Regional Coordination Group
on Economics Issues

ISSG Meeting: Developing Quality Assessment System - current quality assurance framework, reporting, and best practices

18-20 March 2024

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1. INTRODUCTION

The ISSG Meeting: Developing Quality assessment system was held from 18th to 20th March in Salerno with the option to join online through the Teams virtual meeting platform, with 31 experts (Annex 1) representing 14 Member States, Joint Research Centre, DG MARE and EUROSTAT. Of those, 19 persons joined the meeting in person in Salerno and another 12 joined through the Teams platform.

The growing use of data provided by the DCF regulation demands a heightened emphasis on its quality. Recognizing this imperative, the DCF has incorporated a Quality Assurance and Control Framework (QACF) to address this need. Implementation of the QACF commenced in 2016 with the inclusion of a dedicated table (Table 5B) in the Work Plan (WP) for reporting key aspects of QACF implementation by Member States (MS).

Since its inception, adherence to two primary criteria has been pivotal:

- It is the responsibility of MS to institute and delineate a QACF in the work plan.
- The QACF must align with European Statistical System (ESS) definitions and adhere to the Quality Assurance Framework and Code of Practice.

The ESS Code of Practice encompasses 16 principles categorized into three main domains:

- Institutional environment: ensuring MS commitment to quality, efficacy, and resource adequacy.
- Statistical processes: emphasizing adherence to international standards, guidelines, and best practices in data organization, collection, processing, and dissemination.
- Statistical outputs: focusing on data relevance, accuracy, reliability, timeliness, coherence, comparability, and user requirements.

The DCF Regulation addresses the first principle (institutional environment) through various articles, ensuring data quality control, evaluation of work plans and provision of adequate resources via EMFF/EMFAF support. The second principle (statistical processes) is covered by the EU MAP, requiring methodologies to align with scientific advice and best practices. Furthermore, templates for work plans and annual reports mandate the inclusion of "quality reports" detailing methodologies and referencing relevant documentation. The "quality reports" should also refer to the following documents:

- Handbook on sampling design and estimation methods for economic data collection in fisheries statistics, May 2019 (EU funded project SECFISH)
- Guidelines on socio-economic variables (definitions and methodology) regularly updated by RCG_ECON https://datacollection.jrc.ec.europa.eu/guidelines/socio-economic-variables

Regarding the third principle (statistical outputs), the DCF entails reporting achievement levels, quality indicators (in the ARs as well as in the economic data calls) and utilizes the Data Transmission Monitoring Tool (DTMT) to enhance data flow and quality.

In light of recommendations by RCG ECON 2022, efforts have been directed towards expert evaluation of Quality Reports (QRs) in Work Plan Annex 1.2. The Fishn'Co project has contributed to this by offering a list of relevant documentation for economic data collection quality assessment.

RCG_ECON 2023 endorsed the implementation of the Fishn'Co roadmap for quality assurance framework and reporting. It was agreed to base the QACF on EUROSTAT principles, ensuring no overlap with existing provisions, and to pragmatically implement ISSG recommendations without revisiting principles. In alignment

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with the Fishn'Co results, RCG_ECON 2023 proposed continuing the roadmap for developing a quality assessment system and evaluation criteria, along with organizing an ISSG on quality assurance framework and best practices in reporting.

1.1. Terms of reference

Ref. Recommendation 12 RCG TM 2023

To follow the roadmap presented in the RCG ECON 2023 for developing the quality assessment system and developing evaluation criteria or appropriate indicators to the quality assessment system in the coming years. Organising an ISSG on quality assurance framework and reporting the best practices.

Justification

Currently the reporting on quality and methodology for the data collection framework is very limited, incomparable between MS and hardly accessible for end users. The next version of the DCF will start from 2027 onwards. Before it would be good to have a revised and enhanced quality assurance framework and quality reporting system up and running. This system of evaluation can only be incorporated in case the MS have clear guidelines on how to report on methods and quality. These guidelines are also lacking now.

Terms of Reference (ToRs):

1. Discuss the elements in current DCF quality reporting and compare them in relation to the European Statistical System (ESS) handbook for quality reports and the ESS Reference Metadata Reporting Standards
2. Review the quality reports from selected MS WPs in order to compare them and identify best practices
3. The evaluation of the Quality Reports: state-of-the-art and general discussion on potential assessment criteria

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2. TOR 1 Discuss the elements in current DCF quality reporting and compare them in relation to the European Statistical System (ESS) handbook for quality reports and the ESS Reference Metadata Reporting Standards

Stefano Abruzzini (ESTAT) presented the Quality management at Eurostat and in the ESS. The presentation is reported in annex 2 and the following main points were addressed.

Two ISO definitions are available:

> ISO 9000:2015: "Degree to which a set of inherent characteristics fulfils requirements"
>
> ISO 8402:1986: "Totality of features and characteristics of a product or service that bear on its ability to satisfy stated or implied needs"

The concept of quality is defined as a relative, multi-dimensional concept as quality characteristics are related to:

- the institutional environment (conditions, public infrastructure, public financing, democratic decision on the subjects – programming, serving as a common good, public governance)
- the statistical production processes (robust and acknowledged methodology, confidentiality, respondents' burden, cost effectiveness, etc)
- the statistical output (quality dimensions, trade-off, optimal choice and composition)

The EUROSTAT framework foresees 2 areas of application for quality management: A) the Official Eurostat statics for which a complete and wide approach is used and B) "other" statistics for which a simplified version can be applied.

The complete approach (A) includes:

- ESS Code of Practice, QAF, ESS Peer Reviews
- Quality reporting in the ESS: SIMS standard and the Handbook, for data collections and single indicators
- Eurostat internal Quality Reviews + Error Management Policy

The European Statistics Code of Practice, as revised in 2017, includes 16 Principles and 84 indicators. To assess compliance with and implementation of the quality framework in the ESS, EUROSTAT applies a Peer Reviews process at institutional level. The main objectives are to enhance continuous process improvement and compliance with ES CoP/Quality Assurance Framework.

ESS Quality & Metadata reporting is used to describe and quantify the quality of the statistics produced and the underlying processes, based on the defined quality criteria. The ESS handbook for quality and metadata reports (2021 edition) illustrates the reports used by countries to report metadata:

- Single Integrated Metadata Structure (SIMS) v2.0
- Euro SDMX Metadata Structure (ESMS): user-oriented
- ESS Standard for Quality Reports Structure (ESQRS): producer-oriented

In addition to this general approach, simplified templates have been implemented by EUROSTAT for reporting quality and metadata related to "other" statistics (**RQF-OS Approach**). The operational definition for "other" statistics used by EUROSTAT is as follows: "the relevant statistical data collection projects or processes which create and/or exploit raw data from which European policy indicators are periodically computed and disseminated under the responsibility of Commission services others than Eurostat".

Even if this is a "light" quality framework, it is still based on the ES Code of Practice and the ESS Quality Assurance Framework and several implementation documents are available such as guidelines, templates and checklists to monitor/improve the quality of "Other statistics".

The reference quality framework for "other statistic" (RQF-OS Approach) is built on 20 recommendations and relevant indicators and it addresses three main areas:

- Statistical products (relevance, accuracy, reliability….)
- Statistical processes (methodology, procedures…)
- Organisational environment (objectivity, confidentiality)

Also, this framework can be customised to fit the specific statistical purposes.

2.1. Adoption of the reference quality framework for "other statistic" (RQF-OS Approach) in the economic modules of the DCF

During the presentation of the ESS reference quality framework, the working group became aware that ESS also has a simplified quality framework for statistics that are not compiled by statistical offices but can be regarded as quality statistics. This framework was provided during the meeting and it is described in a document (annex 3 of this report) named "the reference quality framework for other statistics" that includes the recommendations for the assessment of the quality of statistics and a template for quality and metadata reporting. Because the group was asked to evaluate the current quality reporting, it was decided that a comparison of the data quality information provided in the various products of the DCF (National plans, annual reports, JRC database and the STECF reports on the DCF data) with these annexes could be used as a way to assess potential blind spots in the quality information provided. This could be used to recommend additional information to be included in the data reporting and potentially in changes in the formats/guidelines.

The chair provided the group with a prefilled template for the comparison of the two annexes with the information provided by the DCF quality reporting and this table was then discussed in the WG. For some of the aspects, the representative of Eurostat provided further explanation to the purpose of the various aspects in the annexes.

The detailed outcomes of the comparison are provided in annexes (Annex 4 and Annex 5). It was concluded that the vast majority of the aspects in the annexes that were of relevance to the quality reporting by member states within the framework of the DCF were included in the existing reports. For some of the aspects this is not clear or could be enhanced in future. These issues are discussed in detail below.

Recommendations from "*EUROSTAT recommendations for the assessment of the quality of statistics*" that are relevant to the DCF reporting but not adhered to currently:

- *5: Statistics are comparable over a reasonable period of time and across countries*. Although the DCF framework theoretically ensures consistency across MS and time this cannot be easily accessed through the current information. Especially the changes in time are not documented consistently and it is almost impossible for end users to find out whether changes in methodology have been taking place. This is an issue that could hamper the usage of the data and it would be very beneficial for the end users if changes in the methodology would be made available.
- *10: Data is accompanied by the appropriate metadata and users are kept informed*. The group concluded that most information on the metadata is available from a combination of the work plan, annual report and quality information in the data delivered to JRC. However, this information is currently

fragmented and end users will have difficulties combining all metadata for the data they would like to asses.

- *17: Human, financial and technical resources, adequate both in magnitude and in quality, are available to meet statistical needs*. This is currently not a part of the reporting on the national level. The group concluded that this is not needed on a regular basis, but in case of new data collection needs, an assessment of the resources needed would be advisable in the work plan.

Data elements mentioned in "*EUROSTAT template for quality and metadata reporting*" that are relevant to the DCF reporting but not included in the documentation currently:

- Publications: Regular or ad-hoc publications in which the data are made easily available to users. The group considers that it would be beneficial to include national initiatives to make the DCF data available for end users in the information in the work plan
- Relevance: Describe the degree to which statistical information meets current and potential needs of the users. The group concluded that this information is not necessary to be included in the national documentation as all the data that is collected under the DCF is relevant for the DCF. However, for the end user it would be useful if it is clear from the meta data provided that some elements of the DCF (data for the processing sector) is collected on a voluntary basis by part of the member states and therefore does not cover all EU.

2.2. Conclusions for TOR1

Main conclusions for TOR 1 (Discuss the elements in current DCF quality reporting and compare them in relation to the European Statistical System (ESS) handbook for quality reports and the ESS Reference Metadata Reporting Standards) are listed below:

Emphasis on Continuous Improvement:

Quality is an ongoing process of enhancement rather than merely complying with a methodological survey plan. Key elements in this process that are still missing in the DCF include ensuring transparency and easy access to quality and metadata information for users, facilitating comparative analysis between countries and clearly indicating responsibility for data collection with provisions for user feedback.

Inconsistent Terminology:

Annex 1.2 of the work plans is named as "quality report", but it is a planning document outlining methodology rather than a comprehensive quality report. This inconsistency in the terminology hindered effective reporting on quality aspects. Comprehensive quality reports describing actual activities and qualitative attributes are therefore lacking in the DCF if we consider the EUROSTAT approach. However, such reports can be easily created integrating details from work plan annexes and annual reports.

Weaknesses in Dissemination System:

The "quality reports" are only available as annexes of the national work plans, but it is not straightforward for an end user to have access to these documents. ISSG considers that ideally, the quality reports should be made available as standalone documents in a web repository or through an open access to the DCF platform. The implementation of the DCF platform could facilitate this task.

Accessibility of quality reports could increase the transparency of the whole data collection process and produce indirect effects, such as feedbacks on the content, increasing clarity, etc.

There exists a lack of direct links between data tables and reference metadata, leading to difficulties in understanding data sources and quality attributes. This is not coherent with the basic statistical rule "no data without metadata". If quality reports will be extracted as standalone documents, then the data dissemination pages (DCF and STECF websites) could make a link to them, as it is the case for the EUROSTAT databases where, for each dataset, it is possible to open the related metadata. While a new IT platform for DCF documents is expected to improve document accessibility, integration with the data dissemination pages remains an unaddressed concern.

Adoption of Flags for Data Points:

The ISSG suggested to implement the system of flags for individual data points already implemented in EUROSTAT (see annex 2, EUROSTAT presentation, slide 20) to allow data providers to inform on reliability issues or discrepancies in definitions or time series breaks.

Adoption of RQF-OS Approach:

The ISSG discussed the possible implementation of the RQF-OS methodology and templates in the DCF. Complete adoption might be further discussed in the RCG_ECON technical meeting, with the possibility of subsequent integration into the legal frameworks from 2028 onwards.

The group also recommended the following:

Short term:

- Include national initiatives to make the DCF data available for end users in the information in the work plan. For now, this could be best included under the heading Data storage and documentation.
- In order to inform the end user on the relevance of the data, it would be good to specify on the data which data is mandatory and which data is collected on a voluntary basis by some member states.

Long term: it would be advisable to work towards a transparent system of metadata that is easily accessible for end users. The implementation of the new portal for the information on the national plans and annual report (DCF platform) is a step in that direction and it will show in the coming years how user friendly and specific this is. In order to be able to find all relevant information specific attention should be given to the following issues:

- Changes in the methodology over time
- Close connection with the data produced. This could be enhanced by including the fleet segments in a separate field which could be used to search the database. Moreover, increasing the specificity of the various headings would also enhance the potential for easy comparison of the methodology between various member states.

In order to ensure that the human, financial and technical resources are adequate both in magnitude and in quality to meet statistical needs, the group reiterates recommendation 14 from RCGEcon 2023 that in the process of the revision of the new DCF and the possible inclusion of new variables, the increased costs of collection of the information is being taken into account.

3. TOR 2 Review the quality reports from selected MS WPs in order to compare them and identify best practises

Experiences in compiling the annexes on quality reports of the work plans were presented by Jörg Berkenhagen (Thünen-Institue of Sea Fisheries, Germany), Irene Tzouramani (Agricultural Economics research Institute, Greece) and Christos Danatskos (Fisheries Research Institute, Greece).

3.1. Quality annex in the German WP

The German Annex 1.2 was presented with a distinction between more formal aspects and more quantitative aspects. The formal aspects encompass the sections "Data storage and documentation", "Revision", and "Confidentiality" as well as the general survey specifications. These formal sections basically contain qualitative descriptions, whereas the sections Estimation design and Error checks focus more on mathematical or quantitative aspects.

In general, the template and guidance for Annex 1.2 was regarded clear and sufficient, i.e. there was no major concern about how to fill in the different sections. However, until now the guidance available for these sections is rather limited, and no feedback has been given to the information provided by Germany. The general structure of Annex 1.2 is such that a separate annex has to be provided for each survey separately. Due to this structure, most of the separate annexes are highly repetitive, especially with respect to the aforementioned formal sections. For instance, the chapter on Confidentiality will most likely be identical for all separate annexes. This repetition is somewhat tedious, but this is not regarded as major problem as there is a good chance that these sections will remain unchanged for most of the time.

Thus far, Annex 1.2 has not been thoroughly evaluated, and no distinct criteria for evaluation are available. Moreover, no end user has ever given feedback to the Annex. Hence, it is unclear whether the information provided is sufficient or if more details are needed.

It is advisable to implement an internal review process in which Annex 1.2 is compared between Member States in order to derive some best practices. Ideally, this procedure could be performed in cooperation with Eurostat to benefit from profound experience with peer-review processes for quality documentation.

Overall, most value added from the quality annex 1.2 is expected not so much from the formal part but rather from components referring to mathematical or quantitative aspects, i.e. "Estimation design" and "Error checks". The Statistical Handbook which was developed specifically for the DCF is a good reference. However, it is also quite comprehensive and more general. It would be desirable to have a practical workshop dealing with the application of the handbook for concrete examples. Ideally, a decision tree can be derived, covering all circumstances under which DCF data are collected and thus helping to select the most suitable statistical approach.

3.2. Quality annex in the Greek WP

During the ISSG Meeting: Developing Quality Assessment System – Current Quality Assurance, reporting, and Best Practices, Greece was asked to share its experience with quality reports.

Greece presented its experience while preparing the National Work Plan, referring to the section in the Quality Annex. Specifically, Irene Tzouramani from the Agricultural Economics Research Institute, ELGO

DIMITRA, presented the Greek fleet fishing sector case, while Christos Danatskos from the Fisheries Research Institute, ELGO DIMITRA, presented the aquaculture and processing sectors.

Greece presented the corresponding quality and methodology reports for fisheries, aquaculture, and processing. These reports (Quality and Methodology of Greek Reports) cover the following sections: 1. Type of Data Collection, 2. Target and Frame Population, 3. Data Sources, 4. Sampling Frame, 5. Estimation Procedure and Modelling, 6. Data Quality Evaluation, 7. Accessibility and Clarity, 8. Coherence and Comparability, 9. Confidentiality, Transparency and Security and 10. General Data Protection Regulation.

So, the main conclusion was that the structure of these reports includes all the relative information that Table Annex requires. The compilation of all the sections was easy during the preparation of the National Work Plan. Moreover, the data survey planning followed the handbook's guidelines on statistical processes and data reporting.

3.3. Conclusions for TOR 2

The main conclusions for TOR 2 (Review the quality reports from selected MS WPs in order to compare them and identify best practices) are listed below.

Template/structure of annex 1.2

The present template, even if redundant in some parts, is clear and includes all the important information. The only section that is possibly missing is the description of the data collection activities with regard to the EU general data protection regulation (GDPR) and the ethic plan. If needed, related information could be included in the section on "data documentation".

The group concluded that the present format of the quality report is appropriate for the current period of the DCF (that is 2025-2027), while it could be amended in the forthcoming period (2028 onwards) to align it to the RQF-OS (see TOR 1).

The AR sections of the annex 1.2 only include a comment to indicate if any deviations occurred. The group discussed if the AR sections could be further elaborated so that the annexes could actually include all the elements needed to have a proper metadata report (see TOR 1).

Content of annexes 1.2

Up to this point, Annex 1.2 has not undergone comprehensive evaluation and there has been no feedback from end users regarding the Annex. Consequently, it remains uncertain whether the provided information is adequate or if further details are required.

There is a need to homogenize the presentation of the quality reports in terms of level of details (some quality reports are much more detailed than others). To enhance this aspect, a comparative quality report, which evaluates and compares the quality reports of each MS, could be created and made available. This would follow EUROSTAT's approach of publishing its metadata reports alongside national metadata reports. This comparative exercise could be useful for the data end user but could also improve the national quality reports in terms of harmonization of the contents, including the level of detail. The group also recognized that RCG_ECON is already working on comparing and harmonizing statical processes for specific variables (capital, intangibles,…).

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From the discussion during the meeting, it emerged that for MS that already have national methodological reports it is easier to compile the WP QR. In terms of content, it is evident that the quality reports should include as a minimum all the elements needed for their proper evaluation by STECF (see TOR 3).

Finally, the group summarized (see table below) all the previous RCG_ECON recommendations on the elements to be reported in the quality reports, for instance for the capital value. MS could use the table as a check list to check the content of the quality reports before the submission of the work plans.

RCG ECON 2023	Recom. 1	Processing	The population of fish processing shall refer to enterprises whose main activity is defined according to the EUROSTAT definition under NACE Code 10.20
RCG ECON 2023	Recom. 5	Fleet	Data needs to support the energy transition on EU fisheries and aquaculture
RCG ECON 2023	Recom. 6	Fleet	To report in the methodological Annex of the NWP a description of PIM assumptions used should be given for valuing the fleet, by fleet segment
RCG ECON 2023	Recom. 7	Fleet	Feedback from ISSG Evaluation of tangible and intangible capital values

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4. TOR 3 The evaluation of the Quality Reports: state-of-the-art and general discussion on potential assessment criteria

DGMARE presented the current legal framework on the evaluation of the work plans and consequently of the annexes. Article 10 of DCF[1] prescribes that STECF evaluates: (a) work plans conformity with EU MAP; (b) the scientific relevance of data for the DCF purposes, and the quality of the proposed methods and procedures, while Article 11 DCF prescribes that STECF evaluates: (a) the execution of the national work plans; (b) the quality of the data collected by the Member States.

MS should present a quality report for each sector (fisheries, aquaculture and any complementary data collection of fishing activity and processing) and evaluators have to assess if information is complete and if the methodologies are sound and coherent with the handbook on sampling design.

The assessment grid that STECF will use for the evaluation of the WP, includes the following points:

Clear description	**Methodology handbook to**
population appropriate data sources survey methods and distribution error detection and elimination data storage confidentiality concerns	calculate population estimate from sample (or otherwise justified) calculate derived data (or otherwise justified) nonresponse treatment (or otherwise justified)

4.1. Conclusions for TOR 3

The group considered that the evaluation of the quality reports is a difficult exercise because thresholds are not set, nor good practices are available. In the long term, such criteria could only emerge from a comparative exercise (see TOR 2) that could be a task for the RCG, but in the short term STECF experts could be recommended to work more horizontally (e.g. all aquaculture survey plans in a sea-basin) than vertically (all surveys of a country).

As a general comment, the group also considered that the evaluation of the annexes should be aimed at highlighting strengths and areas for improvement.

In the overall DCF context, there is a need for a more user-oriented approach to quality assurance and reporting, with a focus effective dissemination of quality-related information.

The group proposed various follow-up actions that can be ranked by priority as follows:

1. Quality plans and metadata reports to be easily accessible (even through the DCF platform) to increase transparency and feedback circle by end users and other data producers.
2. Comparative aggregation of quality plans to comment on similarities and areas for improvement. This exercise is considered to be a task for RCG_ECON

[1] Regulation (EU) 2017/1004 of the European Parliament and of the Council of 17 May 2017 on the establishment of a Union framework for the collection, management and use of data in the fisheries sector and support for scientific advice regarding the common fisheries policy and repealing Council Regulation (EC) No 199/2008 (recast)

3. Quality analysis of the content of the reports and analysis/discussion of the cv and other quality indicators provided by the data producers.

During the discussion there was a thorough exploration of the responsibility pertaining to quality issues and reporting. It was recognized that certain requirements are mandated by regulations and guidelines. However, the focal responsibility for promoting quality and facilitating reporting predominantly rests with the MSs and RCG-ECON. This entails not only adhering to regulatory standards but also actively engaging in initiatives aimed at enhancing data quality and ensuring accurate reporting within their respective domains.

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5. Annexes

Annex 1: List of participants

Annex 2: Presentation from Eurostat

Annex 3: EUROSTAT reference quality framework for other statistics

Annex 4: Detailed comparison of DCF quality reporting with Annex I from the ESS reference quality framework for other statistics

Annex 5: Detailed comparison of DCF quality reporting with Annex III from the ESS reference quality framework for other statistics

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Annex 1. List of participants

Full name	Organization	Attending
Irene Tzouramani	Agricultural Economics research Institute-ELGO DIMITRA	In person
Edvard Avdic Mravlje	Fisheries research institute of Slovenia	In person
Matija Pofuk	Ministry of Agriculture, Directorate of Fisheries	In person
Svjetlana Višnić Novaković	Ministry of Agriculture	In person
Loretta Malvarosa	NISEA	In person
Jörg Berkenhagen	Thünen-Institue of Sea Fisheries	In person
Edvardas Kazlauskas	ADC	In person
Emil Kuzebski	National Marine Fisheries Institute (MIR)	In person
Christos Danatskos	ELGO DIMITRA - Fisheries Research Institute	In person
Stefano Abruzzini	Eurostat	In person
Jarno Virtanen	JRC, European Commission	In person
Lauri Samuli Vesala	Natural Resources Institute Finland	In person
Evelina Carmen Sabatella	CNR IRPPS	In person
Rosaria Felicita Sabatella	Nisea	In person
Hans van Oostenbrugge	Wageningen Economic Research	In person
Jeppe Strandgaard Herring	Statistics Denmark	In person
Simona Vasileva Nicheva Zheleva	Executive Agency for Fisheries and Aquaculture	In person
Kolyo Zhivkov Zhelev	Executive Agency for Fisheries and Aquaculture	In person
Sarah Perry	BIM -Ireland's Seafood Development Agency	Virtually
MINNE Marie-Dominique	Ministry of Agriculture. France	Virtually
Ivana Vukov	Ministry of Agriculture, Directorate of Fisheries	Virtually
Inês Jorge Pereira Antunes Ferreira	DGRM	Virtually
Monika Sterczewska	EC DG MARE	Virtually
Cornelia Kreiss	Thünen Institute of Fisheries Ecology	Virtually
Lisbeth Elin Lakjer Christensen	Statistics Denmark	Virtually
Leyre Goti	Thünen Institute of Sea Fisheries - Research Unit Fisheries Economics	Virtually
Bianca Marzocci	MASAF technical assistance	In person
Suzana Faria Cano	Direção Geral de Recursos Naturais, Segurança e Serviços Marítimos	Virtually
Almudena MÍNGUEZ MATORRAS	Secretaría General de Pesca (ES)	Virtually
Dolores González Villarrubia	Secretaría General de Pesca (ES)	Virtually
García Núñez, Norma Eréndira	Secretaría General de Pesca (ES)	Virtually
Andrius Linauskas	Agricultural Data Center (LT)	In person
Alessio Scian	Eurostat	Virtually

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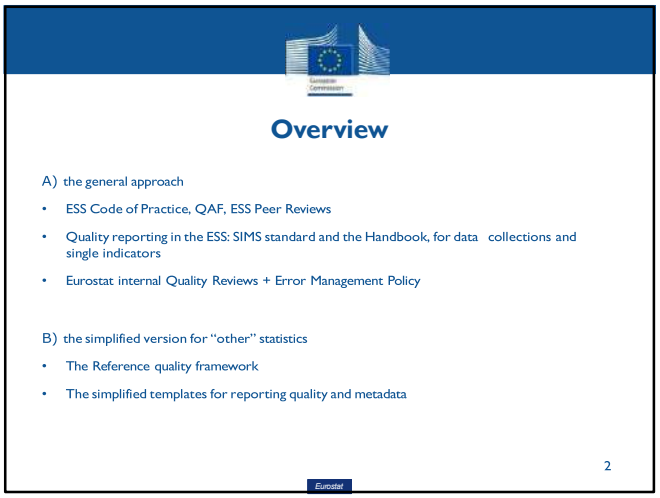
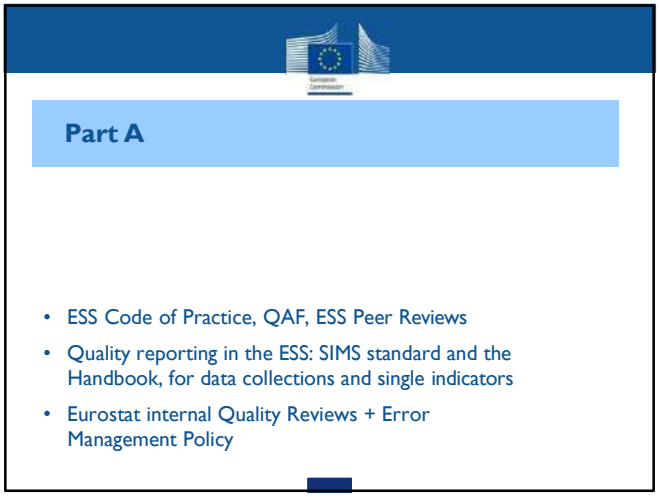
Annex 2: Presentation from Eurostat (Quality management at Eurostat and in the ESS)

1



2



3

4

ISSG Report: Developing Quality assessment system

What is quality in official statistics?

A multi-dimensional approach

- Quality characteristics of the **institutional environment** (conditions, public infrastructure, public financing, democratic decision on the subjects – programming, serving as a common good, public governance)
- Quality specificities of the **statistical production processes** (robust and acknowledged methodology, confidentiality, respondents' burden, cost effectiveness, etc)
- Quality features of the **statistical output** (quality dimensions, trade-off, optimal choice and composition)

5

Eurostat

5

All this – Mirrored in the frameworks

Legal framework

- Article 338 of TFEU – with 7 Principles
- Regulation (EC) No 223/2009, as amended by Regulation(EU) 2015/759 – with 6 Principles, mention of the CoP, quality reporting and the output quality criteria
- Sectoral, domain-specific legislation – quality provisions as well

ESS quality framework – Is not legally binding, is a self- commitment and is self-regulatory

- European Statistics Code of Practice (ES CoP) - self-regulatory
- Quality Assurance Framework of the ESS (ESS QAF)
- General quality management principles (continuous interaction with users, commitment of leadership, partnership, staff satisfaction, continuous improvement, integration and harmonization)

In their dichotomy – They serve different purposes & have their own rationale

6

Eurostat

6

The ESS quality framework

7

Eurostat

7

ES Code of Practice

- Aim:
  to ensure **public trust** in European statistics **by establishing how to develop, produce and disseminate European statistics**

  in line with the statistical principles set out in Regulation (EC) No 223/2009 and best international statistical practice
- **Self-regulatory**, applies to Eurostat, to National Statistical Institutes of the ESS and to other national authorities producing European statistics
- **Revised in 2017**, contains 16 Principles and 84 indicators

http://ec.europa.eu/eurostat/web/quality/european-statistics-code- of-practice

8

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Quality Assurance Framework of the ESS (QAF)

- **Applies** to all statistical domains
- Provides **methods, tools** at institutional and process/output level
- **Was updated in 2019**
  - to align with the revised ES Code of Practice
  - to cover the Code Principles 1, 1bis, 2 and 3 as well

Eurostat

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Level 1 and 2 – Code Principles & Indicators

16 Principles:

- **Institutional environment**
  - Professional independence
  - **Coordination and cooperation** (NEW since Nov 2017)
  - Mandate for data collection
  - Adequacy of resources
  - Commitment to quality
  - Statistical confidentiality
- **Statistical processes**
  - Sound methodology
  - Appropriate statistical procedures
  - Non-excessive burden on respondents
  - Cost effectiveness
- **Statistical output**
  - Relevance
  - Accuracy and reliability
  - Timeliness and punctuality
  - Coherence and comparability
  - Accessibility and clarity

+ 84 Indicators

10

Eurostat

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Example of quality assurance levels 1-3

Principle 8: Appropriate statistical processes

Appropriate statistical procedures, implemented throughout the statistical processes, underpin quality statistics

Indicator 8.2

In the case of statistical surveys, questionnaires are systematically tested prior to the data collection

ESS Quality Assurance Framework: Methods of implementation

Testing of questionnaires. Prior to data collection, survey questionnaires are tested by appropriate methods (questionnaire pretest, 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.

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Eurostat

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Peer Reviews - ESS institutional level

Level 1, 2, 3 – focus on the

- To assess **compliance with and implementation of the quality framework** in the ESS
  - **First round** in 2006-2008, **second round** in 2013-2015; **final reports** to the European Parliament and the Council;
- **Third round** ongoing, Eurostat peer review done in June- July 2021, 8 countries in 2021, 12 countries in 2022, 11 in 2023;
- **Reports and improvement actions** per country and Eurostat, followed by **annual progress reports**;
- http://ec.europa.eu/eurostat/web/quality/peer-reviews

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Level 4 – focus on the processes and the outputs

Quality Reviews – Eurostat internal process/product level

- **Around 100-120 Eurostat processes** to be reviewed over several years
- Around 15-20 reviews on-going at any time
- **The methodology was** revised, **simplified** in 2019, covering now centralized and decentralized quality reviews
- Main objectives:
  - **Continuous process improvement**
  - **Compliance with ES CoP/Quality Assurance Framework**
- Detailed check-lists, Improvement actions, annual follow-u_1p_3

Eurostat

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Internal

Quality Review Reports

- The main deliverables of the quality reviews
- Outlining the strengths and the areas for improvement linked to the CoP Principles
- Recommend improvement actions, agreed by all stakeholders
- Ownership, deadline and priority are indicated

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Eurostat

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Public

ESS Quality & Metadata reporting

- **Data need metadata**
- Describe and quantify the quality of the statistics produced and the underlying processes, based on the defined quality criteria
- **Implementation** in the ESS Metadata Handler according to:
  - Single Integrated Metadata Structure (**SIMS**) v2.0
  - Euro SDMX Metadata Structure (**ESMS**): user-oriented
  - ESS Standard for Quality Reports Structure (**ESQRS**): producer- oriented
- ESS **handbook** for quality and metadata reports (2021 edition)
- https://ec.europa.eu/eurostat/documents/3859598/10501168/KS-GQ-19-006-EN-N.pdf/bf98fd32-f17c-31e2-8c7f-ad41eca91783

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Eurostat

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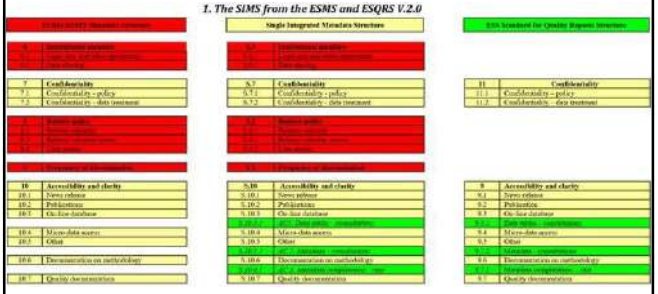
SIMS



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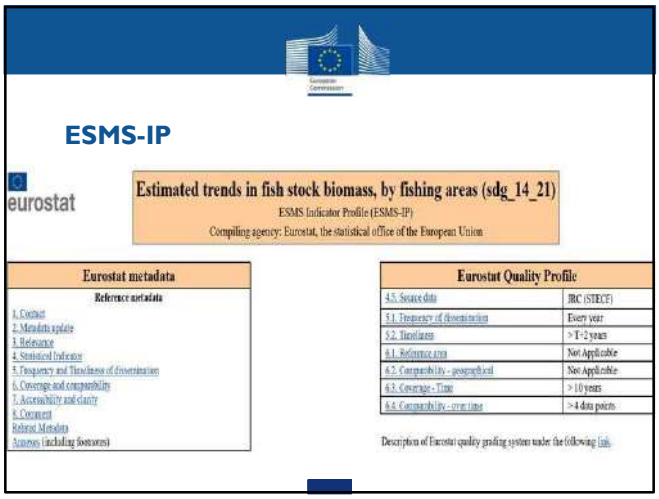

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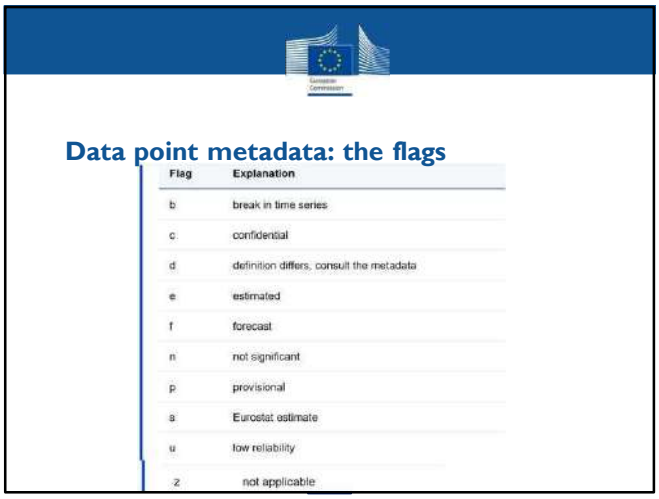

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Eurostat's Error management

- CoP, indicator 6.3: *Errors discovered in **published** statistics are corrected at the earliest possible date and publicised*
- **Eurostat's specific error management policy** adopted in December 2014 and revised in 2020 (defining the actors and responsibilities)
  → all errors are to be corrected &

  → an error report has to be completed
- **Main objectives**: to continuously
  - **improve** statistical production processes
  - **improve** user satisfaction
  - **"no blame"** culture

*So as to **increase the quality of and trust** in European Statistics* 21

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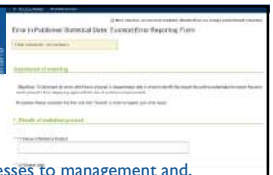
Error Reports



- Aim: to provide feedback on the weaknesses to management and, therefore, to **continuously improve statistical production processes**
- **Completed and submitted** by the production units
- In the very simple, user-friendly **EU Survey format**: http://ec.europa.eu/eusurvey/runner/ErrorReport
- **Annual report** to senior management (to the Coordination Group Quality and Directors' Meeting)

N.B. Special procedure for dissemination of confidential data or data under embargo – inform Legal Unit (A2) 22

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Part B

The Reference quality framework for "other" statistics

The simplified templates for reporting quality

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What is « other statistics »

- Decision 504/2012 on Eurostat (including its coordination role)
- An inventory, using criteria and bilat.agreement
- Operationa definition: *the **relevant** statistical data collection projects or processes which create and/or exploit raw data from which **European** policy indicators are **periodically** computed and **disseminated** under the **responsibility of Commission services** others than Eurostat*
- Public on Eurostat webpage about its co-

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Reference Quality Framework (1)

- Applicable to "Other statistics"
- Aims to support DGs in their production of statistics
- Drafted in cooperation with the DGs
- Based on the ES Code of Practice and the ESS Quality Assurance Framework
- A "light" quality framework adapted to the DGs
- Provides guidelines, templates and checklists to monitor/improve the quality of "Other statistics"

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Reference Quality Framework (2)

- 20 recommendations and relevant indicators
- Addresses three main areas:
  - **Statistical products (relevance, accuracy, reliability….)**
  - **Statistical processes (methodology, procedures…)**
  - **Organisational environment (objectivity, confidentiality)**
- Applicable to periodical data collections (A) and scoreboards/dashboards/composite indicators (B)
- Can be customised to fit the individual DG

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Reference Quality Framework:

Relevance:

1: Policy and analytical needs such as those stated in the work programme or other policy documents justify the data collection for statistical purposes.

A | B 1. Statistical needs are justified based on policy documents, management plans, Memoranda of Understanding, administrative arrangements or other European Commission documents.

Accuracy and reliability:

2: Sampling errors and non-sampling errors are measured and systematically documented.

A | B 1. Procedures for preventing and reducing sampling and non-sampling errors to an acceptable level are in place.

These may include:

- Identification of the main sources of sampling and non-sampling errors (coverage, selectivity, measurement, processing, non-response and model assumption errors) in statistical processes;
- Quantification of sampling errors for key variables; the identification and evaluation, in quantitative or qualitative terms, of the potential bias and additional variance due to non-sampling errors;
- Methods for the correction and adjustment of the errors and the analysis of differences between preliminary and revised estimates.

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Differences with the CoP/QAF (1)

RQF Recommendations	COP / QAF	
4: Statistics are internally consistent.	14 Coherence and comparability	14.1
5: Statistics are comparable over a reasonable period of time and across countries.		14.2, 14.5
6: Statistics are compiled on the basis of common/similar concepts with respect to scope, definitions, units and classifications in the different surveys and data sources.		14.3, 14.4
7: Statistics and the corresponding metadata are presented, and archived, in a form that facilitates proper interpretation and meaningful comparisons.	15 accessibility and clarity	15.1
8: For statistics intended for public publication, dissemination services use modern information and communication technology, methods, platforms and open data standards.		15.2
9: Access to microdata is evaluated and access granted whenever possible. Access is documented and subject to specific rules.		(15.4)
10: Data is accompanied by the appropriate metadata and users are kept informed.		15.5, 15.6, 15.7

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Differences with the CoP/QAF (2)

RQF Recommendations	COP / QAF
18: Procedures are in place to plan, monitor and improve the quality of the statistical processes and outputs.	4 Commitment to quality
19: Statistical confidentiality is guaranteed and data protection is ensured.	5 Statistical confidentiality
20: Statistics are compiled on an objective basis determined by professional statistical considerations, including decisions on data sources, statistical methods and dissemination.	6 *Impartiality* and Objectivity
no correspondence	1 professional independence
no correspondence	1bis Coordination and cooperation
no correspondence	2 Mandate for data collection and access to data
only in principle	6 Impartiality
only in principle	10 Cost-effectiveness

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Service contracts for the outsourcing should include the following:

- ✓ *Strict requirements regarding data confidentiality and data protection, including data transmission (see Recommendation 19);*
- ✓ *Methodological and quality guidelines, including minimum requirements for data quality;*
- ✓ *Required format of deliverables (e.g. raw data and/or derived data sets/indicators);*
- ✓ *Requirements for reporting on metadata and quality (in line with Recommendations 7, 10 and 14 and using the template provided in Annex III of the Reference Quality Framework);*
- ✓ *Minimum burden on respondents (see Recommendation 15);*
- ✓ *Dissemination in line with the Guidelines for referencing statistical data in Commission publications, presented also in Annex IV of this document;*
- ✓ *Provision of documentation by the contractor on the data collection/survey methodology, including verification and quality control of the process;*
- ✓ *Appropriate training of staff and documentation if the activity is to be taken over by*

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Template for quality and metadata reporting

Name of the statistical product as in the inventory		
	Concept Name	Description
A	Data description (metadata)	
	Data description	Describe the main characteristics of the data set in an easily understandable manner, referring to the main data and indicators disseminated. This short description should be understood immediately and easily by the users.
	Statistical population	Describe the target statistical population (one or more) which the data set refers to, i.e. the population about which information is to be sought.
	Reference period	Statistical variables refer to specific time periods, which can be a specific day or a specific period (e.g. a month, a fiscal year, a calendar year or several calendar years). When there is a mismatch between the target and the actual reference period, for instance when data are not available for the target reference period, the difference should also be highlighted.
	Frequency of dissemination	The frequency with which the data is disseminated should be mentioned (e.g. monthly, quarterly, yearly). The frequency can also be expressed by using the codes released in the harmonised code list available for the European Statistical System.
	Geographical reference area	At European level: The geographical area covered by the data set disseminated (e.g. EU Members states, EU regions, USA, Japan, etc. as well as aggregates such as EU-27, EEA). At national level: the country, the regions and aggregates covered by the data set disseminated.
	Unit of measure	The units of measures used for the data set disseminated should be listed (units of measures are e.g. Euro, N. number of persons). Also the exact use of magnitude (e.g. thousand, million) should be added.
	Basic statistical concepts and definitions	Describe in short the main statistical variables provided. The definitions and types of variables provided should be listed.

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	Classifications used	List all classifications which are used for the data set produced (with their detailed names).
	Statistical Confidentiality	Legislative measures or other formal procedures which prevent unauthorised disclosure of data that identify a person or economic entity either directly or indirectly.
B	Data quality	
	Relevance	Describe the degree to which statistical information meets current and potential needs of the users.
	Timeliness	Indicate the length of time between data availability and the event or phenomenon they describe.
	Accuracy and reliability	***Source data***: Indicate if the data set is based on a survey or on administrative data sources. If sample surveys are used, some sample characteristics should also be given (e.g. gross and net sample size, type of sampling design, reporting domain etc.). If administrative registers are used, the description of registers should be given (source, year, primary purpose, potential deficiencies and solutions to address them, etc.) ***Data collection and methods used***: Describe the method used to gather data from respondents (e.g. postal survey, CAPI, on-line survey, etc.). Some additional information on questionnaire design and testing, interviewer training, methods used to monitor non-response etc. should be provided here.
	Accessibility and clarity	***Publications***: Regular or ad-hoc publications in which the data are made easily available to users. ***Quality documentation***: Documentation on procedures applied for quality management and quality assessment.
	Coherence and comparability	***Geographical***: Describe any problems of comparability between countries or regions. The reasons for the problems should be described as well the order of magnitude of the effects of the main sources of errors. ***Over time***: Provide information on the length of comparable time series, reference periods at which series breaks occur, the reasons for the breaks and treatments of them.

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	Coherence and comparability	**Geographical:** Describe any problems of comparability between countries or regions. The reasons for the problems should be described and as well the order of magnitude of the effects of the main sources of errors. **Over time:** Provide information on the length of comparable time series, reference periods at which series breaks occur, the reasons for the breaks and treatments of them.
C	**Contact and update**	
	Contact organisation	The name of the contact organisation for the data or metadata.
	Contact name	The name of the contact points for the data or metadata.
	Contact email address	E-mail address of the contact points for the data or metadata.
	Metadata update	The date on which a metadata element was inserted or modified in the database/on the website.

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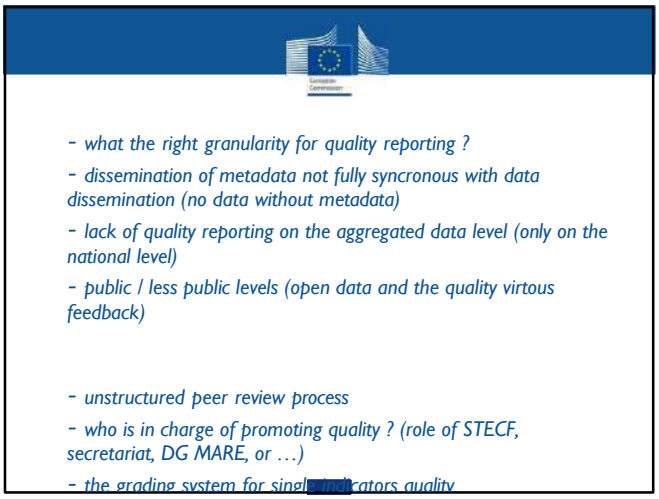

- *what the right granularity for quality reporting ?*
- *dissemination of metadata not fully syncronous with data dissemination (no data without metadata)*
- *lack of quality reporting on the aggregated data level (only on the national level)*
- *public / less public levels (open data and the quality virtous feedback)*

- *unstructured peer review process*
- *who is in charge of promoting quality ? (role of STECF, secretariat, DG MARE, or …)*
- *the grading system for single indicators quality*

Co-funded by
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Annex 3. The Reference Quality Framework for Other Statistics

I. Introduction

This document provides a Reference Quality Framework for "other statistics" developed, produced and disseminated by Commission services. In particular, the Framework defines quality criteria and indicators for the evaluation, review and communication of the quality of those statistics. It also provides guidelines, checklists, templates and examples on compiling indicators and assessing quality.

The framework aims at improving the quality of statistical activities in the Commission services. It is meant to guide the Commission services, who need to demonstrate how their statistics meet expectations for statistical quality. The Framework also aims to increase awareness about statistics and its quality throughout the Commission.

The Reference Quality Framework draws on the statistical principles and quality criteria defined in the Regulation (EC) No223/2009 of the European Parliament and Council on European Statistics, further developed in the European Statistics Code of Practice[2] and the corresponding Quality Assurance Framework of the European Statistical System (ESS QAF)[3]. At the same time, it represents an adjusted version, adapted to the needs of the Commission services. The framework allows the necessary flexibility, to reflect the particular needs and resources available at various DG.

The Reference Quality Framework should be considered as part of the Commission's Data Governance and Data Policy.

II. Scope

This Reference Quality Framework applies to "other statistics" as defined in the Commission Decision 2012/504/EU. The Decision stipulates that statistics produced and disseminated by Eurostat are European statistics. They are determined in the European Statistical Programme (ESP) and are developed, produced and disseminated in conformity with the statistical principles as set out in Article 338 of the Treaty on the Functioning of the European Union and further elaborated in the European Statistics Code of Practice. Those statistics that do not fall in the scope of the European Statistics (as defined above) are defined as *'Other statistics'*. They are subject to and identified through the planning and coordination exercise steered by Eurostat and defined in the Memoranda of Understanding between the particular Commission service and Eurostat[4]. In short, they are those statistics included in the *Inventory of the statistics produced by the Commission services, other than Eurostat*.[5]

[2] https://ec.europa.eu/eurostat/web/products-catalogues/-/KS-02-18-142

[3] https://ec.europa.eu/eurostat/documents/64157/4392716/ESS-QAF-V1-2final.pdf/bbf5970c-1adf-46c8-afc3-58ce177a0646

[4] It is understood that geographical areas to which the statistical phenomenon covered by "Other statistics" refer to are European countries and/or the European aggregates computed.

[5] A link to the Inventory (to be provided when finally adopted)

The Inventory[6] focusses on relevant periodical 'data collections' or production processes and not on single indicators or figures (no ad hoc collections). It is at the level of data collection and production process where quality aspects can be assessed.

EU agencies are normally not included in the Inventory. The only exception is the case in which the obligation to collect data and methodology is set by EU legislation and for which the EU agency has only the mandate to compile and disseminate[7].

III. Quality of statistical output

The quality of a statistical output (product) refers to the "fitness for purpose" of that output (product). In this regard, to determine whether statistics meet user needs and are fit for purpose, they have to be assessed against the following quality criteria:

- **Relevance:** the degree to which statistics meet current and potential user needs;
- **Accuracy and Reliability**: the closeness of the estimated value to the true (unknown) values;
- **Timeliness:** the time between the date of the publication of the information and the date or period to which the data refer;
- **Coherence and comparability:** the adequacy of the data to be reliably combined in different ways and for various uses and the extent to which data can be compared over time and domain and between countries and regions;
- **Accessibility and clarity:** the ease with which users can obtain data and availability of easily comprehensible metadata necessary to give a full understanding of statistical data.

IV. Quality of statistical processes (Basic statistical principles)

The quality of statistics produced depends on the quality of primary data, methods and processes that lead to the final statistical output (product). If inputs, methods and processes follow high standards and are selected or designed based on scientific criteria, it is expected that the resulting statistics are also of high quality. It implies the use of professional and ethical standards, taking into account international recommendations and best practices, and that the policies and practices followed are transparent to users, survey respondents and other primary data owners.

The development, production and dissemination of statistics shall be governed by the following statistical principles:

- **Impartiality:** statistics must be developed, produced and disseminated in a neutral manner, and all users have to be given an equal treatment;
- **Objectivity:** statistics must be developed, produced and disseminated in a systematic, reliable and unbiased manner;

[6] https://myintracomm-collab.ec.europa.eu/networks/STATCOOR/Useful%20documents/Guidelines%20for%20the%20inventory%202019%20-%20final%2022feb.docx

[7] This exception is needed to include data collections realised under some specific legislation assimilated to statistical legislation, as it is the case for example for some environmental indicators, set by DG ENV and compiled-disseminated by the EEA.

- **Statistical confidentiality:** the protection of confidential data related to single statistical units (respondents). Confidential data are to be used for statistical purposes only and their unlawful disclosure is prohibited.
- **Cost-effectiveness:** the costs related to the production and dissemination of statistics have to be proportional to their importance and expected benefits.

V. Recommendations for assessing the quality of statistics

This section comprises 20 recommendations and relevant indicators for assessing the quality of statistics against the quality dimensions and principles described above. The recommendations are grouped in three sections, covering the statistical output (1 to 10), statistical processes (11 to 16) and the organisational environment (17-20).

The recommendations distinguish periodical data collections from producing scoreboards/dashboards of indicators. This labelling follows the *Inventory of the statistics produced by the Commission services, other than Eurostat* and sets out the following categories – A and B:

- A: Periodical data collections; A B
- B: Indicators' sets, scoreboard /dashboards and composite indicators; A B

Annex I contains a list of 20 Recommendations and relevant indicators to assess the quality of statistics. It indicates to which category (A or B) a particular recommendation refers.

Annex II provides a checklist for new data collections carried out by the Commission services.

Annex III provides a template for quality and metadata reporting guiding on the information, which has to be made publicly available.

VI. Implementation of the Reference Quality Framework

The Reference Quality Framework for the statistics, not produced by Eurostat, but by other Commission services could be further complemented with additional manuals or instructions, or through adapting the existing quality frameworks in the Commission services. Eurostat is available to provide advice and guidance on the implementation of this Framework.

VI.1 Statistics developed and produced internally within the services

For the development, production and dissemination of *other statistics,* this Reference Quality Framework is the reference document. Furthermore, for the dissemination of these statistics, the provisions of Eurostat's *Guidelines for referencing statistical data in Commission publications* are to be followed. This document can be found in Annex IV.

VI.2 Data collection outsourced to an external contractor by the services

Before commencing the contractual procedure and after having completed the checklist in Annex II, a thorough check is to be made to see whether the relevant data is available from other sources e.g. Eurostat, ECB, OECD, UN and others (see Recommendation 15).

The criteria for the selection of external service providers for statistical purposes should be objective and known to staff (see Recommendation 20).

It is recommended that all service contracts for the outsourcing of statistical work include the following aspects:

- Strict requirements regarding data confidentiality and data protection, including data transmission (see Recommendation 19);
- Methodological and quality guidelines, including minimum requirements for data quality;
- Required format of deliverables (e.g. raw data and/or derived data sets/indicators);
- Requirements for reporting on metadata and quality (in line with Recommendations 7, 10 and 14 and using the template provided in Annex III of the Reference Quality Framework);
- Minimum burden on respondents (see Recommendation 15);
- Dissemination in line with the *Guidelines for referencing statistical data in Commission publications,* presented also in Annex IV of this document;
- Provision of documentation by the contractor on the data collection/survey methodology, including verification and quality control of the process;
- Appropriate training of staff and documentation if the activity is to be taken over by the Commission services.

VI.3 Data purchased from external, commercial data providers

In the case of data licenses purchased from external, commercial data providers, the European Commission has limited control or possibility to assess and validate the quality of the data. A disclaimer to this effect can be found in in the *Guidelines for referencing statistical data in Commission publications*.

* * *

The Reference Quality Framework can be consulted on My IntraComm (https://myintracomm.ec.europa.eu/dg/ESTAT/4-stat/Documents/RQFOS-Package.zip). Eurostat is available for consultation or advice on the implementation of the Framework.

In order to encourage the implementation of this Framework, exchanges of good practices within the DGs will be organised at meetings of the Statistical Correspondents.

If deemed necessary, the Reference Quality Framework could be revised by Eurostat in consultation with the DGs after a period of two years.

ANNEX 1: RECOMMENDATIONS FOR ASSESSING THE QUALITY OF STATISTICS

Statistical Output

Relevance:

1: Policy and analytical needs such as those stated in the work programme or other policy documents justify the data collection for statistical purposes.

A B 1. Statistical needs are justified based on policy documents, management plans, Memoranda of Understanding, administrative arrangements or other European Commission documents.

Accuracy and reliability:

2: Sampling errors and non-sampling errors are measured and systematically documented.

A B 1. Procedures for preventing and reducing sampling and non-sampling errors to an acceptable level are in place.

These may include:

- Identification of the main sources of sampling and non-sampling errors (coverage, selectivity, measurement, processing, non-response and model assumption errors) in statistical processes;
- Quantification of sampling errors for key variables; the identification and evaluation, in quantitative or qualitative terms, of the potential bias and additional variance due to non-sampling errors;
- Methods for the correction and adjustment of the errors and the analysis of differences between preliminary and revised estimates.

Timeliness:

3: Timeliness meets the internal requirements and those of the stakeholders, and is regularly monitored.

A B 1. The timeliness requirements of the stakeholders are known and met to the extent possible.

A B 2. Quality indicator(s) on timeliness are regularly monitored and analysed.

Coherence and comparability:

4: Statistics are internally consistent.

A B 1. Internal consistency is monitored systematically between microdata and aggregated data, between annual, quarterly and monthly data or other periodicity, between national and regional data.

A B 2. Outputs obtained from complementary data sources are combined so as to ensure internal coherence and consistency.

A B 3. Quality indicator(s) on coherence are regularly monitored and analysed.

5: Statistics are comparable over a reasonable period of time and across countries.

A B 1. Changes in concepts (classifications, definitions and target populations) as well as their impact are clearly identified/made visible.

A B 2. Quality indicator(s) on comparability are regularly monitored and analysed.

A B 3. Cross-national comparability of the data is assessed and ensured.

6: Statistics are compiled on the basis of common/similar concepts with respect to scope, definitions, units and classifications in the different surveys and data sources.

A B 1. When the same phenomenon is measured for the same purpose, a common repository of concepts is in place and promoted to ensure coherence and comparability. Eurostat's definitions and concepts are used to the extent possible and applicable.

A B 2. Assessments of compliance with standards on definitions, units and classifications are carried out as required.

A B 3. Deviations from standards on definitions, units or classifications and the reasons for these deviations are explained.

Accessibility and clarity:

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

A B 1. Guidance on the dissemination and archiving of statistical information is available to the staff of the DG.

A B 2. Meaningful comparisons are included in publications as appropriate.

8: For statistics intended for public publication, dissemination services use modern information and communication technology, methods, platforms and open data standards.

A B 1. Statistical outputs are disseminated using tools and formats that are accessible and user-friendly and that facilitate understanding and re-use.

9: Access to microdata is evaluated and access granted whenever possible. Access is documented and subject to specific rules.

A B 1. Rules or protocols to access microdata are available centrally. The rules or protocols clearly set out all access conditions, are known to staff and are available to the public.

10: Data is accompanied by the appropriate metadata and users are kept informed.

A B 1. Content, structure and dissemination of metadata are inspired by the ESS standards, i.e. the Single Integrated Metadata Structure (SIMS).

A B 2. All statistical outputs are disseminated together with metadata allowing a better understanding of the outputs, including the methodology used and any non-comparability issues. If metadata are disseminated separately from the statistical outputs, clear links are provided.

A B 3. Metadata is updated as necessary.

A B 4. Training on metadata for staff of the DG may be organised in cooperation with Eurostat as necessary.

A B 5. Disclaimers are used in accordance with the guidelines provided by Eurostat for different cases of data produced and/or disseminated by the DG.

Statistical Processes

Methodology:

11: Standard concepts, definitions, classifications (for example those in RAMON Nomenclature Server[8]) and other types of standards are used whenever possible.

A B 1. The Statistical Correspondent or another suitably designated person or team provides guidance and assistance for the statistical production in the DG. Tasks could include recommendations on available standards, advising on the design of new statistical methods, support on monitoring and validation of the results.

Production procedures:

12: For statistical surveys, questionnaires are tested prior to the data collection.

A B 1. Prior to data collection, survey questionnaires are tested by appropriate methods (for example, questionnaire pre-test, pilot in real situation, in-depth interviews, focus groups, interviewer support, etc.) and the results used for improvement purposes.

13: Statistical processes are routinely monitored and revised as required.

A B 1. The Statistical Correspondent or another suitably designated person or team, in cooperation with Eurostat, provides guidance, recommends appropriate methodologies, and examines and revises as required the methods used for statistical processing.

A B 2. With the support of Eurostat, statistical standards and best practices of statistical processing are promoted and shared in order to improve the quality of statistics and to encourage the harmonisation of processes.

These may include:

- Design of statistical processes;
- Designing, testing and updating questionnaires;
- Measurement of non-sampling errors;
- Assessment of sampling and estimation methods;
- Assessment of data collection methods;
- Provision of all necessary/explanatory documents to respondents;
- Monitoring data collection;
- Procedures to follow-up non-response;
- Data coding methods;
- Editing, imputation, and statistical disclosure control techniques;
- Data integration methods in the case of multisource statistics;
- Use of statistical models, e.g. for seasonal adjustment;
- Use of quality indicators

14: Metadata related to statistical processes are managed throughout the statistical processes and disseminated, as appropriate.

A B 1. Guidance is provided to ensure that metadata is an integral part of all statistical processes. Management of metadata is effective at all phases of the process. Metadata may include reference metadata (e.g. the Single Integrated Metadata Structure), structural metadata (concepts, classifications, structure of data etc.) and process metadata.

[8] https://ec.europa.eu/eurostat/ramon/nomenclatures/index.cfm?TargetUrl=LST_NOM&StrGroupCode=CLASSIFIC&StrLanguageCode=EN

A B 2. Clear and appropriate metadata is compiled and updated on the statistical processes. The metadata is compiled inspired by ESS standards (e.g.. the Single Integrated Metadata Structure – SIMS) or similar standards.

Response burden:

15: The data sought from businesses or administrations is, as far as possible, readily available from their accounts and electronic means are used where possible to facilitate its return.

A B 1. Before launching a new data collection, a thorough check is carried out to see whether the relevant data is available from other sources e.g. Eurostat, ECB, OECD, UN.

A B 2. Survey managers work together with the business community and administrations in order to find adequate solutions for potential difficulties in obtaining the requested information.

A B 3. The use of electronic means for data collection from businesses or administrations is encouraged wherever possible.

A B 4. Alternative data sources (including existing surveys and administrative data) are considered to optimise data collection.

A B 5. Methods and tools for data integration are in place and promoted.

16: Source data, integrated data, intermediate results and statistical outputs are assessed and validated.

A B 1. Guidelines and procedures for data quality assessment and validation are established. They address accuracy and reliability issues.

A B 2. Statistics produced are reviewed and cross-checked whenever possible to reduce errors to an acceptable level.

A B 3. Quality indicator(s) on accuracy and reliability are regularly monitored and analysed.

Organisational Environment

Adequacy of resources:

17: Human, financial and technical resources, adequate both in magnitude and in quality, are available to meet statistical needs.

A B 1. Procedures are in place to ensure that:

- Human, financial and IT resource needs for statistical purposes are taken into account in the planning and monitoring exercises.
- An adequate number of staff with statistical skills is in place through recruitment, training etc.

Commitment to quality:

18: Procedures are in place to plan, monitor and improve the quality of the statistical processes and their output.

A B 1. The Statistical Correspondent or another suitably designated person or team, in collaboration with Eurostat, provides methodological and technical support and general statistical tools, as necessary, to facilitate the implementation of process/output quality monitoring, and improvement plans with the aim to ensure adherence to defined quality standards.

A B 2. The quality of statistical outputs is regularly assessed and reported upon.

Statistical confidentiality and data protection:

19: Statistical confidentiality is guaranteed and data protection is ensured.

A B 1. Respecting the Regulation 2018/1725 (data protection rules for EU Institutions and bodies) and other relevant Commission legislation and guidelines on, statistical confidentiality is guaranteed and data protection is ensured by provisions made by the DG.

Such provisions may take the form of:

- Instructions and guidelines to preserve and ensure statistical confidentiality and data protection throughout the statistical processes.
- Information to both respondents and users that the DG fully commits itself to data protection and statistical confidentiality, that the data are used for statistical purposes only and that individual data are not disclosed unless specifically allowed by the respondent.
- Provisions to ensure that prior to the release of statistical information (aggregate data and microdata), statistical disclosure control methods are applied and documented in order to secure statistical confidentiality.
- Standard articles on statistical confidentiality and data protection which are included in every statistical procurement contract covering the collection of data / statistics.
- Rules and procedures for the protection of statistical confidentiality are documented.
- Confidential data is processed and stored in a secure environment allowing access only to those who need to process the data.

Objectivity:

20: Statistics are compiled on an objective basis determined by professional statistical considerations, including decisions on data sources, statistical methods and dissemination.

A B 1. Guidance for the selection of data sources, statistical methods and dissemination are available and known to staff of the DG.

A B 2. The chosen data sources and statistical methods are clearly stated in methodological notes, quality or metadata reports.

A B 3. The statistical soundness of the selected data sources, collection modes and methodology is regularly assessed.

A B 4. The statistical elements in production processes are documented and this documentation is available to staff of the DG.

Template for quality and metadata reporting

	Name of the statistical product as in the inventory	
	Concept Name	**Description**
A	**Data description (metadata)**	
	Data description	Describe the main characteristics of the data set in an easily understandable manner, referring to the main data and indicators disseminated. This short description should be understood immediately and easily by the users.
	Statistical population	Describe the target statistical population (one or more) which the data set refers to, i.e. the population about which information is to be sought.
	Reference period	Statistical variables refer to specific time periods, which can be a specific day or a specific period (e.g. a month, a fiscal year, a calendar year or several calendar years). When there is a mismatch between the target and the actual reference period, for instance when data are not available for the target reference period, the difference should also be highlighted.
	Frequency of dissemination	The frequency with which the data is disseminated should be mentioned (e.g. monthly, quarterly, yearly). The frequency can also be expressed by using the codes released in the harmonised code list available for the European Statistical System.
	Geographical reference area	At European level: The geographical area covered by the data set disseminated (e.g. EU Members states, EU regions, USA, Japan, etc. as well as aggregates such as EU-27, EEA). At national level: the country, the regions and aggregates covered by the data set disseminated
	Unit of measure	The units of measures used for the data set disseminated should be listed (units of measures are e.g. Euro, %, number of persons). Also the exact use of magnitude (e.g. thousand, million) should be added.
	Basic statistical concepts and definitions	Describe in short the main statistical variables provided. The definitions and types of variables provided should be listed.
	Classifications used	List all classifications which are used for the data set produced (with their detailed names).
	Statistical Confidentiality	Legislative measures or other formal procedures which prevent unauthorised disclosure of data that identify a person or economic entity either directly or indirectly.
B	**Data quality**	
	Relevance	Describe the degree to which statistical information meets current and potential needs of the users.
	Timeliness	Indicate the length of time between data availability and the event or phenomenon they describe.
	Accuracy and reliability	***Source data***: Indicate if the data set is based on a survey or on administrative data sources. If sample surveys are used, some sample characteristics should also be given (e.g. gross and net sample size, type of sampling design, reporting domain etc.). If administrative registers are used, the description of registers should be given (source, year, primary purpose, potential deficiencies and solutions to address them, etc.) ***Data collection and methods used:*** Describe the method used to gather data from respondents (e.g. postal survey, CAPI, on-line survey, etc.). Some additional information on questionnaire design and testing, interviewer training, methods used to monitor non-response etc. should be provided here.
	Accessibility and clarity	***Publications***: Regular or ad-hoc publications in which the data are made easily available to users. ***Quality documentation*:** Documentation on procedures applied for quality management and quality assessment.
	Coherence and comparability	***Geographical***: Describe any problems of comparability between countries or regions. The reasons for the problems should be described and as well the order of magnitude of the effects of the main sources of errors. ***Over time***: Provide information on the length of comparable time series, reference periods at which series breaks occur, the reasons for the breaks and treatments of them.
C	**Contact and update**	
	Contact organisation	The name of the contact organisation for the data or metadata.

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Contact name	The name of the contact points for the data or metadata.
Contact email address	E-mail address of the contact points for the data or metadata.
Metadata update	The date on which a metadata element was inserted or modified in the database/on the website.

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Annex 4. Detailed comparison of DCF quality reporting with Annex I from the ESS reference quality framework for other statistics

			Quality reporting in DCF						Adjustments to be done		
aspect nr	Description from quality framework for other statistics	Relevance for DCF	National plan	Annual Report	AER	Datas et/portal JRC	Comments	Not included yet	Short-term	Lomg-term	No action
1	Relevance:	0									
1	1: Policy and analytical needs such as those stated in the work programme or other policy documents justify the data collection for statistical purposes.	0									
1.1	Statistical needs are justified based on policy documents, management plans, Memoranda of Understanding, administrative arrangements or other European Commission documents.	0									
2	Accuracy and reliability:	0									
2	Sampling errors and non-sampling errors are measured and systematically documented.	0	0								
2.1	Procedures for preventing and reducing sampling and non-sampling errors to an acceptable level are in place.	1	1								
2.1	These may include:	1	1								

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2.1	§ Identification of the main sources of sampling and non-sampling errors (coverage, selectivity, measurement, processing, non-response and model assumption errors) in statistical processes;	1	1								
2.1	§ Quantification of sampling errors for key variables; the identification and evaluation, in quantitative or qualitative terms, of the potential bias and additional variance due to non-sampling errors;	1	1								
2.1	§ Methods for the correction and adjustment of the errors and the analysis of differences between preliminary and revised estimates.	1	1								
3	Timeliness:	0									
3	3: Timeliness meets the internal requirements and those of the stakeholders, and is regularly monitored.	0									
3.1	The timeliness requirements of the stakeholders are known and met to the extent possible.	1	1	1							
3.2	Quality indicator(s) on timeliness are regularly monitored and analysed.	1				1					
4	Coherence and comparability:	0									
4	4: Statistics are internally consistent.	0									

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4.1	Internal consistency is monitored systematically between microdata and aggregated data, between annual, quarterly and monthly data or other periodicity, between national and regional data.	0									
4.2	Outputs obtained from complementary data sources are combined so as to ensure internal coherence and consistency.	1	1								
4.3	Quality indicator(s) on coherence are regularly monitored and analysed.	??									
5	5: Statistics are comparable over a reasonable period of time and across countries.	0									
5.1	Changes in concepts (classifications, definitions and target populations) as well as their impact are clearly identified/made visible.	1						1		1	
5.2	Quality indicator(s) on comparability are regularly monitored and analysed.	1						1			
5.3	Cross-national comparability of the data is assessed and ensured.	1						1			
6	6: Statistics are compiled on the basis of common/similar concepts with respect to scope, definitions, units and classifications in the different surveys and data sources.	0									
6.1	Assessments of compliance with standards on definitions, units and classifications are carried out as required.	1	1								
6.2	Deviations from standards on definitions, units or classifications and the reasons for these deviations are explained.	1	1	1							

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7	Accessibility and clarity:	0									
7	7: Statistics and the corresponding metadata are presented, and archived, in a form that facilitates proper interpretation and meaningful comparisons.	0					Not relevant for the National reports, but relevant for the system				
7.1	Guidance on the dissemination and archiving of statistical information is available to the staff of the DG.	0									
7.2	Meaningful comparisons are included in publications as appropriate.	0									
8	8: For statistics intended for public publication, dissemination services use modern information and communication technology, methods, platforms and open data standards.	0					Not relevant for the National reports, but relevant for the system, in case MS deciminate the data in what form do they do this.				
8.1	Statistical outputs are disseminated using tools and formats that are accessible and user-friendly and that facilitate understanding and re-use.	0									
9	9: Access to microdata is evaluated and access granted whenever possible. Access is documented and subject to specific rules.	0									
9.1	Rules or protocols to access microdata are available centrally. The rules or protocols clearly set out all access conditions, are known to staff and are available to the public.	0									
10	10: Data is accompanied by the appropriate metadata and users are kept informed.	0									

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10	Content, structure and dissemination of metadata are inspired by the ESS standards, i.e. the Single Integrated Metadata Structure (SIMS).	1	1	1			challenge is to make this better available					
10	All statistical outputs are disseminated together with metadata allowing a better understanding of the outputs, including the methodology used and any non-comparability issues. If metadata are disseminated separately from the statistical outputs, clear links are provided.	0					challenge is to make this better available					
10	Metadata is updated as necessary.	1	1	1			not easily accessible for end users					
10	Training on metadata for staff of the DG may be organised in cooperation with Eurostat as necessary.	1					Done in RCGEcon					
10	Disclaimers are used in accordance with the guidelines provided by Eurostat for different cases of data produced and/or disseminated by the DG.	1			1		Data issues are reported in AER, but not in the data base					
11	Statistical Processes	0										
11	Methodology:	0										
11	11: Standard concepts, definitions, classifications (for example those in RAMON Nomenclature Server[1]) and other types of standards are used whenever possible.											

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11	1. The Statistical Correspondent or another suitably designated person or team provides guidance and assistance for the statistical production in the DG. Tasks could include recommendations on available standards, advising on the design of new statistical methods, support on monitoring and validation of the results.	1	1				RCGEcon guidelines				
12	Production procedures:	0									
12	12: For statistical surveys, questionnaires are tested prior to the data collection.	0									
12	1. Prior to data collection, survey questionnaires are tested by appropriate methods (for example, questionnaire pre-test, pilot in real situation, in-depth interviews, focus groups, interviewer support, etc.) and the results used for improvement purposes.	1	1				in the form of pilot studies				
13	13: Statistical processes are routinely monitored and revised as required.	0									
13	The Statistical Correspondent or another suitably designated person or team, in cooperation with Eurostat, provides guidance, recommends appropriate methodologies, and examines and revises as required the methods used for statistical processing.	1	1				Done in STECF and RCGEcon				
13	2. With the support of Eurostat, statistical standards and best practices of statistical processing are promoted and shared in order to improve the quality of statistics and to encourage the harmonisation of processes.	1					RCGEcon				

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13	These may include:	1									
13	§ Design of statistical processes;	1									
13	§ Designing, testing and updating questionnaires;	1									
13	§ Measurement of non-sampling errors;	1									
13	§ Assessment of sampling and estimation methods;	1									
13	§ Assessment of data collection methods;	1									
13	§ Provision of all necessary/explanatory documents to respondents;	1									
13	§ Monitoring data collection;	1									
13	§ Procedures to follow-up non-response;	1									
13	§ Data coding methods;	1									
13	§ Editing, imputation, and statistical disclosure control techniques;	1									
13	§ Data integration methods in the case of multisource statistics;	1									
13	§ Use of statistical models, e.g. for seasonal adjustment;	1									
13	§ Use of quality indicators	1									
14	14: Metadata related to statistical processes are managed throughout the statistical processes and disseminated, as appropriate.	0									

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14	1. Guidance is provided to ensure that metadata is an integral part of all statistical processes. Management of metadata is effective at all phases of the process. Metadata may include reference metadata (e.g. the Single Integrated Metadata Structure), structural metadata (concepts, classifications, structure of data etc.) and process metadata.	1	1	1	1						
14	Clear and appropriate metadata is compiled and updated on the statistical processes. The metadata is compiled inspired by ESS standards (e.g.. the Single Integrated Metadata Structure – SIMS) or similar standards.	1	1	1	1						
15	Response burden:	0									
15	15: The data sought from businesses or administrations is, as far as possible, readily available from their accounts and electronic means are used where possible to facilitate its return.	0									
15	1. Before launching a new data collection, a thorough check is carried out to see whether the relevant data is available from other sources e.g. Eurostat, ECB, OECD, UN.	1	1								
15	Survey managers work together with the business community and administrations in order to find adequate solutions for potential difficulties in obtaining the requested information.	1	1								

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15	The use of electronic means for data collection from businesses or administrations is encouraged wherever possible.	1	1								
15	4. Alternative data sources (including existing surveys and administrative data) are considered to optimise data collection.	1	1								
16	Methods and tools for data integration are in place and promoted.	0									
16	16: Source data, integrated data, intermediate results and statistical outputs are assessed and validated.	1	1								
16	Guidelines and procedures for data quality assessment and validation are established. They address accuracy and reliability issues.	1	1								
16	2. Statistics produced are reviewed and cross-checked whenever possible to reduce errors to an acceptable level.	1	1								
16	Quality indicator(s) on accuracy and reliability are regularly monitored and analysed.	1	1	1			STECF evaluations				
17	Organisational Environment										
17	Adequacy of resources:	0									
17	17: Human, financial and technical resources, adequate both in magnitude and in quality, are available to meet statistical needs.	1					This is mainly needed for new data to be collected				
17	Procedures are in place to ensure that:	0									

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17	§ Human, financial and IT resource needs for statistical purposes are taken into account in the planning and monitoring exercises.	1									
17	§ An adequate number of staff with statistical skills is in place through recruitment, training etc.	1						1			
18	Commitment to quality:	0									
18	18: Procedures are in place to plan, monitor and improve the quality of the statistical processes and their output.	0									
18	The Statistical Correspondent or another suitably designated person or team, in collaboration with Eurostat, provides methodological and technical support and general statistical tools, as necessary, to facilitate the implementation of process/output quality monitoring, and improvement plans with the aim to ensure adherence to defined quality standards.	1					RCGEcon				
18	2. The quality of statistical outputs is regularly assessed and reported upon.	1		1			STECF evaluation				
19	Statistical confidentiality and data protection:	0									
19	19: Statistical confidentiality is guaranteed and data protection is ensured.	0									

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19	1. Respecting the Regulation 2018/1725 (data protection rules for EU Institutions and bodies) and other relevant Commission legislation and guidelines on, statistical confidentiality is guaranteed and data protection is ensured by provisions made by the DG.	1	1				DCF legislation				
19	Such provisions may take the form of:	0									
19	§ Instructions and guidelines to preserve and ensure statistical confidentiality and data protection throughout the statistical processes.	0									
19	§ Information to both respondents and users that the DG fully commits itself to data protection and statistical confidentiality, that the data are used for statistical purposes only and that individual data are not disclosed unless specifically allowed by the respondent.	0									
19	§ Provisions to ensure that prior to the release of statistical information (aggregate data and microdata), statistical disclosure control methods are applied and documented in order to secure statistical confidentiality.	0									
19	§ Standard articles on statistical confidentiality and data protection which are included in every statistical procurement contract covering the collection of data / statistics.	0									

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19	§ Rules and procedures for the protection of statistical confidentiality are documented.	0									
19	§ Confidential data is processed and stored in a secure environment allowing access only to those who need to process the data.	0									
20	Objectivity:	0									
20	20: Statistics are compiled on an objective basis determined by professional statistical considerations, including decisions on data sources, statistical methods and dissemination.	0									
20	Guidance for the selection of data sources, statistical methods and dissemination are available and known to staff of the DG.	1					RCGEcon				
20	The chosen data sources and statistical methods are clearly stated in methodological notes, quality or metadata reports.	1	1	1							
20	The statistical soundness of the selected data sources, collection modes and methodology is regularly assessed.	1	1	1			STECF				
20	4. The statistical elements in production processes are documented and this documentation is available to staff of the DG.	1	1	1							

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Annex 5. Detailed comparison of DCF quality reporting with Annex III from the ESS reference quality framework for other statistics

			DCF source of information			Work to be done
Aspect	Description	Relevance	National plan	Annual Report	AER	
Meta data						
Data description	Describe the main characteristics of the data set in an easily understandable manner, referring to the main data and indicators disseminated. This short description should be understood immediately and easily by the users.	X	x		X	
Statistical population	Describe the target statistical population (one or more) which the data set refers to, i.e. the population about which information is to be sought.	X	X	X	X	
Reference period	Statistical variables refer to specific time periods, which can be a specific day or a specific period (e.g. a month, a fiscal year, a calendar year or several calendar years). When there is a mismatch between the target and the actual reference period, for instance when data are not available for the target reference period, the difference should also be highlighted.	X	X	X		

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Frequency of dissemination	The frequency with which the data is disseminated should be mentioned (e.g. monthly, quarterly, yearly). The frequency can also be expressed by using the codes released in the harmonised code list available for the European Statistical System.	X				
Geographical reference area	At European level: The geographical area covered by the data set disseminated (e.g. EU Members states, EU regions, USA, Japan, etc. as well as aggregates such as EU-27, EEA). At national level: the country, the regions and aggregates covered by the data set disseminated	X	X		X	
Unit of measure	The units of measures used for the data set disseminated should be listed (units of measures are e.g. Euro, %, number of persons). Also the exact use of magnitude (e.g. thousand, million) should be added.	X			X	
Basic statistical concepts and definitions	Describe in short the main statistical variables provided. The definitions and types of variables provided should be listed.	X	X	X		
Classifications used	List all classifications which are used for the data set produced (with their detailed names).	X	X through the RWP	X		

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Statistical Confidentiality	Legislative measures or other formal procedures which prevent unauthorised disclosure of data that identify a person or economic entity either directly or indirectly.	X	X			
Data quality						
Relevance	Describe the degree to which statistical information meets current and potential needs of the users.	see note				Should be clear for the end users, should be in a document attached to the data
Timeliness	Indicate the length of time between data availability and the event or phenomenon they describe.	X	X			
Accuracy and reliability	***Source data***: Indicate if the data set is based on a survey or on administrative data sources. If sample surveys are used, some sample characteristics should also be given (e.g. gross and net sample size, type of sampling design, reporting domain etc.). If administrative registers are used, the description of registers should be given (source, year, primary purpose, potential deficiencies and solutions to address them, etc.)	X	X			
	Data collection and methods used: Describe the method used to gather data from respondents (e.g. postal survey, CAPI, on-line survey, etc.). Some additional information on questionnaire design and testing, interviewer training, methods used to monitor non-response etc. should be provided here.	X	X	X		
Accessibility and clarity	***Publications***: Regular or ad-hoc publications in which the data are made easily available to users.	X				Include in guidelines

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	***Quality documentation*:** Documentation on procedures applied for quality management and quality assessment.	X	X	X		
Coherence and comparability	***Geographical***: Describe any problems of comparability between countries or regions. The reasons for the problems should be described and as well the order of magnitude of the effects of the main sources of errors.	***not among countries***	X			
	Over time: Provide information on the length of comparable time series, reference periods at which series breaks occur, the reasons for the breaks and treatments of them.	***X***			X	X
Contact and update						
Contact organisation	The name of the contact organisation for the data or metadata.	X	X	X		
Contact name	The name of the contact points for the data or metadata.	X	X	X		
Contact email address	E-mail address of the contact points for the data or metadata.	X	X	X		
Metadata update	The date on which a metadata element was inserted or modified in the database/on the website.	X	X	X		

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