments to the initial Commission text, the Council asked for some clarifications.

Our Presidency managed to defend all the Member States' amendments, convincing Parliament to accept all the Council's modifications. We were extremely pleased that the regulation was signed and published during the Estonian Presidency.

We were also delighted with the progress on the Gross National Income proposal. We launched a written consultation which was then discussed in the Council Working Party and agreed in one meeting. The final presidency text was approved by the committee made up of each Member State permanent representatives in November 2017.

Another priority of the Estonian Presidency was the integrated farming statistics regulation. This regulation required enormous effort on our part. The Maltese had discussed it twice at the Council Working Party. We discussed it four times and finally managed to reach an agreement between the Member States. As we had managed to go this far before the end of our Presidency, we decided to enter into trilogues.

However, the trilogues on the farming statistics regulation were much more complex than those we had carried out with the Tercet regulation. The main problem was that the Member States were worried about the burden it places on farmers and the resultant costs for the Member States. However, the Parliament wanted additional statistics on issues such as young farmers, farm-related accidents and organic farming.

I am still convinced that we could have found common ground acceptable to all parties concerned, if it had not been for having to deal with the General Data Protection Regulation. In brief, the trilogues were inconclusive and I wish Bulgaria, our Presidency successor, all the best in concluding them. The integrated farming

statistics regulation must be published by the end of 2018, so Member States can prepare for the next agricultural census in 2020.

Besides the regulations above, the Estonian Presidency also progressed with the social statistics framework regulation and the enterprise statistics framework regulation.

### What were the main difficulties that you encountered?

*Etienne Caruana:* Our main challenge was implementing our planned workload in just six months. When so many important dossiers are on the Council Working Party's table, no country heading the EU Presidency has time on its side.

*Tuulikki Sillajõe:* From a practical point of view, the main difficulties related to communicating with different stakeholders, such as the Member States, the Council Legal Service, the Council Secretariat, advisers to rapporteurs of different regulations, Eurostat, our own Permanent Representation to the EU and national ministries. We exchanged literally hundreds of e-mails on a daily basis, and had countless phone calls and face-to-face meetings.

Psychologically, we faced a difficult moment when we realised that, despite our best efforts, it would not be possible to conclude the integrated farming statistics regulation trilogues during the Estonian Presidency. We could agree on the statistical content of the regulation, but just when the end was in sight, it turned out that solving the "data protection issue" would need more time than we had before the end of the Estonian Presidency. The problem was that the Member States had not yet reached a common understanding about whether derogations from the General Data Protection Regulation were necessary and, if so, whether these should be at EU or national level.

It was one of these moments when you just have to let it go. You have to understand that you cannot stick rigidly to your objective, but need to allow time for the issues that others need to solve. So it was difficult, but overall we succeeded and played our role in history.

### And what worked well?

*Etienne Caruana:* We took a long-term view of the agreements that could be reached at the level of the Council Working Party. In this sense, we worked towards strong and realistic compromises that could be defended and justified during negotiations with the Parliament.

As a case in point, this way of working helped us to avoid amendments by Parliament on Tercet, the territorial typologies regulation. Our strategy undoubtedly helped the Estonian Presidency to safeguard the Council's General Approach during their trilogues on this regulation. We adopted the same approach with regard to both the Integrated European Social Statistics and Integrated Farming Statistics regulations.

The bilateral meetings we held with various Member States and with Eurostat were another positive factor that helped us enormously in our work during the Presidency. We would like to thank all those involved during our Presidency term for their assistance and commitment.

*Tuulikki Sillajõe:* In my opinion, the best thing about the Estonian Presidency was teamwork. We had a well-functioning core team and excellent experts on different regulations. We supported each other and received a lot of support from the statistical offices of Bulgaria and Austria, former Presidencies, the Council Legal Service, Council Secretariat, Eurostat and others. I am very grateful to all these people. Working with them was a real pleasure.

We chaired the Council Working Party from Tallinn. There was no special attaché on statistics in Brussels. It meant that travelling was quite time-consuming, but we were prepared for it.

These six months of the Presidency were extremely intense, but we were forewarned by our predecessors. Now I can also confirm that the work is demanding, but the experience is worth it!



# 20 YEARS OF THE HICP

March 2017 marked the 20th anniversary of the Harmonised Index of Consumer Prices (HICP). The HICP was designed as a comparable measure of consumer price inflation within the euro area and the EU. Since the very beginning, it has provided high-quality information for economic and monetary policymaking and for European citizens.



The HICP is compiled according to a methodology harmonised across Member States. It measures the changing cost of a fixed basket of goods and services over time.

Virtually all consumer goods and services purchased by means of monetary transactions come within the scope of the HICP, including everyday items such as food, newspapers and petrol, durable goods such as clothing, computers and washing machines, and services such as hairdressing, insurance and rented housing. Statistical offices regularly update their national baskets to include new products that have become an important part of household consumption expenditure (such as streaming media subscriptions), while eliminating products that are no longer representative (such as video tapes).

Two breakdowns of HICP data are available: purpose of consumption and type of product. Purpose of consumption data, broken down according to an international classification (COICOP), is used by most statistical offices around the world. On the other hand, the European Central Bank (ECB) generally uses the type of product breakdown, which divides the basket into product group components influenced by particular economic developments such as food, services and energy.

The HICP is a 'pure price index', meaning that only changes in prices should be reflected in the index between the current and the reference period. Thus any differences when comparing Member States should reflect only variations in national price changes or expenditure patterns.

In the early years, the main use of the HICP was to assess the price convergence for those Member States aiming to join the euro. After the launch of the euro, the focus changed. Today, the HICP is used as a key indicator of price stability by the ECB. The ECB defines stability as an annual HICP inflation rate of 'below, but close to, 2% over the medium term'.

Today's HICP is the result of major harmonisation work by Eurostat and Member States within the European Statistical System (ESS). The index continues to develop, as price statistics experts continually face new challenges in measuring inflation in a rapidly changing economic environment.

The full HICP data set is published each month according to a pre-announced schedule – in general 16 to 18 days after the end of the reference month. Each month, Eurostat also publishes an HICP flash estimate for the euro area as a whole as well as a breakdown according to type of product. The flash estimate gives an early indication of what inflation is likely to be in the current month. It is generally released on the last working day of that month.

The input data required to produce and publish the HICP come directly from the Member State statistical departments responsible for consumer price indices. Member States send the data to Eurostat according to a pre-determined timetable through Eurostat's single data entry point system, which is compulsory for the transmission of all regular ESS datasets.

HICP data that have already been published by Eurostat are revisable. The European Statistics Code of Practice requires that revisions follow standard, well-established and transparent procedures. In this context, Member States (as members of the ESS) are responsible for informing users about their practices on revisions, including the correction of errors. This public declaration promotes confidence among users and accuracy for data producers. Revisions policy should be recognised as an important aspect of good governance in statistics.

HICP quality and transparency are further enhanced by Eurostat's programme of compliance-monitoring visits to scrutinise the compilation practices of individual national statistical institutes.

2017 marked the year in which data was released for all EU countries at a more detailed level of the HICP classification. The new level (sub-class or five-digit level) further disaggregated the HICP into the categories of the ECOICOP (European Classification of Individual Consumption according to Purpose).

Key priorities for the coming years are expanding the use of retail purchase information (such as price, brand, product size, amount purchased) gathered at the point of purchase as a data source for the HICP, and greater harmonisation of methods for quality adjustment and sampling. ■

## View of ESS Members

### A VIEW FROM IRELAND: 20 YEARS OF HARMONISATION

#### Challenging times

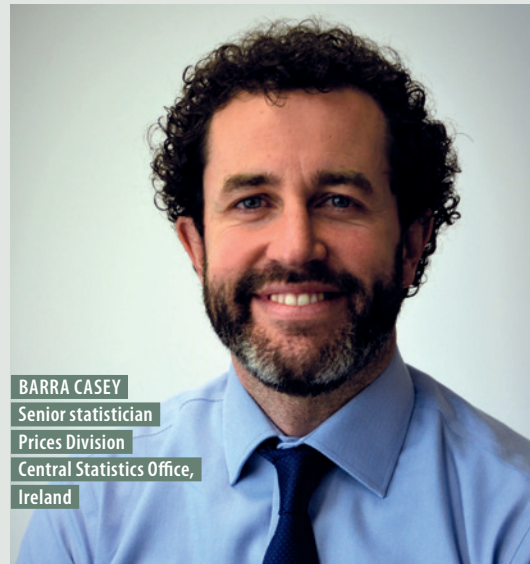
There is a folder stored securely in a cupboard next to my desk that has survived the last 20 years. The front of the folder is emblazoned with a quote from Niccolò Machiavelli which encapsulates the difficulty, uncertainty and excitement of introducing an entirely new statistical product.

‘There is nothing more difficult to take in hand, more perilous to conduct, or more uncertain in its success, than to take the lead in the introduction of a new order of things.’

*Niccolò Machiavelli*

The folder was created in the mid-1990s by the statistician responsible for consumer price inflation in Ireland. It contains many of the intricate calculations that were required to create the Harmonised Index of Consumer Prices (HICPs). This quote seems to have summed up the HICP challenge for one statistician and presumably swathes of other statisticians across the EU.

The creation of the HICPs was no easy task and took years to achieve. In many ways, although the challenges are different, we are still striving for that ultimate and original goal of cross-country harmonisation.



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#### Preparing for harmonisation

The HICPs were never intended to replace national CPIs. The indices were designed expressly for international comparison within the EU. The National Statistical Institutes (NSIs) of the Member States and Eurostat had been collaborating closely for three years to harmonise CPIs before the introduction of the HICPs. The initial outcome of that work was the Interim Index of Consumer Prices (IICP) compiled by all Member States in 1996. The IICPs were derived from national CPIs by excluding those categories of goods and services which were not treated in a comparable way by all Member States.

The next stage of harmonisation began with the publication of the HICPs in January 1997. Although the HICPs were more harmonised in coverage and methodology than the IICPs, full harmonisation had not yet been achieved. The main items of consumer expenditure which were still excluded from the coverage of the HICP were health, education and owner-occupied housing. While the former two categories of expenditure have since been added to the HICP, owner-occupied housing has remained elusive and continues to be a very challenging area for statisticians to measure.

#### Statistical and technical challenges

In 1996, Ireland was the only country with a quarterly CPI. It proved to be a huge task to move the national index, and hence the HICP, to a monthly frequency. This was complicated further by the need to backcast a monthly series for the years 1995 and 1996. This



was a difficult methodological challenge and the results were of intense interest to the National Central Bank, the Department of Finance, the European Commission and Eurostat. The results were presented in September 1997 and a summary report “EU Harmonised Index of Consumer Prices: Estimated Monthly Indices for 1995 and 1996” was published.

The monthly index called for a full system rewrite, which required significant statistical and IT resources to complete. This proved to be the most onerous aspect in creating the HICPs. However, there was an upside to all this extra work between the statistician and the IT developer. It resulted in a blossoming relationship which some years later ended in marriage. This was a harmonisation, I am sure, that Eurostat never envisaged.

### **Communication of the HICPs**

From 1922 (the first time Ireland published a CPI) up until 1997, there was a single official measure of inflation. It was going to be difficult to communicate the need for a second measure and to ensure that users did not become confused or inadvertently use the wrong index.

In Ireland, it was felt that the name of the new index would be important to distinguish it from the national CPI.

As the story goes, there was a European meeting which was chaired by Eurostat’s Director-General. He proposed that the new harmonised index should be entitled “Consumer Price Index”. The Irish Director-General immediately objected on the grounds that this would lead to confusion for users. Eurostat’s Director-General responded by immediately asking his Irish counterpart what title he would suggest instead. Having to reply on the spot and, without any prior consideration, the Irish Director-General spontaneously suggested “European Harmonised Index of Consumer Prices”. Surprisingly, this was accepted by Eurostat with no objection from any other country.

### **Changing consumption patterns**

Over the last 20 years, the consumption patterns of households have been changing radically. For example, when the HICPs were first introduced in January 1997, almost half

of the expenditure of Irish households was on products such as food, beverages, tobacco, clothing and footwear. The equivalent proportion today is only 20%. Households now purchase a far broader range of products, while services, such as telecommunications and recreation, account for an increasingly larger proportion of expenditure.

### **Cross-Country Cooperation**

As consumption patterns evolve, the methodology employed in production of the HICP must also evolve. This constant change in the composition of the target population means that countries must move together to ensure that cross-country harmonisation is protected.

For this to happen, it is crucially important that we engage consistently with colleagues from Eurostat and other NSIs. We do this through our involvement in various European and international meetings, workshops and compliance visits. One good example is the Taskforce on Quality Improvement (TFQI), which has focused on developing recommendations (outside the requirements in the Regulation) for the treatment of particular product categories in the HICP. The material produced by this group has been a great source of learning and information for all countries.

### **Conclusion**

The Machiavelli quote on the folder from the mid-1990s was quite prophetic. The HICPs have become the new order and have gone from strength to strength. After 20 years of HICPs, the conversation between statisticians, while remaining focused on harmonisation, has changed inexorably. The rise of technology and the digital economy has created new categories of products to measure but also new ways of measuring those products. In particular, scanner data (electronic transactions data directly from retailers) and webscraping are being adopted as new data sources by NSIs, with significant support from Eurostat. Technology creates huge opportunities for the statistician but, of course, also creates many challenges for the continued harmonisation of the HICP. ■



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## THE ITALIAN EXPERIENCE OF COMPILING THE HICP IN THE EUROPEAN CONTEXT

I began my career in the field of consumer price statistics in 2003, during what was a very “hot” period for measuring inflation in the EU Member States, particularly in the Euro area countries. The previous year had seen the introduction of the euro to 12 Member States.

During that time, several issues were being raised about the measurement of inflation through the Harmonised Indices of Consumer Prices (HICP) and the national Consumer Price Indices (CPI). Although there were some major sticking points in the discussions between National Statistical Institutes (NSIs), experts, academics and public opinion, in the end the HICP’s role as a key macroeconomic indicator to measure inflation in a harmonised way across Europe and beyond the borders of EU was enhanced. This meant the European Commission and European Central Bank had a powerful tool with which to monitor changes in the economy.

### **The relevance of harmonising national HICPs at European level**

The currency changeover provided another push factor towards harmonising national and European measurements of inflation. Since 2002, a further eight regulations implementing framework Regulation 2494/1995 have entered into force. Most recently, in 2016, a new framework Regulation (2016/792) extended coverage to include house prices.

Throughout the 20-year plus history of the HICP, and in particular after the establishment of the Euro area, all European countries have been involved in further harmonising national HICPs, under Eurostat’s supervision. The aim is to constantly improve the quality of this crucial economic measure.

I would like to highlight a couple of HICP-related events that were of significant importance from both a national and European perspective.

### **The treatment of seasonal products**

The first was Regulation 330/2009, which took effect in January 2011. It concerned minimum standards for the treatment of seasonal products in the HICP.

This Regulation represented a very important step forward in harmonising and improving the quality of the Italian HICP. The rules laid down by the Regulation allowed different Member States to implement a new common set of methodological and practical standards. These in turn enabled the national HICPs to better illustrate the short-term evolution of inflation, without “seasonal adjustment”.

Through implementing the new rules, the Italian HICP and the national Consumer Price Index became more accurate, and could abandon outdated practices and standards.

### **Challenges for the future**

The second crucial event is the recent trend towards using new data sources and data collection techniques for compiling the HICP. Nowadays, two key topics repeatedly pop up in debates between consumer price experts at EU and UN level: scanner data and web scraping.



## Scanner data

Scanner data on prices, obtained from the Global Trade Item Numbers (GTIN) of items paid for at the cash register in the modern retail trade distribution system, represent a crucial and innovative source of Big Data for estimating inflation. These data can replace traditional price data collections, at least in hypermarkets and supermarkets.

At European and national level, the use of scanner data in HICP compilation is one of the more challenging topics. Scanner data have several advantages, as they can provide detailed information on sales and quantities of items at a weekly frequency, GTIN by GTIN, outlet by outlet, throughout entire national territories.

Scientific research carried out over the last few years in several workshops and meetings, under the initiative of Eurostat and with the cooperation of the NSIs, has enabled Member States to make use of more advanced research and studies on the topic. This in turn has allowed them to move towards introducing this new data source into their national HICP and CPI.

The Italian experience in this context has been very fruitful and has led to us using scanner data to compile CPI and HICP since January 2018. This outcome is an excellent example of the crucial role the European context plays in supporting national efforts to make further quality improvements in national inflation measurements.

## Web scraping

Web scraping is a technique used to collect information on the Internet in an efficient way, namely by using bots to automatically download huge quantities of data from the web. We could say that its application in the field of consumer prices is “natural” if we consider the easy availability of price information on websites.

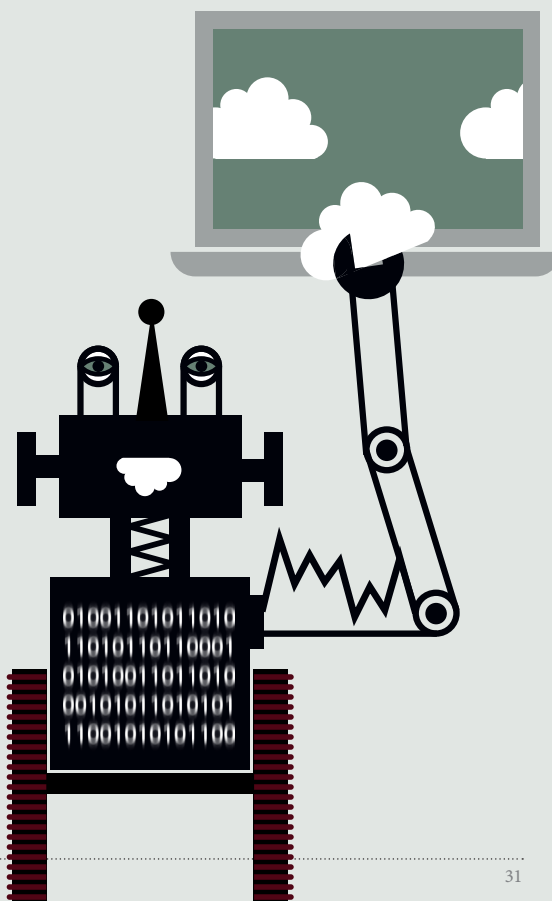
The adoption of this technique is another challenging issue for the Member States and the EU as official statistics and NSIs are plunged into the realm of Big Data. Here too, Istat’s scientific research has been drawn from the European

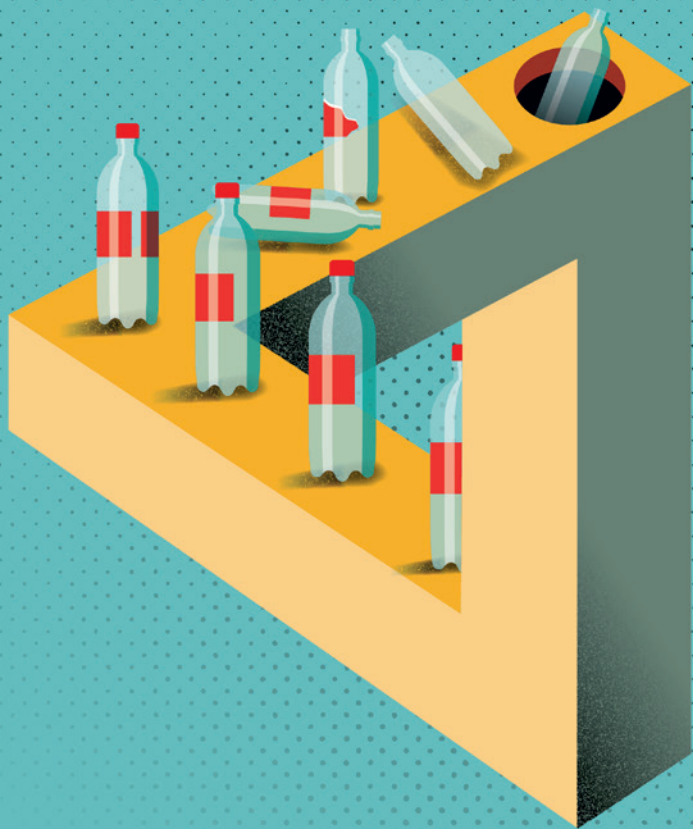
context, and we have begun to use bots to download price data on consumer electronics products and railway transportation from the web to produce the Italian CPI and HICP.

## Towards a multi-source consumer price survey

As we in Italy are also increasingly using administrative data (for example for automotive fuels and soon for house rentals), we can see that consumer price statistics and HICP are becoming multi-sourced. New sources such as scanner data, Internet and administrative information will increasingly be combined with the more traditional data collection techniques of visiting physical shops. In turn, the significance of those products gathered in the traditional manner is destined to decline.

We are doing all of this in pursuit of a single goal: increasing the quality of inflation measurement, and ensuring that we can keep up with new developments in the ever-changing field of consumer prices. ■





# THE CIRCULAR ECONOMY — TURNING WASTE INTO A RESOURCE

**O**ur modern societies rely on a regular flow of new products created to satisfy our consumer lifestyles. These products are made from natural resources extracted from the environment, such as biomass, metals and minerals, or derived materials such as plastics or synthetic fabrics. After use, they are frequently disposed of or discharged as residual waste.

For too long, the impact of this lifestyle on the environment was overlooked. We now acknowledge that this way of life is not sustainable in a world with a growing population, ever-increasing living standards and a growing pollution problem. The mindset is changing.

The circular economy paradigm can help. In contrast to the linear economy production model of take, make and discard, in a circular economy the value of products, materials and resources is maximised for as long as possible, and the generation of waste minimised. In a true circular economy, less waste is produced in the first place, more is recycled and secondary raw materials are created out of waste. The fewer products we discard and the fewer materials we extract from nature, the better it is for our environment.

However, environmental protection is not the only consideration. The circular economy model starts at the very beginning of a product's lifecycle: smart product design, production processes and product packaging can help to prevent waste and save resources. One industry's waste can become another's raw material. This leads to new business opportunities, protects businesses against scarcity of rare resources and may create more local jobs and thus opportunities for social integration. By introducing a system based on the circular economy, new production and consumption patterns may be created as well as energy savings and a reduction in greenhouse gas emissions.

To sum up, the circular economy is potentially a win-win deal for the environment, economy and society.

## **The circular economy in the EU**

The European Union is taking practical steps towards a circular economy. The transition to this type of economy is closely tied to a number of EU policy agendas, including jobs and growth, investment, climate and energy, social policy, industrial innovation and sustainable development.

In 2015, the European Commission adopted an ambitious Circular Economy Action Plan containing measures covering the whole cycle, from production and consumption to waste management and the market for secondary raw materials. The Action Plan called for the development of an EU monitoring framework for the circular economy. Monitoring makes it possible to keep track of progress and assess the effectiveness of actions, giving guidance to those involved both at policy and societal level.

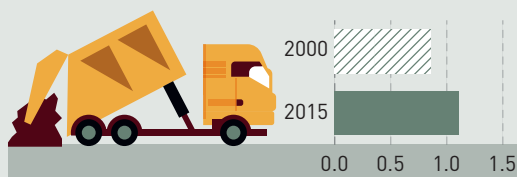
## **Measuring the circular economy**

Monitoring progress towards a circular economy is a challenging task. Since late 2016, the European Commission has been developing a monitoring framework consisting of 10 indicators, some of them with sub-indicators, amounting to 23 indicators in total. Eurostat was co-leader of this initiative, alongside three other Commission services. Close cooperation with the ESS was also ensured. This framework captures the main elements of the circular economy in a concise set of indicators. The indicators are structured around four thematic areas: production and consumption; waste management; secondary raw materials; competitiveness and innovation. They are based on existing data, mainly from official statistics from

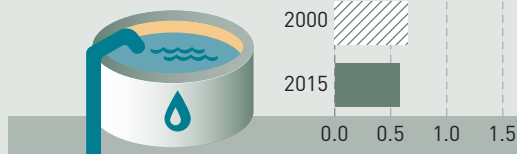
## Employment in the environmental economy

(million full-time equivalents, EU-28, 2000-2015)

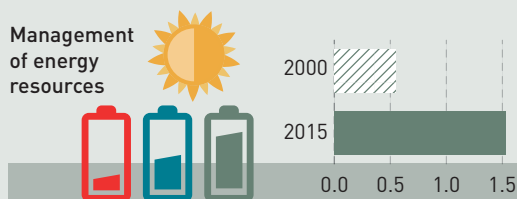
### Waste management



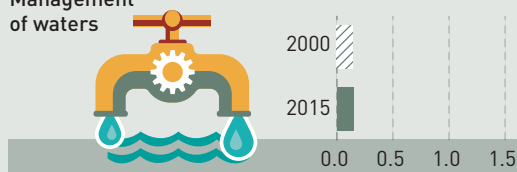
### Wastewater management



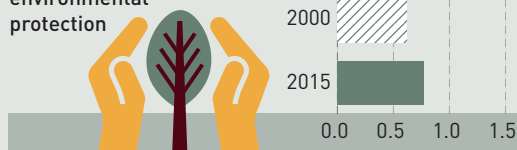
### Management of energy resources



### Management of waters



### Other environmental protection



Source: Eurostat (datacode env\_ac\_egss1)

the ESS, supplemented with other sources. Eurostat disseminates the results on its website.

We in the ESS have learnt some lessons through this project.

Firstly, it is not possible to achieve a balanced coverage of the various aspects of the circular economy using official statistics alone. We need a blend of official statistics: either domain-specific, such as waste statistics, or general-purpose, such as production statistics, together with other types of information, such as thematic studies, patents and research models. These alternative information sources often have completely different quality standards and may give conflicting messages, but the use of official statistics alone is insufficient. We need to learn to extract the best from each source and harmonise the information.

Another lesson we have learned from measuring a complex phenomenon using many different sources is the importance of using overarching conceptual frameworks and within these, developing unifying methodologies. Frameworks such as environmental-economic accounts can build the bridge between, for example, waste statistics, industrial production statistics (PRODCOM) and external trade statistics.

We have also learned that while quality standards are very important to statisticians, they may not be so highly valued by other stakeholders for whom sound definitions, classifications or time series are of secondary importance. We must become better at explaining and marketing our own statistical products.

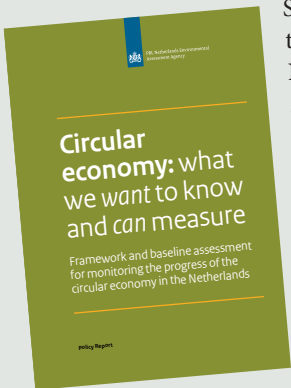
Finally, some areas remain relatively underdeveloped and we do not have much data on the circular economy. These include the shared economy, competitiveness and innovation. We do not know enough about food waste nor public investments in the circular economy sector. We also need more and better data about secondary raw materials. We need to work on improving this.

Some EU Member States have also developed their own indicators for the circular economy. Two countries share their experiences over the next few pages. ■

# View of ESS Members

## A VIEW FROM THE NETHERLANDS: THE CIRCULAR ECONOMY IS MORE THAN RECYCLING

In 2016, the Dutch government launched a new, ambitious policy programme: “A circular economy in the Netherlands in 2050”. The programme is about transitioning towards a more sustainable society by reducing the use of abiotic resources and waste production. The government set a target of reducing the use of primary abiotic resources by 50% by 2030, and having a fully circular economy by 2050.



Statistics Netherlands, together with the Netherlands Environmental Assessment Agency (PBL) and the National Institute for Public Health and the Environment (RIVM), were commissioned by the Ministry of Economic Affairs and the Ministry of Infrastructure and Environment to monitor



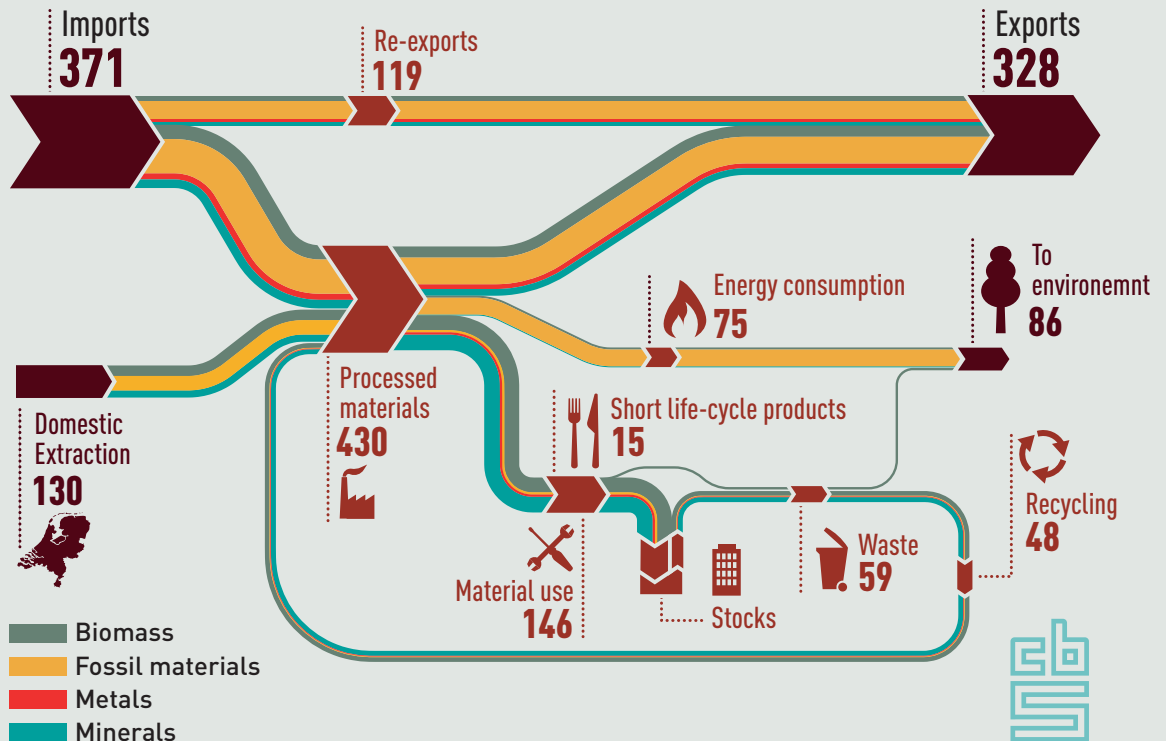
the transition towards a circular economy. The first monitoring framework on the Dutch circular economy, “Circular economy: what we want to know and can measure” was published on 15 January 2018.

### A first circular economy monitoring system for the Netherlands

The Dutch circular economy monitoring framework consists of three sections: the first explains the actions the government has initiated; the second explores the transition towards a circular economy; and the third section describes the effects a circular economy could have on, for example, resource use and the environment. The first two sections were written by the Institute for Public Health and the Environment, together with the Environmental Assessment Agency, while Statistics Netherlands was in charge of the last section.



## Material Flows in the Netherlands, in billion kg, 2014



Statistics Netherlands compiled the amount of resources that the Netherlands uses and showed how solid waste is treated. The figure above shows materials flows in the Netherlands.

Compared with other EU countries, material input into the Dutch economy is high. This is because many of our imports are exported for foreign consumption. However, if we extract exports from the input results when calculating our domestic material consumption, we find that the figure is relatively low compared with other countries.

Although Dutch recycling rates are relatively high (around 80%), the amount of secondary material that goes back into our economy is around 10% of our total input and around 20% of our total consumption.

Given these findings, we had to find an appropriate measure to monitor Dutch policy targets. We also had to decide whether we should only examine the direct use of natural resources/materials or whether we should also take into account direct and indirect natural resources used in the production chain. In any case, we agreed that we need to know the effect of our use of resources on the environment (for example, greenhouse gas emissions, water use and land use) and the economy (for example, value added, employment).

We are also interested in discovering the extent to which a circular economy can help reduce climate change. Although further analysis is needed, we think that the first edition of the CE policy brief provides a good basis for this work.

## **Building on the EU monitoring framework**

The Dutch circular economy indicators mainly use ordinary statistics, which are also collected by Eurostat, such as material flow accounts and waste statistics. These same statistics are used in the circular economy monitoring framework developed by the European Commission.

However, Statistics Netherlands takes these statistics further in that we also estimate the physical weight of flows of products and residuals between branches of industry. These data are all part of the System of Environmental-Economic Accounting (SEEA) and are compatible with national accounts' monetary supply and use tables. From the data we can derive circular economy indicators at industry branch level. These indicators include resource efficiency, which can be measured both in terms of the amount of value generated per kilo of material as well as the share of input that ends up in the final product.

The Dutch monitoring framework builds on the indicators proposed by the European Commission in two ways. Firstly, we try to estimate how a change in resource flows affects the environment (e.g. greenhouse gas emissions, water use, land use) and the economy (value added, employment) in the Netherlands and abroad. Secondly, we try to estimate the extent to which the transition towards a circular economy has already taken place.

In our opinion, it is not possible to transition towards a circular economy only by increasing the amount we recycle. End-of-life products need to be brought back into the economy in such a way that their value remains as high as possible. For example, instead of recycling a building by demolishing it and using it as foundation for a road, a building could be used to build a new building. To maintain the value of products throughout their life cycle, we need to invest in product repurposing and new business models. Dutch knowledge institutes together with Statistics Netherlands are currently looking for indicators that can capture these kinds of developments.

### ***Domestic material input =***

Domestic extractions (raw materials extracted from the natural environment for use in the economy, excluding water and air) plus physical imports (raw, semi-finished and final products)

### ***Domestic material consumption =***

Domestic extraction (raw materials extracted from the natural environment for use in the economy, excluding water and air) plus physical imports minus physical exports (raw, semi-finished and final products)

## **Conclusion**

The statistics and accounts for waste and materials, developed within the European Statistical System, provide key data and indicators for monitoring the transition towards a circular economy.

However, we still need to find and develop indicators that go beyond measuring recycling. These could include indicators on repairs, repurposing or new business models. In addition, the effect on the environment and the economy of the transition to a more circular economy needs to be analysed. Finally, we require more specific national and European policy targets.

Although the Dutch circular economy monitoring system provides a good basis for a monitoring framework, further work is required before a fully-fledged framework is in place.

Initial results show that although the recycling rate is high, only around 10% of the initial input of materials go back into the economy. Although the share of input of secondary materials is higher with regard to domestic consumption, it can still not fully replace primary resources. It is therefore important to have strategies that sustain the value of end-of-life products when transitioning towards a circular economy. ■

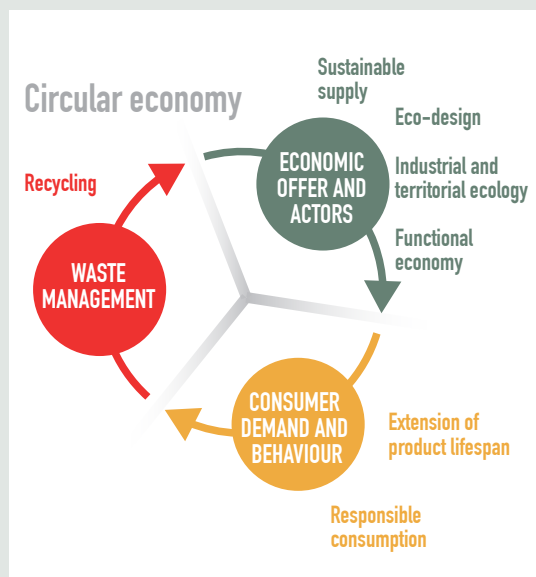
# A VIEW FROM FRANCE – MEASURING THE CIRCULAR ECONOMY

A clear need for statistics on the circular economy emerged in France in 2013. At a round table discussion during the national Environmental Conference, various stakeholders such as associations, the Ministry of Environment, industrial groups, and the French Environment and Energy Management Agency agreed that a set of indicators should be established to monitor the circularity of our economy. This strategic task was assigned to the Ministry of Environment’s statistical office, and specifically my unit, which is responsible for statistics on environmental pressures.

## Historical background to the work – initial provisional list (2014)

We convened a national task force with a number of stakeholders at the beginning of 2014 to establish an initial list of indicators. This was not an easy task, as each contributor had their own understanding of the definition and scope of ‘circular economy’. Our initial list contained seven indicators for which data were available, mostly based on waste and material flows statistics, and a further six indicators, mostly based on a consumption approach, that were not yet calculated, or for which data were unavailable.

The process of updating the national sustainable development strategy (2015-2020) also took place in 2014, with the inclusion of a pillar on the low-carbon economy and the circular economy. The indicators selected to monitor this national strategy came from the initial seven available indicators we had identified, complemented with indicators from energy statistics.



## A French definition of the circular economy – establishing the monitoring framework

After a lengthy process involving working groups and debates between stakeholders and policymakers, the French Law on Energy Transition for Green Growth was finally adopted in August 2015. Prior to this law, there was no common agreement on the definition and scope of the circular economy.

That same year, the French Environment and Energy Management Agency (ADEME) organised a national conference on the circular economy and proposed a diagram to complement the definition. This diagram translates the legislative text into visual form. It is based around three groups: economic stakeholders, consumers and waste management activities, and seven pillars: extraction/manufacturing and sustainable supply chain, eco-design, industrial and territorial ecology, functional economy, extension of product lifespan, responsible consumption, and recycling.

We incorporated these latest improvements into the circular economy concept in early 2016, deliberately selecting only ten indicators, each of them chosen as they could be integrated into the cycle and, in most cases, were comparable at European level. We tried to monitor each stage of the circular economy cycle, which involved



finding at least one indicator for each of the seven pillars. We sought advice from ADEME's raw materials expert to improve and support the list. The 10 key indicators for monitoring the French circular economy were published in March 2017.

### **Constraints and advantages of the French monitoring framework**

During the selection process, we encountered difficulties in monitoring the efficiency of the circular economy pillars, since the statistical classifications were not suited to the new concepts and activities of the circular economy.

Two constraints emerged during our selection of the ten indicators. The first one was that raw material consumption (RMC) data were not available. We wanted to include this data in the list, but we did not have a dataset, or a sound methodology that could allow us to update this indicator annually. In the meantime, the situation has changed, as Eurostat has given us a very useful tool to calculate the RMC on a regular basis.

Another constraint was to find an indicator to match the pillar 'functional economy'. We found one eventually, which came from a public opinion survey (frequency of car-sharing by journey type and age). This indicator currently straddles the 'functional economy' and the 'responsible consumption' pillars.

However, our final monitoring framework also has its advantages. It covers the whole circular economy cycle, rather than focusing only on waste recycling. It makes international comparisons possible for eight of the ten indicators. It provides an overall assessment of different policies and identifies room for improvement, for example in food waste reduction, and the repair and use of recycled raw materials. For this latter indicator, we relied on the work done by the task force on Material Flow Accounts organised by Eurostat to calculate the use rate of cyclical materials. This indicator is very interesting, because it complements the incorporation rate of the five recycled materials (paper/cardboard, glass, steel, aluminium and plastics), and thus provides comprehensive information on the circularity of the materials within our economy.



### **Conclusion and next steps**

We will issue a four-page publication on raw material consumption in early 2018, incorporating this key indicator and completing the data framework on the circular economy.

French policymakers are currently working on a circular economy roadmap. We are also working on ways to present the sustainable development goals, to make them accessible to a wider public, in particular those dealing with the circular economy.

The work we have completed on the 10 key circular economy indicators is extremely useful for making a quick judgement of what can or cannot be measured. The European Monitoring Framework for the Circular Economy, published in January 2018, is also invaluable in making international comparisons. ■









# EUROPEAN STATISTICAL SYSTEM

ESS - <http://ec.europa.eu/eurostat/web/ess/latest-news>

Eurostat - <http://ec.europa.eu/eurostat>

-  Statistics Belgium - <http://statbel.fgov.be>
-  National Statistical Institute of Bulgaria - [www.nsi.bg](http://www.nsi.bg)
-  Czech Statistical Office - [www.czso.cz](http://www.czso.cz)
-  Statistics Denmark - [www.dst.dk](http://www.dst.dk)
-  Federal Statistical Office of Germany - [www.destatis.de](http://www.destatis.de)
-  Statistics Estonia - [www.stat.ee](http://www.stat.ee)
-  Central Statistics Office of Ireland - [www.cso.ie](http://www.cso.ie)
-  Hellenic Statistical Authority - [www.statistics.gr](http://www.statistics.gr)
-  National Statistics Institute of Spain - [www.ine.es](http://www.ine.es)
-  National Institute of Statistics and Economic Studies of France - [www.insee.fr](http://www.insee.fr)
-  Croatian Bureau of Statistics - [www.dzs.hr/](http://www.dzs.hr/)
-  National Institute of Statistics of Italy - [www.istat.it](http://www.istat.it)
-  Statistical Service of Cyprus - [www.cystat.gov.cy](http://www.cystat.gov.cy)
-  Central Statistical Bureau of Latvia - [www.csb.gov.lv](http://www.csb.gov.lv)
-  Statistics Lithuania - [www.stat.gov.lt](http://www.stat.gov.lt)
-  Statistics Luxembourg - [www.statistiques.public.lu](http://www.statistiques.public.lu)
-  Hungarian Central Statistical Office - [www.ksh.hu](http://www.ksh.hu)
-  National Statistics Office of Malta - [www.nso.gov.mt](http://www.nso.gov.mt)
-  Statistics Netherlands - [www.cbs.nl](http://www.cbs.nl)
-  Statistics Austria - [www.statistik.at](http://www.statistik.at)
-  Central Statistical Office of Poland - [www.stat.gov.pl](http://www.stat.gov.pl)
-  Statistics Portugal - [www.ine.pt](http://www.ine.pt)
-  National Institute of Statistics of Romania - [www.insse.ro](http://www.insse.ro)
-  Statistical Office of the Republic of Slovenia - [www.stat.si](http://www.stat.si)
-  Statistical Office of the Slovak Republic - <http://slovak.statistics.sk>
-  Statistics Finland - [www.stat.fi](http://www.stat.fi)
-  Statistics Sweden - [www.scb.se](http://www.scb.se)
-  Office for National Statistics of the United Kingdom - [www.ons.gov.uk](http://www.ons.gov.uk)

## EFTA COUNTRIES

-  Statistics Iceland - [www.statice.is](http://www.statice.is)
-  Office of Statistics Liechtenstein - [www.as.llv.li](http://www.as.llv.li)
-  Statistics Norway - [www.ssb.no](http://www.ssb.no)
-  Federal Statistical Office of Switzerland - [www.bfs.admin.ch](http://www.bfs.admin.ch)

