Statistical production infrastructure, data sources, information technology, dissemination and user support

Session 3: Supporting the transformation of statistical production processes from the data collection to dissemination in the context of the digital and technological revolution

The presentation will outline the content of chapters:

- **VIII "Data sources, collection and processing"** ***(drafted)***
- **X "Dissemination and user communications"** ***(drafted)***
- **XI "Common statistical infrastructure"** ***(not yet drafted)***
- **XIII "Data, information and knowledge management"** ***(drafted)***
- **XIV "Information technology management"** ***(drafted)***

VIII "Data sources, collection and processing"

Chapter VIII: *the collection and processing of data from various types of sources, including secondary and non-traditional.*

VIII "Data sources, collection and processing"

Surveys and censuses

- *Description of survey functions*
- *Survey types*
- *Data collection and capture modes*
- *Survey design*
- *Respondent relations and communications*
- *Processing survey and administrative data*
- *Designing integrated survey programmes*
- *Survey staff expertise*

Administrative sources

- *Types of administrative data*
- *Working with administrative data providers*
- *Accessing administrative data*
- *Processing administrative data*

VIII "Data sources, collection and processing"

Geospatial data

Big data

- *Types of big data*
- *Challenges and risks of using big data*
- *Developing relationships with big data providers*
- *Accessing big data*
- *Processing big data*
- *Using big data in official statistics*

Non-traditional data sources - the future of data collection

Relevance to other producers of official statistics

X "Dissemination and user communications"

Chapter X: *covers all aspects of data dissemination and user communication are reviewed. The chapter also covers dissemination policy, data types, dissemination platforms and recovering the costs of dissemination.*

X "Dissemination and user communications"

Dissemination and communications strategies

Release schedule

Data accessibility

Providing information on the properties of statistical data (metadata)

Metadata management

Different data types for dissemination

Macrodata

Geospatial data

Microdata

X "Dissemination and user communications"

Dissemination methods

- *Dissemination by data portals*
- *Dissemination using social media*
- *Hard-copy dissemination*
- *Multimedia dissemination*
- *Machine-to-machine dissemination*
- *Mobile apps*
- *GIS portals*
- *Dynamic visualisations*
- *Statistical yearbook*

X "Dissemination and user communications"

Recovering dissemination costs

- *Free versus paid access*
- *Role of data resellers*
- *Copyright and royalties*

User relations

Other dissemination issues

- *Open data movement*
- *Moving to a modernized distributed digital system*

Statistical literacy

Skills needed

Relevance to other producers of official statistics

XI "Common statistical infrastructure"

Chapter XI: *covers the statistical infrastructure required to support the statistical production programme, including the development of internal registers, methods, tools, systems and standards.*

XI "Common statistical infrastructure"

Statistical business register

- *Roles and benefits of the statistical business register*
- *Conceptual framework*
- *Administrative sources*
- *Statistical sources*
- *Generation of statistical business register snapshots and common frames*
- *Generation of survey frames and samples*
- *Producing statistics from the statistical business register*

Statistical farm register

- *Roles and benefits of the farm register*
- *Conceptual framework*
- *Creation and updating of sources and procedures*
- *Generation of survey frames and samples*

XI "Common statistical infrastructure"

Household address register

- *Roles and benefits of address register*
- *Conceptual framework*
- *Sources and maintenance procedures*
- *Generation of household survey frames*
- *Household master sample*
- *Roles and benefits of the address register*
- *Conceptual framework*
- *Sources, creation and maintenance procedures*
- *Generation of survey frames and samples*
- *Methodological services*
- *Confidentiality and disclosure control*

XI "Common statistical infrastructure"

Questionnaire design
Sample design and estimation
Editing, imputation and outlier determination
Seasonal adjustment and time series analysis
Statistical policies, standards and guidelines
Statistical policies
Standard concepts, variables and classifications
Statistical guidelines
Application to other producers of official statistics

XIII "Data, information and knowledge management"

Chapter XIII: *covers the ownership and custody of records, documents, data, information and other intellectual assets held by the national statistical office, and the policies, guidelines and standards for their collection, storage, maintenance, retrieval, dissemination and destruction.*

XIII "Data, information and knowledge management"

General information management concepts, principles and policies
Managing statistical data and metadata
Managing other information and knowledge
Managing microdata archives
Relevance to other producers of official statistics

XIV "Information technology management"

Chapter XIV: *covers recent advances in technology, including cloud technology, the use of smartphones and tablet computers, big data, data-visualization techniques, new methods of data collection and dissemination and data integration.*

XIV "Information technology management"

Review of changes since previous edition, current trends

- ***User expectations***
- ***Changes in ways of working***
- ***Increase in the use of the Internet***
- ***Cloud technology***
- ***Smartphones and tablet computers***
- ***Data-visualization software***
- ***Big data***
- ***Open data initiatives***
- ***Open-source software***
- ***New methods of dissemination, for example, machine-to-machine, and Internet services***
- ***Linked data***
- ***Common Statistical Production Architecture***

XIV "Information technology management"

Data integration and data linkage
Enterprise architecture
Artificial intelligence
Data science
Data security

Models of information technology management

In-house development
Outsourced development
Collaborative approach

Other current information technology issues

Use of standards and generic models

Need for standards in the industrialization of statistical processing
Generic Activity Model for Statistical Organizations

XIV "Information technology management"

Generic Statistical Business Process Model
Generic Statistical Information Model
Common Statistical Production Architecture
Statistical Data and Metadata Exchange
Data Documentation Initiative

Basic information technology infrastructure needs and skill requirements

Databases and data warehouses
Specialist statistical-processing and analytical software
Dissemination tools
Other skills

Relevance to other producers of official statistics

Issues for discussion

Your input required !

Publicly available drafts of the Handbook on Statistical Organisation can be found at:

https://unstats.un.org/wiki/display/HSO/Handbook+Statistical+Organization

Please provide inputs to:

statistics-handbook@un.org

Issues for discussion

1. What could be the benefit of a broader integration of i.) administrative data, ii.) big data, and iii.) geospatial information in the production of official statistics and indicators? And what are the main issues in using these 3 categories of data sources?
2. To what extent has innovative technologies been deployed in your respective production processes starting at data collection to the dissemination of official statistics? Please explain.
3. Can you provide us with any relevant success stories, new initiatives or best practices regarding question 1 and 2 above?
4. What additional support would you wish to receive in order to better grasp the digital revolution in the production of statistics and indicators?
5. What is missing from the discussion on this session that should be covered in the Handbook?