



Food and Agriculture Organization
of the United Nations

FAO Statistics Quality Assurance Framework (SQAF)

The Quality Assurance Mechanism

Office of the Chief Statistician
Food and Agriculture Organization of the United Nations
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1. Introduction

The **FAO corporate Statistics Quality Assurance Framework (SQAF)**¹, released in 2014, represents an important tool striving toward the adoption of sound and internationally accepted statistical concepts, definitions and standard methodologies to increase of the quality of statistics² produced and disseminated by FAO.

The FAO SQAF consists of a **quality framework** and a **mechanism to ensure the compliance** of the FAO statistics to the framework itself. This document mainly focuses on the mechanism and procedures to ensure compliance. Before describing details of the mechanism, it is worth recalling the FAO quality framework includes a series of principles related to:

- **statistical outputs** (providing the definition of quality of statistics);
- **statistical processes** (i.e. the processes³ that produce the statistics);
- **institutional environment** in which processes are carried out.

The FAO **definition of quality of statistics** focuses on users' needs, i.e. quality is the degree to which statistics satisfy users' needs. The following dimensions are considered:

- **relevance** (principle 1 in FAO SQAF)
- **accuracy and reliability** (principle 2 in FAO SQAF)
- **timeliness and punctuality** (principle 3 in FAO SQAF)
- **coherence and comparability** (principle 4 in FAO SQAF)
- **accessibility and clarity** (principle 5 in FAO SQAF)

At the same time, all FAO processes dealing with production and dissemination of statistics should comply with the following principles:

- **Sound methodology and appropriate statistical procedures** (principle 6 in FAO SQAF)
- **Cost-effectiveness** (principle 7 in FAO SQAF)
- **Non excessive burden on respondents** (principle 8 in FAO SQAF)

In order to ensure the adherence with product and process principles, the FAO SQAF foresees two procedures for evaluating on-going statistical processes: **self-assessment** and **audit**. Moreover, a specific procedure for the approval of new statistical production processes is in place. Self-assessment and audit are well-known tools, often used in combination as the required effort is substantially different, though they have the same goal.

This document provides an overview of the procedures and tools for assessing compliance to the SQAF, taking into account the changes of the institutional framework occurred after the release of the SQAF itself, in particular the Administrative Circular No 2015/22 defining the "Accountability framework for

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

² The terms "statistics" and "statistical outputs" are considered synonyms through the whole document.

³ The term "statistical process" refers to (statistical) activity that collects and usually disseminate statistics. In some cases the synonym "statistical activity" is used instead of "statistical process". The reference framework is provided by the "Generic Statistical Business process Model" ([GSBPM; Version 5, December 2013](#)) developed by the UNECE.

the FAO statistical activities” and the establishment of the Office of Chief Statistician⁴ (OCS). In this new framework, the activities of assessing the compliance of new and ongoing statistical activities to the SQAF go under the responsibility of the OCS, which operates in strict coordination with the FAO Inter-Departmental Working Group (IDWG) on Statistics.

2. Procedures for evaluating ongoing statistical activities collecting data and disseminating statistical outputs

2.1 Self-assessment

With the **self-assessment**, the officer responsible for the statistical process evaluates the adherence of the process and its outputs to the principles stated in the SQAF. The assessment requires filling-in a predefined **checklist** of quality questions. FAO developed its own checklist at the end of 2015, on the basis of experiences of other international organizations, but tailoring it to the specific peculiarities of the Organization statistical production processes. The checklist covers the SQAF principles concerning statistical processes and the corresponding statistical outputs. It analyzes the different stages of the statistical processes following the structure of the “Generic Statistical Business process Model” (GSBPM; Version 5, December 2013) developed by the UNECE.

To facilitate its completion, the checklist has mainly closed-ended questions allowing single or multiple-choice responses. It is designed to put the respondent in condition to get an idea of what is required for the process compliance following the guidelines contained in the SQAF. In fact, the questions in general list all the possible quality scenarios, from the best to the worst (i.e. fully compliant, partially compliant, not compliant). The predictable risk in a self-assessment exercise consists in obtaining a biased picture from the respondent, who depicts a more positive situation than the real one.

The checklist was tested in a pilot study involving a small set of statistical production processes. The feedbacks collected in this study allowed to further improve some parts of the checklist itself.

2.2. Audit

A **quality audit** is an in-depth assessment of a single statistical process carried out by a team of auditors. The audit procedure designed for FAO statistical processes follows the standard characteristics of a “typical” audit in this area. In practice, the team of auditors (2-4 experts) studies the documentation concerning the process and its statistical outputs (provided by the responsible officer or accessible on Internet or Intranet web site, etc.), then meets the responsible officer to assess more thoroughly some phases of the process and/or the main quality issues of its statistical outputs. At the end, strengths and weaknesses of the processes and the related outputs are summarized in an audit report prepared by the auditors. The responsible officer then completes the report with a set of improvement actions to address the main weaknesses.

⁴In particular, since Director-General’s Bulletin No. 2017/12.

As shown in Annex A, a single audit should last about 16 weeks (slightly less than 4 months), however a longer period maybe required by complex processes. Given the high effort involved, quality audits can assess only a limited number of processes (2-3) on an annual basis.

Key steps in an auditing process are the selection of the processes to be audited and the creation of team of experts that performs the audit.

Good candidates for audits are the processes deemed more relevant for users and with high visible outputs. Usually, the statistical processes facing a re-engineering phase are not suitable for quality audits. The team of auditors should be formed after the selection of the processes to be audited in order to ensure that at least a subject matter expert in the relevant area and a senior statistician with a broad experience with statistical production processes are included in the team. In order to ensure the independence of the audit and the objectivity of its results, experts should not be taken from the same technical division of the process being audited. The presence of external auditors would ensure a higher level of neutrality but, on the other hand, they may have limited knowledge of complex statistical processes carried out in an international organization. The auditors are responsible for performing the assessment and preparing the audit report, which should summarize the main findings of the assessment, i.e. the main strengths and weaknesses of the process and the corresponding statistical outputs. Weaknesses will have to be addressed by a series of improvement actions agreed with the officer responsible of the process and, whenever possible, with an indication of a priority for implementation.

2.3 Implementation of the statistical quality assessment at FAO

National and international organizations producing statistics may adopt different strategies for implementing the mechanism of statistical quality assessment. Some organizations have in place just a self-assessment procedure; other prefer carrying only quality audits on the subset of most important statistical processes; sometimes a single audit can involve a subset of homogeneous processes in a given statistical domain (e.g. agriculture, social statistics, etc.) rather than a single process. A mixed approach consists in a combining both audit and self-assessment. Usually, the strategies for quality assessment are developed to cover all the statistical processes, or the subset of the most relevant ones, in a given time window, usually not shorter than 2-3 years.

The FAO adopts a mixed approach, with a particular emphasis on the self-assessment component. Moreover, the self-assessment checklist focuses only the production processes finalized at data collecting and dissemination as they are the most visible statistical outputs of the Organization with the highest impact on users.

Regarding the modality of implementation, since 2016 the self-assessment checklist has been embedded in the questionnaire collecting the required information to prepare the biennial FAO Statistical Programme of Work (SPW). The “combined” data collection tool is now called “Quality Assessment and Planning Survey” (QAPS). The QAPS in reality is a larger survey that collects information on all statistical processes carried out by the Organization, but the assessment component addressing the methodological, capacity development and governance activities is minimal. The decision to embed the self-assessment checklist in the SPW questionnaire for data collection activities, has allowed to reduce the response burden of the statistical units, by avoiding to collect partially overlapping data, and to increase the coherence of the information being collected.

Quality audits are planned to be carried out on an annual basis but on a very small subset of statistical processes (maximum 2 or 3). In years where the QAPS takes place, quality audits are scheduled right

after it (typically second part of the year) and, due to the limited time, they may assess just 1 (or 2) processes. In every other year when there's no QAPS, the audits can start at the beginning of year and can involve more than one process. The main advantage of such a scheme is that auditors will use information collected in the QAPS as a supporting material for the audit. Moreover, the audit can be used to probe the reliability of the QAPS answers. The main drawback with this approach is that the processes which undergo an audit immediately after the QAPS face a high response burden.

In setting up a pluriennial scheme for assessment, it should be considered that the data collection and dissemination processes carried out at FAO are about 100 (even though some of them are not carried out on an annual basis). They all undergo a self-assessment on a biennial basis but, given the limited number of audits that can be carried out on an annual basis, not all of them can be covered by an audit even in the medium-term period. For this reasons the audits should be carried out on a limited subset of very relevant processes.

3. Procedures for evaluating new data collections

When new statistical activities involving completely new data collection are planned, the assessment process aims at evaluating whether some conditions are met. In particular the main areas to assess are:

- the **relevance** of the statistics that are going to be produced and disseminated by the new process (i.e. users' needs) and/or the mandate received by an intergovernmental forum;
- the **response burden** associated with the data collection, mostly when data are collected from countries;
- possible **overlap** with other existing data collection activities carried out by FAO or by other international organizations;
- Basic information on **how the new process** would be carried out (questionnaire, data processing, imputation, dissemination);
- Basic **cost-benefit** analysis.

These information should be collected through a summary report that should be prepared by the officer responsible of the new activity, starting from the checklist presented in the Annex B⁵, which jointly with the report provides the basis of the approval process by the Chief Statistician⁶.

4. Coordination

All assessment activities related to new or existing processes (self-assessment and audit) are supported and coordinated by a team of experts that reports to the Chief Statistician, and subsequently to the Inter-Departmental Working Group (IDWG) on Statistics. The same team coordinates and promotes the implementation of improvement actions to ensure quality at institutional level, in line with priorities set by the IDWG.

⁵ The checklist is intended not only for new data collections but also for other statistical activities like statistical capacity development etc.

⁶ in accordance with the FAO AC No. 2015/22 the Chief Statistician has overall authority and is responsible for "review and approval of all data collection activities [...] and dissemination of all statistical indicators and new datasets" (points 1.a and 1.b)

Annex A

Auditing procedure scheme

Task	Who is involved	Details	Duration
Identification of activities to be audited	OCS in consultation with the IDWG	Low performing activities according to QAPS1 outcomes or activities with important statistical outputs	2 weeks
Set-up team of auditors	OCS	2-4 staff 1-2 experts from OCS and 1-2 expert from another Technical Division or non-FAO expert	1 week
Communication to the Director of the Unit that carries out the statistical activity to be audited	Chief Statistician	Director and data owner is informed and about the process and the expected steps.	1 week
Meetings	Team of auditors, Data owner, part of the staff involved in the activity	1 or 2 half-day meetings to discuss critical issues in the activity affecting the quality of the final statistical outcomes. Data collected via QAPS serve as a base for discussion	6 weeks
Preparation of an Audit Report	Team of Auditors	Team of auditors prepare a summary report identifying strengths and weaknesses of the audited activity	2 weeks
Preparation of an improvement plan	Data owner, in consultation with the Director of the relevant Technical Unit	Data owner prepares an improvement plan to address weaknesses identified in the report	2 weeks
Approval of the improvement plan	Chief Statistician	The Chief Statistician approves the improvement plan	2 weeks

Annex B

Clearance form for new statistical activities

Office of Chief Statistician (OCS) Request for Clearance of **NEW STATISTICAL ACTIVITIES**

1. **Title of the activity (or of the statistical component within a broader non-statistical activity):**
2. **FAO leading Division:**
3. **Name of the responsible technical officer:**
4. **What is the reason you are proposing this new activity? What is its value added, especially from a users' perspective?**
5. **Briefly describe the activity objectives and duration (not exceeding 100 words):**
6. **What is the geographical focus of your activity:**
7. **Is the activity related to SDG indicators?**
 1. Yes
 2. No
8. **Source of funding:**
 1. FAO regular budget
 2. Extra budgetary resources
 3. Both

9. **Indicate the activity strategic objective:**
10. **Do you plan to hire staff to perform statistical tasks this year?**
1. Yes, staff (VA to be submitted to OCS for clearance)
 2. Yes, consultants/PSA (TORs to be submitted to OCS for clearance)
 3. No
11. **Is the statistical activity mandated by an Intergovernmental body?**
1. Yes, please explain
 2. No
12. **Have you conducted user/beneficiary consultation?**
3. Yes, please explain
 4. No, why?
13. **Is this activity carried out in cooperation with other FAO Divisions/Regional Offices?**
1. Yes (please indicate which ones and the type of cooperation):
 2. No
14. **Is the activity overlapping with other activities already carried out by FAO (your division or other divisions)?**
1. Yes (please explain)
 2. No
 3. Don't know
15. **Is this activity carried out in cooperation with other organizations?**
1. Yes (please indicate which ones and the type of cooperation):
 2. No
16. **Is the activity overlapping with other activities already carried out by other international organizations?**
1. Yes (please explain)
 2. No
 3. Don't know
17. **In case of overlapping, have you plans to avoid or reduce at the minimum the overlap?**
1. Yes, please explain
 2. No, why?

18. **Does the statistical activity include the compilation of time series and/or data sets?**
1. Time series
 2. Data sets
 3. Both
 4. No
19. **Does the statistical activity include the calculation of indicators?**
1. Yes
 2. No
20. **Is/are the indicator(s) part of the SDGs indicators?**
1. Yes (please indicate the SDGs indicator's number):
 2. No
21. **Does the activity involve the collection of input data at country level?**
1. Yes (questionnaire to be submitted to OCS for clearance)
 2. No
22. **In case of data collection at country level, please indicate the expected response burden on data providers**
1. High
 2. Moderate
 3. Low
 4. None
23. **Did you check whether the data to be collected are already available/collected by other FAO divisions?**
1. Yes, please explain
 2. No, why?

24. **Did you check whether the data to be collected are already available/collected by other UN organizations or other international organizations?**
1. Yes, please explain
 2. No, why?
25. **In case of data collection, have you designed procedures and tools to deal with non-reporting, missing values, invalid collected data?**
1. Yes, please explain
 2. No, why?
26. **Does your activity include external data dissemination?**
1. Yes, through online database
 2. Yes, through statistical yearbook
 3. Yes, through FAO official publication (e.g. SOFI, SOFO, SOFIA and similar)
 4. Yes, other (please explain)
 5. No, data will be only internally available
 6. No, data will not be disseminated
 7. *No, not applicable.*
27. **Does your activity include initiatives for strengthening the statistical capacity of national and/or regional institutions?**
1. Yes
 2. No
28. **Have you assessed the cost-benefices of this new statistical activity?**
1. Yes, please explain
 2. No, why?