Chapter 5
Development and implementation of a national quality assurance framework

Introduction

5.1. Chapter 5 discusses the process and provides guidance on the development of an NQAF and steps for its implementation at the NSO and other producers of official statistics. Chapter 6 discusses the role of NSS-wide bodies for the implementation of an NQAF throughout the NSS.

5.2. The emergence of an enlarged data ecosystem with increased needs for data and statistics, new statistics producers and new data sources and data providers requires that an NQAF be systematically developed and implemented throughout the entire NSS. This will assure the quality of official statistics and maintain the role of official statistics as a provider of trusted information. For example, the NSO and other members of the NSS may find themselves increasingly in the situation of having to use data from new data providers and having to assess statistics produced outside the traditional realm of official statistics, as illustrated by the discussion regarding the use of big data.  

5.3. How to use chapters 5 and 6. Chapters 5 and 6 describe different aspects of institutional arrangements and specific actions of various actors with regard to developing and implementing an NQAF throughout the NSS. These are summarized in figure 5.1, which also shows the relationship between chapters 5 and 6. Readers may find certain sections of greater interest than others:

(a) Section 5.A. provides a basic introduction to the purpose of quality assurance and highlights core recommendations on quality assurance of which newcomers to quality assurance should be aware. For a thorough introduction and the full list of recommendations on quality assurance, readers should refer to chapters 1 and 2;

(b) Section 5.B. describes the institutional arrangements and process of developing an NQAF and is directed at staff who work at the NSO or at other members of the NSS who are tasked to develop an NQAF;

(c) Section 5.C. describes the institutional arrangements and actions for implementing an NQAF in a statistical agency. It is directed at staff at statistical agencies who work in the quality unit or as a quality focal point or quality manager within the organization and are tasked with implementing quality assurance;

(d) Staff and senior management at the NSO or at other statistical agencies tasked with supporting the implementation of an NQAF throughout the NSS should refer to and review chapter 6.

5.4. The institutional arrangements for the development and implementation of an NQAF vary in countries, as do the overall national circumstances. NSOs and NSSs in countries (or areas) may only have a few staff or employ thousands of professional statisticians. However, quality assurance is part of the work of any statistician producing official statistics, whether someone has only a few or thousands of colleagues. Chapters 5 and 6 are not meant to assume any specific national circumstances, nor prescribe any specific institutional arrangements nor any specific path for NQAF development and implementation. However, in order to be able to provide a generic description of the overall process, chapters 5 and 6 assume a path for the development and implementation of quality assurance in the NSS that starts at the NSO and is driven by that office.

5.A. Phase 1: Establishing the purpose, scope and responsibility for a national quality assurance framework

5.5. The case for an NQAF. The value of official statistics lies in the trust placed by users in the information provided and its quality, which depends on its ability to meet user needs. The NQAF is an instrument to assure trust and quality, and assure that official statistics stay relevant. This entails not only assuring the quality of statistical outputs, but also assuring the quality of statistical processes, the management of the NSS and the institutional environment, which is reflected in the principles and requirements of the UN-NQAF set out in chapter 3 of this Manual.

5.6. Global mandate and core recommendations. In the context of the monitoring of the Sustainable Development Goals, Member States stressed the need for quality, accessible, timely and reliable disaggregated data to help with the measurement of progress (see General Assembly resolution 71/313). According to the core recommendations for quality assurance in chapter 2:
(a) **It is recommended** that countries include the requirements of quality assurance in their national statistical legislation and other legislation mandating the production of statistics for official use (core recommendation #2);

(b) **It is recommended** that countries establish a national quality assurance framework for official statistics and that all members of the national statistical system commit to continually assessing, improving and reporting on the quality of official statistics, as well as on the quality of data and statistics used in the production of official statistics as required41 (core recommendation #3);

(c) **It is recommended** that the national quality assurance framework be implemented at the national statistical office and throughout the entire national statistical system. Furthermore, it is recommended that the national quality assurance framework be applied to all data and statistics produced outside of the national statistical system that are disseminated with the help and support of a member of the national statistical system or that are used for government decision-making, as deemed appropriate and required (core recommendation #5).

5.7. **Scope of an NQAF and role of the NSO.** As indicated in the above core recommendations, the NQAF applies to all members of the NSS and all official statistics, including some producers of statistics that may be considered by countries as being outside the NSS. The NSO is normally at the centre of the NSS and serves as its coordinator and as a main producer of statistics. In this dual role, the NSO is best placed to develop the NQAF, to support its implementation throughout the NSS and its application to all official statistics and, under specific circumstances and in collaboration with other members of the NSS, to non-official statistics.

5.B. **Phase 2: Development and adoption of a national quality assurance framework**

5.8. **Institutional arrangements for the development and adoption of an NQAF.** Consequently, it is assumed that the NSO is leading the development of the NQAF for the entire NSS, although specific arrangements in countries may vary.42 Countries may also decide to initially limit the NQAF implementation to the NSO. The establishment of the necessary institutional arrangements for the development of an NQAF may encompass the following:

(a) **High-level commitment.** The development and implementation of an NQAF requires the support and commitment of the leadership of the NSO and other members of the NSS that are major producers of official statistics;

(b) **Establishment of a quality unit at the NSO responsible for quality assurance.** Typically, the head of the NSO would establish a dedicated quality unit to lead, coordinate and conduct the required conceptual work for the development of an NQAF. Such a unit is typically placed in the division or department responsible for cross-divisional/cross-departmental statistical work, coordination and/or statistical methodology;

(c) **Establishment of a quality task force (or working group).** The head of the NSO would establish a quality task force that would be given the responsibility of developing an NQAF. The quality task force should be composed of a variety of subject matter experts of the NSO and, as appropriate, important members of the NSS to ensure coherence of efforts, broad involvement and subject matter expertise from the start. The NSO would typically chair

41 This commitment of members of the NSS should also, as deemed appropriate and required, extend to data and statistics that are disseminated jointly with other statistics producers that are not members of the NSS.

42 The further role of the NSO as a central coordination body and the role of other NSS-wide bodies in the implementation of an NQAF throughout the NSS is elaborated in section 6.B.
and be the secretariat of the quality task force. Representatives of users of official statistics such as ministries, the media or research institutes may be part of the quality task force as well;

(d) **Role of the NSS-wide governance body.** The NSO is normally the coordinator of the NSS but typically has no authority over other members of the NSS such as the country’s central bank or government ministries, which are typically above the NSO in the government hierarchy. Therefore, the development and adoption of an NQAF would benefit from an NSS-wide governance body that is able to agree on a common NQAF and implementation guidelines. Many NSSs already have such a governance body in the form of a statistical council or board, typically consisting of the head of the NSO and representatives of other major statistical agencies (see chapter 6 for details);

(e) **Role of an NSS-wide advisory body.** A primary task of such an advisory body would be to ensure that statistical outputs meet user needs, but it may also provide advice on all other aspects of statistics development, production and dissemination. In this function it may raise quality concerns, assess existing statistics or formulate requirements for additional statistics and analysis. It would typically be composed of government users, the business sector, researchers, non-governmental organizations, media and the general public. In some countries the advisory body may take the form of or be called a user committee. In some countries a separate user committee may exist in parallel to the advisory body;

(f) **Establishment of a legal framework for quality assurance.** The requirements and process to include or reflect an NQAF in the national statistical laws and regulations should be evaluated early on. Adequate steps should be taken to achieve a timely incorporation of the NQAF into the national statistical legislation, as part of an effort to guarantee the fundamental values and principles that govern the development, production and dissemination of official statistics by legal and institutional frameworks (core recommendation #1), and to include the requirement of quality assurance in the national statistical legislation (core recommendation #2).

5.9. **Activities for the development and adoption of an NQAF.** Development of an NQAF may be undertaken over a period of a minimum of one year, including review, revision and approval. The process may include the following steps:

(a) **Establishment of a timetable for development and implementation.** The quality unit at the NSO (see para. 5.8.(b)), in collaboration with the quality task force (see para. 5.8.(c)) should identify an initial timetable for the development and implementation of the NQAF and regularly review and update it as needed;

(b) **Review and analysis of national circumstances and practices.** The quality unit at the NSO, in collaboration with the quality task force, should compile and review all relevant national documents such as statistical laws, regulations and guidelines, and national statistical strategies and plans that may be of relevance for the development and implementation of an NQAF for official statistics. Countries should also compile and analyse information about statistical quality frameworks that are already being used within the country and existing practices of quality assurance in general;

(c) **Uses and users of an NQAF and the NQAF implementation plan.** The uses and users of an NQAF should be clearly identified. Countries may want to perform a deeper analysis of their needs, for example by conducting a
“SWOT” analysis (strengths, weaknesses, opportunities, threats) of their NSO or NSS. An initial plan for the implementation of an NQAF, including the identification of resource requirements, should be developed early on;

(d) Compilation, review and analysis of materials available at the international level. Countries do not need to start from scratch and can refer to extensive materials relevant for the development of an NQAF. The quality unit at the NSO, in collaboration with the quality task force (which may include other members of the NSS), should compile and review the various existing global, regional and thematic quality assurance frameworks and standards (the UN-NQAF, the European Statistics Code of Practice, the IMF Data Quality Assessment Framework, the Recommendation of the OECD Council on Good Statistical Practice, the African Charter on Statistics, the Association of Southeast Asian Nations (ASEAN) Community Statistical System Code of Practice, the Code of Good Practice in Statistics in Latin America and the Caribbean and other relevant guidelines such as the GSBPM, as well as practices of other countries;)

(e) Decision on the reference framework for an NQAF. After the analysis of all requirements, relevant experiences and materials, the quality task force and the NSS members and, if appropriate, the NSS-wide governance body, will need to decide whether to adopt an existing NQAF (or code of practice) or whether to develop their own NQAF from a combination of existing NQAFs or by identifying specific quality principles themselves. In some regions, countries can either choose for themselves to adopt or align their NQAF with the regional quality assurance framework or code of practice, or are obliged to do so. Countries should follow core recommendation #4, which recommends that the NQAF be developed in consideration or in alignment with the UN-NQAF or similar existing quality assurance frameworks. Generally, NQAFs are not expected to be very different from each other, as existing quality assurance frameworks are very similar;

(f) First draft of an NQAF and its contents. Based on the decision on the reference framework, the quality task force will develop a first draft of the NQAF. An NQAF typically consists of a description and the definition of quality concepts and quality principles, which may be complemented by initial implementation instructions and guidelines;

(g) Quality requirements, elements to be assured and indicators. The draft of the NQAF should include or will need to be complemented at a later stage by quality requirements and elements to be assured, in order to provide guidance on how the NQAF can be implemented and used with regard to quality assessment and management;

(h) Consultation and review process of the draft NQAF. The draft NQAF may undergo an internal review and approval process within the organizations participating in the quality task force, before being subjected to a wider consultation with all concerned producers of official statistics and other stakeholders in order to raise awareness, create ownership and ensure that the NQAF fits different circumstances and reflects all relevant quality aspects. The draft NQAF may even be made available for public consultation;

(i) Finalization and adoption. The draft NQAF should be updated on the basis of inputs received during the consultation process and may undergo a final round of consultations with all stakeholders. The updated version would then typically undergo a final review and approval at the management level.
of the organizations participating in the quality task force before being submitted for adoption to the NSS-wide governance body. The NQAF may also be adopted at a higher political level or reflected in the national statistical legislation;

(j) Communication and dissemination. The NQAF should be disseminated to all producers of official statistics and introduced to the staff at the statistical agencies, with an emphasis on its benefits. The adoption of the NQAF should be announced to all users of statistics.

Box 5.1
Experience of the Statistical Institute of Jamaica in establishing its national quality assurance framework

The Statistical Institute of Jamaica developed its quality assurance framework after conducting an extensive review of existing international, regional and national statistical quality assurance frameworks (the UN-NQAF, the IMF Data Quality Assurance Framework, the European Statistics Code of Practice, the Recommendation of the OECD Council on Good Statistical Practice, the Code of Good Practice in Statistics in Latin America and the Caribbean, the CARICOM Statistics Code of Practice and the quality assurance frameworks of Statistics Canada and Statistics South Africa) and related materials such as the Fundamental Principles of Official Statistics and the International Statistical Institute’s Declaration on Professional Ethics. The following national references relevant to quality management were reviewed: the Statistics (Amendment) Act of 1984, which established the Statistical Institute of Jamaica as the NSO of Jamaica, the Institute’s Five-year Strategic Plan 2012–2017, and its policies and strategies addressing data confidentiality, access to data, metadata, the publication of data, data revision, the misuse of information, the Institute’s commitment to quality and other relevant items.

This review established the basis for the adoption and adaptation of relevant guidelines and good practices that are accepted in the global statistical community. In addition to outlining the circumstances and key issues driving the need for quality management, the benefits and challenges of implementing the framework were also taken into account. The development of the quality assurance framework of the NSO was undertaken by staff in the Research, Design and Evaluation Division of the Institute.

The framework uses definitions articulated in the SDMX Glossary of 2016 to describe quality concepts. The layout of the framework draws extensively on the compliance criteria in the Code of Good Practice in Statistics in Latin America and the Caribbean, which was considered useful for facilitating global assessments conducted by the Economic Commission for Latin America and the Caribbean of the national statistical office’s compliance with the Code of Good Practice in Statistics. In addition, the framework arranges guidelines for good statistical practice in accordance with the levels of the UN-NQAF (i.e., managing the statistical system (albeit partially), the institutional environment, statistical processes and statistical products).

The Institute has a process for the ratification of official documents which involves the Senior Management Committee and the Board of Directors. After review of the original draft of the framework by the Director of the Research, Design and Evaluation Division, which includes the Quality Management Unit, recommended amendments were implemented. The subsequent draft was submitted to the Senior Management Committee for review, commentary and approval, and then submitted to the Board of Directors for final approval and adoption. On 12 January 2017, the Board of Directors ratified the quality assurance framework of the NSO, which was later issued on 12 June 2017. It may be accessed by the public on the NSO website (www.statinja.gov.jm).
5.C. Phase 3: Implementation of the national quality assurance framework by the national statistical office and other producers of official statistics

5.10. Building on existing efforts. Countries may wish to build on already existing quality management tools and guidelines when implementing an NQAF. The following paragraphs describe possible steps and elements for the implementation of an NQAF. Figure 5.2 provides a brief summary and a possible flow sequence for these steps and elements.

Figure 5.2
Implementation of the national quality assurance framework: possible steps and elements

<table>
<thead>
<tr>
<th>Starting point: NQAF has been developed and adopted</th>
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<tr>
<td>1 Establish proper institutional arrangements</td>
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<td>2 Train staff and conduct an initial self-assessment</td>
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<td>3 Communicate internally and externally</td>
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<tr>
<td>4 Develop an implementation strategy and identify implementation actions</td>
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<tr>
<td>5 Analyse business processes and activities (using the GSBPM and the GAMSO)</td>
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<tr>
<td>6 Decide on methods and tools to be used for quality assessment</td>
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<tr>
<td>7 Integrate the implementation steps into the National Strategy for the Development of Statistics and the multi-year statistics plan</td>
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<tr>
<td>8 Ensure ongoing commitment and seek actions with quick/visible pay-offs</td>
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5.11. Institutional arrangements for the implementation of an NQAF. Quality management must be institutionalized. However, the specific institutional arrangements and roles of the quality units, task forces, quality managers, quality champions and focal points, and quality networks, among other things, that are involved in quality assurance are expected to evolve over time. The arrangements in countries may consist of a mix of permanent and temporary structures depending on the implementation stage and the specific objectives. In general, as specific activities become more established, responsibilities may shift from more centralized structures such as quality units and task forces to more decentralized structures consisting of quality focal points and networks. The following best practices can be identified, which apply to the NSO but also possibly to other major producers of official statistics:

(a) Quality unit. The NSO is encouraged to retain a quality unit as a place for quality management or coordination within the NSO in order to maintain sufficient capacity to lead and support the implementation of quality management initiatives throughout the NSO, and to support other NSS members and producers of official statistics if required. Other major statistics producers within the NSS are encouraged to establish their own internal quality units to support the work on quality within their organizations. The quality unit may be headed by the quality manager of the statistical agency;

(b) Internal quality task force. The NSO is encouraged to establish an internal quality task force consisting of representatives of the quality unit and representatives from each of the other divisions of the NSO to serve as quality champions/focal points in their respective divisions; such an internal task force would support NQAF implementation throughout the NSO. The internal quality task force should serve as a forum in which quality-related issues in the various aspects of NSO operations can be addressed.
at both the strategic management and the operational level. The internal quality task force should also serve as a mobilization mechanism for quality management initiatives, such as documentation workshops or specialized training workshops for improving quality, among other things. Other major producers of official statistics are encouraged to establish their own internal task forces;

(c) Quality assurance managers or focal points. The NSO is encouraged to appoint quality assurance managers or focal points in the various statistical domains and to establish clear terms of reference for their work. In general, the quality manager or focal point would be responsible for establishing the quality assurance plan, defining all the quality activities and quality indicators to be implemented and computed in the statistical domain under the responsibility of the quality manager. Other major producers of official statistics are encouraged to establish quality managers or quality focal points as well;

(d) Central coordination body, NSS-wide governance body and NSS-wide advisory body. The central coordination body of the NSS (a role typically assumed by the NSO), the NSS-wide governance body and the NSS-wide advisory body should guide and support the implementation of the NQAF at the NSO and throughout the NSS (see chapter 6 for details).

5.12. Training of staff. Quality managers and focal points and managers of statistical products need to gain a thorough understanding of the basic concepts, objectives and tools of quality assurance, and the country’s NQAF. Chapter 1 of the Manual provides an introduction to the basic concepts of quality assurance, defining quality as fitness for use or fitness for purpose and putting the needs of the user at the centre of quality assurance. Chapter 4 of this Manual introduces quality assessment tools.

5.13. Conducting a self-assessment as starting point. When an NQAF has been adopted, a workshop with managers and experts from throughout the NSO or other statistical agencies can conduct a first self-assessment based on the NQAF. The assessment can be carried out in groups and be facilitated by external experts. Such self-assessment establishes a baseline for NQAF implementation and ensures awareness, ownership and management support for further quality work.

5.14. External and internal communication. The NSO is encouraged to explicitly communicate its commitment to high quality and continuous improvement to its stakeholders in the form of a declaration on quality. The declaration would state the principles that guide the approach of the NSO to managing quality, the standards it follows and the commitments to which the NSO can be held accountable in producing official statistics. The declaration on quality should be officially launched, be visible on the NSO website and be actively introduced and promoted internally and externally to all stakeholders. Promotional activities may include quality seminars, quality campaigns or an annual quality week. An important instrument of communication are external quality reports, which should address the needs of various user groups.

5.15. Development of an implementation strategy and implementation actions. The NSO and other statistical agencies that produce official statistics must decide where and how to start with the implementation of an NQAF. They may develop a short-term action plan for quality improvements covering the next data production cycle and prepare in parallel a mid- and long-term strategy and action plan. Generally, quality assurance can be applied at the institutional level and/or at the process or product level. On the process or product level there is the option to: (a) apply all relevant NQAF principles to all processes or products; (b) apply selected principles to all processes or products (the selection of principles can be based on the GSBPM); or

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50 For example, the European Statistics Code of Practice 2017 includes a Quality Declaration of the European Statistical System (see https://ec.europa.eu/eurostat/web/products-catalogues/-/KS-02-18-142).
(c) apply all relevant principles to selected processes or products. Self-assessments are a useful tool to identify areas for improvement.

5.16. Specific actions and activities for quality assurance may entail:

(a) Implementing quality assurance in the various subject area domains by, among other things, formulating subject-matter quality assurance frameworks, which would include as appropriate any subject-area-specific recommendations. Such domain-specific quality assurance frameworks may reflect guidance issued by the respective international and regional organization responsible for international or regional data collection in this area; for example, relevant international agencies may even be invited to organize and conduct a quality assessment;

(b) Reviewing institutional and legal arrangements, including mandates and authority for data collection, and initiating any changes as required;

(c) Reviewing the extent to which compliance with applicable legal requirements and the organization’s risk management can be integrated into statistical quality management;

(d) Conducting staff training with the aim of embedding quality assurance in everyday activities;

(e) Conducting a dialogue between producers and users to provide information on quality, and use its findings and conclusions alongside results from quality assessments and audits. User engagement should be part of the development and execution of the quality assurance programme.

5.17. Best practices in using the GSBPM and the GAMSO for quality management. The improvement of the quality of statistics requires the improvement of statistical processes. The precondition for the management (and quality improvement) of statistical processes and activities is their clear identification. The GSBPM describes and defines the set of business processes needed to produce official statistics. The GAMSO extends and complements the GSBPM by adding three additional activities needed to support statistical production: strategy and leadership, capability development and implementation of a national quality assurance framework

For example, the Food and Agriculture Organization of the United Nations is responsible for agricultural statistics, the United Nations Educational, Scientific and Cultural Organization for education statistics, and the United Nations Environment Programme for environment statistics. For the list of the specialized United Nations agencies and other international, supranational and regional organizations active in specific statistical domains, see https://unstats.un.org/unsd/ccsa/members.csh.html.
ment, and corporate support (see chapter 4 for more information on the GSBPM and the GAMSO). The following best practices can be identified:

(a) The NSO and major producers of official statistics are encouraged to use the GSBPM to: (i) document and analyse statistical processes and associated metadata in a standard way; (ii) identify pertinent quality characteristics; (iii) formulate appropriate quality indicators to monitor statistical processes; and (iv) identify necessary actions to improve and assure the quality of statistical processes and outputs. The integration of different statistical processes and achieving data interoperability may be an important objective in the use of the GSBPM;

(b) The NSO and major producers of official statistics may use the GAMSO to facilitate the extension of quality assurance to additional activities needed to support statistical production, namely: strategy and leadership, capability management, and corporate support;

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**Box 5.3**

*Experience of the Italian National Institute of Statistics in implementing its national quality assurance framework*

At the Italian National Institute of Statistics all statistical processes are mapped to a GSBPM-compliant system. For each subprocess the use of generalized software is documented, activities carried out to monitor or assess quality are documented and standard quality indicators are computed. For example, for a given process, documentation exists which confirms that “run collection” has been carried out by the computer-assisted personal interviewing (CAPI) technique, that the interviewers have taken specific training and are monitored and that the electronic questionnaire has been implemented with the software considered standard at the Institute. Furthermore, response rates (and sometimes control charts for the interviewers) are computed. The process manager can compare the quality of the process with the quality of other similar processes or with indicators from past editions of the same process (phase 8 of the GSBPM).

An extensive self-assessment and auditing programme was carried out from 2010 to 2016. The Institute produced two manuals of quality guidelines (for direct processes and for processes using administrative data). These manuals are both a guide for the statistical activity and a reference to evaluate the compliance with good practices in an auditing and self-assessment programme (supported by an auditing questionnaire).

At the Institute, quality documentation and the standard quality indicators are highly homogeneous. The latter are analysed yearly at the Institute level and an aggregated quality report is published internally, with the aim of identifying areas for quality improvement common to groups of statistical processes. Regarding the statistical production, the modernization programme introduced in April 2016, which resulted in the creation of a centralized data collection and a reinforcement of the methodological function, has fostered the use of standard methodologies and practices.
5.18. Methods and tools for quality assessment, statistical and technical standards and standard procedures. All methods and tools for quality management and assessment, such as quality indicators, quality reports, quality assessments and audits, among other things, as specified in chapter 4, should be considered. The methods and tools are complemented by the statistical concepts, definitions and methods set out in the manuals and guidelines for the respective subject-matter domain, standard procedures for processes and technical standards for IT systems and software specifications. Quality management and assessment entails the ongoing documentation of all processes and the recording of metadata at the input, intermediary and output stages. Existing and internationally recognized data quality assessment instruments should be considered.52

5.19. Overarching activities that impact quality:

(a) The development and regular update of the National Strategy for the Development of Statistics (and/or the multi-year statistics programme) should be conducted as an inclusive process involving all stakeholders in order to assure that the outputs of the NSO and NSS meet user needs;

(b) To the extent possible, legislative and institutional reform to improve the efficiency of the NSO and the NSS should be employed;

(c) Participation in regional or international activities and initiatives that aim at improving the availability and quality of official statistics can provide important guidance and support for the implementation of an NQAF. For example, countries may participate in one of the three tiers of the IMF data dissemination standards: the Enhanced General Data Dissemination System, the Special Data Dissemination Standard or the Special Data Dissemination Standard Plus;

(d) If possible, a peer review of the compliance with the NQAF may be conducted with the participation of external experts and/or international statistical organizations.

5.20. The challenge of ongoing commitment and actions with quick/visible pay-offs. The major challenge for quality assurance is maintaining an ongoing commitment to and investment in quality assurance despite the difficulty in demonstrating immediate pay-offs. Therefore, a clear mandate and legal obligation are important to assure ongoing support for quality assurance. Even more important is the understanding that quality assurance is indispensable to maintaining trust in official statistics, thereby securing its very existence. At the same time efforts should be made to demonstrate the usefulness of quality assurance to users. The following are good practices that are of immediate benefit to statistics users:

(a) Establish an advance release calendar and adhere to it;

(b) Establish and publish some output quality indicators (e.g., on accuracy and timeliness);

(c) Provide metadata and quality reports for users in a systematic and easily accessible way.

52 Examples are the data quality toolkit of Statistics Canada; the survey quality assessment framework checklist of the International Household Survey Network, which is especially useful for survey projects; DESAP: The European Self-Assessment Checklist for Survey Managers; the IMF Data Quality Assessment Framework for data dissemination standards; and the Office for National Statistics of the United Kingdom of Great Britain and Northern Ireland “Guidelines for Measuring Statistical Output Quality”, version 4.1, which is especially useful for assessing the quality of administrative data. For further references with regard to quality assurance of data from specific data sources, see chapter 7.