EUROPEAN STATISTICAL SYSTEM

European Statistical System

Links between the European and national levels

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28 countries

1952	**Belgium, France, Germany, Italy, Luxembourg, the Netherlands**
1973	Denmark, Ireland, the United Kingdom
1981	Greece
1986	Portugal, Spain
1995	Austria, Finland, Sweden
2004	Cyprus, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Slovakia, Slovenia
2007	Bulgaria, Romania
2013	Croatia

Legal background

* **REGULATION (EC) No 223/2009 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 11 March 2009**

as amended by:

* Regulation (EU) 2015/759 of the European Parliament and of the Council of 29 April 2015

and as implemented by:

* Commission Regulation (EU) No 557/2013 of 17 June 2013 implementing Regulation (EC) No 223/2009 of the European Parliament and of the Council on European Statistics as regards access to confidential data for scientific purposes and repealing Commission Regulation (EC) No 831/2002

List of National statistical institutes (NSI) and other national authorities

BE - Belgium

NSI: Direction générale Statistique et Information économique

Other national statistical authorities:

1. National Accounts Institute (= DG Statistics and Economic Information - Federal Planning Bureau - National Bank of Belgium)
2. FPS Economy, SMEs, Self-employed and Energy – Energy DG
3. FPS Home Affairs
4. FPS Employment, Labour and Social Dialogue
5. FPS Social Security
6. FPS Justice
7. PPS Science Policy
8. Fund for Accidents at Work
9. FPS Health, Food Chain Safety and Environment
10. Scientific Institute of Public Health
11. Ministry of the French Community - directorate of International Relations
12. Flemish Ministry of Education and Training - Department of Education and Training
13. Ministry of the German-speaking Community - General Services
14. Federal Police

The funcionning

The ESS functions as a **network** in which **Eurostat**'s role is to lead the way in the harmonization of statistics in close cooperation with the national statistical authorities.

* Member States collect data and compile statistics for national and EU purposes
* ESS works focusing mainly on EU policy areas
* ESS also coordinates its work with candidate countries, and at European level with other Commission services, agencies and the ECB and international organizations such as OECD, the UN, the International Monetary Fund and the World Bank.

Links between EU and national levels
Data collection

how does it work?

Objectives

- General overview of data sources at national level
- Data collection at European level
- European standards on data quality
- The data validation process

- Eurostat web site

Data collection at national level

Many and different type of data sources….

* Administrative data
* Survey
* Census
* Other data sources…

P.A.	Activities: [Code] title, description, plus their statistical products and/or other outputs and, if applicable, the flag *NEW* and the list of other financing DGs (for the full description of the statistical products, see the ad hoc Catalogue)	Project/ Process
11	**[ADMIN] ESS.VIP on administrative data sources (ESS.VIP.BUS.ADMIN)** Description: The ADMIN project is a coordinated set of actions aiming to support Member States in using administrative data sources without compromising output quality. Output(s): • Access to and development of data sources (reports, best practices and recommendations, preparation of long-term EU actions on improving access). • ESSnet on quality of multisource statistics. • combining administrative sources and surveys using modelling and estimation methods. • Development of quality standards for statistical frames for social statistics. • Pilot and implementing actions in Member States.	Project (2012-201
11	**[BIGD] ESS.VIP BIGD** Description: In the Scheveningen Memorandum (27/09/2013), the DGINS called for a Big Data Action Plan and Roadmap (BDAR) to follow up its implementation. The BDAR 1.0 was adopted by the European Statistical System Committee on 26/09/2014 and contains a list of actions for achieving the long-term goal of integrating big data sources into official statistics' production. Output(s): • Proposal for a data strategy for Big Data and Official Statistics. • Launch of pilots on big data and official statistics. The following data sources/domains are being envisaged: Web-scraping from internet websites for job vacancies, Smart electricity meters for energy consumption and other applications (use of buildings/apartments for different purposes), Automatic vessel identification system as frame for improving maritime transport statistics, estimates of fuel consumption and identification of activities on sea, e.g. fishery. • Combination of various data sources for tourism statistics. • Conditions of access and use of mobile phone data / Analysis of portfolio of statistical outputs from mobile phone data. • Cross-sectional work on methodology, quality, IT infrastructure and dissemination. • Ethical review and guidelines on big Data and Code of practice/principles of official statistics of the UN as input to discussions on updating European statistics code of practice. • Definition of communication strategy for big data and official statistics. • Review of legal conditions on using big data for official statistics. Statistical laws at European and national level, data protection and privacy laws as well as sectoral legislation will be examined considering selected big data sources (mobile communication, websites and social media, smart meters). Final output will be available in 2017. First outputs on EU laws in 2016. • Training strategy to bridge the big data skills gap within the ESS. • Workshop on Big Data. • Run tests and pilots on Sandbox (= a server environment run by the Irish Centre for High End Computing for supporting international collaboration projects on analysing big data for official statistics).	Project (2014-202
11	**[CollEconPlatf] Collecting Data and Compiling Statistics on the Collaborative Economy** *NEW* Description: The aim of the project is to start a regular production of statistics on the collaborative economy and to improve the quality of existing data collections. The aim is also to tackle several long term strategic issues related to the production of official statistics in an increasingly digitised world: An efficient collection of basic data from owners of private data (Collaborative Economy Platforms) and exploring new ways of collaboration with NSIs. The statistical domains affected include national accounts, business- and labour market statistics. Some attention will be paid to tourism statistics. Product(s): • [NAMA] Annual national accounts. • [Tran-Ind] Transport indicators. • [EmplUnempl] Employment and unemployment. • [LMP] Labour market policy. • [GVC-Ind] Globalisation indicators. • [SBS] Structural Business Statistics. • [TourAcc] Tourism industry - accommodations. • [DAE] Digital Agenda for Europe. • [ISocEnt] Information society - enterprises. • [ISocHI] Information society - households and individuals. Other output(s): • Defining new statistics to be produced. • Agreeing on statistical methodology. • Setting up new data collection systems in corporation with NSIs. • Developing new	Project (2017-201

Data collection at national level

Administrative data versus statistical data

* Administrative data refers to information collected primarily for administrative (not statistical) purposes.
* This type of data is collected by government departments and other organisations for the purposes of registration, transaction and record keeping, usually during the delivery of a service.
* Government departments are the main (although not exclusive) purveyors of large administrative databases, including welfare, tax, health and educational record systems.
* These datasets have often been used to produce official statistics to inform policy-making.

Data collection at national level

Possible scenarios

* 1. Direct use of administrative data to produce national economic and social statistics, for example crime rates, election statistics and employment statistics
* 2. Linking different complementary administrative datasets. Data linkage is facilitated through concerted collaboration efforts between data holding authorities, and a well established unified system (including personal identity codes for accessing to different datasets).
* 3. Combining survey and administrative data.

Data collection at national level

Advantages of administrative data	Disadvantages of administrative data
Already collected for operational purposes and therefore no additional costs of collection (though costs of extraction and cleaning).	Information collected is restricted to data required for administrative purposes – limited to users of services and administrative definitions.
Regularly (sometimes continuously) updated.	Possible lack of context information
Can provide historical information and allow consistent time-series to be built up.	Changes to administrative procedures could change definitions and make difficult comparison over time problematic.

Data collection at national level

Advantages of administrative data	Disadvantages of administrative data
Near 100% coverage of population interest.	Quality issues with variables less important to the administrator e.g. address details may well not be updated.
Regularly (sometimes continuously) updated.	Possible fragmentation of data sets
Captures individuals who may not respond to surveys.	Metadata issues (may be lacking or of poor quality)

Data collection at national level

Survey ….

OECD Glossary: survey is an investigation about the characteristics of a given population by means of collecting data from a sample of that population and estimating their different profiles

Data collection at national level

Survey

makes international comparisons easier, compared to registration data

Data collection at national level

Census…

is the procedure of systematically acquiring and recording information about the members of a given population.

Data collection at national level

Data linkage

1. Linking **individual level administrative data** with other **individual level administrative data**
2. Linking **individual level administrative data** with **cross-sectional or longitudinal survey data**
3. Linking **individual level administrative data** with **contextual information**

Business objective perspective: criteria

EFFICIENCY

Efficiency means achieving maximum output from a given level of resources used to carry out an activity

EFFECTIVENESS

- Effectiveness means the extent to which the activity's stated objectives have been met

EFFICACY

- Efficacy means the power to produce a desired result or effect

Data collection at EU level

Adopting the EU perspective

Business objectives:

* Improve the overall efficiency of statistical production in Europe;
* Improve the quality of statistical production;
* Improve responsiveness to policy needs.

Data collection at European level

Main constraints

* 1. Diversity of national environments;
* 2. Limited resources;
* 3. Subsidiarity principle;
* 4. Preservation of statistical confidentiality

Constraint: Subsidiary principle

The principle of subsidiarity is established in Article 5 of the Treaty on European Union.

The principle of subsidiarity determines when the EU is competent to legislate, and contributes to decisions being taken as closely as possible to the citizen.

It appears alongside another principle that is also considered to be essential to European decision-making: the principle of proportionality.

Constraint: Subsidiary principle

The principle of subsidiarity aims at determining the level of intervention that is most relevant in the areas of competences shared between the EU and the Member States.

The Protocol on the application of the principles of subsidiarity and proportionality lays down three criteria aimed at establishing the desirability of intervention at European level:

- Does the action have transnational aspects that cannot be resolved by Member States?
- Would national action or an absence of action be contrary to the requirements of the Treaty?
- Does action at European level have clear advantages?

Links between EU and national levels

Common objectives

Quality data

EUROPEAN STATISTICAL SYSTEM

European Statistical System — Committed to Quality

September 2016

Quality Declaration of the European Statistical System

The European Statistical System is a partnership in which Eurostat and the national statistical authorities of each EU Member State and EFTA country cooperate. Together, our mission is to provide independent high quality statistical information at European, national and regional levels and to make this information available to everyone for decision-making, research and debate.

The Quality assessment

The European Statistics Code of Practice highlights the importance of data quality assessment in several instances. Its principles require an assessment of the various product quality components

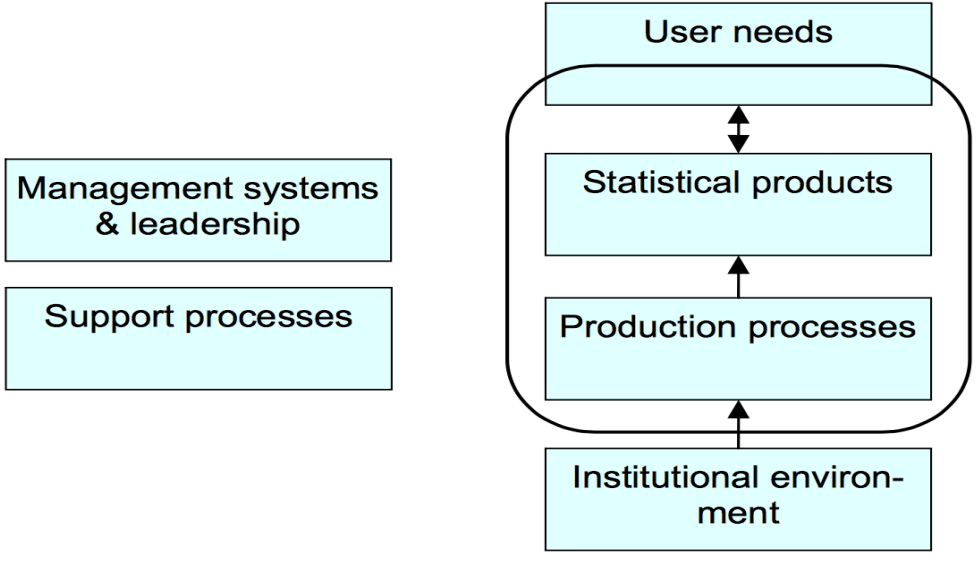
The quality assessment

Production of high quality statistics depends on the assessment of data quality.

Without a systematic assessment of data quality, the statistical office will risk to lose control of the various statistical processes such as data collection, editing or weighting.

EUROPEAN STATISTICAL SYSTEM

Elements of a quality management system



Corresponding principles from the European Statistics Code of Practice

Relevance, accuracy and reliability, timeliness and punctuality, coherence and comparability, accessibility and clarity

Sound methodology, appropriate statistical procedures, non-excessive burden on respondents, cost effectiveness

Professional independence, mandate for data collection, adequacy of resources, quality commitment, statistical confidentiality, impartiality and objectivity

Links between EU and national levels

Common objectives

Data validation

Definition

The term validation refers to any process used to establish whether data conforms to specific criteria.

Validation is a key task performed by all statistical domains.

To address this issue, Eurostat and the ESS launched the ESS.VIP project on **Common Data Validation Policy**

National versus EU level

The lack of harmonisation at ESS level has several negative consequences:

* **The validation process is not systematically considered when designing a new statistical domain or data collection.**

* **It is difficult to develop a set of common validation tools (building blocks) to support the different validation approaches.**

National versus EU level

The lack of harmonisation at ESS level has several negative consequences:

* Diversity of agreements on quality compliance depending on the statistical domain.
* Inefficient validation processes, endless communications with data providers and revised data transmitted several times.
* Tasks performed in a redundant way because there is no common agreement on the distribution of validation responsibilities between Member States and Eurostat.

Validation project objectives

How to improve a coherent validation policy in the different statistical domains, in cooperation with MS:

* Standard validation language
* Solutions for complex validation actions to ensure:
  * Coherence between data files
  * Coherence between Member States
  * Integrity of the ESS data

Links between EU and national levels

Common objectives

Comparability

Comparability challenge

An attribute of statistics measuring the extent to which differences between statistics can be attributed to differences between the values of the statistical characteristics…..

or policy gaps….???

Comparability challenge

Comparability aims at measuring the impact of differences in applied statistical concepts, definitions, measurement tools and procedures on the comparison of statistics between geographical areas, non-geographical dimensions, sectorial domains or over time.

Comparability challenge

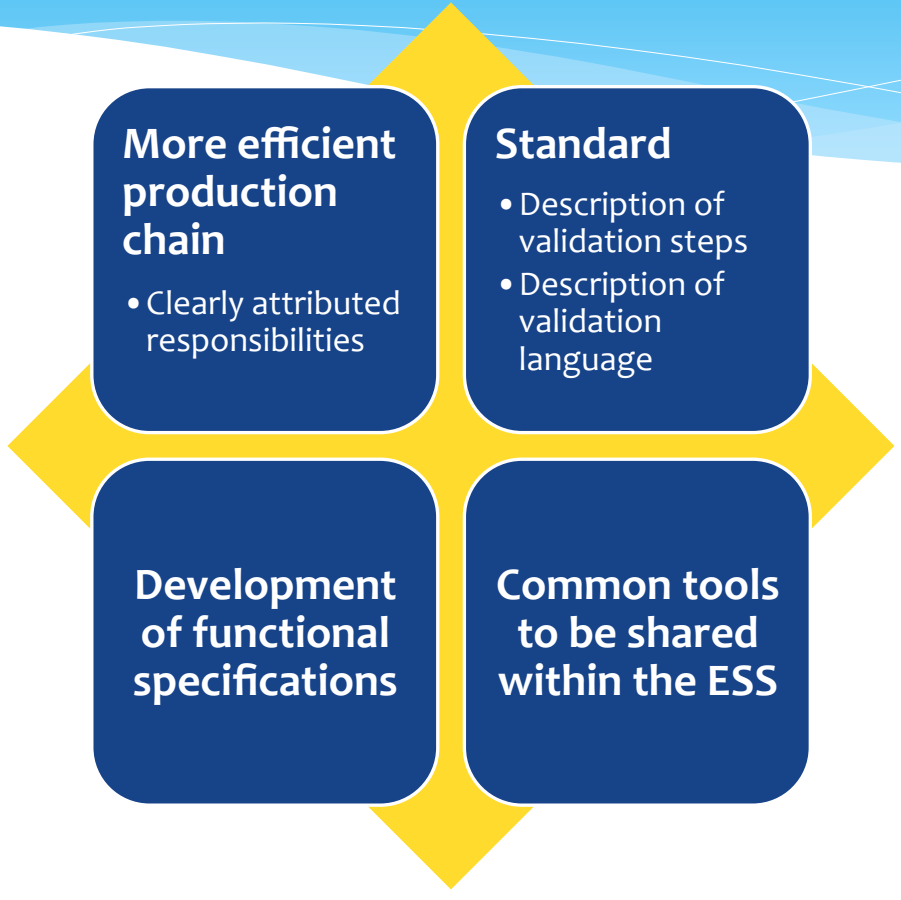
* The concept can be further broken down into:

* (a) Comparability - geographical, referring to the degree of comparability between statistics measuring the same phenomenon for different geographical areas
* (b) Comparability over time, referring to the degree of comparability between two or more instances of data on the same phenomenon measured at different points in time.
* (c) Comparability between domains, referring to the comparability between different survey results which target similar characteristics in different statistical domains.

Comparability challenge

According to the European Statistics Code of Practice, European statistics should be consistent internally, over time and comparable between regions and countries; it should be possible to combine and make joint use of related data from different sources…..

Comparability challenge



The link

Statistical Data and Metadata eXchange (SDMX) standardises the way data are organised and exchanged and provides international guidelines on how to shape the data.

What

SDMX provides

* A logical model to describe statistical data, together with guidelines on how to structure the content
* A standard for automated communication from machine to machine
* A technology supporting standardised IT tools that can be used by all parties involved in the data exchange and processing

Why?

The implementation of a *SDMX content-oriented* pilot project aims to enhance the harmonization of both *structural* and *reference* metadata between European Member States

SDMX allows the exchange of metadata between European Member States and other European institutional bodies

Why

For this purpose, the SDMX, improving metadata exchange and sharing, will increase comparability reducing discrepancies between national statistical systems.

SDMX approach

SDMX structure

Two main components of SDMX can be identified:

* SDMX information model
* SDMX Data exchange

SDMX structure

SDMX information Model

* An information model provides a format to describe a domain (irrespective of the implemented hardware/software), specifying concepts, relationships, constraints, rules and interoperability between data.

* The mapping of the information model generates data models.

SDMX structure

SDMX Data exchange

* Interoperability refers to the ability of diverse systems to work together.
* If two or more systems are able to communicate and exchange data, a syntactic interoperability exists.
* If two or more systems are capable to automatically interpret the exchanged information and produce expected and pre-defined results – it means that what is sent is the same as what is understood – a semantic interoperability has been created.

SDMX Information Model

SDMX Metadata

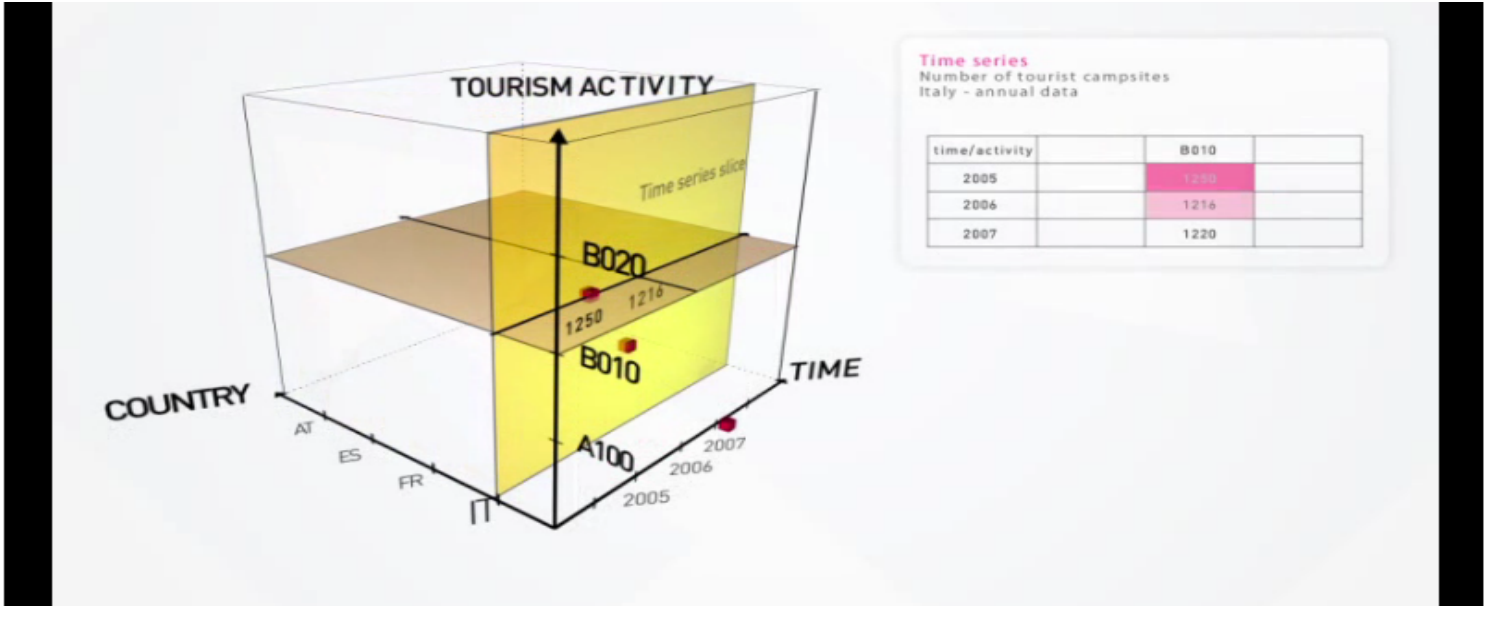
Statistical concepts (metadata) are defined to understand the meaning of numerical observations.

Data Structure Definition

Number of touristic establishments in Italy, annual data

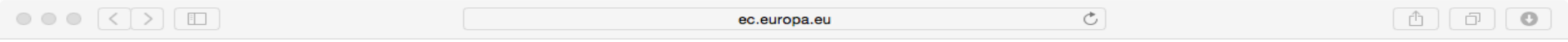
Indicator / Time	A100 Hotels and similar	B010 Tourist Campsites	B020 Holiday dwellings
2002A00	33611	2374	61479
2003A00	33480	2530	58526
2004A00	33518	2529 E	68376
2005A00	33527	2611 P	61810

Data Structure Definition



Example:

http://ec.europa.eu/eurostat/cache/metadata/en/tour_occ_esms.htm



eurostat

Capacity and occupancy of tourist accomodation establishments

Reference Metadata in Euro SDMX Metadata Structure (ESMS)
Compiling agency: Eurostat, the statistical office of the European Union

Eurostat metadata

Reference metadata

National metadata

National reference metadata

National metadata produced by countries and released by Eurostat

Belgium	Bulgaria	Czech Republic	Denmark
Germany	Estonia	Ireland	Spain
France	Croatia	Italy	Latvia
Lithuania	Luxembourg	Hungary	Malta
Netherlands	Austria	Poland	Romania
Slovenia	Slovakia	Finland	Liechtenstein
Switzerland	Serbia		

For any question on data and metadata, please contact: EUROPEAN STATISTICAL DATA SUPPORT

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NEWS RELEASES

See complete list

23/10/2017

Euro area and EU28 government deficit at 1.5% and 1.7% of GDP respectively

In 2016, the government deficit and debt of both the euro area (EA19) and the EU28 decreased in relative terms compared with 2015. In the euro area the government deficit to GDP ratio fell from 2.1% in 2015 to 1.5% in 2016, and in the EU28 from 2.4% to 1.7%. In the euro area the government debt... *more*

Release calendar

WHAT'S NEW?

See complete list

28/10/2017

Eurostat celebrates the Czech Republic

27/10/2017

Important milestones in life

26/10/2017

Eurostat celebrates Austria

25/10/2017

Mamma mia! EU pasta comes

DATA

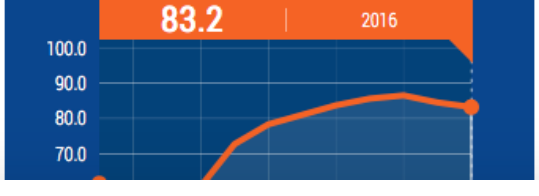
Most popular tables | Complete database | Visualisations & Tools

ECONOMIC TRENDS

Government gross debt (% GDP)

EU (28 countries)

Annual data | Quarterly data



Many thanks!