



QAF

European Statistical System

QUALITY ASSURANCE FRAMEWORK

In order to assist the implementation of the  
European Statistics Code of Practice,  
as revised by the Sponsorship on Quality

Version 1.0

# Quality Assurance Framework (QAF)

## Table of Contents

	Page
Introduction.....	3
Quality Assurance Framework.....	4
Principle 4 – Commitment to Quality.....	4
Principle 7 – Sound Methodology .....	7
Principle 8 – Appropriate Statistical Procedures .....	10
Principle 9 – Non-excessive Burden on Respondents .....	14
Principle 10 – Cost effectiveness .....	17
Principle 11 – Relevance.....	19
Principle 12 – Accuracy and Reliability .....	21
Principle 13 – Timeliness and Punctuality.....	23
Principle 14 – Coherence and Comparability.....	25
Principle 15 – Accessibility and Clarity.....	27

# Introduction

In order to assist the implementation of the European Statistics Code of Practice (CoP), as revised by the Sponsorship on Quality, a supporting document – Quality Assurance Framework (QAF) – has been prepared. The QAF identifies possible activities/methods/tools that can provide guidance/evidence for the implementation of the Indicators, i.e. it facilitates taking the steps necessary to operationalize the Indicators that are required to adhere to each Principle of the CoP. While the CoP sets the Principles and Indicators as standards by which the compliance by National and Community statistical authorities will be judged through Peer Reviews and other forms of assessment, the QAF describes, for each Indicator, activities/tools/methods that facilitate the implementation of the CoP.

In accordance with the work programme of the Sponsorship the QAF has been developed to support the implementation of Principles 4 and 7 to 15 of the European Statistics Code of Practice as revised.

- P4 – Commitment to Quality
- P7 – Sound Methodology
- P8 – Appropriate Statistical Procedures
- P9 – Non-excessive Burden on Respondents
- P10 – Cost effectiveness
- P11 – Relevance
- P12 – Accuracy and Reliability
- P13 – Timeliness and Punctuality
- P14 – Coherence and Comparability
- P15 – Accessibility and Clarity

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# Quality Assurance Framework (QAF)

**Principle 4: Commitment to Quality. Statistical authorities are committed to quality. They systematically and regularly identify strengths and weaknesses to continuously improve process and product quality.**

**Indicator 4.1: Quality policy is defined and made available to the public. An organizational structure and tools are in place to deal with quality management.**

## Methods at institutional level

1. A Quality Commitment Statement is made publicly available, laying out principles and commitments related to quality in statistics which are consistent with the goals set out in the Mission and Vision statements.
2. There is a clear organizational structure for managing quality within the statistical authority<sup>1</sup>. Examples of such a structure are:
  - Quality Committee;
  - Quality Manager;
  - Centralized Quality unit;
  - Other structures (e.g. a selected group of staff trained as “quality pilots” to act as project/processes coach/advisers).
3. Guidelines are defined on how to implement quality management within the statistical production process, comprising:
  - A description of the statistical production process and the identification of documentation for each stage, following the Business Process Model for Statistics;
  - A description of the methods to monitor the quality of each stage of the statistical production process.
4. Quality guidelines are made available to external users at least in a summary version.
5. An appropriate infrastructure is in place in order to ensure updated documentation on quality.
6. Specific training courses support the quality policy and are available to relevant staff on a regular basis.

## Reference Documentation

NSI's manuals/handbooks on quality guidelines (e.g. United Kingdom, Finland, Canada)

Link to INSEE and Eurostat website (quality section):

[http://epp.eurostat.ec.europa.eu/portal/page/portal/quality/code\\_of\\_practice/compliance](http://epp.eurostat.ec.europa.eu/portal/page/portal/quality/code_of_practice/compliance)

<http://www.insee.fr/en/insee-statistique-publique/default.asp?page=qualite/pratiques.htm>

<http://www1.unece.org/stat/platform/display/metis/The+Generic+Statistical+Business+Process+Model/>

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<sup>1</sup> Statistical authority means Eurostat, national statistical institutes (NSIs) and other national authorities responsible for the development, production and dissemination of European statistics, where appropriate (cf. Regulation (EC) No 223/2009, Articles 4 and 5).

## **Indicator 4.2: Procedures are in place to plan and monitor the quality of the statistical production process.**

### **Methods at institutional level**

1. Methodological and technical support and general tools are provided by specialized / dedicated units, namely Methodology and IT, for implementing process quality monitoring/quality assurance plan.

### **Methods at product/survey level**

2. Procedures are in place to monitor the quality of different stages of the statistical production, e.g. according to a quality assurance plan or a similar scheme, like the establishment of regular expert group meetings.
3. The quality assurance plan, or any other similar scheme, describes the working standards, the formal obligations (such as laws and internal rules) and the set of quality control actions to prevent, monitor and evaluate sampling and non sampling errors and to control different points at each stage of the statistical process.
4. The quality assurance plan, or any other similar scheme:
  - takes user's needs into account and checks the relevance of the statistical operation;
  - ensures effective technical and organizational design;
  - assures the quality of data collection, including the use of administrative data;
  - assures the quality of data editing;
  - ensures the systematic examination of possible trade-offs within quality;
  - makes information accessible and comprehensible to users, and collects reactions/feedback from users.

### **Reference Documentation**

Standards for statistical surveys:

[http://www.whitehouse.gov/omb/assets/omb/inforeg/statpolicy/standards\\_stat\\_surveys.pdf](http://www.whitehouse.gov/omb/assets/omb/inforeg/statpolicy/standards_stat_surveys.pdf)

[Handbook on Data Quality – Assessment Methods and Tools \(DatQam Manual\)](#)

ESS Guidelines for finding a balance between accuracy and delays in the statistical surveys

[ESS Handbook on improving quality by analysis of process variables](#)

## **Indicator 4.3: Product quality is regularly monitored, assessed with regard to possible trade-offs, and reported according to the quality criteria for European Statistics.**

### **Methods at institutional level**

1. Procedures based on quality reporting are in place to internally monitor product quality. Results are analyzed regularly and top management is informed in order to decide improving actions.
2. User Satisfaction Surveys are implemented on a regular basis and their results are made public and incorporated where useful in Quality Reports, since they monitor "Relevance", amongst other dimensions.

## Methods at product/survey level

3. User oriented quality reports are made available to the public.
4. Producer oriented quality reports are carried out regularly (periodicity to be determined: e.g. by the specific Regulation and the survey life cycle), bearing in mind the ESS standard quality reporting scheme and the ESMS standards for reference metadata and quality indicators. They are used by the statistical authority as an instrument for quality monitoring over time. In this context several tools can be used such as paper publications, hyperlinks, information systems among others.
5. Producer and user oriented reports are produced for all European Statistics.

## Reference Documentation

[ESS Standard for Quality reports \(2009\)](#)

[ESS Handbook for Quality reports \(2009\)](#)

[European Statistics Metadata System \(ESMS\)](#)

**Indicator 4.4: There is a regular and thorough review of the key statistical outputs using also external experts where appropriate.**

## Methods at institutional level

1. An appropriate Plan for implementing Quality Reviews (such as Auditing and Self-Assessment) is defined/implemented regularly for key statistical outputs and systematically in the case of processes reengineering.
2. Quality reviews have as reference documentation:
  - Quality guidelines/quality assurance plan, or a similar scheme;
  - Producer oriented quality reports and/or user oriented quality reports;
  - Self-assessments questionnaires filled by producers;
  - Reports from audit interviews;
  - Questionnaires filled by respondents and/or users;
  - Any other satisfaction survey.
3. The findings of the quality reviews result in action plans.
4. Feedback from different users is used as input to action plans (making use of User Satisfaction Surveys or Focus groups).
5. Outside experts are deployed to review key statistical domains (e.g. Data Review of Standards and Codes (ROSC) by the IMF).
6. An appropriate structure for carrying out Quality reviews is in place for internal audits and self-assessments.
7. Internal auditors are trained in auditing techniques and behavior.
8. Benchmarking on key statistical processes with other statistical authorities is carried out to identify good practices.

## Reference Documentation

ISO Norms on auditing ISO19011

[Handbook on Data Quality – Assessment Methods and Tools \(DatQam Manual\)](#)

[Self-assessment checklist for Survey Managers \(DESAP Checklist\)](#)

[International Statistical Processes Assessment Checklist \(ISPAC\) – condensed version 2009](#)

[International Statistical Processes Assessment Checklist \(ISPAC\) – full version 2007](#)

**Principle 7: Sound Methodology. Sound Methodology underpins quality statistics. This requires adequate tools, procedures and expertise.**

**Indicator 7.1: The overall methodological framework used for European Statistics follows European and other international standards, guidelines, and good practices.**

### Methods at institutional level

1. The methodological framework and the procedures for implementing statistical operations are integrated into a standard methodological document and periodically reviewed.
2. Divergence from existing European and international methodological recommendations are explained and justified.

## Reference Documentation

Classifications and methodologies:

[http://ec.europa.eu/eurostat/ramon/index.cfm?TargetUrl=DSP\\_PUB\\_WELC](http://ec.europa.eu/eurostat/ramon/index.cfm?TargetUrl=DSP_PUB_WELC)

EU Legislation:

[http://ec.europa.eu/eurostat/ramon/nomenclatures/index.cfm?TargetUrl=LST\\_NOM&StrGroupCode=L\\_EX\\_MANUAL&StrLanguageCode=EN](http://ec.europa.eu/eurostat/ramon/nomenclatures/index.cfm?TargetUrl=LST_NOM&StrGroupCode=L_EX_MANUAL&StrLanguageCode=EN)

**Indicator 7.2: Procedures are in place to ensure that standard concepts, definitions and classifications are consistently applied throughout the statistical authority.**

### Methods at institutional level

1. Concepts, definitions, and classifications are defined by the Statistical Authority, are applied in accordance with European or national legislation and are documented.
2. A methodological infrastructure (e.g. units, nets, committees) is in place which defines statistical methods, monitors their implementation and validates the results. In particular, it defines and makes available standard tools for every stage of the business process model (e.g. sampling, collecting and processing data, etc.).

### Methods at product/survey level

3. Surveys or statistical operations benefit from the views of relevant experts and users where appropriate.

4. Methodological documentation is elaborated for each statistical operation containing all pertinent information on metadata, namely concepts, methods, classifications, and is made public at least in a summary form.
5. Staff attends seminars and workshops at a national or international level on the application of standards, classifications, etc.

## Reference Documentation

Classifications:

[http://ec.europa.eu/eurostat/ramon/nomenclatures/index.cfm?TargetUrl=LST\\_NOM&StrGroupCode=C\\_LASSIFIC&StrLanguageCode=EN](http://ec.europa.eu/eurostat/ramon/nomenclatures/index.cfm?TargetUrl=LST_NOM&StrGroupCode=C_LASSIFIC&StrLanguageCode=EN)

Concepts and definitions:

[http://ec.europa.eu/eurostat/ramon/nomenclatures/index.cfm?TargetUrl=LST\\_NOM&StrGroupCode=C\\_ONCEPTS&StrLanguageCode=EN](http://ec.europa.eu/eurostat/ramon/nomenclatures/index.cfm?TargetUrl=LST_NOM&StrGroupCode=C_ONCEPTS&StrLanguageCode=EN)

**Indicator 7.3: The business register and the frame for population surveys are regularly evaluated and adjusted if necessary in order to ensure high quality.**

### Methods at product/survey level

1. For the business register, there is an updating procedure on all relevant changes in the population of businesses (i.e. change of activity, births, deaths, mergers, and acquisitions and other structural changes as well as changes of main variables). This update is performed continuously.
2. The business register is subject to a regular follow-up survey on quality and/or quality indicators are calculated and evaluated.
3. For household surveys the appropriate population frame is updated regularly and sufficiently often to ensure the quality of samples.
4. Information gathered during the conduct of surveys is used to assess the quality of the frame, especially its coverage.

## Reference Documentation

EU Business Registers Recommendations Manual:

[http://epp.eurostat.ec.europa.eu/portal/page/portal/product\\_details/publication?p\\_product\\_code=KS-32-10-216](http://epp.eurostat.ec.europa.eu/portal/page/portal/product_details/publication?p_product_code=KS-32-10-216)

**Indicator 7.4: Detailed concordance exists between national classifications systems and the corresponding European systems.**

### Methods at product/survey level

1. National classifications are consistent with the corresponding European classification systems.
2. Correspondence tables are documented and kept up-to-date. Explanatory notes or comments are made available to the public.

## Reference Documentation

[EU Business Registers Recommendations Manual](#)

[Eurogroups Register](#)

### **Indicator 7.5: Graduates in the relevant academic disciplines are recruited.**

#### **Methods at institutional level**

1. Staff of the statistical authority is recruited openly and with appropriate qualifications from relevant disciplines.

## Reference Documentation

[Eurostat recruitment procedures](#)

### **Indicator 7.6: Statistical authorities implement a policy of continuous vocational training for their staff.**

#### **Methods at institutional level**

1. An adequate structure ensures continuous vocational training of staff which is an integral part of the human resource policy.
2. Continuous vocational training is encouraged and valued in the career path.
3. Staff skills are updated concerning new tools and fields of study.
4. Attendance of staff to relevant training courses and/or to national, European or other international conferences is encouraged.

## Reference Documentation

[European Statistical Training Programme](#)

### **Indicator 7.7: Co-operation with the scientific community is organized to improve methodology, the effectiveness of the methods implemented and to promote better tools when feasible.**

#### **Methods at institutional level**

1. There is regular contact with the scientific community to discuss methodological, IT and innovation developments.
2. Staff collaborates on methodological issues with colleagues at international level.
3. Regular participation at relevant national and international conferences is encouraged.
4. National and international conferences are organized and the participation of ESS statistical authorities is encouraged.

## Methods at product/survey level

5. Evaluations/assessments of the methods used are requested from external experts where appropriate.

## Reference Documentation

[Handbook on Data Quality – Assessment Methods and Tools \(DatQam Manual\)](#)

State of the art concerning the auditing activity in NSI' s (October, 2003)

**Principle 8: Appropriate Statistical Procedures. Appropriate statistical procedures implemented from data collection to data validation, underpin quality statistics.**

**Indicator 8.1: When European Statistics are based on administrative data, the definitions and concepts used for administrative purposes are a good approximation to those required for statistical purposes.**

## Methods at institutional level

1. The statistical authority is responsible for the statistical processing of administrative data used for European Statistics.
2. Statistical processing is clearly distinguished from administrative data processing and includes appropriate validation rules and specific procedures for checking quality.

## Methods at product/survey level

3. Documentation exists describing the differences between administrative and statistical processes in terms of definitions, concepts, coverage, etc.
4. Differences in concepts are thoroughly studied and measures to deal with these differences are taken, when appropriate.

## Reference Documentation

[Quality assessment of administrative data for statistical purposes \(Eurostat 2003\)](#)

[Checklist for the quality evaluation of administrative data sources \(NL 2009\)](#)

**Indicator 8.2: In the case of statistical surveys, questionnaires are systematically tested prior to the data collection.**

## Methods at institutional level

1. A procedure is in place to assess and validate new questionnaires and involves relevant experts (i.e. in the statistical domain and in questionnaire design).

## Methods at product/survey level

2. Prior to data collection, survey questionnaires are tested by appropriate methods (pilot in real situation, in depth - interviews, focus groups, interviewer support, etc).The response time (the interview length) is estimated at this stage, if necessary.

3. The test results are taken into account in the process of implementing the final questionnaire, and documented in a report.

### Reference Documentation

[The handbook of Recommended Practices for Questionnaire Development and Testing Methods in the ESS](#)

**Indicator 8.3: Survey designs, sample selections, and estimation methods are well based and regularly reviewed and revised as required.**

#### Methods at institutional level

1. Within the statistical authority, an appropriate organizational structure provides guidelines, recommends appropriate methodologies and periodically examines the methods used for survey sampling, sample selections and estimation methods.
2. The statistical authority reports publicly on sample selection and estimation methods when they occur.

#### Methods at product/survey level

3. Survey designs and sample selections are developed according to standard methods.
4. Sample designs are periodically renewed for recurrent surveys.
5. Methods for calculating the accuracy of statistical data allow for the accuracy of European Statistics to be compared.
6. Estimations of sampling precision are properly measured and adequately reported to users.
7. Estimation methods, including the correction of non-response and data calibration, follow transparent methodological rules.

### Reference Documentation

[Quality improvement of the survey processes - EI 2009](#)

[Survey sampling reference guidelines - Introduction to sample design and estimation techniques - \(2008\)](#)

[Estimation of Standard Error of Indices in the sampling business Surveys \(SI 2006 and EN Q2006\)](#)

[Sampling Issues in Business Surveys](#) (June, 2005)

**Indicator 8.4: Data collection, data entry, and coding are routinely monitored and revised as required.**

#### Methods at product/survey level

1. Data collection is optimized in order to reduce costs and response burden, to improve accuracy and to reduce non-sampling errors.
2. Respondents are provided with all necessary documents (i.e. letters, questionnaires, leaflets, especially in the case of self-administrated questionnaires and feedback if possible). These documents are reviewed regularly.

3. Data collection techniques are periodically monitored.
4. Training courses are provided for interviewers. For each survey, an interviewer manual/handbook exists and the accompanying interviewer procedures are implemented.
5. Follow-up procedures are in place and implemented in the case of non-response.
6. The data coding methods are documented and stored.
7. Automatic coding methods are periodically reviewed and revised if necessary.
8. Quality indicators related to data collection and coding are produced and analyzed.

### Reference Documentation

[Estimation of the Interviewer Effect by IT 2006 and EN Q2006](#)

[Using Real-Time Process Measures to Improve Data Collection WESTAT 2004 ,EN Q2004](#)

[Web data collection in a mixed mode approach an experiment NL 2006 and EN Q2006](#)

**Indicator 8.5: Appropriate editing and imputation methods are used and regularly reviewed, revised or updated as required.**

### Methods at institutional level

1. Procedures for editing and imputation techniques are promoted and shared in order to encourage their harmonization.

### Methods at product/survey level

2. Analysis of the effect of editing and imputation is undertaken as part of assessing quality of the data collection.
3. Editing and imputation techniques follow standard methodological rules and are documented.

### Reference Documentation

[Guidelines for balance between accuracy and delays](#)

[Seasonal Adjustment Methods and Practices](#)

[ESS guidelines on seasonal adjustment](#)

[Recommended Practices for Editing and Imputation in Cross-Sectional Business Surveys](#)

**Indicator 8.6: Revisions follow standard, well-established and transparent procedures.**

### Methods at institutional level

1. Guidelines and principles relating to the revision of published statistics exist, are routinely applied and made known to users.
2. Methodological improvements are promoted through regular and permanent actions (i.e. seminars on methodology, expert meetings, self assessments, audits etc).

## Methods at product/survey level

3. Revisions are accompanied by all necessary explanations and made available to users.
4. Quality indicators on the revisions made are regularly calculated in accordance with current standards and made known to users.

## Reference Documentation

OECD / Eurostat Guidelines on Revisions Policy and Analysis:

[http://www.oecd.org/document/21/0,3343,en\\_2649\\_34257\\_40016853\\_1\\_1\\_1\\_1,00.html](http://www.oecd.org/document/21/0,3343,en_2649_34257_40016853_1_1_1_1,00.html)

**Indicator 8.7: Statistical authorities are involved in the design of administrative data in order to make administrative data more suitable for statistical purposes.**

## Methods at institutional level

1. The statistical authority monitors developments concerning regulations/legal acts which involve the use of the administrative data.
2. The statistical authority is consulted when administrative forms or files are created, reviewed or revised and is involved in changes to the design or processing in order to assess the continuity of the series.
3. The statistical authority investigates the potential for statistical purposes of available administrative sources.

## Methods at product/survey level

4. Regular meetings take place between the statistical authority and the providers of administrative data in order to be kept informed about amendments to the administrative data (contents, production process, etc.).

## Reference Documentation

Use of administrative data for business statistics:

<http://essnet.admindata.eu/WikiEntity?objectId=4356>

[Quality assessment of administrative data for statistical purposes - Eurostat 2003](#)

**Indicator 8.8: Agreements are made with owners of administrative data which set out their shared commitment to the use of these data for statistical purposes.**

## Methods at institutional level

1. Arrangements between statistical and administrative authorities are in place to facilitate the use of administrative data for statistical purposes,

## Methods at product/survey level

2. Documentation about the contents of the administrative data and the production process of the data (such as a methodological document, concepts and definitions and populations) is available to the statistical authority.

3. Joint agreements concerning the security of the data, the provision of files of individual data and the delivery deadlines are jointly developed by the statistical authority and the provider of administrative data.

### Reference Documentation

[Quality assessment of administrative data for statistical purposes - Eurostat 2003](#)

[Checklist for the quality evaluation of administrative data sources - NL 2009](#)

**Indicator 8.9: Statistical authorities co-operate with owners of administrative data in assuring data quality.**

### Methods at institutional level

1. The administrative data owner is kept informed about the way administrative data are used for statistical purposes, and related quality issues.
2. The statistical authority makes sure that arrangements are in place and, where possible, provide tools to assess the quality of the administrative data, while respecting confidentiality.

### Reference Documentation

[Quality assessment of administrative data for statistical purposes - Eurostat 2003](#)

**Principle 9: Non-excessive Burden on Respondents. The reporting burden is proportionate to the needs of the users and is not excessive for respondents. The statistical authorities monitor the response burden and sets targets for its reduction over time.**

**Indicator 9.1: The range and detail of European Statistics demands is limited to what is absolutely necessary.**

### Methods at institutional level

1. Priorities for European Statistics are set at an ESS level taking burden on respondents into account.
2. Analysis of EU regulations on European statistics is undertaken in order to verify the response burden and level of details of variables foreseen by the regulations.
3. The content of the statistical work programme is assessed to eliminate duplication or redundancy across the statistical authority.

### Process/Survey level

4. European and national needs of statistical information and level of detail by domain are analyzed in the planning phase of data collections.
5. Response burden is measured periodically.

## Reference Documentation

[EU regulations by domain](#)

[ESS Handbook for Quality reports \(2009\)](#)

**Indicator 9.2: The reporting burden is spread as widely as possible over survey populations.**

### Methods at institutional level

1. ESS reviews of reporting burden are undertaken on a regular basis.
2. Action plans for simplification/modernization to decrease burden on respondents are developed and monitored.
3. Performance indicators on reporting burden are produced and analyzed periodically by senior management.
4. Statistical sampling methods are used to ensure the reporting burden does not fall on particular categories of respondent unnecessarily.

### Methods at product/survey level

5. Reporting burden is reduced by appropriate sampling design.
6. The response burden is calculated for the time needed: to answer the questionnaire, to retrieve the required information, to consult internal or external expertise to answer the questionnaire and to handle sensitive information.
7. Questions used to collect information which will not be published are limited and justified.
8. Use of coordinated sampling is desirable.

## Reference Documentation

[Eurostat sampling reference guidelines](#)

[Handbook on design and implementation of business surveys](#)

**Indicator 9.3: The information sought from businesses is, as far as possible, readily available from their accounts and electronic means are used where possible to facilitate its return.**

### Methods at institutional level

1. Manuals and technical tools (e.g. software) are developed to increase electronic means for data collection.
2. A plan for implementing electronic data collection for businesses exists.
3. A common web site for business data collection is in place.

## Methods at product/survey level

4. Business accounting concepts and standardized IT systems such as XBRL are used in data collections from businesses.
5. Survey managers aware of potential difficulties in obtaining information, work together with business community in order to find adequate solutions.
6. Respondents are given support with filling in the questionnaires (help on-line, free toll number, support from statisticians).
7. Software tools to directly extract data from business accounting systems are in place.
8. Businesses are kept informed of the results of surveys.

## Reference Documentation

[Handbook on design and implementation of business surveys](#)

[Eurostat eDAMIS data transmission tool](#)

**Indicator 9.4: Administrative sources are used whenever possible to avoid duplicating requests for information.**

## Methods at institutional level

1. European collaborative networks develop tools to increase the use of administrative sources.
2. Planning actions at national level are developed in order to explore and use administrative records for statistical needs (e.g. appropriate arrangements, development of modules to be used in a coordinated way reducing/limiting response burden, national legislation or agreements if necessary).

## Methods at product/survey level

3. Guidance on the availability and quality of administrative sources is available to survey managers.
4. Applications for the collection of administrative data to be used for statistical purpose are developed and implemented.

## Reference Documentation

[Access to administrative records \(European Statistical Law\)](#)

Service level agreements or national laws on the use of administrative sources

**Indicator 9.5: Data sharing within statistical authorities is generalised in order to avoid multiplication of surveys.**

## Methods at institutional level

1. Technical tools for data sharing within National statistical system (e.g. formal agreements, web services, common data bases,) exist.

## Methods at product/survey level

2. Documentation of repositories for production and archived data exists.
3. Data archives are shared within statistical authorities.

## Reference Documentation

[Communication COM \(2009\) 544 on reducing administrative burden](#)

### Indicator 9.6: Statistical authorities promote measures that enable the linking of data sources in order to reduce reporting burden.

## Methods at Institutional level

1. The statistical authority defines the key variables that need to be shared between data processes in accordance with confidentiality rules.

## Methods at product/survey level

2. Documentation is available on the data file structures and transmission formats required for linking data sources.

## Reference Documentation

[Communication COM \(2009\) 404 on the production method of EU statistics](#)

### Principle 10: Cost effectiveness. Resources are used effectively.

### Indicator 10.1: Internal and independent external measures monitor the statistical authority's use of resources.

## Methods at institutional level

1. Indicators of human and financial resources are monitored centrally and regularly reported to management.
2. Accounting systems allow allocation of resources to statistical operations.
3. Human resources are evaluated annually in line with office-wide guidelines. The evaluation covers allocation, performance and training needs of staff.
4. Staff opinion surveys are conducted regularly.
5. IT infrastructure is reviewed regularly.
6. Ex-ante cost calculation procedures are available for statistical operations.

## Reference Documentation

[Evaluation of activities and user satisfaction in Eurostat](#)

[Evaluation in the European Commission](#)

**Indicator 10.2: The productivity potential of information and communications technology is being optimized for data collection, processing and dissemination.**

### **Methods at institutional level**

1. Centralized IT and methodological units provide for pooling resources and investments and the identification of innovation/modernization potential.
2. An appropriate IT architecture and strategy exists and is regularly updated.
3. Policies, procedures and tools should exist to promote automatic techniques for data capture, data coding and validation.

### **Methods at product/survey level**

4. The use of automated processing techniques is regularly reviewed.

### **Reference Documentation**

Eurostat eDAMIS data transmission tool:

[http://circa.europa.eu/irc/dsis/edamis/info/data/website/overview/gene\\_present.htm#RefDoc](http://circa.europa.eu/irc/dsis/edamis/info/data/website/overview/gene_present.htm#RefDoc)

[The Census Hub Project](#)

[Self-assessment checklist for Survey Managers \(DESAP Checklist\)](#)

[SDMX](#)

**Indicator 10.3: Proactive efforts are made to improve the statistical potential of administrative data and to limit recourse to direct surveys.**

### **Methods at institutional level**

1. Appropriate arrangements (e.g. Service Level Agreements or National legislation) are signed with owners of administrative data collections and regularly updated. The statistical authority seeks to be involved at the design of administrative data collections.
2. An assessment of possible administrative data sources is carried out prior launching any new survey.

### **Methods at product/survey level**

3. Data linking and integration methods are pro-actively pursued subject to data security respect.
4. Quality indicators are developed and compiled to improve the use of administrative data for statistical purposes.

### **Reference Documentation**

Checklist for the quality evaluation of administrative data sources – NL 2009

Results of ESS Net on integration of administrative data

Results of ESS Net on data integration

## **Indicator 10.4: Statistical authorities promote and implement standardized solutions that increase effectiveness and efficiency.**

### **Methods at institutional level**

1. Standardization programmes and procedures are defined and implemented in key areas, such as sampling, registers, data collection, and data exchange according to the business process model.

### **Methods at product/survey level**

2. A statement explaining steps taken to move gradually towards or to comply with standardization is part of the methodological document.

### **Reference Documentation**

Outputs from the Sponsorship on Standardization

Outputs from the ESSnet on Standardization

## **Principle 11: Relevance. European Statistics meet the needs of users.**

## **Indicator 11.1: Processes are in place to consult users, monitor the relevance and utility of existing statistics in meeting their needs, and consider their emerging needs and priorities.**

### **Methods at institutional level**

1. The statistical law (National and European) includes an obligation to consult with users.
2. Regular activities for the consultation of users are in place focusing on both, the content of the statistical programme and the product quality of the statistics.
3. Data on the use of statistics (e.g. evaluation of downloads, subscribers of reports) are analyzed to support priority setting and user consultation.

### **Methods at product/survey level**

4. A classification of users of a given product is regularly updated and made available.
5. A list of key users and their data uses, including a list of unmet user needs, are regularly updated and made available.
6. Procedures for user consultation on the statistics are in place.
7. Quality indicator(s) on relevance are regularly assessed.

### **Reference Documentation**

[Self-assessment checklist for Survey Managers \(DESAP Checklist\)](#)

ESS quality and performance indicators 2010

ESMS/ESQRS (13.1 User needs and 13.3 Completeness) in relation to ESQR/EHQR

Euro-IND Monitoring report (monthly)

## **Indicator 11.2: Priority needs are being met and reflected in the work programme.**

### **Methods at institutional level**

1. Procedures are implemented to prioritise between different users' needs in the work programme.
2. Strategic goals and programme plans are elaborated and published regularly.
3. Service level agreements or similar arrangements are established with the most important users.
4. Periodical evaluation of work programme is carried out to identify negative priorities and emerging needs.

### **Reference Documentation**

[Self-assessment checklist for Survey Managers \(DESAP Checklist\)](#)

ESMS, ESQRS (13.1 User needs) in relation to ESQR/EHQR

## **Indicator 11.3: User satisfaction is monitored on a regular basis and is systematically followed up.**

### **Methods at institutional level**

1. User satisfaction surveys (including e.g. compilation of quality indicators on user satisfaction) or similar user studies are carried out and assessed regularly with an office-wide scope.
2. Improvement actions arising from the user satisfaction surveys are defined and scheduled for implementation.

### **Methods at product/survey level**

3. Measures to assess satisfaction of key users with particular products are in place (e.g. specific user satisfaction survey/indicators on product level).

### **Reference Documentation**

[Self-assessment checklist for Survey Managers \(DESAP Checklist\)](#)

ESMS/ESQRS (13.2 User satisfaction) in relation to ESQR/EHQR

ESS quality and performance indicators 2010

Measuring Customer Satisfaction, a methodological guidance 2006

[Handbook on Data Quality – Assessment Methods and Tools \(Chapter 2.3 DatQam Manual\)](#)

**Principle 12: Accuracy and Reliability. European Statistics accurately and reliably portray reality.**

**Indicator 12.1: Source data, intermediate results and statistical outputs are regularly assessed and validated.**

### **Methods at institutional level**

1. System for assessing and validating source data, intermediate results and statistical outputs are developed, implemented and managed.
2. Internal procedures and guidelines for data quality assessment exist and address accuracy and punctuality issues.

### **Methods at product/survey level**

3. Data compliance is systematically checked with other type of data sources.
4. Results are compared with other existing sources of information in order to ensure validation.

### **Reference Documentation**

[Handbook on Data Quality – Assessment Methods and Tools \(DatQam Manual\)](#)

Quality guidelines (e.g. United Kingdom, Finland, Canada)

**Indicator 12.2: Sampling errors and non-sampling errors are measured and systematically documented according to the European standards.**

### **Methods at institutional level**

1. Internal procedures and guidelines to measure and reduce errors are in place and may cover activities such as these examples:
  - Identification of the main sources of error for key variables;
  - Quantification of sampling errors for key variables;
  - Identification and evaluation of main non-sampling error sources in statistical processes;
  - Identification and evaluation in quantitative or qualitative terms of the potential bias;
  - Special attention to outliers as well as their handling in estimation;
  - Quantification of potential coverage errors;
  - Quantification of potential measurement errors (comparison with existing information, questionnaire design and testing, information on interviewer training, etc.);
  - Quantification of non-response errors, including systematic documentation for technical treatment of non response at estimation stage and indicators of representativeness;
  - Quantification of processing errors;
  - Analysis of the differences between preliminary and revised estimates.

## Methods at product/survey level

2. Periodical quality reporting on accuracy are put in place (serving both producer and user perspectives).
3. Quality Reporting on accuracy comprises recommendations, aligned within the ESS.
4. Methods and tools for preventing and reducing non-sampling errors are in place.

## Reference Documentation

[ESS Standard for Quality reports \(2009\)](#)

[ESS Handbook for Quality reports \(2009\)](#)

ESMS

## Indicator 12.3: Revisions are regularly analyzed in order to improve statistical processes.

### Methods at institutional level

1. A Revision Policy stating principles and procedures are spelled out in writing and made public according to European requirements.
2. The timing of revisions, their reasons and nature are explained.

### Methods at product/survey level

3. The Revision Policy follows standard and transparent procedures in the context of each survey.
4. Information on the size and direction of revisions for key indicators is provided and made public.
5. An analysis of revisions is used to improve the statistical process.

## Reference Documentation

[ESS Standard for Quality reports \(2009\)](#)

[ESS Handbook for Quality reports \(2009\)](#)

McKenzie, R. and Gamba, M. (2008a) "Interpreting the results of Revision Analyses: Recommended Summary Statistics". Technical Report, OECD/Eurostat Task Force on "Performing Revisions Analysis for Sub-Annual Economic Statistics"

<http://www.oecd.org/dataoecd/47/18/40315546.pdf>

McKenzie, R. and Gamba, M. (2008b) "Data and metadata requirements for building a real-time database to perform revisions analysis". Technical Report, OECD/Eurostat Task Force on "Performing Revisions Analysis for Sub-Annual Economic Statistics".

<http://www.oecd.org/dataoecd/47/15/40315408.pdf>

Di Fonzo, (2005) "The OECD Project on Revisions Analysis: First Elements for Discussion", OECD Short-term Economic Statistics Expert Group (STESEG), 27-28 June 2005.

**Principle 13: Timeliness and Punctuality. European Statistics are released in a timely and punctual manner.**

**Indicator 13.1: Timeliness meets European and other international release standards.**

#### **Methods at institutional level**

1. There is compliance with international standards on timeliness.
2. A release calendar is published covering economic and social indicators, for which timeliness standards are established within European regulations or agreements at international level.
3. Divergences from European and international timeliness targets are regularly monitored and an action plan is developed if these targets are not met.

#### **Methods at product/survey level**

4. Quality indicator(s) on timeliness are regularly calculated and published.

#### **Reference Documentation**

[Self-assessment checklist for Survey Managers \(DESAP Checklist\)](#)

[International Monetary Fund Special Data Dissemination Standard](#)

ESS quality and performance indicators 2010

[ESMS/ESQRS \(15.1 Timeliness\) resp. ESQR/EHQR](#)

**Indicator 13.2: A standard daily time for the release of European Statistics is made public.**

#### **Methods at institutional level**

1. A release policy is defined and published. The release policy distinguishes between different kinds of publications (e.g. releases, specific statistical reports/tables, general publications) and their corresponding release procedures.
2. At least all releases are published at a standard daily time.

#### **Reference Documentation**

[Self-assessment checklist for Survey Managers \(DESAP Checklist\)](#)

**Indicator 13.3: The periodicity of statistics takes into account user requirements as much as possible.**

#### **Methods at institutional level**

1. The statistical authority consults users regularly on periodicity.

#### **Reference Documentation**

[Self-assessment checklist for Survey Managers \(DESAP Checklist\)](#)

**Indicator 13.4: Divergence from the dissemination time schedule is publicized in advance, explained and a new release date set.**

**Methods at institutional level**

1. A release calendar is regularly published.
2. Punctuality of every release is regularly monitored and evaluated.
3. Divergences from the pre-announced time are published in advance, the reasons are explained, and a new release time is announced.

**Methods at product/survey level**

4. Quality indicator(s) on punctuality for preliminary and final results are regularly calculated.

**Reference Documentation**

[Self-assessment checklist for Survey Managers \(DESAP Checklist\)](#)

[ESMS/ESQRS \(8 Release Policy and 15-2 Punctuality\) in relation to ESQR/EHQR](#)

ESS quality and performance indicators 2010

**Indicator 13.5: Preliminary results of acceptable aggregate accuracy can be released when considered useful.**

**Methods at product/survey level**

1. The possibility of disseminating preliminary results is reviewed regularly taking into account the data accuracy.
2. Key outputs, or group of key outputs, which are subject to scheduled revisions have a published policy covering those revisions.
3. When preliminary results are released, appropriate information is provided to the user to assess the quality of the published results.

**Reference Documentation**

[ESMS/ESQRS \(19-2 Data revision - practice\) in relation to ESQR/EHQR](#)

ESS quality and performance indicators 2010

ONS National Statistics Code of Practice – protocol on revisions (p. 4)

**Principle 14: Coherence and Comparability. European Statistics are consistent internally, over time and comparable between regions and countries; it is possible to combine and make joint use of related data from different sources.**

**Indicator 14.1: Statistics are internally coherent and consistent (i.e. arithmetic and accounting identities observed).**

### **Methods at institutional level**

1. Procedures and guidelines to monitor internal coherence are developed and carried out in a systematic way.

### **Methods at product/survey level**

2. Process specific procedures and guidelines ensure that outputs obtained from complementary sources are properly combined.
3. A common repository of concepts or a mechanism to promote coherence and consistency is used.

### **Reference Documentation**

Concepts and definitions:

[http://ec.europa.eu/eurostat/ramon/nomenclatures/index.cfm?TargetUrl=LST\\_NOM&StrGroupCode=C\\_ONCEPTS&StrLanguageCode=EN](http://ec.europa.eu/eurostat/ramon/nomenclatures/index.cfm?TargetUrl=LST_NOM&StrGroupCode=C_ONCEPTS&StrLanguageCode=EN)

**Indicator 14.2: Statistics are comparable over a reasonable period of time.**

### **Methods at institutional level**

1. Significant changes in reality are reflected by appropriate changes to concepts, classifications, definitions and target populations.

### **Methods at product/survey level**

2. Changes in methods are clearly identified and measured to facilitate reconciliation.
3. Breaks in the series are explained and methods for ensuring reconciliation over a period of time made publicly available.

### **Reference Documentation**

Classifications:

[http://ec.europa.eu/eurostat/ramon/nomenclatures/index.cfm?TargetUrl=LST\\_NOM&StrGroupCode=C\\_LASSIFIC&StrLanguageCode=EN](http://ec.europa.eu/eurostat/ramon/nomenclatures/index.cfm?TargetUrl=LST_NOM&StrGroupCode=C_LASSIFIC&StrLanguageCode=EN)

Concepts and definitions:

[http://ec.europa.eu/eurostat/ramon/nomenclatures/index.cfm?TargetUrl=LST\\_NOM&StrGroupCode=C\\_ONCEPTS&StrLanguageCode=EN](http://ec.europa.eu/eurostat/ramon/nomenclatures/index.cfm?TargetUrl=LST_NOM&StrGroupCode=C_ONCEPTS&StrLanguageCode=EN)

**Indicator 14.3: Statistics are compiled on the basis of common standards with respect to scope, definitions, units and classifications in the different surveys and sources.**

#### **Methods at product/survey level**

1. Periodic assessments of compliance with standards on definitions, units and classifications are carried out and reflected in quality reporting.
2. Deviations from standards in definitions, units or classifications are made explicit and the reasons for deviating are explained.

#### **Reference Documentation**

Concepts and definitions:

[http://ec.europa.eu/eurostat/ramon/nomenclatures/index.cfm?TargetUrl=LST\\_NOM&StrGroupCode=CONCEPTS&StrLanguageCode=EN](http://ec.europa.eu/eurostat/ramon/nomenclatures/index.cfm?TargetUrl=LST_NOM&StrGroupCode=CONCEPTS&StrLanguageCode=EN)

**Indicator 14.4: Statistics from different sources and of different periodicity are compared and reconciled.**

#### **Methods at product/survey level**

1. Statistical outputs are compared with other statistical or administrative sources that provide the same or similar information on same domain/phenomenon.
2. Divergences originated from different sources are identified and reasons clearly and publicly explained.
3. Statistical outputs are reconciled whenever possible.

#### **Reference Documentation**

[Manual on sources and methods for the compilation of ESA 95](#)

**Indicator 14.5: Cross-national comparability of the data is ensured within the European Statistical System through periodical exchanges between the European Statistical System and other statistical systems. Methodological studies are carried out in close co-operation between the Member States and Eurostat.**

#### **Methods at institutional level**

1. Periodic assessments of comparability are carried out.
2. Methodological studies are conducted in collaboration between Member States and Eurostat.
3. Eurostat assesses the comparability of data from the quality reports requested from Member States.

## Methods at product/survey level

4. An analysis of asymmetries is carried out where possible and reports on mirror statistics between Member States are made available to the public.
5. Discrepancies in mirror statistics are identified and corrected whenever possible.

## Reference Documentation

[Manual on sources and methods for the compilation of ESA 95](#)

[Quality reports for statistical domains published on the Eurostat website](#)

**Principle 15: Accessibility and Clarity. European Statistics are presented in a clear and understandable form, released in a suitable and convenient manner, available and accessible on an impartial basis with supporting metadata and guidance.**

**Indicator 15.1: Statistics and the corresponding metadata are presented, and archived, in a form that facilitates proper interpretation and meaningful comparisons.**

## Methods at institutional level

1. A Dissemination Policy, defining dissemination practices, is in place and is made public. Procedures are in place to define the standards of statistical results dissemination.
2. Users are consulted about the most appropriate forms of dissemination (e.g. Focus groups, Customer Satisfaction Surveys) on a regular basis.
3. Training courses for writing press releases are conducted.
4. Policy for archiving statistics and metadata is in place.

## Methods at product/survey level

5. Meaningful comparisons are clearly included in publications, when appropriate.

## Reference Documentation

[http://epp.eurostat.ec.europa.eu/portal/page/portal/quality/ess\\_practices/dissemination\\_guidelines](http://epp.eurostat.ec.europa.eu/portal/page/portal/quality/ess_practices/dissemination_guidelines)

[Dynamic data presentation and interactive publication ESTAT DE 2004 Q2004](#)

[UNECE Making Data Meaningful](#) "A guide to writing stories about numbers"

**Indicator 15.2. Dissemination services use modern information and communication technology and, if appropriate, traditional hard copy.**

## Methods at institutional level

1. The website and statistical data bases are the main means for disseminating statistical results and facilitate self-tabulation in the most appropriate formats (e.g. XLS, HTML).

2. An information service/ call centre service is available for answering requests and clarifications of statistical results.
3. A publication catalogue is available to users.

### **Methods at product/survey level**

4. Alternative forms of dissemination are considered for specific statistical results that will allow for better understanding, comparisons and decision making (e.g. hard copies, CD-Roms).

### **Reference Documentation**

Web Content Accessibility Guidelines 1.0: <http://www.w3.org/TR/WAI-WEBCONTENT/>

[http://epp.eurostat.ec.europa.eu/portal/page/portal/quality/ess\\_practices/dissemination\\_guidelines](http://epp.eurostat.ec.europa.eu/portal/page/portal/quality/ess_practices/dissemination_guidelines)

**Indicator 15.3: Custom-designed analyses are provided when feasible and the public is informed.**

### **Methods at institutional level**

1. Custom-designed statistical outputs are provided on request.
2. Custom-designed outputs are made public where possible.

### **Methods at product/survey level**

3. An information service is available to enable users to make requests for custom-designed analyses.

### **Reference Documentation**

[User support services offered by Eurostat](#)

**Indicator 15.4: Access to microdata is allowed for research purposes and is subject to specific rules or protocols.**

### **Methods at institutional level**

1. The rules or protocols are made available on the website.
2. Researchers are able to access micro data in a secure environment (e.g. Safe Centers).
3. Researchers are regularly consulted about the effectiveness of such rules and effective access.
4. Remote access facilities are available with appropriate controls.

### **Reference Documentation**

[Eurostat treatment of anonymised microdata](#)

## **Indicator 15.5. Metadata are documented according to standardized metadata systems.**

### **Methods at institutional level**

1. All statistical results are widely disseminated together with the respective metadata allowing for a better understanding of the results.
2. Metadata are structured and disseminated in accordance with European Standards.
3. Metadata of statistical results are available independently of the format of publication (e.g. Web, Hardcopies).
4. Metadata is regularly updated and procedures to do it are available.
5. An information service/ call centre service is able to answer to clarification on metadata issues.

### **Reference Documentation**

[http://epp.eurostat.ec.europa.eu/portal/page/portal/quality/ess\\_practices/metadata\\_guidelines](http://epp.eurostat.ec.europa.eu/portal/page/portal/quality/ess_practices/metadata_guidelines)

CoSSI Methodologically Oriented Metadata FI 2006 Q2006

Guidelines for the Modeling of Statistical Data and Metadata UN 1995 CES

Terminology on Statistical Metadata UN 2000

Guidelines for Statistical Metadata on the Internet UN 2000 CES

MetaStore - A central repository for managing Statistical Metadata at OECD 2004 Q2004

Optimizing Data Accessibility via Reference Metadata Management Principles OECD 2006 Q2006

[Euro-SDMX Metadata Structure](#)

Guidelines for Statistical Metadata on the Internet UN 2000 CES

MetaStore - A central repository for managing Statistical Metadata at OECD 2004 Q2004

Optimizing Data Accessibility via Reference Metadata Management Principles OECD 2006 Q2006

## **Indicator 15.6: Users are kept informed about the methodology of statistical processes including the use of administrative data.**

### **Methods at institutional level**

1. The regular production of up-to-date user-oriented quality reports and methodological documents are planned in the work programme of the statistical authority.

### **Methods at product/survey level**

2. User-oriented quality reports and methodological documents are made available to users.

## Reference Documentation

[http://epp.eurostat.ec.europa.eu/portal/page/portal/quality/ess\\_practices/quality\\_reporting](http://epp.eurostat.ec.europa.eu/portal/page/portal/quality/ess_practices/quality_reporting)

[http://epp.eurostat.ec.europa.eu/portal/page/portal/quality/quality\\_reporting](http://epp.eurostat.ec.europa.eu/portal/page/portal/quality/quality_reporting)

Quality of Norms, QUALISTAT Sub-Group, Final Report, July 1998.

ESS Reference metadata:

<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2009:168:0050:0055:EN:PDF>

**Indicator 15.7: Users are kept informed about the quality of statistical outputs with respect to the quality criteria for European Statistics.**

## Methods at product/survey level

1. User oriented quality reports are made available for the statistical results.
2. User oriented quality reports are defined according to ESS standards and guidelines for quality reporting.

## Reference Documentation

[http://epp.eurostat.ec.europa.eu/portal/page/portal/quality/ess\\_practices/quality\\_reporting](http://epp.eurostat.ec.europa.eu/portal/page/portal/quality/ess_practices/quality_reporting)

[http://epp.eurostat.ec.europa.eu/portal/page/portal/quality/quality\\_reporting](http://epp.eurostat.ec.europa.eu/portal/page/portal/quality/quality_reporting)

Quality of Norms, QUALISTAT Sub-Group, Final Report, July 1998.

ESS Reference metadata:

<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2009:168:0050:0055:EN:PDF>