Economic and Social Council

Statistical Commission
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Item 3(b) of the provisional agenda *
Items for discussion and decision: Handbook of Statistical Organization

Handbook of Statistical Organization

Report of the Secretary-General

Summary

    The present report is prepared in accordance with Economic and Social Council decision 2017/228 and past practices. The Cape Town Global Action Plan for Sustainable Development Data and the final report of the series of conferences on a Transformative Agenda for Official Statistics both stress the need for statistical organizations to adapt and develop. The 2030 Agenda for Sustainable Development demands high-quality, timely and disaggregated statistics to respond to new data needs and emerging challenges. The report includes a commented outline for the Fourth Edition of the Handbook of Statistical Organization that considers the strategic development areas proposed by these initiatives, based on consultations with chief statisticians and senior managers of statistical organizations.

    Points for discussion by the Commission are contained in paragraph 25.

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*   E/CN.3/2018/1.

I.   Introduction

1.   The Cape Town Global Action Plan for Sustainable Development Data (E/CN.3/2017/3) and the final report of the series of conferences on a Transformative Agenda for Official Statistics (E/CN.3/2017/5), both submitted to the forty-eighth session of the United Nations Statistical Commission, stress the need for statistical organizations to adapt and develop. The monitoring of the 2030 Agenda for Sustainable Development, and related regional and national development policies, require national statistical systems (NSSs) to grasp the potential of innovative technologies in a rapidly changing data ecosystem while reinforcing leadership, coordination, communication, and dialogue through institutional and organizational reforms, in compliance with the Fundamental Principles of Official Statistics endorsed by the UN General Assembly in 2014. Modernisation and transformation are crucial if official statistics are to meet the widening and increasing requirements of policy makers, researchers, the media, and the civil society for high-quality, timely, and disaggregated statistics.

2.   Considering these circumstances, the 48th session of the UN Statistical Commission agreed with the proposed update of the Handbook of Statistical Organization (the Handbook) with the primary objective to guide chief statisticians and senior managers of statistical organizations in developing and maintaining statistical capacity that is fit for purpose. The Statistical Commission required that the updated version of the Handbook, first published in 1952 with the most recent (third) Edition from 2003, should consider the strategic development areas proposed in the Cape Town Global Action Plan (CP-GAP) for Sustainable Development Data and the main outcomes of the series of conferences on a Transformative Agenda for Official Statistics, in particular:

a.   Institutional and organizational frameworks securing resilience and adaptability of official statistics;

b.   Communication, advocacy, and multi-stakeholder partnerships for official statistics;

c.   Production processes and data sources for integrated production systems in official statistics;

d.   Information technology infrastructure to support data collection, sharing, processing and dissemination in official statistics;

e.   Quality assurance framework, quality policy and management in official statistics;

f.   Capacity-building, training, and resource mobilization in official statistics.

3.   The updating process of the handbook was divided in two segments. The first segment was to develop a commented outline for the next (Fourth) Edition of the Handbook based on a review of the Third Edition, consultation rounds held within the framework of the Statistics Division of the Department of Economic and Social Affairs' regional and sub-regional capacity building workshops and an online survey conducted among Chief Statisticians between September to October 2017. The survey as well as the consultation rounds focused on the structure to be followed by the updated Handbook, major recent developments, and priorities to be reflected in the updated version, and other issues such as electronic dissemination vs. paper publication and available languages.

4.   The second segment of the update process after March 2018 will be the drafting of the updated version of the Handbook using the commented outline and the outcome of the discussion and guidance provided by the forty-ninth session of the Commission.

5.   The purpose of this report is to present to the forty-ninth session of the United Nations Statistical Commissions for discussion and guidance the result of the first segment of the updating process of the Handbook structured around the following sections: II) factors shaping the update of the Handbook and outcome of user consultations; III) summary of the content of each chapter in the proposed new structure; and IV) the proposed next steps in the update process.

6.   The detailed commented outline is available in the annex to this report.

II.   Factors shaping the update of the Handbook and outcome of user consultations

7.   Since 2003, when the Third Edition was published, there have been many developments in the organisation and production of official statistics that should be addressed in an updated version. The outcome of

the review, consultation rounds and the result of the survey conducted among Chief statisticians suggested the following:

a.   Increased focus on implementation of the Fundamental Principles of Official Statistics, both within the national statistical offices (NSOs) and among other producers of official statistics within the NSSs;

b.   Increased focus on the NSS, not just the NSO, and the need for coordination between NSS members;

c.   Increased focus on systematic reuse and exchange of data;

d.   Technological developments that have significant implications for data collection, data handling and data dissemination;

e.   The requirement that producers of official statistics meet new data needs at both national and international levels.

Review of the target audience, structure, and content of the Third Edition

8.   A review of the Third Edition with the aim of identifying areas to be updated and improved, and how best to adapt the structure and content to meet new requirements resulted in the following conclusions:

a.   The Handbook should not be designed as a narrative story but rather a checklist that a statistical agency should take into consideration. The chapters should be capable of being read independently;

b.   The Handbook should provide clear and firm guidance, but not be prescriptive as the situation in each country is unique and only those in the country can determine the usefulness of the guidance;

c.   The Handbook should contribute to the harmonisation and alignment of concurring definitions and terminology that have emerged recently through various, and sometimes uncoordinated, initiatives and programmes at global and regional levels;

d.   Most chapters and sections, especially those relating to information technology would have to be completely rewritten.

e.   The structure of the Handbook, meaning the division of the material into chapters and the sequencing of those chapters, should be fundamentally revised to reflect the emerging topics and issues to be covered, and the relevant international standard, as further discussed below.

9.   The primary target audience of the present Handbook are chief statisticians and senior managers. However, with the revised approach it will be possible to address a wider range of users and stakeholders at all levels both within and outside the national statistical system. This will provide an opportunity to develop a mutual understanding of official statistics and a common statistical culture. As the NSOs vary greatly in terms of their size and development, this should also be considered when drafting the new Handbook. As in the Third Edition, the approach is to present general principles that appear to have withstood the tests of time, location, tradition, and legal context, and to illustrate them with national examples and practices.

Accessibility, readability, usability, and ease of update

10.   It became clear through the consultation process that the updated Handbook should be conceived as a living document available on the web, a wiki style resource that is easily accessible, that includes links to other relevant material available on the web, that invites discussion of issues, and that can readily be updated. To ensure an efficient structure, including how to use links, it is proposed that a pilot chapter is drafted as a guidance for developing the other chapters. This pilot chapter might also be an experiment in how search mechanisms and the use of key words can be implemented to facilitate use of the updated Handbook as a toolkit for training and providing answers to different issues.

11.   It is suggested that a procedure is put in place for the regular update of the Handbook, that each version of updates is clearly marked, and that the frequency of updates for each chapter is fixed, for instance every second year. Furthermore, it should be decided which languages should be made available in the web version.

12.   It is foreseen that a hardcopy version of the Handbook will be confined to the overview chapter (Chapter 2). This printed document will be made available in all UN official languages and will target policy makers and other stakeholders in addition to NSOs and other NSS members. In addition, it is proposed that the other chapters that are available exclusively online are made print-friendly.

Reference initiatives, guidelines, and material

13.   The updated Handbook will address common challenges, including those related to the production and utilization of the indicators for monitoring progress towards the goals and targets of the 2030 Agenda, based on institutional principles, managerial practices and innovative production processes and technologies that have been internationally acknowledged and successfully implemented. The updated Handbook will, to the extent possible, rely on relevant global and (sub-)regional initiatives such as the deliverables and recommendations of the High-level Group for Partnership, Coordination, and Capacity-Building for statistics for the 2030 Agenda for Sustainable Development (HLG-PCCB), the work of the High-level Group on Modernisation of Official Statistics (HLG-MOS), the revision of the Generic National Quality Assurance Framework (NQAF) and its Guidelines, and the review of the current Implementation Guidelines for the UN Fundamental Principles of Official Statistics.

14.   It was proposed during the consultation phase that, before starting with the drafting of the chapters of the handbook according to the priorities mentioned above, there be an inventory conducted at national, regional, and global levels of innovative initiatives, reference material and guidelines, and country experiences that should be duly reflected in the updated version.

III   Proposed structure and content of the updated Handbook

15.   It is suggested that the Generic Activity Model for Statistical Organisations (GAMSO)[1] be used as the overall architecture of the updated Handbook. To quote from its introductory sections, GAMSO describes and defines the activities that take place within a typical statistical organization. It extends and complements the Generic Statistical Business Process Model (GSBPM) by adding additional activities needed to support statistical production. It aims to provide a common vocabulary and framework to support international collaboration activities, particularly in the field of modernisation. However, as GAMSO is a relatively new standard and does not have the maturity of GSBPM[2] and it is proposed that it provides guidance in the choice of structure rather than being a standard that must be strictly followed.

16.   GAMSO comprises three hierarchical levels. The top level comprises four broad activity areas that further articulated at a second level as follows:

    a.   **Strategy and leadership** with, at the second level, i) define vision; ii) govern and lead; and iii) manage strategic collaboration and cooperation;

    b.   **Capability development** with i) plan capability improvement; ii) develop capability improvements; iii) monitor capabilities; and iv) support capability implementation plan;

    c.   **Corporate support** with i) manage business and performance; ii) manage finances; iii) manage human resources; iv) manage IT; v) manage statistical methodology; vi) manage information and knowledge; vii) manage consumers; viii) manage data suppliers; ix) manage buildings and physical space; and x) manage quality;

    d.   **Production** as per GSBPM.

17.   The second levels were taken as a starting point for the Handbook chapters but then significantly modified since GAMSO is a model for a national statistical office and the Handbook covers the entire national

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[1]   GAMSO was endorsed by the Conference of European Statisticians at it sixty-fifth plenary session (ECE/CES/2017/11); for more information on GAMSO see also: https://statswiki.unece.org/display/GAMSO/GAMSO+v1.1.

[2]   GSBPM was endorsed by the Conference of European Statisticians at it sixty-fifth plenary session (ECE/CES/2017/11); for more information on GSBPM see also: https://statswiki.unece.org/display/GSBPM/GSBPM+v5.0.

statistical system. The third level of GAMSO, which a textual description breakout of the second level, has been used as a broad reference.

18.   The resulting structure of the updated Handbook may be summarised as follows: the first two chapters outline the objectives, intended audience and main themes of the Handbook; chapter 2 is an overview of the Handbook, and is sufficiently comprehensive and self-contained to be printable as a small booklet; Chapters 3-6 describe the basis for official statistics, the national statistical system, the national statistical office, and user needs, respectively; chapters 8-10 deal with statistical production - data collection, processing, analysis and dissemination - respectively. chapters 7 and 11-14 cover all aspects of the statistical infrastructure, including management of quality, human resources, information technology, data and metadata; chapters 15 and 16 describe management of the physical infrastructure and international activities and collaboration.

19.   The commented outline containing the chapters, sections and subsections of the updated Handbook is provided in the annex to this report.

20.   As regards the development of the various chapters, the consultation rounds conducted in the second half of 2017 suggested the following priorities: Chapter 7 on quality management, Chapter 8 on data sources, collection and processing; Chapter 9 on analysis and analytical frameworks; Chapter 10 on dissemination and user communication; Chapter 11 on common statistical infrastructure; Chapter 13 on data, information and knowledge management; and Chapter 14 on information technology management. It was also proposed that the overview chapter with a broader target audience would be drafted and made available only after the first versions of all other chapters has been finished.

IV   The next steps

21.   The process of drafting the updated version of the Handbook will be undertaken during 2018 and 2019 by a drafting team with expertise in all major topics covered by the Handbook and according to priorities and guidance provided by the Statistical Commission at its forty-ninth session. The drafting team, consisting of consultants and led by UNSD could be complemented with experts from partner organizations and national statistical agencies that would be mobilized when drafting chapters requesting very specific experience and knowledge. During the drafting process, chief statisticians, senior managers of statistical organizations and other stakeholders will be consulted within the framework of activities organised through existing global and (sub) regional statistical programmes and capacity building projects. The aim will be to ensure that there is ample opportunity for feedback as the Handbook is being drafted.

22.   An Advisory Group will be established with the task, at regular intervals or upon request, of providing overall guidance to the drafting team. The Advisory Group will comprise i) selected chief statisticians, ensuring the link with the HLG-PCCB and other relevant bodies, and a limited number of ii) senior statisticians from UN regional commissions and iii) multilateral development banks (MoU Group). The Advisory Group should not be too large, ideally not more than 12 members. When needed, the drafting team may also seek support and guidance from other bilateral and multilateral partner organizations outside the Advisory Group.

23.   If needed, this approach will be complemented by a series of thematic conferences at (sub-)regional level for senior statisticians to consider recent institutional, organizational, and technical developments addressing prospective challenges and opportunities. The objective will be to assess if there is enough insight and positive implementation feedback incorporated in the Handbook.

24.   The Statistical Commission will be informed and consulted at its fiftieth session on drafted chapters and work in progress.

V.   Points for discussion

25.   The Commission is invited to:

    a.   Comment on the proposed structure and content of the updated Handbook and express its views on chapters to be drafted as a priority;

    b.   Express its views on the organisation of the drafting procedure and consultation mechanisms;

    c.   **Comment on the proposal to have the updated Handbook on and interactive web platform targeting chief statisticians and senior managers of statistical organizations complemented with a printed publication of the overview chapter (chapter 2) for a broader audience within and outside the National Statistical System.**

Annex: Proposed Updated Handbook Structure

			Chapter/Section/Subsection	Comments
			Preface	
			Table of Contents	
			Table of Figures	
			Abbreviations	
1			**Introduction**	
			Chapter 1 outlines the objectives, intended audience, structure and content of the Handbook	
1	1		**Motivation for Handbook update**	• Changes since 2003, especially technology • Current themes – transformation of NSOs, sustainable development
1	2		**Purpose, Users and Uses of Handbook**	• Target audience - chief statisticians, heads of other agencies producing statistics (OAPS) plus a wider range of users and stakeholders related to official statistics • Reference manual covering all aspects the activities under their direction • For large and for small NSOs • For developed and for developing countries
1	3		**Main Topics Discussed**	• General principles and policies • Illustrated by examples • Citing international standards and guidelines wherever available
1	4		**Key Concepts and Terminology**	• NSO and NSS • Official statistics
1	5		**Structure and Content of Handbook**	• Standalone chapters linked to one another • Live links to key reference documents with more details • Loosely based on GAMSO • Overview • General outline of NSS and of NSO • Main uses and users of statistics • Sources, data acquisition and provider relations • Processing and analysis • Dissemination and user communications • Common statistical infrastructure • HR management, information management, IT management • International activities • Quality management
2			**Overview**	
			Chapter 2 is a stand-alone summary of major topics covered in the Handbook. This chapter will be available as a printed publication targeting a broader audience within and outside the National Statistical System.	

			Chapter/Section/Subsection	Comments
3			**The Basis of Official Statistics**	
			The aim of chapter 3 is to provide a common basis for the understanding of what should be covered by the designation official statistics as well as the principles and related legal provisions that may apply.	
3	1		**Introduction**	
3	2		**Fundamental Principles**	• Description mainly from United Nations Fundamental Principles, Implementation guidelines with links to the guidelines. • Reference can also be made to the six principles of the Human Rights-Based Approach to Data (HRBAD) from the Office of the United Nations High Commissioner for Human Rights (OHCHR).
3	2	1	Principle 1	• Relevance, Impartiality and Equal Access
3	2	2	Principle 2	• Professional Standards, Principles and Ethics
3	2	3	Principle 3	• Accountability and Transparency
3	2	4	Principle 4	• Prevention of Misuse
3	2	5	Principle 5	• Sources of Official Statistics
3	2	6	Principle 6	• Confidentiality
3	2	7	Principle 7	• Legislation
3	2	8	Principle 8	• National Coordination
3	2	9	Principle 9	• Use of International Standards
3	2	10	Principle 10	• International cooperation
3	3		**Legislative Frameworks**	
3	3	1	Introduction	• The need for a legislative framework
3	3	2	Types of legislative frameworks	• Main national framework law, implementing regulations/ decrees/orders. • Who decides what.
3	3	3	The relationship between legislation in the field of statistics and other legislation	• Conflicts regarding access to information, protection of individual data etc.

			Chapter/Section/Subsection	Comments
3	3	4	Topics to be covered in a national law on official statistics	• The definition of official statistics, to be distinguished from administrative information • The definition and delineation of producers of official statistics; • The principle of professional independence of organizations and organizational entities producing official statistics • The role of the NSO as the main producer of official statistics and the coordinator of the system of official statistics • Operational and strategic programming, focusing on existing and emerging user needs • The mandate for data collection and access to administrative data and other data sources • The principles and procedures for handling confidential statistical data • Management of quality • The principles for dissemination of official statistics to all relevant user groups; Link to model act
4			**The National Statistical System**	
			Chapter 4 outlines the delineation of the National Statistical System as well as its governance, programmatic and coordination mechanisms and tools.	
4	1		**Introduction**	
4	2		**Structure of the National Statistical System (NSS)**	
4	2	1	Delimitation of the national statistical system	
4	2	2	The position and role of the central bank	
4	3	3	Legal frameworks; obligations, restrictions	
4	3		**Coordination of the NSS**	
4	3	1	Why coordination?	
4	3	2	Legal basis for coordination	
4	3	3	Coordination mechanisms	• Standards and nomenclatures • Coordination of questionnaires • Rotation of staff • National statistical programmes • National statistical council • Coordinated budgets.
4	4		**The Roles of the NSO and the Chief Statistician**	
4	5		**The National Statistical Council**	
4	5	1	The role of the Statistical Council	
4	5	2	Membership	
4	5	3	Chairmanship	
4	5	4	Secretariat	

			Chapter/Section/Subsection	Comments
4	5	5	Agenda	
4	5	6	Frequency of meetings	
4	5	7	Advisory committees and ad hoc bodies	
4	6		**Multiannual and Annual Planning and Priority Setting**	
4	6	1	Organisation of planning activity within the NSS	• The role of the NSO as a coordinator • The process for developing plans
4	6	2	Which types of plans?	• Strategic, multiannual, annual
4	6	3	Analysing user needs and balancing priorities	• User surveys • Involvement of different actors and the statistical council.
4	6	4	Content of the multiannual plan	• Strategic goals for the NSS in the next period • Major development work to be undertaken. • Which producers of which surveys • Legal basis; periodicity, dissemination
4	6	5	Content of the annual plan	• Changes in relation to multiannual plan regarding producers, surveys and development projects
4	6	6	Follow up and reporting	• Who responsible for what in relation to follow up and reporting
4	6	7	Authority to take decision on plans	• Government, ministry, NSO, Statistical Council
4	7		**Branding of Official Statistics**	• Mechanisms to ensure that the designation official statistics is only given to statistics that are in line with UN Fundamental Principles and/or national requirements
4	8		**Financing the National Statistical System**	• Common, coordinated government budget for official statistics or separate for each producer
5			**The National Statistical Office**	
			Chapter 5 describes the key features of a National Statistical Office.	
5	1		**Introduction**	
5	2		**Vision and goals of the National Statistical Office**	• Analyse national and international trends and challenges • Define and communicate vision, mission and strategic goals
5	3		**The National Statistical Office as an organisation**	
5	3	1	The NSO administrative solution and financing	• Reporting to which authority? Independent agency? • Financing only through government budget? • Market prices for goods and services?
5	3	2	The chief statistician	• Qualifications • Terms of office • Appointment and dismissal • The authority of the chief statistician
5	4		**Statistical Business Architecture**	
5	4	1	Definition of a Statistical business architecture	• Activities undertaken by a statistical organization: conceptualize, design, build and maintain information • Application assets used in the production of statistical outputs
5	4	2	The need for a statistical business architecture	• Driving the information, application and technology architectures for a statistical organization

			Chapter/Section/Subsection	**Comments**
5	4	3	Common Statistical Processing Architecture	• Formally defined business architecture can reference CSPA • Describes aspects of their business architecture in common with other producers of official statistics • Enables sharing of components
5	4	4	Generic activity model for statistical organisations	• Introduction of GAMSO • Position of business architecture in GAMSO
5	4	5	Definition of an integrated production system	• Harmonization/centralization of statistical production processes • Standards based (GSBPM, CSPA, GSIM, SDMX) • Modular IT applications across statistical domains
5	4	6	The importance of an integrated production system	• Evolving from a fragmented and silo approach towards an integrated systems approach for producing statistical outputs • Governing common statistical production process and centralized statistical services over time and across countries • Cost effectiveness • Collaborating in the development and application of common methods and IT tools • A robust, flexible and stable platform for facing new developments • Centralised vs decentralised systems
5	4	7	The data processing life cycle	• Relationship to GSBPM • Data processing life cycle stages
5	4	8	Examples and best practices	
5	5		**Governance and Leadership**	
5	5	1	Internal decision-making bodies	• Management committee supporting the chief statistician? Tasks and composition?
5	5	2	Internal communication/ coordination	• Use of management committee or other coordinating bodies? Relationship with trade unions. Information/communication through the hierarchy and/or across the organisational structure? Use of the intranet. Development and communication of internal policies and decisions.
5	5	3	Options for organising the NSO	• Organisation by subject or by function? Stovepipe or process-oriented organisation? How many divisions and levels? Reorganisation; how and when?
5	5	4	Central Office and Regional Network	• Division of tasks, relationship with other regional bodies; reorganising regional networks
5	5	5	Planning and monitoring within the NSO	• Develop multiannual and annual work programmes; analyse and balance user requirements; allocate project and programme portfolio budgets; evaluate plans and performance and follow up.
5	6		**Plan and Develop Capabilities**	

			Chapter/Section/Subsection	Comments
5	6	1	Capability management	• Managing HR capabilities - overview of HR capability management (summarise and refer to chapter "Human resource management") • Managing IT capabilities - overview of IT capability management (summarise and refer to Chapter 14)
5	6	2	Project Management	
5	7		**Support capability implementation**	
5	7	1	Change Management	• Define change management • Change management models
5	8		**Monitor capabilities**	
5	8	1	Risk management	• Define risk management • Risk management principles
5	9		**Relevance to Other Producers of Official Statistics**	
6			**Users and their Needs**	
			This chapter details the various groups of users of official statistics and their specific needs.	
6	1		**Introduction**	
6	1	1	Increased demand for statistics (SDG context)	• The increase in demand for data • Increased expectations for data access - the age of the 'digital native' • Specific requirements for SDGs
6	1	2	Analysis of user needs	• Strategy to assist in the identification and satisfaction of the needs of different users (Public consultations, focus groups etc.)
6	2		**Needs of Government**	
6	2	1	General Needs of Government	• The relationship between government and NSO • Categories of government needs: regular and ad hoc
6	2	2	Ministries of Finance	• Ministry of finance data requirements • Examples
6	2	3	Other ministries	• Other ministries data requirements • Examples
6	2	4	Organising and establishing contacts	• Needs for gathering information throughout the NSS • Establishing links to experts in specialised ministries • Establishing links to data in specialised ministries
6	2	5	Regional and local government	• Needs for gathering information in regional and local government • Establishing links to experts in regional and local government • Establishing links to data in regional and local government
6	3		**Needs of General Public**	• Specific requirements of the general public • Meeting the needs of the general public
6	4		**Needs of Businesses**	
6	4	1	Large businesses	• Specific requirements of large businesses • Meeting the needs of large businesses

			Chapter/Section/Subsection	Comments
6	4	2	Small businesses	• Specific requirements of small businesses • Meeting the needs of small businesses
6	5		**Needs of Education and Academia**	• Specific requirements of schools, high-schools and universities • Meeting the needs of schools and high-schools • Meeting the needs of universities
6	6		**Needs of Media**	• Different types of media • Specific requirements of the media • Meeting the needs of the media
6	7		**Needs of Researchers**	• Specific requirements of researchers • Meeting the needs of researchers
6	8		**Needs of International Institutions**	• Specific requirements of international institutions (refer to Chapter 16) • Meeting the needs of international institutions
6	9		**Needs Associated with SDGs**	• Specific requirements associated with the production and use of SDG indicators
6	10		**Relevance to Other Producers of Official Statistics**	• Other producers of official statistics • Meeting needs of their users
7			**Quality Management**	
			Chapter 7 describes developing and administering a quality framework, including user satisfaction surveys and certification and labelling of official statistics	
7	1		**Introduction**	• Reasons for quality management • Structure and content of chapter • General quality management systems • Statistical quality management frameworks • Promoting a quality culture
7	2		**General Quality Management Systems**	
7	2	1	ISO 9000 Series	• Total quality management concepts, principles and terminology • Certification process • Use by NSOs
7	2	2	ISO 20252 Market, Opinion and Social Research	• Scope, concepts and coverage • Use by NSOs
7	2	3	Six Sigma	• Scope, concepts and coverage • Use by NSO
7	2	4	Lean	• Scope, concepts and coverage • Use by NSO
7	2	5	European Foundation for Quality Management	• Scope, concepts and coverage • Use by NSO
7	2	6	Other general quality management systems	• Scope, concepts and coverage • Use by NSO
7	3		**Statistical Quality Assurance Frameworks**	
7	3	1	European Statistical System Code of Practice and QAF	• Scope, concepts and coverage • Use by NSO
7	3	2	IMF Data Quality Assessment Framework	• Scope, concepts and coverage • Use by NSO

			Chapter/Section/Subsection	Comments
7	3	3	Other statistical quality assurance frameworks	• Scope, concepts and coverage • Use by NSO
7	4		**Developing a Statistical Quality Framework**	
7	4	1	Defining dimensions of quality	• Output quality dimensions • Process quality dimensions • Institutional quality dimensions • Quality of NSS coordination
7	4	2	Creating and maintaining a quality culture	• Promoting quality • Quality training programme
7	4	3	Developing statistical quality guidelines	• Process oriented guidelines • Process oriented checklist • Output oriented checklist
7	4	4	Statistical quality monitoring and control	• Defining quality and performance indicators • Monitoring quality and performance indicators • Defining and implementing quality gates • Disseminating quality indicators
7	4	5	Statistical quality evaluation	• Conducting quality review programme • Defining and implementing quality improvements • Disseminating main results to users
7	4	6	Statistical quality certification	• Certifying official statistics • Based on quality evaluation
7	5		**Implementation of Statistical Quality Framework**	
7	5	1	Need for quality unit/manager	• Some NSOs are too small to have a dedicated quality unit but need designated quality manager
7	5	2	Need for quality council/committee	• To ensure results and recommendations from quality reviews are implemented
7	5	3	Role of NSO staff	• Quality is everyone's business
7	6		**Relevance to Other Producers of Official Statistics**	• Dimensions of quality • Quality guidelines • Quality review programme • Certification of official statistics
8			**Data Sources, Collection and Processing**	
			Chapter 8 examines the collection and processing of data from the various types of data sources, including secondary or non-traditional data sources.	
8	1		**Introduction**	• Structure and contents of chapter • Sources – surveys, administrative sources, geospatial data sources, big data sources • Statistical processes – surveys, administrative data based processes, big data based processes • Modelling statistical processes with reference to GSBPM
8	2		**Surveys and Censuses**	
8	2	1	Description of survey functions	• Phases and sub-processes constituting a survey • Types of statistical units that can be subject to survey

			Chapter/Section/Subsection	Comments
8	2	2	Survey types	• Household surveys • Business enterprise surveys • Establishment surveys • Price surveys
8	2	3	Data collection and capture modes	• Personal interview using paper questionnaire • Self-completion using paper questionnaire • Computer assisted personal interview • Computer assisted telephone interview • Self-completion using electronic questionnaire • Machine to machine transfer • Appropriate choice of mode
8	2	4	Survey design	• Frame and sample design • Questionnaire design • Editing and imputation • Estimation • Confidentiality preservation • Seasonal adjustment
8	2	5	Respondent relations and communications	• Respondent policy and charter • Managing key respondents, business profiling • Minimising response errors • Minimising non-response, follow-up procedures • Use of the law to enforce response • Measuring response burden, individually and in total
8	2	6	Processing Survey and Administrative Data	• Point of collection editing • Point of collection coding • Primary editing • Secondary editing • Coding • Imputation • Outlier detection and treatment • Macro Editing
8	2	7	Designing integrated survey program	• Integrated suite of surveys • Core survey vehicles and supplementary modules • Flexible survey taking capability Responding to urgent requests
8	2	8	Survey staff expertise	• Survey managers • Subject matter specialists • Methodologists • Data collection and follow-up specialists • Data capture, verification and editing process
8	3		**Administrative Sources**	

			Chapter/Section/Subsection	Comments
8	3	1	Types of administrative data	• Taxation data • Employment data • Social security data • Foreign trade data • Health data • Justice data • Corporation register and business licenses • Other administrative sources
8	3	2	Working with administrative data providers	• Administrative data provider policy • Memorandum of understanding regarding flows of data and metadata and communications • Early warning of impending change in administrative process • Promoting statistical standards • Advising on and supporting data quality
8	3	3	Accessing administrative data	• Push method – Administrative source send data to NSO • Pull method – NSO extracts data from administrative source database
8	3	4	Processing administrative data	• Retaining a copy of data as originally obtained • Transforming to standard format • Processing as if survey data
8	4		**Geospatial Data**	• Types of geospatial data • Geostatistical frameworks for geo-referencing data • Examples of geospatial data being used in official statistics
8	5		**Big Data**	
8	5	1	Types of big data	• Types of big data • Categories of big data (phone logs, social media, sensor data etc.)
8	5	2	Challenges and risks of using big data	• Challenges and risks in using big data (volume, quality, privacy, impermanence, technology, skills etc.)
8	5	3	Developing relationships with big data providers	• Explaining statistical needs and standards
8	5	4	Accessing big data	• Challenges in accessing big data sources (technical, legal, financial etc.)
8	5	5	Processing big data	• Challenges in processing big data
8	5	6	Using big data in official statistics	• Examples of big data use in official statistics
8	6		**Relevance to Other Producers of Official Statistics**	• Data collection and capture procedures • Data coding and editing procedures
9			**Analysis and Analytical Frameworks**	
			Chapter 9 discusses the extent to which data should be supplemented with analysis and the frameworks and methods for doing so.	
9	1		**Introduction**	• Why an NSO performs analysis • Structure and contents of chapter
9	2		**Supplementing Data with Analysis**	
9	2	1	Facts and their interpretation	

			Chapter/Section/Subsection	Comments
9	2	2	Analytical functions and information	• Analysis by responsible subject matter area • Analysis by dedicated analysis unit
9	2	3	Review of publications	• Review of data output • Review of analytical output
9	3		**Analysis Methods and Systems**	
9	3	1	Analysis methods	• Regression and correlation • Seasonal adjustment and time series • Confidentiality rules and disclosure control • Other
9	3	2	Analysis systems	• COTS systems - SAS, SPS, R, other • In house systems
9	4		**National Accounts**	
9	4	1	Conceptual framework	• SNA 2009
9	4	2	Organisational arrangements	• Location of national accountants • Relationships with subject matter experts • Relationships of NSO, Central Bank, Ministry of Finance
9	5		**Balance of Payments**	
9	5	1	Conceptual framework	• Balance of Payments Manual: Fifth Edition
9	5	2	Organisational arrangements	• Location of compilation • Roles of NSO and Central Bank
9	6		**Other Analytical Frameworks**	
9	6	1	**Environmental Account**	• Conceptual framework • Organisational arrangements
9	6	2	**Labour Account**	• Conceptual framework • Organisational arrangements
9	6	3	Other Analytical Frameworks	
9	7		**Relevance to Other Producers of Official Statistics**	• SNA 2009 • BPM V • General analysis methods and systems
10			**Dissemination and User Communications**	
			Chapter 10 reviews all aspects of data dissemination and user communication. It covers dissemination policy, data types, dissemination platforms and recovering the costs of dissemination.	
10	1		**Introduction**	
10	2		**Dissemination Policy**	
10	2	1	Release schedule	• The importance of a release schedule • Establishing a release schedule
10	2	2	Data availability	• Establishing a policy for data availability
10	3		**Providing information on the Properties of Statistical Data (Metadata)**	
10	3	3	Metadata management	• Access to metadata • Providing documentation • Metadata revisions • Error handling
10	4		**Different data types for dissemination**	

			Chapter/Section/Subsection	Comments
10	4	1	Micro data	• List types of micro data • Specific issues related to disseminating micro data (technical, legal)
10	4	2	Macro data	• List types of macro data • Specific issues related to disseminating macro data (technical, legal)
10	5		**Dissemination by Data Portals**	
10	5	1	Importance of data portals	• The rise of data portals • The importance of data portals in reducing reporting burdens and improving the quality of reporting data • Selecting the right data portal or an NSO • Examples of data portals
10	5	2	NSO specific data portals	• Examples of specific NSO data portals • Pros and cons of specific NSO data portals
10	5	3	NSS data portals	• Needs for a common data portal across an NSS
10	5	4	Integrated reporting within NSS	• Use of standards to integrate reporting within an NSS (SDMX, CSPA etc.) • Examples of integrated reporting in an NSS
10	5	5	Generic data portals	• Examples of generic data portals • Pros and cons of generic data portals
10	6		**Dissemination Using Social Media**	
10	6	1	Types of social media	• The rise of social media • List types of social media (Facebook, Twitter etc.)
10	6	2	Role of social media in dissemination	• Skills needed by an NSO to use social media • How an NSO can use social media in the dissemination process
10	7		**Other Forms of Dissemination**	
10	7	1	Hardcopy Dissemination	• Use of paper publications • The future of paper publications
10	7	2	Multi-media Dissemination	• List types of multi-media • Use of multi-media in dissemination • The future of multi-media for dissemination
10	7	3	Machine-to-machine Dissemination	• The growth of machine-to-machine data exchange • Examples of machine-to-machine data exchange in dissemination
10	7	4	Mobile apps	• Examples of mobile apps for disseminating data
10	8		**Recovering Dissemination Costs**	
10	8	1	Free vs paid access	• Data access models (free, paid, hybrid) • Current trends in data access policies
10	8	2	Role of data resellers	• List examples of data resellers • Pros and cons of using data resellers
10	8	3	Copyright and royalties	• List types of copyrights • Legal implications of copyrights and royalties • Current trends in use of copyrights
10	9		**User Relations**	• Managing user relations in an NSO
10	10		**Other dissemination issues**	

			Chapter/Section/Subsection	Comments
10	10	1	The Open Data movement	• The evolution of the open data movement • Impact of open data for NSOs
10	10	2	**Moving to modernised distributed digital system**	• Traditional model (non-digital, centralised) • Towards a distributed, modernised digital system
10	10	3	**The Statistical Yearbook**	• Requirements for a statistical yearbook • Using data warehouses to disseminate statistical yearbook compilations
10	11		**Relevance to Other Producers of Official Statistics**	• Other producers of official statistics
11			**Common Statistical Infrastructure**	
			Chapter 11 describes the statistical infrastructure that is required to support the statistical production programme, including development of internal registers, methods, tools, systems and standards.	
11	1		**Introduction**	• Notion of statistical infrastructure methods and tools supporting statistical processes • Structure and content of chapter • Multi-purpose registers • Statistical methods and tools • Policies, standards and guidelines
11	2		**Statistical Business Register**	
11	2	1	Roles and benefits of SBR	• Source of survey frames • Extension to include sample selection • Source of demographic statistics • Underpins harmonisation and integration
11	2	2	Conceptual framework	• International standards - SNA 20011, ISIC Rev 4, ICLS 111111 • Defining coverage and content
11	2	3	Administrative sources	• Identification of potential sources • Selection of sources • Prevention of duplication
11	2	4	Statistical sources	• Reasons for profiling - special treatment of large businesses • Profiling procedures • Feedback from surveys • Need for SBR improvement surveys • Conduct of improvement surveys
11	2	5	Generation of SBR snapshots and common frames	• Reasons for snapshots (frozen frames) • Generation of common frame
11	2	6	Generation of survey frames and samples	• Specification of survey population • Derivation of survey frame • Selection of survey sample
11	2	7	Producing statistics from the SBR	• SBR as a source of business demographics • Limitations of SBR as a data source
11	3		**Statistical Farm Register**	
11	3	1	Roles and benefits of farm register	• Source of agricultural survey frames • Underpins harmonisation and integration
11	3	2	Conceptual framework	• International standards • Defining coverage and content

			Chapter/Section/Subsection	**Comments**
11	3	3	Creation and updating sources and procedures	• Agricultural census • Administrative sources • Statistical sources
11	3	4	Generation of survey frames and samples	• Specification of survey population • Derivation of survey frame • Selection of survey sample
11	4		**Household Address Register**	
11	4	1	Roles and benefits of address register	• Replaces need for periodic area enumeration of households • Provides frames for household surveys and population census
11	4	2	Conceptual framework	• International standards Defining coverage and content
11	4	3	Sources and maintenance procedures	• Administrative sources • Statistical sources
11	4	4	Generation of household survey frames	• Specification of survey population • Derivation of survey frame • Selection of survey sample
11	5		**Household Master Sample**	
11	5	1	Roles and benefits of address register	• Reduces need for area enumeration • Provides frames for household surveys
11	5	2	Conceptual framework	• International standards • Defining coverage and content
11	5	3	Sources, creation and maintenance procedures	• Population census • Selection of master frame • Master frame area re-enumeration
11	5	4	Generation of survey frames and samples	• Specification of survey population • Derivation of survey frame • Selection of survey sample
11	6		**Methodological Services**	
11	6	1	Confidentiality and disclosure control	• Legislated requirements regarding privacy and confidentiality • Definition of disclosure • Methods – suppression, perturbation • Customised off the shelf systems • Application of disclosure control
11	6	2	Questionnaire design	• Questionnaire design principles • Questionnaire design tools • Responsibility for questionnaire design
11	6	3	Sample design and estimation	• Sampling principles and methods • Sample design tools • Sample selection tools • Estimation methods • Responsibility for sample design and estimation

			Chapter/Section/Subsection	**Comments**
11	6	4	Editing, imputation and outlier determination	• Editing and outlier detection principles and methods • Imputation principles and methods • Editing, imputation and outlier determination tools • Responsibility for editing, imputation and outlier determination
11	6	5	Seasonal adjustment and time series analysis	• Seasonal adjustment principles • Seasonal adjustment tools Responsibility for seasonal adjustment
11	7		**Statistical Policies, Standards and Guidelines**	• Note this section may be absorbed elsewhere - policies in Chapter 5, standards in Chapter 11 and guidelines in all chapters
11	7	1	Statistical Policies	• Need for corporate policies • Development of corporate policies • Monitoring and enforcing policies, governance procedures
11	7	2	Standard concepts, variables and classifications	• Benefits of standard conceptual metadata • Underpinning harmonisation and integration • Cross reference to Chapter 13
11	7	3	Statistical guidelines	• Guidelines as basis for training and support • Development of guidelines • Monitoring use of guidelines
11			**Application to Other Producers of Official Statistics**	• Forms design • Editing and outlier detection
12			**Human Resource Management and Development**	
			The content of chapter 12 is reflecting changes in staff hiring, retention and training to cover IT evolutions, new data sources, modernization standards and business architecture.	
12	1		**Introduction**	
12	2		**Staff Composition**	• Skills needed in a modern NSO • Categories of staff
12	3		**Human Resources Policy**	• Defining an HR policy for an NSO • Elements of an HR policy
12	4		**Recruitment**	• Defining a recruitment policy for an NSO
12	5		**Training**	• The importance of training for NSO staff • List types of training (on the job, in-house, internet etc.)
12	6		**Job Rotation**	• The principles of job rotation • Pros and cons of job rotation for an NSO
12	7		**Staff Retention**	• The challenge of retaining staff • Improving staff retention
12	8		**Options for New Chief Statistician**	• Concerns and challenges for a new chief statistician
12	9		**Human Resources Management: a Package**	• Defining the elements for an HR policy package
12	10		**Relevance to Other Producers of Official Statistics**	• Other producers of official statistics • Implications in HR management for other producers of official statistics

			Chapter/Section/Subsection	Comments
13			**Data, Information and Knowledge Management**	
			Chapter 13 covers the ownership/custody of records, documents, data, information and other intellectual assets held by the NSO, and the policies, guidelines and standards for their collection, storage, maintenance, retrieval, dissemination and destruction.	
13	1		**Introduction**	• Importance of managing information as a resource • Statistical data as the core asset of an NSO needs special management • Structure and content of chapter • General principles and policies • Managing data and metadata • Managing other information and knowledge
13	2		**General Information Management Concepts, Principles and Policies**	• Concepts – relationships between data information and knowledge • Policies for custody of records, documents, information and other intellectual assets • Governance of information collection, arrangement, storage, maintenance, retrieval, dissemination and destruction
13	3		**Managing Statistical Data and Metadata**	• Statistical data and metadata management principles – single source of truth, need for discoverability, importance of reuse • Developing a data and metadata management strategy • Implementing a data and metadata management strategy
13	4		**Managing Other Information and Knowledge**	• Developing an information/knowledge management strategy • Implementing an information/knowledge management strategy
13	5		**Relevance to Other Producers of Official Statistics**	• Statistical data and metadata management principles • Developing and implementing a data and metadata management strategy
14			**Information Technology Management**	
			Chapter 14 reflects the recent advances in technology, including cloud technology, use of smart phones and tablets, big data, data visualisation techniques, new methods of data collection and dissemination and data integration.	
14	1		**Introduction**	
14	2		**Review of changes since last edition and current trends**	
14	2	1	User expectations	• User expectations for IT services in an NSO
14	2	2	Changes in way of working	• Increase in collaboration between organisations working on projects and sharing software. • Organisations develop less and less software for their own use and seek more tools available from the international statistics community (CSPA, SDMX Toolkit, OECD.stat)
14	2	3	Increase in use of web	• Implications for NSOs of increased internet use • 'Internet of things'

			Chapter/Section/Subsection	Comments
14	2	4	Cloud technology	• Increase in use of cloud technology • Pros and cons of cloud technology for an NSO • Examples of using cloud technology by NSOs
14	2	5	Smart phones and tablets	• Increase in use of smart phones and tablets • Implications for NSOs of smart phones and tablets • Examples of using smart phones and tablets by NSOs
14	2	6	Data visualisation software	• The importance of data visualisation • List types of data visualisation • Increase in use of data visualisations by NSOs • Examples of data visualisations by NSOs
14	2	7	Big data	• The growth of big data (refer to Chapter 8) • Implications of big data for an NSO IT infrastructure and skill requirements
14	2	8	Open data initiatives	• The growth of the open data movement (refer to Chapter 8) • Implications of open data for an NSO IT infrastructure and skill requirements
14	2	9	Open source software	• The growth of open source software • Examples of open source software relevant to an NSO
14	2	10	New methods of dissemination, M2M, web services etc.	• List new methods of dissemination • Implications of new dissemination methods for an NSO IT infrastructure and skill requirements
14	2	11	Linked data	• The growth of linked data • Uses of linked data for an NSO • Data-linking frameworks • Requirements and strategies for linking data • Examples of linked data
14	2	12	Common Statistical Processing Architecture	• The growth in use of CSPA • Advantages of CSPA for an NSO • List software available via CSPA inventory • Examples of CSPA usage by NSOs
14	2	13	Data integration / data linkage	• The importance of data integration and data linkage for an NSO • Examples of data integration and data linkage
14	2	14	Enterprise architecture	• The adoption of enterprise architecture
14	2	15	AI	• Artificial intelligence
14	2	16	Data science	• Data science technologies
14	2	17	Data security	• The importance of data security
14	3		**IT Management Models**	
14	3	1	In-house development	• Software development and maintenance determined internally • Autonomy of development and integration • Pros and cons • Statistics software as a niche market

			Chapter/Section/Subsection	Comments
14	3	2	Outsourced development	• Customise external software to meet organisation needs • Pros and cons • Risks of outsourcing • Implications for confidentiality • Vendor incentives • Vendor expertise vs. In-house knowledge • Ensuring transparent and ethical relationship
14	3	3	Collaborative approach	• Mix of internal and shareable software – CSPA approach
14	4		**Other Current IT Issues**	• Constantly evolving IT environment • Monitoring new products • New and emerging technologies • Learning from experience of others • Need to assess risks
14	5		**Use of Standards and Generic Models**	
14	5	1	Need for standards in industrialisation of statistical processing	• the importance of standards • using standards for modernisation and transformation • examples of standards used in modernisation and transformation projects
14	5	2	Generic Activity Model for Statistical Organisations (GAMSO)	• Refer to Chapter 5 • Manage IT assets and services • Manage IT security • Manage technological change
14	5	3	Generic Statistical Business Process Model	• GSBPM as a conceptual model • GSBPM main processes and sub-processes • Using GSBPM in a statistical organisation
14	5	4	Generic Statistical Information Model	• GSIM as a conceptual model • Using GSIM in a statistical organisation
14	5	5	Common Statistical Production Architecture	• Using CSPA to share statistical components
14	5	6	Statistical Data and Metadata Exchange	• SDMX as standard for statistical data and metadata exchange • Technical standards (supporting platforms, file formats, web services and APIs) • SDMX and SDGs • Examples of SDMX implementations in NSOs
14	5	7	Data Documentation Initiative (DDI)	• DDI as a standard for micro-data exchange • Examples of DDI implementations in NSOs
14	6		**Basic IT Infrastructure Needs and Skill Requirements**	
14	6	1	Databases and data warehouses	• The importance of databases in an NSO IT infrastructure • Examples of databases and data warehouses
14	6	2	Specialist statistical processing\analytical software	• List of specialist statistical processing and analytical software
14	6	3	Dissemination tools	• List of dissemination software

			Chapter/Section/Subsection	Comments
14	6	4	Other skills	• Data visualisation • Cloud services • Artificial intelligence • Data science
14	6	5	Self-assessment of IT infrastructure and needs	• Link to IT infrastructure self-assessment
14	7		**Relevance to Other Producers of Official Statistics**	• Other producers of official statistics • Implications in IT management for other producers of official statistics
15			**Management of Finance, Buildings and Physical Space**	
			Chapter 15 is dealing with management issues of more operational nature not reflected elsewhere in the handbook.	
15	1		**Manage environmental, mechanical, and electrical needs**	• How to manage environmental, mechanical, and electrical needs
15	2		**Manage arrangement of office space**	• How to manage arrangement of office space
15	3		**Manage distribution of offices within space**	• How to manage distribution of offices within space
15	4		**Building security**	• How to manage building security
15	5		**Manage finance**	• How to manage finance
16			**International Activities and Collaboration**	
16	1		**The importance of international standards and requirements**	
16	1	1	International standards and frameworks	• Sustainable development goals indicators (SDG Indicators) • Other standards and frameworks
16	2		**Organisation of international cooperation**	• Separate unit responsible for international cooperation • Tasks
16	3		**International actors and bodies in the field of statistics**	
16	3	1	UNSD and other UN bodies (regional bodies?)	• UNECE, UNECA; ESCAP, ECLAC,WHO, ILO, FAO
16	3	2	OECD	
16	3	3	IMF	
16	3	4	EU/Eurostat	
16	4		**International professional organisations**	
16	4	1	International Statistical Institute	• Including associations IAOS etc.
16	5		**International Development Cooperation**	
16	5	1	The importance of statistical development cooperation	
16	5	2	Actors in the field of development cooperation	• PARIS21, World Bank, UNDP (+ those mentioned above)
16	6		**Relevance to Other Producers of Official Statistics**	

			Chapter/Section/Subsection	Comments
A			**Annexes**	
A	1		**Reference Documents**	
A	2		**Glossary**	
			UN Fundamental Principles and guidelines	• Replace by links to actual document in text footnotes and in Reference documents
			Statistical and IT Standards	• Replace by links to actual document in text footnotes and in Reference documents
			Model Statistics Act	• Replace by link to actual document in text footnote and in Reference documents
A	3		**Possible Organisational Structures**	