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ESS VISION 2020 ADMIN
Task Force on Frames for Social Statistics
2017 – 2019

FINAL RECOMMENDATIONS

ON

**FURTHER ACTIONS SUPPORTING THE DEVELOPMENT AND CONSTRUCTION OF FRAMES BASED ON
ADMINISTRATIVE DATA**

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1. BACKGROUND AND PURPOSE

In 2011, the Wiesbaden Memorandum acknowledged the need for high-quality frames on individuals and dwellings for social statistics. The ESS Vision 2020 project on the improved use of administrative source in official statistics (ADMIN) addressed this need in a dedicated work package 5 (Frames for social statistics).¹ Based on the ADMIN business case and positive opinion of the Steering Group, a Task Force on frames for social statistics was set up in 2017. According to its mandate², the TF objectives were to draft methodological recommendations featuring proposals for frames for social statistics, while considering specific national circumstances. The following outputs were covered by the mandate of the Task Force:

1. minimum requirements and related quality indicators;
2. a desirable, optimal setup;
3. a set of harmonized frame related metadata used for EU social statistics;
4. proposals for further actions supporting the development and construction of frames based on administrative data, e.g.:
 - a monitoring system keeping track of the development of frames used in the Member States for the production of European social statistics;
 - a follow-up to the ADMIN work aiming at, e.g.,

¹ https://ec.europa.eu/eurostat/cros/content/wp5-frames-social-statistics_en

² https://circabc.europa.eu/sd/a/fade8124-801e-4bcf-a70f-181fce69dfbb/FRAMESTF_Final_Mandate.pdf

- capacity building;
- enhancement of existing frames;
- creation or re-design of frames that shall be sustainable and of high quality;
- guidelines as well as good and bad practices for the implementation of frames on persons and dwellings.

As an input to the Task Force work, Eurostat conducted a survey to gather information on the availability, kind and development of registers on persons and dwellings and derived frames used in the Member States for the production of European social statistics. The final report and detailed overview of findings by country (both based on the 2018 Member States review and update as well as published on the ADMIN WP5 page, see footnote 1) gave a comprehensive overview of the factual situations of ESS members regarding frames as of 2018. The documents were provided to the Task Force for analysis in June 2018.

Addressing objectives 1 – 3 and the last item of point 4 above, the Task Force then revised in depth the draft *Quality Guidelines on Frames for Social statistics* (QGFSS, see section 2), provided essential inputs and endorsed the final QGFSS version as a Task Force recommendation.

This document completes the Task Force objectives by presenting the final endorsed recommendations on objective 4 (further actions). The document is structured as follows:

- section 2 gives an introduction to the QGFSS representing the basis for several proposed future actions;
- section 3 outlines methodological issues identified by the Task Force;
- section 4 describes each of the future work proposed by the Task Force;
- section 5 provides an indicative summary timetable for all proposed actions.

2. QUALITY GUIDELINES ON FRAMES FOR SOCIAL STATISTICS (QGFSS)

As a part of the ADMIN work addressing quality, an ESSnet on quality of multisource statistics (KOMUSO)³ took up its work in 2016. One of the KOMUSO tasks was to develop the *Quality Guidelines on Frames for Social statistics* (QGFSS) as an input to ADMIN work package 5 on the frames. In June 2018, the KOMUSO delivered a first complete and reviewed⁴ QGFSS version as an input to the further Task Force work. During the meeting on 4 – 5 September 2018, the Task Force and the KOMUSO representative responsible for the QGFSS agreed to integrate their further work in order to deliver one coherent final output.⁵ Following a close revision and substantial inputs provided by the Task Force in early 2019,⁶ the KOMUSO delivered a final QGFSS version in May 2019⁷, which was subsequently adopted by the Task Force as a recommendation.

³ https://ec.europa.eu/eurostat/cros/content/essnet-quality-multisource-statistics-komuso_en

⁴ Written consultations during May 2018 with the Working Groups on Methodology and Quality, as well as the ADMIN Steering Group and the whole ADMIN network.

⁵ https://circabc.europa.eu/sd/a/fe12bd07-29ff-4621-a2a4-cb0175c9e601/FRAMESTF2018090405_Minutes.pdf

⁶ https://circabc.europa.eu/sd/a/dde80dff-ca54-40ea-89a2-e3af12160f0e/FRAMESTF2019022627_Minutes.pdf

⁷ [future reference to be added after QGFSS are published]

The QGFSS cover aspects relevant for frames for social statistics such as:

- the construction and maintenance of frames (QGFSS chapter 3);
- frame uses in social statistics (QGFSS chapter 4) – including for sampling, processing and direct tabulation of statistical outputs;
- methodology for assessing the quality of frames (QGFSS chapter 5) – including methodologies and formulas for the calculation of quantitative frame quality indicators;
- minimal and optional requirements for frame contents (QGFSS annex III).

Moreover, the QGFSS provide at the end of each (sub-) section a box with numbered "Guides" summarising the section in the form of concise guidelines. These guidelines describe the state of the art at the time of drafting the QGFSS. It is clear that further efforts at ESS level will be necessary to enable ESS members to improve their current situations towards this ideal target. On the other hand, it is obvious that the current QGFSS version may itself be superseded by further developments in the future, which stresses the need for a regular review and update mechanism for the QGFSS beyond 2019. Finally, regarding the QGFSS – in particular quantitative quality indicators and recommendations for frame contents – the Task Force identified several methodological as well as procedural issues that would merit following up in future actions.

3. METHODOLOGICAL ISSUES IDENTIFIED BY THE TASK FORCE

The overview report on frames across ESS members mentioned in section 0 indicated a diverse picture as well as several methodological issues especially in the assessment of the quality of frames. The QGFSS took first steps in addressing them; note for instance the development of a methodological framework to calculate quantitative indicators measuring the quality of frames (see QGFSS section 5.1). However, it was clear that the complexity of this topic would require efforts beyond the scope of the QGFSS. Moreover, it became clear that the approach taken by the QGFSS in its current version should be understood as a first step establishing an initial framework and aiming to start collecting and analysing more regularly information about frames in ESS social statistics. Such evidence could then be used in the future to define more clearly the particular points for further methodological work, or to enhance the frames quality and its assessment.

At this stage, the Task Force has already identified various broad topics where further methodological work would be recommended, which are briefly outlined below. These recommended methodological topics may contribute as inputs to various mechanisms for future work described in section 4.

3.1. Improvement of quality indicator methodologies

The overview report on frames availability has revealed that quantitative indicators measuring the quality of frames are not always available in the Member States, or if available, their underlying methodology is sometimes unclear or hard to compare. As a first step towards progress on this, QGFSS section 5.1 establishes a common recommended framework to calculate quality indicators covering various frame error components. Moreover, the QGFSS provide a methodology to calculate combined quality indicators from these components. Such combined indicators may be tailored for dedicated analyses covering certain aspects of frame quality (e.g. coverage). In general, such indicators could be very helpful for a frame owner and maintainer to monitor frame quality over time.

Even though the Task Force supported the idea of combined indicators, it noted that currently there is a lack of empirical evidence how such indicators would work and this evidence needs to be built. Along

these lines, the QGFSS recommend collecting regularly measures of the different error components (coherent with QGFSS calculation formulas) as a part of a harmonised frame metadata questionnaire. These measures would allow for calculating the QGFSS proposed initial combined indicators and contribute to further development of frame quality measures. Further work is clearly needed when the error component measures become available. This may include:

- refining the definitions and calculation methods of various error component measures;
- perfecting methodologies or guidelines how to obtain indicator results for specific error measures that will be feasible and comparable across the ESS (see also section 3.2);
- perfecting methodologies for weighting of various error components;
- improving the definitions of appropriate combined quality indicators for an effective monitoring over time;
- assessing the feasibility of establishing minimum or desired quantitative thresholds based on the collected quality measures;
- defining and assessing alternative approaches for analysis and visualisation of frame quality measures;

as well as other tasks contributing to an improved framework for quantitative quality assessment of social statistics frames.

3.2. Methodological guidelines for under-coverage evaluation

Under-coverage is a particularly important component of frames quality because it is both very relevant, real and at the same time very difficult to assess. The reason is that independent sources of information, such as dedicated surveys or other sources covering the frame population, are needed for the assessment. Obtaining such independent information is costly, so the cost effectiveness plays a significant role for the questions if, how, and how often the under-coverage should be assessed for a particular frame.

Therefore, the Task Force recommended further work on the methodology of under-coverage assessment suggesting common guidelines as most efficient means to facilitate, coordinate and harmonise assessments of frame under-coverage.

3.3. Metadata collection

As per mandate objective 3, the Task Force recommended a set of harmonised frame metadata to be collected regularly at the ESS level (see section 0). The complete proposed metadata questionnaire is attached to the QGFSS as annex IV. This questionnaire is a first attempt to launch an ESS-wide common frame metadata collection procedure (instead of collecting such information repeatedly with each individual survey or data collection). Based on the experience with first test results collected, the Task Force recommends one-off or even better regular reviews of the questionnaire to fine-tune the metadata collection. It would be particularly important to keep the metadata in line with future developments on the quantitative quality indicators (see section 3.1). Another possible topic for future fine-tuning would be the interlinking of frame metadata with the metadata collected at the level of individual surveys (using a given frame) in order to further optimise the overall efficiency of all metadata collections.

3.4. Household definitions and methodological implications

The Task Force acknowledged that, while a harmonised set of ESS household related definitions would be ultimately desirable, the current situation in terms of different applications (i.e. household

definitions being available from different data sources and/or serving different statistical needs) is rather diverse. As this issue has much wider methodological consequences, touching many other aspects of official statistics, a harmonisation was beyond the scope of this Task Force or the QGFSS alone or any further work focusing only on frames for social statistics. Therefore, the QGFSS handled the concept broadly, without restricting to particular definitions.

On the other hand, the Task Force noted that different definitions of households – or composite sampling units in general – could have significant repercussions on sampling or survey methodology (e.g. selection probabilities, calibration, etc.) that would merit further exploration in future methodological work. A possible outcome of such work could be a set of household definitions used in the ESS, together with application scenarios and methodological implications.

3.5. Case studies

The Task Force recommended testing the QGFSS on specific use cases, for instance internal harmonisation or comparisons within an NSI, or modernisation of a particular survey or statistical process. This would be important because the usefulness of certain guidelines and/or their implementation may depend heavily on the use case.

Case studies of individual frame uses inside Member States could be an aspect of future methodological work to compile typical use cases and to identify examples of good practice, as well as areas where the QGFSS may need to be updated.

4. FUTURE WORK

The Task Force recommends the following specific future strands of work supporting the development and construction of frames for social statistics based on administrative data:

- A. a regular update and governance mechanism for the QGFSS;
- B. a survey on the usage of QGFSS;
- C. a follow-up ESSnet to work on the implementation of guidelines;
- D. support to NSIs and to the ESS as a whole for the implementation of the QGFSS;
- E. dissemination and communication.

These strands are described below.

A. Regular update and governance mechanism for the QGFSS

The European Statistical System (ESS) is dedicated to improving the efficiency and quality of statistics through the systematic collaboration of ESS members. This collaboration is fostered by sharing data, services, methodologies, tools, knowledge and experience, and is implemented using a wide range of common procedures enabling common production, use of integrated data and systems and the sharing of tools and infrastructure. The ESS standardisation process is one of these, enhancing this collaboration by providing a framework and arrangements to develop, share and maintain standards. It creates an environment in which standards in the ESS are established by consensus with the involvement of potential stakeholders in a transparent process, so that standardisation helps in the achievement of efficiency gains and improvements to data quality in the ESS.

In order to establish a regular update/governance mechanism, the Task Force recommends the **QGFSS to be adopted as an ESS standard**. ESS standardisation⁸ is an agreed formal process⁹ that foresees several steps starting from the identification of a need, through development, stakeholder consultation, adoption, down to periodic review and possible revision/withdrawal if needed. In particular, regular monitoring is foreseen to keep track of problems encountered as well as lessons learned in the use/implementation of the standard, in order to feed back into the regular review.

The ESS standard is a normative document respecting ESS standardisation principles (i.e. consensus, transparency and openness, balance, due process, proportionality) and approved by a recognised body according to the procedure of ESS standardisation. It provides for common and repeated use by several actors in the ESS, rules, guidelines or characteristics for the development, production and dissemination of European Statistics, aimed at the achievement of the optimum degree of order in the context of the implementation of the mission and vision of the ESS. The ESS standards are non-binding documents. Documents registered in the Catalogue of ESS Standards¹⁰ are the only ones that have passed through the formal process of ESS standardisation adopted by the European Statistical System Committee (ESSC). The status of "ESS Standard" is formally granted by the ESSC in its role of standardisation authority of the ESS.

The use of standards included in the ESS catalogue is not mandatory but recommended when designing and building statistical processes to support interoperability and cooperation and when applying for ESS projects, grants or calls for tenders. However, the implementation of these standards is ultimately subject to national decisions.

ESS standards are managed throughout their lifecycle under the ESS standardisation process, i.e. monitored, reviewed and maintained periodically so their relevance is preserved over time. The standardisation process stipulates that a permanent body of the ESS shall have ownership of all established standards to assure sustainability and maintenance over time.

The draft proposal for a standard undergoes the following steps in the standardisation process:

- consultations at technical level;
- endorsement by the group (Directors' Group) that will accept ownership of the standard;
- review by the bodies involved in the standardisation process: Expert Group on Standardisation and DIME/ITDG;
- formal adoption of the ESSC.

If adopted as an ESS standard, the QGFSS will establish by consensus non-legislative ESS recommendations for specific actions/procedures in order to assess and improve the quality of frames for social statistics. While their implementation would be ultimately subject to a national decision, the guidelines could then undergo monitoring of their use/implementation as well as relevance assessments in order to identify problems and lessons learned, which would feed the periodic review of each standard in an iterative process. The DSS as the owner group would oversee the monitoring and possible updates of the standard.

⁸ https://ec.europa.eu/eurostat/cros/content/ess-standardisation_en

⁹ https://ec.europa.eu/eurostat/cros/content/process-principles_en

¹⁰ https://ec.europa.eu/eurostat/ramon/nomenclatures/index.cfm?TargetUrl=LST_NOM&StrGroupCode=ESS_STAND&StrLanguageCode=EN

A regular monitoring mechanism is needed to identify areas for improvement. The Task Force considered a monitoring/update period of 3 to 5 years within the ESS standard maintenance framework most appropriate for the QGFSS. Respective observations could feed into other future actions such as (C) tasks for a follow-up ESSnet or (D) objectives for calls for mono-beneficiary grant proposals. In particular, the ESSnet may carry out some updating/maintenance work as part of its tasks. Along these lines, an important update topic already identified was the development of methodological guidelines for under-coverage evaluation. Throughout the maintenance cycle, the challenge would be to reconcile input from many different actors involved, e.g. subject matter experts, methodologists, quality practitioners with legal and technological changes.

B. Survey on the usage of QGFSS elements

Clearly the adoption as an ESS standard would provide a formalised process for regular QGFSS maintenance. To support the implementation of such an update mechanism, a one-off survey could be an intermediate step closing the gap between the adoption of the QGFSS as an ESS standard and eventually kick start regular, formalised revisions. The survey in one or two years after the initial standard adoption could be a first source of knowledge regarding implementation and practical problems encountered. Results could be used to feed regular updates of the ESS standard as well as into other work as feeding an ESSnet (see C) or objectives for calls for mono-beneficiary grant proposals (see D). From this point of view, the timing of the survey would be vital: its outcome would ideally be used to prioritise and define objectives for QGFSS improvement work, but if the survey is too early, there will not yet be enough progress on the use of the QGFSS inside the Member States.

Possibly, the survey could identify typical use cases (see section 3.5) and thus support the selection of appropriate instances for in-depth case studies. The survey could be organised as a stand-alone project managed by Eurostat or as part of the ESSnet work. The advantages and drawbacks of each option should be considered when deciding how to implement the survey.

C. ESSnet to work on the implementation of guidelines

Following the successful work and signal outputs from the ESSnet KOMUSO under the ADMIN project, a follow-up ESSnet could continue this work and focus on methodological aspects for the implementation of the guidelines according to technical topics outlined above in section 3. In particular, the issues outlined in sections 3.1 and 3.2 would help to improve the initial framework established by the QGFSS to measure the quality of frames.

The added value of a potential ESSnet could be optimised by further investigating in advance the particular methodological challenges encountered among ESS members. This could be achieved in various ways:

- comparative analysis of first returns of the frame metadata;
- targeted case studies addressing specific country situations or experiences of general interest for the whole ESS (see section 3.5);
- results from a dedicated survey on QGFSS implementation and usage (see B).

All these inputs could in principle be collected as part of an initial stage of the ESSnet. However, if the QGFSS survey is conducted outside the ESSnet (e.g. for reasons described under action B), the timetables of both actions should be closely aligned. Finally, the ESSnet could also implement some dissemination and communication actions (see E) as well as support the governance of the standard, in particular during the first review.

D. Support to NSIs and to the ESS as a whole for the implementation of QGFSS recommendations

The Task Force also proposed flexible support in the form of topical grants targeting the implementation of QGFSS recommendations as an ESS standard. The recent experience with mono-beneficiary ADMIN grants 2015 – 2019 (all actions of the last 2018 wave ending by August 2019) may help establish good practice on how to maximise the added value of topical grant programmes for the whole ESS community: grant results are being analysed under various categorisation aspects, such as statistical domain, production phase, lessons learned, outputs that can be generalised to other scenarios. On the basis of this analysis, a summary overview is being compiled and the categorised knowledge is made available and searchable on a central online knowledge repository hosted on the CROS portal.¹¹

Future grant programmes as a follow-up action on frames for social statistics may similarly focus on specific technical and methodological aspects outlined in sections 3.1 and 3.2. These may be further specified or extended by a survey (B) or regular monitoring (A) so that the calls can focus on the most common and the highest priority issues. Due to this interlinking of different actions, the overall timetable will be crucial to maximise the potential value added of the grants while avoiding delays in implementation.

An analysis of the individual grant results and their dissemination through a central repository can be envisaged. Based on current ADMIN experience, it appears to be very useful for this meta-analysis to add harmonised standard elements in reports. Such standard elements could be:

- a short subtitle describing the nature of the project;
- an executive summary to inform readers about the main objectives, the key results achieved, and the main lessons learned;
- a table of contents;
- a list of acronyms;
- references to EU legislation establishing reporting obligations related to the project;
- a list of other references (if any).

Following requests for a standard template for final grant reports, such a template could be prepared before a first wave of future grants on frames and then used throughout all waves to further facilitate the analysis of individual results.

E. Dissemination and communication

In addition to QGFSS maintenance, updates and implementation, the Task Force proposes further support for better dissemination and communication of the QGFSS and frame-related metadata in the ESS. Three particular ideas suggested by the Task Force are briefly outlined below.

- 1) A **web-based, interactive publication of the QGFSS**. This format could improve the user experience and efficiency by using digital content functionalities such as internal cross-linking, external hyperlinking and tooltips for immediate extra information. Such a web solution could be based either on the CROS portal or on a dedicated platform allowing tailored functionalities

¹¹ https://ec.europa.eu/eurostat/cros/content/wp6-pilots-and-applications_en (work still in progress)

and appearance. In particular, a dedicated solution could support a layout optimised for small screens such as tablets or mobile phones.

- 2) A **condensed pocket and/or poster version of the QGFSS**. This could focus on the short "Guides" mentioned in section 2 and possibly concise definitions of the most relevant frame quality indicators, thus providing a concise look-up reference. Moreover, QR codes could be added to provide smart links to more detailed content of the web publication mentioned in item (1). A pocket version would be particularly well suited to promote the QGFSS at relevant events, and to provide an easy introduction to working with the QGFSS for instance at training events or workshops.
- 3) A **regular publication and/or exchange of the frames metadata** collected through the proposed questionnaire in QGFSS annex IV within the ESS. This should include both country-level information as well as ESS summary information to draw a comprehensive picture of frames usage in the ESS. Individual ESS members would thus benefit by being able to identify and look up similar situations in other countries. The specific mode of publication or exchange still needs to be assessed. This could be implemented directly after the first return of metadata information.

5. INDICATIVE SUMMARY TIMETABLE

An indicative rough timetable for the future work (section 4) is presented here for illustration:

Year	(A) ESS standard	(B) Ad-hoc Survey	(C) ESSnet	(D) Support	(E) dissemination communication
2020	Adoption as ESS standard				1 st metadata collection
2021	1 st ESS standard maintenance cycle - review	Conduct survey	ESSnet	Grants programme	New QGFSS publication formats
2022		Survey results available			
2023					
2024	1 st update version final (QGFSS v2.0)			Grants summary	Update new formats to QGFSS v2.0
2025					

6. CONCLUSIONS

This document shows how the Task Force has realised the objective to propose further actions supporting the development and construction of frames based on administrative data. Acknowledging extensive preceding work and the important results of the ESSnet on quality of multisource statistics (KOMUSO) drafting the *Quality Guidelines on Frames for Social Statistics* (QGFSS), the Task Force considers the QGFSS a central element of its recommendations. Therefore, the future work proposed addresses the future implementation, maintenance and updating of the QGFSS as a common ESS reference, the dissemination and communication of the QGFSS and the QGFSS recommended frames metadata.

The Task Force supports and recommends:

- ✓ the content and conclusions of this document (endorsed by written consultation and subsequent circulation of the present final version in May and June 2019); and
- ✓ further work towards implementation of these conclusions.