



FAO of the UN

The FAO Statistics Quality Assurance Framework (SQAF)

Implementation Strategy and Plan

Change history

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1 Introduction

The FAO Statistics Quality Assurance Framework (SQAF)¹ includes a definition of quality and a series of principles to adhere to in order to improve the quality of FAO statistical production processes and statistical outputs. Each principle is accompanied by corresponding good practices, which provide practical guidance on how to assure compliance with the principle. Principles and good practices refer to *Statistical Outputs*, *Statistical Processes* and the *Institutional Environment*.

The FAO SQAF principles encompass the Fundamental Principles of Official Statistics of the United Nations Statistical Commission² and the Principles Governing International Statistical Activities endorsed by Committee for the Coordination of Statistical Activities (CCSA)³. In order to avoid duplication of work, the FAO SQAF has been developed taking stock of the work already done by several international organizations (Eurostat, ECB, IMF and OECD) in this area⁴.

The FAO SQAF also includes the definition of a mechanism to ensure the compliance of FAO statistics to the principles. In order to ensure the compliance with the principles related to Statistical Processes and Statistical Outputs, FAO should put in place a series of tools and procedures to evaluate both existing and new statistical processes. It is worth noting that a set of additional activities should be promoted by FAO in order to meet all the principles referred to the Institutional Environment. However, this issue will not be addressed in this document.

This document presents the next steps to be followed and the tools to be developed for the implementation of the FAO SQAF as far as the assessment of the statistical processes and outputs are concerned. The definition of the quality assurance framework in itself does not provide the resources, the practical tools and methods for its implementation.

2 The implementation of the FAO Statistics Quality Assurance Framework

The definition of the corporate FAO SQAF will be followed by a series of activities aimed at developing the procedures and the tools needed for its actual application. In other words, the implementation of the FAO SQAF will be organised in two main steps:

- A preparatory phase, where all the tools and procedures will be developed, tested and approved;

¹ <http://www.fao.org/docrep/019/i3664e/i3664e.pdf>

² <http://unstats.un.org/unsd/methods/statorg/FP-english.htm>

³ https://unstats.un.org/unsd/methods/statorg/Principles_stat_activities/principles_stat_activities.asp

⁴ REF to the document on State of art in other international organization

- An application phase, where the mechanism of quality assurance will start running effectively.

This document will provide a detailed overview of the tools to be developed in the preparatory phase together with a tentative work plan (schedule in Annex 1). Information on resource requirements will also be provided together with an overview on how the application phase will work.

With regard to the resources to be devoted to the FAO SQAF implementation, it is worth mentioning that a specific request for CAPEX funding has been made for this project. If approved, the costs of the preparatory phase will be completely covered and also some of the actions for the first round of application, e.g. the training course for auditors will be included as outlined in this document. However, if the CAPEX proposal is not endorsed, progress on implementing the FAO Statistics Quality Assurance Framework will be significantly impaired.

2.1 Quality assessment of statistical outputs and processes

Preparatory phase

Without a systematic assessment of data quality, there is a risk of losing control over the various statistical processes, with a consequent reduction in the quality of the corresponding output statistics. At the same time, quality assessment is a precondition for deciding which statistics can be published, which should be disseminated with warnings, or in some extreme cases, which cannot be published because of their poor quality.

The quality assessment will not cover just the existing processes but it will be also extended to new statistical activities to be launched. Both the procedures are aimed at assessing the adherence of existing and new processes to the principles of the FAO SQAF. In order to apply the procedures, a set of tools will be developed, as described below.

Assessment of existing process

The procedure for evaluating existing statistical processes is two-fold and consists of a combination of self-assessment and audit. The self-assessment is applied to most of the ongoing processes, while the usage of audit procedures is limited to key corporate statistical processes.

Self-Assessment Procedure:

In the ***self-assessment*** phase, the responsible officer evaluates the statistical process and its outputs with respect to the principles stated in the FAO SQAF and to the good practices reported in a series of more detailed *quality guidelines* covering all the various phases of the statistical processes and the final output statistics. Usually, this task is facilitated by a *checklist* which follows the same structure of the quality guidelines.

The **quality guidelines** will describe how the different phases of the process should be carried out and will represent the benchmark against which the assessment should be performed. They will explain how to measure the quality of statistical outputs and how to efficiently conduct the statistical processes in order to ensure high quality outputs. The quality guidelines should be tailored to the FAO framework and the specific characteristics of the processes for the production of statistics. In particular, they have to be defined according to the main phases of the statistical business processes. During each phase guidance should be provided on how to proceed (guidelines, standards, best practices, etc.).

The development of the quality guidelines is a complex task which requires the involvement of a number of experts from different areas: quality of statistics, statistical methods, subject matter experts. Before releasing the guidelines, it would be opportune to test them in a pilot phase (generally aimed at testing the whole assessment procedure and the other tools). After the testing phase, the revised guidelines should be submitted to the Inter-Departmental Working Group on Statistics, in order to finalize them and disseminate them internally and externally.

It is worth noting that the guidelines will represent a reference for different users: the officers of the FAO processes who should assess the quality of their processes, the officers in charge of new processes to be put in place; other staff involved in the assessment procedure and staff to be trained on quality issues.

The **checklist** to be used in self-assessment will share the same structure of the quality guidelines. For each phase of the statistical process a series of “indicators”, in the form of closed-ended questions, is listed; indicators aim at verifying whether the process is compliant with the guidelines. Lack of compliance usually denotes critical situations that should be overcome. The self-assessment checklist should be a simple and flexible tool to be developed jointly with the quality guidelines.

The officer responsible for the process under self-assessment will summarize the results of the evaluation in a final *report*, which highlights the strengths and weaknesses of the processes and the related outputs. The reports should end with a list of actions addressing the main weaknesses. A **template for the final report** should be developed to facilitate the task of the officers in charge of the processes being evaluated.

Audit Procedure:

As already mentioned, the self-assessment will be complemented with an auditing procedure aimed at evaluating key statistical processes. In the **quality auditing**, the evaluation is carried out by a team of experts (two or three *auditors* with specific expertise, selected internally⁵) that study the **documentation** concerning the process and then meet the manager of the process to further investigate in more detail the issues which appear to be critical in determining the quality of the process and the related statistical outputs. The auditors summarize the results of the assessment in a final report, which highlights the strengths and weaknesses of the processes and the related outputs. The officer responsible

⁵ In order to supervise all the activities related to the assessment of processes (selection of processes, assignment of auditors, monitoring of the implementation of the improvement actions, etc.), it is suggested to create an ad hoc task force of the IDWG.

for the process being audited should complete the report with a list of the improvement actions aimed at overcoming the main weaknesses. The report will share the same structure as the one used in the self-assessment.

In quality auditing the auditors play a key role, for this reason it is important to identify experts who have the right experience to undertake an audit⁶. Thus, **rules for the selection of auditors** will be set up and ad hoc **training courses** will be provided.

In addition, to ease the task of the auditors and of the officers responsible for the statistical processes that are audited, **a template to support the officer in preparing the documentation** on the process and on the quality of its outputs (with, when possible, a set of and quality indicators) will be developed.

Step-by-Step Assessment Procedures:

In practical terms, to perform the assessment, it is also necessary to define the **assessment procedures** (i.e. auditing and self-assessment procedures). They should list all the tasks to be performed, by whom, the expected outputs of each step and how long each step should last. The procedures have to cover all the steps from the initial selection of the processes to be assessed, to the final procedure for putting in place the improvement actions. The **criteria for selecting the processes** to be evaluated should be clearly defined. These criteria, as well as the rules for the selection of the auditors, will be agreed with other offices of FAO that perform audits and evaluations on processes from other points of view (e.g. Office of the Inspector General and the Office of Evaluation), in order to avoid duplication.

The final steps of the procedures are also crucial; it is important to establish how to finalize the assessment in terms of the approval of the final reports and the corresponding improvement actions. It is worth noting that the improvement actions can be quite heterogeneous ranging from small changes, to costly actions, which require the establishment of specific projects involving additional experts from different departments. During the audit, where key processes are being evaluated, improvement actions could require a major effort; thus it should be evaluated whether a system of incentives for starting the improvement actions should be introduced, as appropriate.

Finally, the whole assessment procedure will incorporate a mechanism for monitoring the effective implementation of the improvement actions at a given time (i.e. one year after the end of the assessment procedure).

Time and resources:

A tentative scheduling of the activities is provided at the end of this document.

In general terms, the preparatory phase will last about 20 months. If this phase is initiated at the beginning of 2014, it will end before the end of 2015.

The preparatory phase will be mostly devoted to the development of the described tools, starting from the quality guidelines, the checklist for self-assessment and the template for

⁶ Bergdahl, M., Ehling, M., Elvers, E., Földesi, E., Körner, T., Kron, A., et al. (2007). Handbook on Data Quality Assessment Methods and Tools. Wiesbaden: European Commission

process documentation. These three tools share some common characteristics: they will cover the main phases of the statistical process, which have been tailored specifically to FAO.

In order to develop the tools, in addition to the involvement of experts on quality and methodologies and the central coordination work, which will be described in the next section, it is necessary to involve FAO experts involved in statistical work (e.g. one person from each technical department):

- at the beginning (months 1-3 of the project), through specific meetings with experts from different sectors, aimed at identifying the most important phases of the FAO statistical processes, which are quite complex and heterogeneous
- when drafting the tools (months 3-10), where experts on highly specific phases can be involved and asked to contribute e.g. writing a section of the guidelines
- in the test phase (months 11-16), where a limited number of processes will be submitted to the quality assessment procedures.

Before the testing phase, the remaining tools, namely the template for the final report and the document describing the overall procedures will also be developed. FAO management should be consulted as appropriate when key decisions are needed. All the tools should be reviewed and approved by the IDWG before the application phase.

Assessment of new statistical activities

The assessment procedure will encapsulate the procedure and tools for assuring the quality of the proposed new statistical processes.

It is necessary to develop a **questionnaire** for collecting key information about the proposed new statistical activity. In particular, information will be collected on the main characteristics of the process (data sources, expected outputs, periodicity, main methodological issues). An estimate of the financial and human resources needed for its implementation and the direct impact that these new products will also have to be determined through the questionnaire, as well as their contribution to FAO's Strategic Objectives and the outcome/output indicators that are already defined there.

Emphasis should be placed on the relevance of the expected output statistics (main users and their needs), the data sources and the estimated response burden. Possible overlapping with existing statistical processes should be evaluated and when it cannot be avoided, an explanation should be provided. Finally, it would be useful to document what procedures are in place to guarantee the quality of the whole process and the final outputs.

All the information collected will represent the basis for the approval process. The **approval procedure** will be clearly defined specifying the scheduling, the process and all the actors involved in it.

Both the questionnaire and the approval procedure will be developed taking into account the existing tools and procedures for introducing a new statistical activity in to the FAO Statistical Programme of Work. How to integrate and harmonize the quality assessment requirements with the existing planning system will be analysed and all efforts will be made to reduce the additional burden on the staff responsible for statistical work.

Time and resources:

A tentative scheduling of the activities is provided at the end of this document.

As described, the questionnaire for collecting information about the proposed new statistical activities will focus on a limited number of key issues and it is expected to be prepared within three months of the beginning of the project.

The definition of the approval procedure will be developed, taking into account the procedure for introducing a new statistical activity in to the FAO Statistical Programme of Work. Thus, FAO staff working on the definition of the Statistical Programme of Work should be involved in this task.

Specific Deliverables for the Preparatory Phase

The preparatory phase will end with the following items:

1. Quality guidelines
2. Procedures and tools for self-assessment
 - 2.a Procedure for self-assessment (tasks to be performed, timing, etc.)
 - 2.b Checklist for self-assessment
 - 2.c Template for preparing the final report summarizing findings of the self-assessment
3. Procedures and tools for quality auditing
 - 3.a Procedure for quality auditing (tasks to be performed, timing, etc.)
 - 3.b Template for preparing documentation concerning the process (to submit to the auditors)
 - 3.c Template for preparing the final report summarizing the findings of the audit
 - 3.d Auditor training course material (including the description of the tools and procedure for auditing)⁷
4. Procedure and tools for the assessment of new statistical activities
 - 4.a Questionnaire for collecting information about the new proposed statistical activity
 - 4.b Approval procedure
5. Recommended set of Monitoring and Evaluation activities

⁷ This material can be a by-product of the testing phase and can be next corrected with the possible changes made to the procedure after the test.

Application phase

The effective application of quality assessment procedures will start after the tools have been developed and tested.

As reported in Annex 1, should the FAO SQAF implementation start at the beginning of 2014, the tools and procedures regarding the new statistical activities should be ready before the end of 2014. As already mentioned, the procedure should be integrated with the process for the inclusion of new activities in the FAO Statistical Programme of Work. The procedures for the definition of FAO Statistical Programme of Work usually start in January/February and the application of the quality assessment procedure will start with the definition of the 2016-2017 FAO Statistical Programme of Work, with due attention given to synchronizing and avoiding duplication with the work planning processes associated with FAO's overall Programme of Work and Budget for the biennium. The tools and procedures for self-assessment and auditing should be drafted before the end of 2015. Therefore, the last months of 2015 can be used for preparing the first round of the application phase, for example, informing the FAO staff about the FAO SQAF through the organization of an internal event.

It can be considered that the first round of application will start in 2016 and will be programmed within the Programme of Work and Budget for 2016 – 2017 under Objective 6.

The self-assessment will be used to assess all the existing statistical processes in a period of four years, after which the self-assessment cycle can start again. The list of the process to be submitted for self-assessment will be defined at the beginning of each year by the IDWG. The definition of the list of process to be submitted can be performed from January to February each year. Then, the officers responsible for the statistical activities under self-assessment should be informed about the procedure, tasks, timings, etc. This can be done in March, partly by email and partly by organizing a one-day informative meeting with all of them. The core phase of the self-assessment procedure can be performed from April to July each year. It is roughly estimated that it can take between three and five working days for an officer to perform such tasks. The last part of the year can be then devoted to the analysis and approval of the reports, with the related improvement actions.

The quality auditing procedure is slightly more complex. At the beginning of each year the key statistical activities that will be submitted to auditing during the year should be identified (from two to four processes) jointly with the team of the auditors that will assess them. This task will be performed during the months of January and February each year. The auditors should be trained to perform the auditing. At the same time the officer responsible for the statistical activities should be informed about the auditing procedure (tasks, timing, etc.). This activity can be done in March. After the initial phase, the officer responsible for the statistical activity should start preparing the required documentation on the process, in line with the ad hoc template. Then the prepared documentation should be sent to the team of auditors who will read it. Next, the auditors will meet the officer responsible for the statistical activity to clarify and look in-depth at some issues identified in the initial documents. The months of April to July can be devoted to this activity, taking into account that about three to five working days are needed to produce the documentation, two to three working days are required to read it and two days should be devoted to the meeting.

After the meeting, the auditors are expected to be ready to write the final auditing report (according to the prepared template) summarizing the strengths and the weaknesses of the activity being audited. Finally the officer responsible for the process will complete the report with a series of improvement actions to be put in place in order to overcome the major weaknesses identified in the report. The final report, including the improvement actions, should be ready for the end of September. After that, the approval procedure can take place. Where possible, a system of incentives should be defined in order to support officers in implementing complex and resource intensive improvement actions resulting from auditing procedures.

All the activities need to be coordinated and supported centrally (see next section).

It would also be desirable to have some “checkpoints” to evaluate whether the tools and/or to the procedures need to be changed/improved, e.g. after the first four-year cycle of application.

2.2 Central coordination and support

All activities related to the assessment of quality (self-assessment and audit) require central support and coordination from beginning to end.

During the preparatory phase, the IDWG will be involved in the review and approval of all the tools and procedures.

Then, during the application phase, the IDWG is the main reference point for all the quality assessment procedures. In particular, the IDWG will be involved regularly in the:

- Definition of the plan of processes to be evaluated and with which procedure;
- Selection of auditors;
- Approval of final reports, improvement actions and, if available, distribution of incentives;
- Monitoring the implementation of improvement actions;
- Approval of new statistical activities.

Central support will then be provided through the Office of the Chief Statistician. This will include the involvement of a quality expert and at least one person who coordinates the overall process. This will ensure that the work plan is followed and delivered according to expectations, that the assessment procedure is correctly undertaken, as well as verifying the proper use of the assessment tools.

During the preparatory phase, the central support function will coordinate all the activities for the development of the tools, e.g.:

- Coordinating the activities related to the implementation of the FAO SQAF with the planning activities carried out in other FAO offices (e.g. OSP)

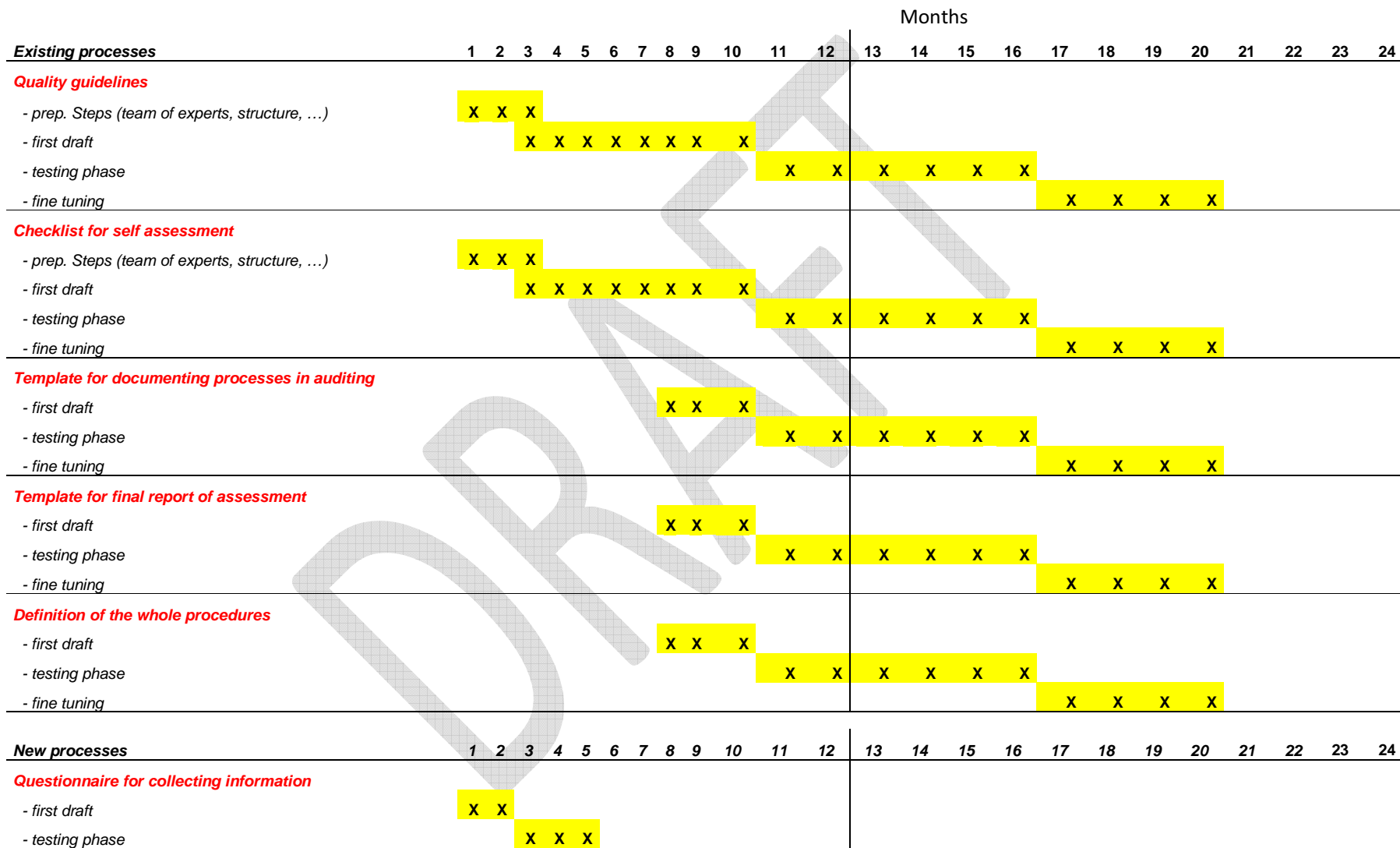
- Identifying and involving the internal experts needed for the development of the tools in the project;
- Collecting the existing FAO documents that can be useful for the development of tools;
- Ensuring that the timing set out in the schedule is followed.

During the application phase, the central support function will:

- a) Inform the officer that is being requested to carry out an assessment and provide all the relevant information and tools to perform it (explain procedures, actors, scheduling, tasks, etc.);
- b) Organize the training course for auditors;
- c) Ensure that the tools are used properly and file all the documents prepared during the assessment procedure (filled in checklist and final self-assessment report; process documentation and final audit report);
- d) Provide support during the assessment procedure;
- e) Monitor the implementation of the improvement actions;
- f) Prepare a document summarizing the main findings of the overall assessment process at the end of each year and
- g) Suggest and implement eventual improvement of the tools or the procedures used for assessment.

In addition, the central support function can promote the implementation of actions to improve quality at institutional level. Indeed, the self-assessment and auditing procedures will deal with a single statistical process and its outputs, however emphasis can also be placed on the implementation of quality improvement actions at a higher level (e.g. the introduction of a release calendar for FAO statistical outputs, the organization of internal awareness raising events and training courses on quality, etc.)

Annex 1 Tentative scheduling of preparatory phase



- fine tuning

X X

Definition of the approval procedure

- first draft

X X

- testing phase

X X X

- fine tuning

X X

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