Official Statistics for SDGs- Lesson 2

2.1 Lesson2

Notes:

This Lesson provides the overview of organizations for the production, dissemination and coordination of official statistics.

2.2 Lesson Outline

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This Lesson provides the overview of organizations for the production, dissemination and coordination of official statistics.

2.3 2-1 National Statistical Systems

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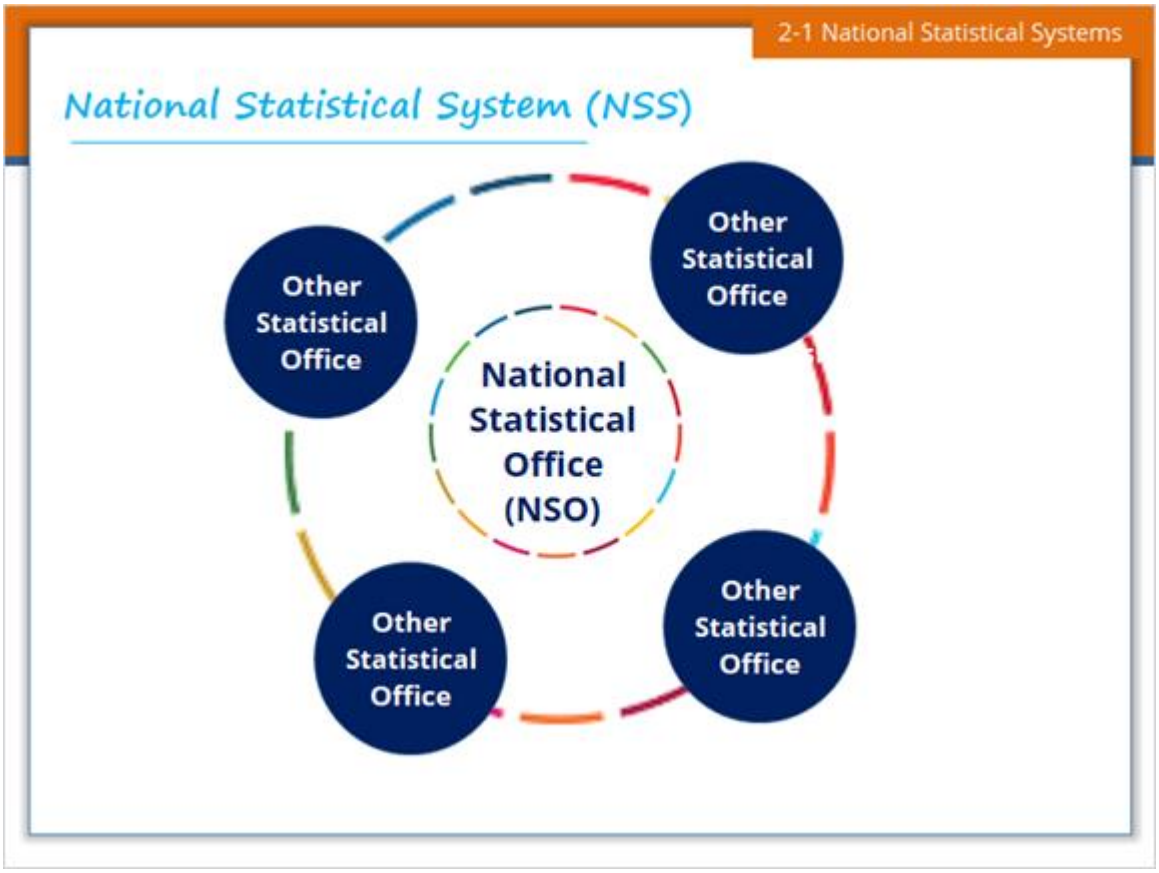
2.4 National Statistical System



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Institutional arrangements under which the National Statistical System (NSS) operates vary from one country to another as a result of the country's history and culture.

NSS is the ensemble of statistical organizations and units (statistical agencies) within a country that develop, produce and disseminate official statistics on behalf of the national government (and other levels of government). It is the responsibility of each country to define the scope of its NSS. NSS produces economic statistics (National Accounts, prices, balance of payments, government finance), social statistics (population, health, education, labour), agricultural statistics and environmental statistics, and multi-domain statistics, on behalf of the national government. It should be stressed that in order to fulfil its mandate, a NSS requires a strong legal underpinning, common standards and good coordination between data producers to enable it to produce high-quality statistics, as well as a strong relationship with its data suppliers and data users. Most but not all countries have a NSS.

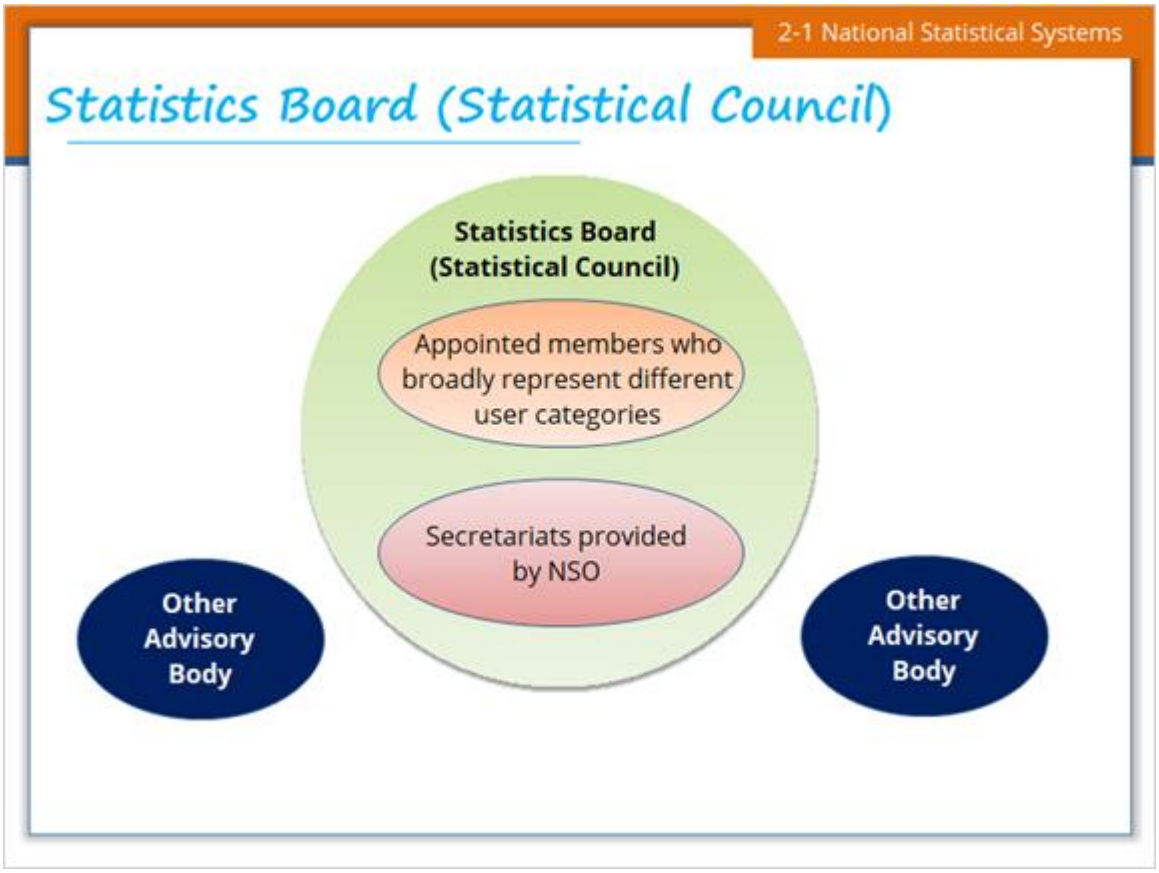
The Law defines the National Statistical Office (NSO) as the leading authority of the

NSS and as a professionally independent body organized under the authority of the President, Prime Minister, a Minister for coordination of a country. To improve trust in data and ensure the independence and integrity of the NSS, the NSO should be structured as an autonomous body with a separate budget, accountable primarily to the legislature. The NSO is the main producer of official statistics and responsible for coordinating all activities for the development, production and dissemination of official statistics within the NSS. The NSO cannot be assigned responsibilities that are in contradiction with the provisions and principles of official statistics of the present Law. The preamble to the Fundamental Principles of Official Statistics tells us that “professional independence and accountability of statistical agencies are crucial”, and that they “have to be guaranteed by legal and institutional frameworks and be respected at all political levels and by all stakeholders in national statistical systems”. In most countries, specific legislation establishes the responsibilities of the NSO, its governance structure and its authority over the NSS. National law should authorize NSO to make data collection compulsory for certain purposes, to protect confidential information, and to release data or statistics in a form that preserves the privacy of individuals.

Other Statistical Offices shall be professionally independent entities within their respective organizations with exclusive or primary activities related to the development, production and dissemination of official statistics. These entities cannot be assigned responsibilities that are in contradiction with the provisions and principles of official statistics of the present law.

Other Statistical Offices shall be responsible for the development, production and dissemination of official statistics: departments and agencies which have the responsibility of producing and disseminating official statistics in specific sectors or fields. The functions shall be carried out in full conformity with statistical legislation and standards.

2.5 Statistics Board (Statistical Council)



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In many countries, a designated board of governors or an advisory body provides independent advice on the standards and conduct of the NSO and the larger statistical system. When this office is not administratively autonomous, it may be located within the Ministry of coordination including Ministry of Finance or Planning. Wherever situated, however, laws and regulations should protect statistical agencies from partisan influence.

The Statistics Board or Statistical Council shall be the main advisory body to the government and the Chief Statistician (head of NSO) on issues of strategic importance to official statistics. The mandate and composition of the Statistics Board, as well as its work, shall be public.

The Statistics Board shall be composed of appointed members who broadly represent different user categories. The public sector representatives must not form the majority of the Statistics Board. The Chief Statistician shall be a member of the Statistics Board, and the NSO shall provide the secretariat. The NSO shall be granted adequate resources necessary for covering the costs of the functioning of the Statistics Board.

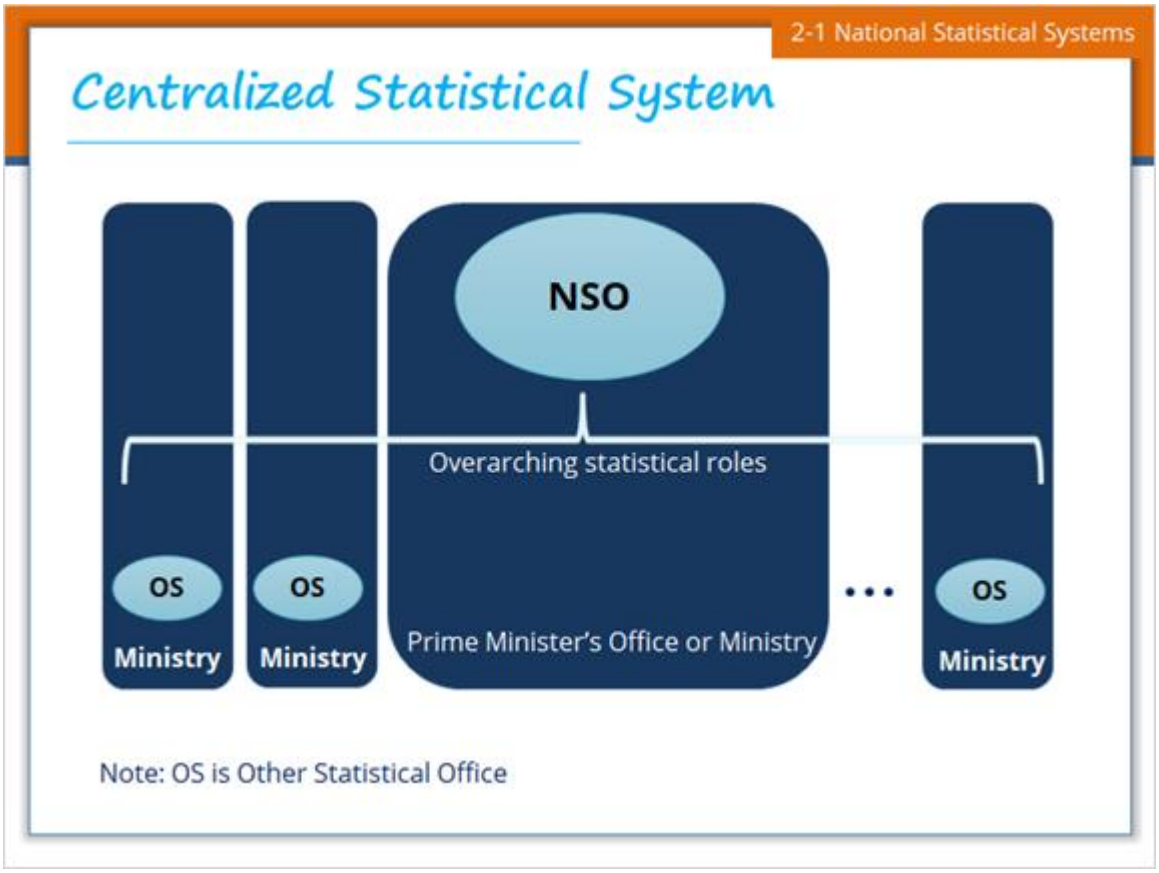
The members of the Statistics Board shall be appointed by the President of the country or the government upon a proposal on the bodies or groups to be represented. Their period of office shall be limited to some years. The Statistics Board shall elect from its members a chairperson who is not a representative of public administration.

In some countries the national legislation gives the authority to issue statistical policy directives to the Statistics Board. Examples are the Board of the UK Statistics Authority and the Board of the Philippine Statistics Authority.

In the UK, the Statistics and Registration Service Act 2007 established the Statistics Board - the UK Statistics Authority, an independent body at arm's length from government. It has a statutory objective of promoting and safeguarding the production and publication of official statistics that serve the public good, including the responsibility to prepare, adopt and publish a Code of Practice for Statistics. It has a regulatory arm, the Office for Statistics Regulation, and an executive office, the Office for National Statistics - the largest producer of official statistics in the UK.

The Philippine Statistical Act of 2013 established the Philippine Statistics Authority (PSA) and created the PSA Board, composed of representatives of the government, the National Statistician, representatives of the statistical community and the private sector. Section 5 of the law states that "the PSA Board shall be the highest policy-making body on statistical matters".

2.6 Centralized Statistical System



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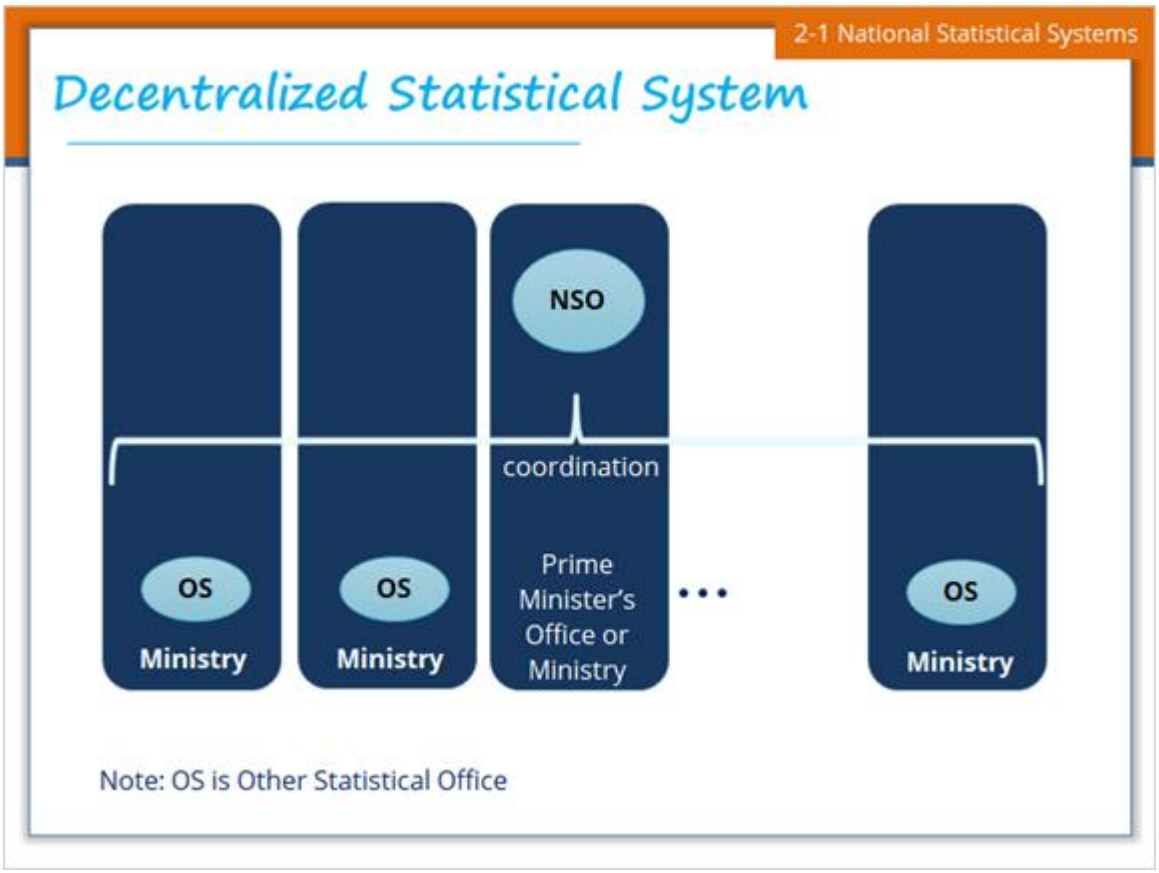
NSO acts in the leadership role across Ministries in the NSS in some countries such as Australia and Canada. The system is called the centralized statistical system. In a highly centralized NSS, the authority over the statistical policy and the statistical work program and large parts of the statistics production would rest with one single entity, typically the NSO.

The Australia Bureau of Statistics has a legislated role to ensure coordination of the operations of official bodies in the collection, compilation and dissemination of statistics and related information to avoid duplication between collections, attain compatibility between collections and ensure the maximum utilization of statistics.

This centralization is called from subjects in charge of responsibility of ministries and sometimes called subject-matter centralization. On the other hand, the centralization between the central government and local governments is called regional centralization.

2.7 Decentralized Statistical System



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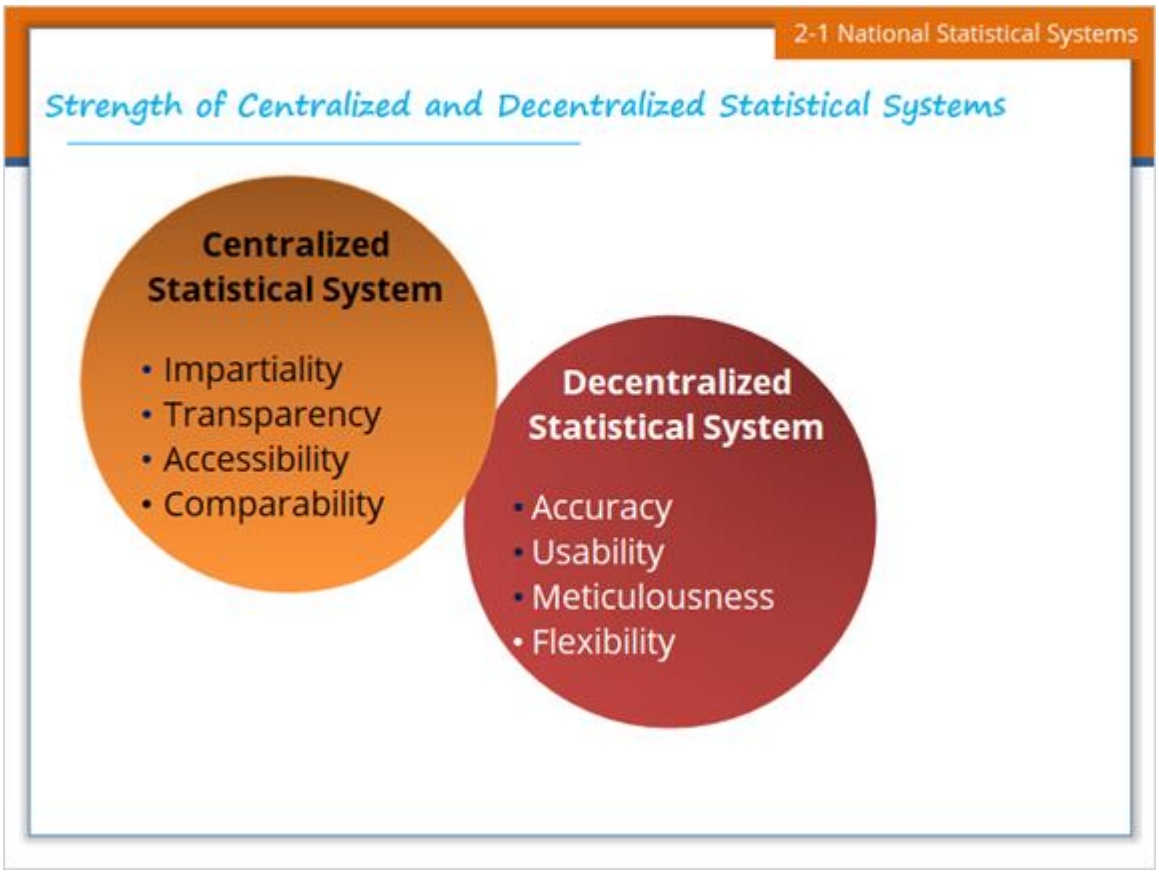
One single entity, typically the NSO does not act in the leadership role but coordinates other statistical offices in some countries including France and the US. The system is called the decentralized statistical system.

In a highly decentralized statistical system, the authority on statistical matters and responsibilities for statistics production is dispersed across many government entities. The decentralized statistical system requires more coordination than the centralized system.

The degree of centralization and decentralization depends on the system of government. Under the system of countries where Ministries are independent, statistical systems tend to be decentralized, too. Also, there is no complete centralized or decentralized system. The statistical system of countries is somewhat centralized and decentralized. Thus, centralization or decentralization is a matter of comparison.

2.8 Strength of Centralized and Decentralized Statistical Systems



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Centralization and decentralization each has its own characteristics.

Under the centralized statistical system, providers are apt to consider a wide range of users. Thus, the system will be impartial, transparent, accessible and comparable.

On the other hand, under the decentralized system, both providers and users are limited to those in a specific subject such as agriculture, construction, and health, and statistics are compiled with knowledge not only on statistics but also on the subject. Therefore, ideally the decentralized system will be accurate, usable, meticulous and flexible. In practice, under scarce human resources, it is difficult for each Ministry to secure staff with statistical knowledge and develop these strengths.

2.9 2-2 Generic Statistical Business Process Model

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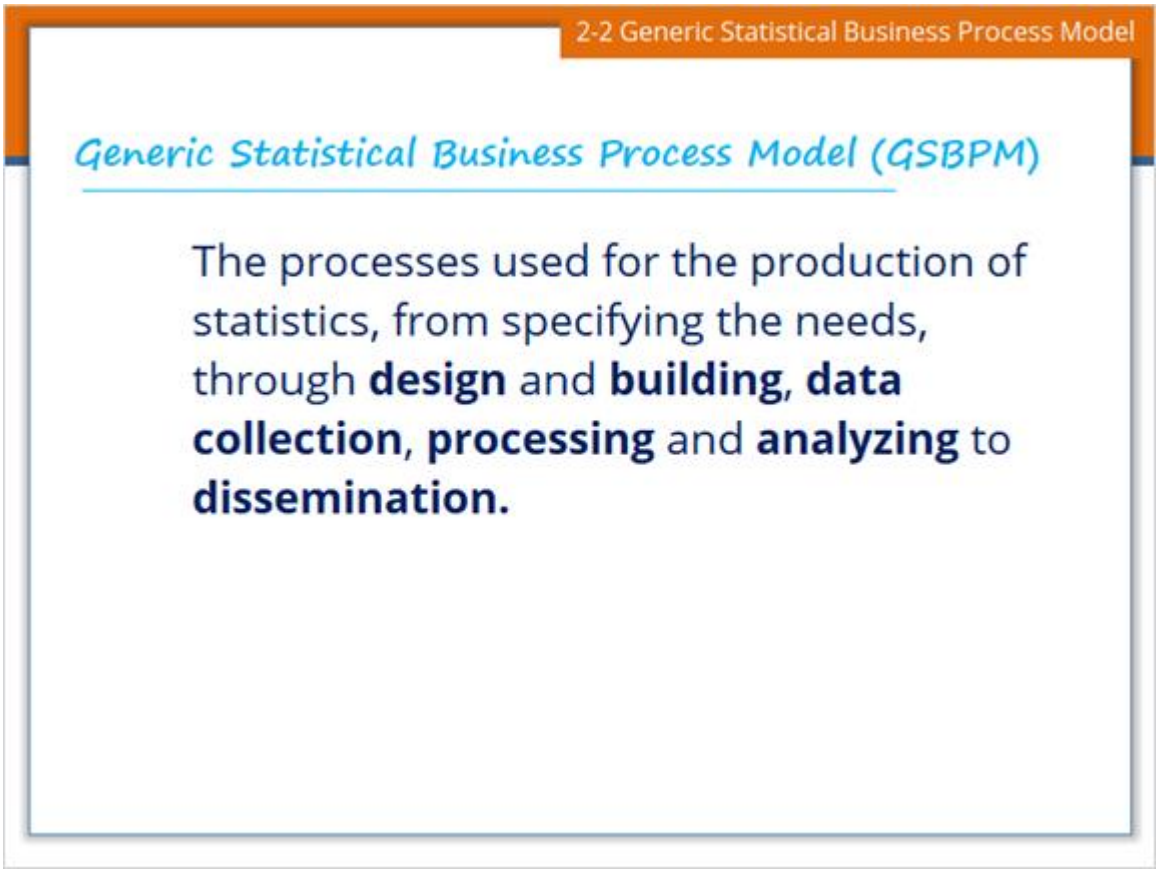
2.10 Generic Statistical Business Process Model (GSBPM)



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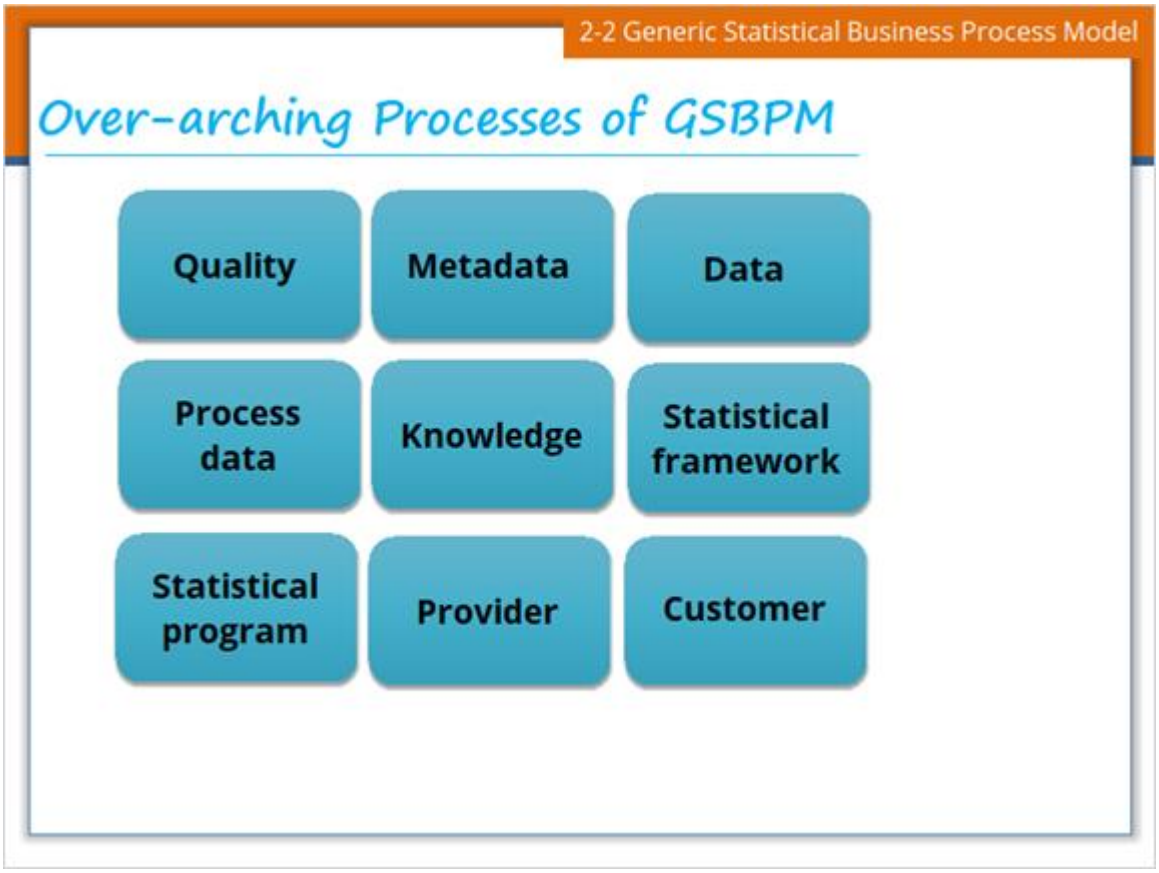
There is an international model related to the process of the NSS. While the statistical production process is somewhat different in every country and is different for different indicators, different statistical processes can be described in general terms. GSBPM does just that: provides a general description of the steps of the statistical production process.

The Generic Statistical Business Process Model (GSBPM) is a model developed by the ECE and the Conference of European Statisticians Steering Group on Metadata, based on Statistics New Zealand's business process model. GSBPM is related to the modernization of statistical systems, which will be introduced later.

Meanwhile, the Generic Activity Model for Statistical Organizations (GAMSO) describes and defines the activities that take place within a typical statistical organization. It extends and complements the GSBPM by adding additional activities needed to support statistical production. This course does not depict GAMSO further because it outlines fundamental elements of official statistics.

2.11 Over-arching Processes of GSBPM



Notes:

The over-arching processes of GSBPM are listed on the slide.

Quality management includes quality assessment and control mechanisms. It recognizes the importance of evaluation and feedback throughout the statistical business process.

Metadata are generated and processed within each phase. There is, therefore, a strong requirement for a metadata management system to ensure that the appropriate metadata retain their links with data throughout the GSBPM. This includes process-independent considerations such as metadata custodianship and ownership, quality, archiving rules, preservation, retention and disposal.

Data management includes process-independent considerations such as general data security, custodianship and ownership, data quality, archiving rules, preservation, retention and disposal.

Process data management includes the management of data and metadata generated by and providing information on all parts of the statistical business process.

Knowledge management ensures that statistical business processes are repeatable, mainly through the maintenance of process documentation.

Statistical framework management includes developing standards, for example methodologies, concepts and classifications that apply across multiple processes.

Statistical program management includes systematic monitoring and reviewing of emerging information requirements and emerging and changing data sources across all statistical domains. It may result in the definition of new statistical business processes or the redesign of existing ones.

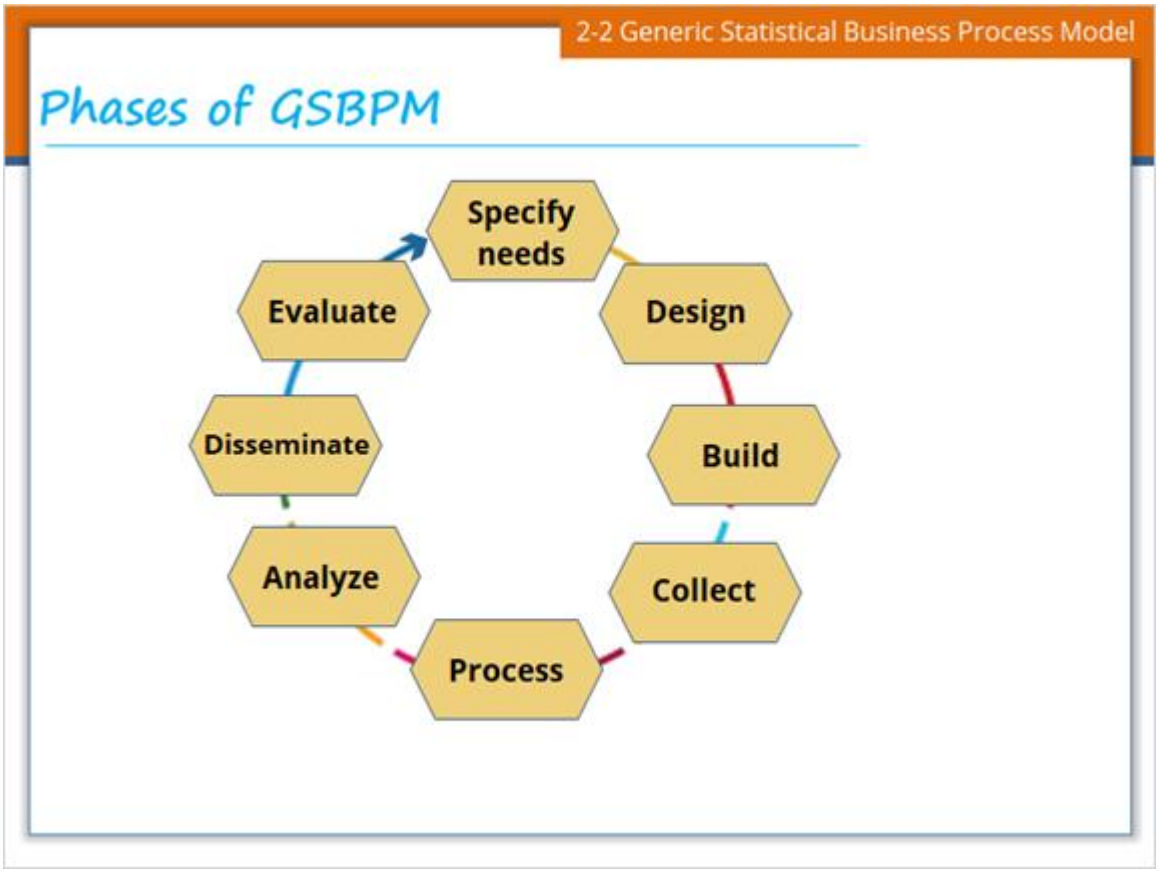
Provider management includes cross-process burden management, as well as topics such as profiling and management of contact information and thus has particularly close links with statistical business processes that maintain registers.

Customer management includes general marketing activities, promoting statistical literacy, and dealing with non-specific customer feedback.

Other than the processes on the slide more general over-arching processes include:

- Human resource management
- Financial management
- Project management
- Legal framework management
- Organizational framework management
- Strategic planning

2.12 Phases of GSBPM



Notes:

GSBPM identifies eight phases of statistical processes on the slide.

More broadly, the processes can be thought of as planning for “specify needs”, “design” and “build”; production for “collect”, “process”, and “analyze”; and evaluation for “disseminate” and “evaluate”.

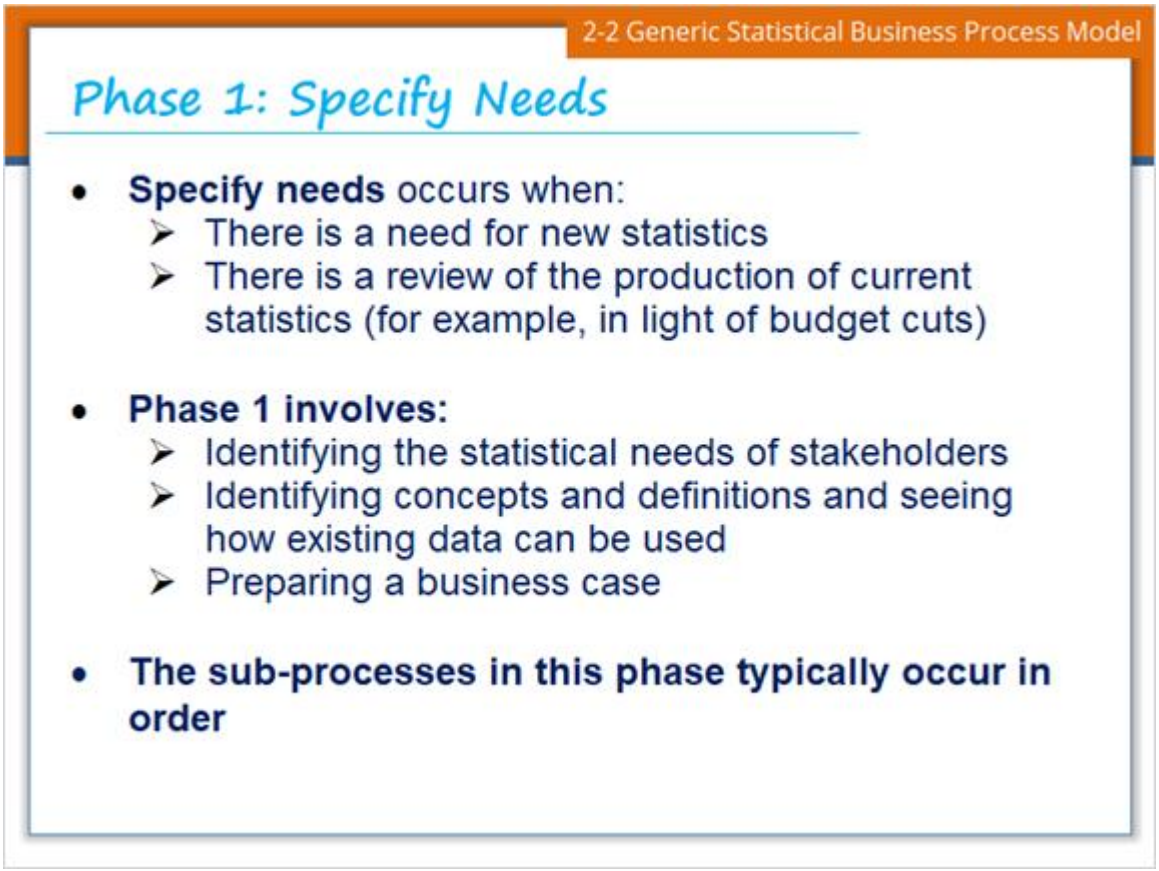
Each phase is further divided into a number of sub-processes.

The GSBPM should be applied and interpreted flexibly. It is **not a rigid framework in which all steps must be followed in a strict order**, instead it identifies the possible steps in the statistical business process, and the inter-dependencies between them.

Although the presentation of the GSBPM follows the logical sequence of steps in most statistical business processes, the elements of the model may occur in different orders in different circumstances. Also, some sub processes will be revisited a number of times **forming iterative loops**, particularly within the Process and Analyse phases.

GSBPM should therefore be seen more as a matrix, through which there are many possible paths. In this way the GSBPM aims to be sufficiently generic to be widely applicable, and to encourage a standard view of the statistical business process, without becoming either too restrictive or too abstract and theoretical.

2.13 Phase 1: Specify Needs



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From this slide, each phase is explained.

The first phase is triggered when the need for new statistics is identified, or feedback about current statistics initiates a review. It includes all activities associated with engaging customers to identify their detailed statistical needs, proposing high level solution options and preparing business cases to meet these needs.

1.1. Identify Needs

This sub-process includes the initial investigation and identification of what statistics are needed and what is needed of the statistics. It may be triggered by a new information request or an environmental change such as a reduced budget. Action plans from

evaluations of previous iterations of the process, or from other processes, might provide an input to this sub-process. It also includes consideration of practice amongst other national and international statistical organizations producing similar data, and in particular the methods used by those organizations. It may involve consideration of specific needs of different user communities, such as the disabled, or different ethnic groups.

1.2. Consult and confirm needs

This sub-process focuses on consulting with the stakeholders and confirming in detail the needs for the statistics. A good understanding of user needs is required so that the statistical organization knows not only what it is expected to deliver, but also when, how, and, perhaps most importantly, why. For second and subsequent iterations of this phase, the main focus will be on determining whether previously identified needs have changed. This detailed understanding of user needs is the critical part of this sub-process.

1.3. Establish output objectives

This sub-process identifies the statistical outputs that are required to meet the user needs identified in sub-process 1.2 (Consult and confirm needs). It includes agreeing on the suitability of the proposed outputs and their quality measures with users. Legal frameworks (e.g. relating to confidentiality), and available resources are likely to be constraints when establishing output objectives.

1.4. Identify concepts

This sub-process clarifies the required concepts to be measured by the business process from the point of view of the user. At this stage the concepts identified may not align with existing statistical standards. This alignment, and the choice or definition of the statistical concepts and variables to be used, takes place in sub-process 2.2 (Design variable descriptions).

1.5. Check data availability

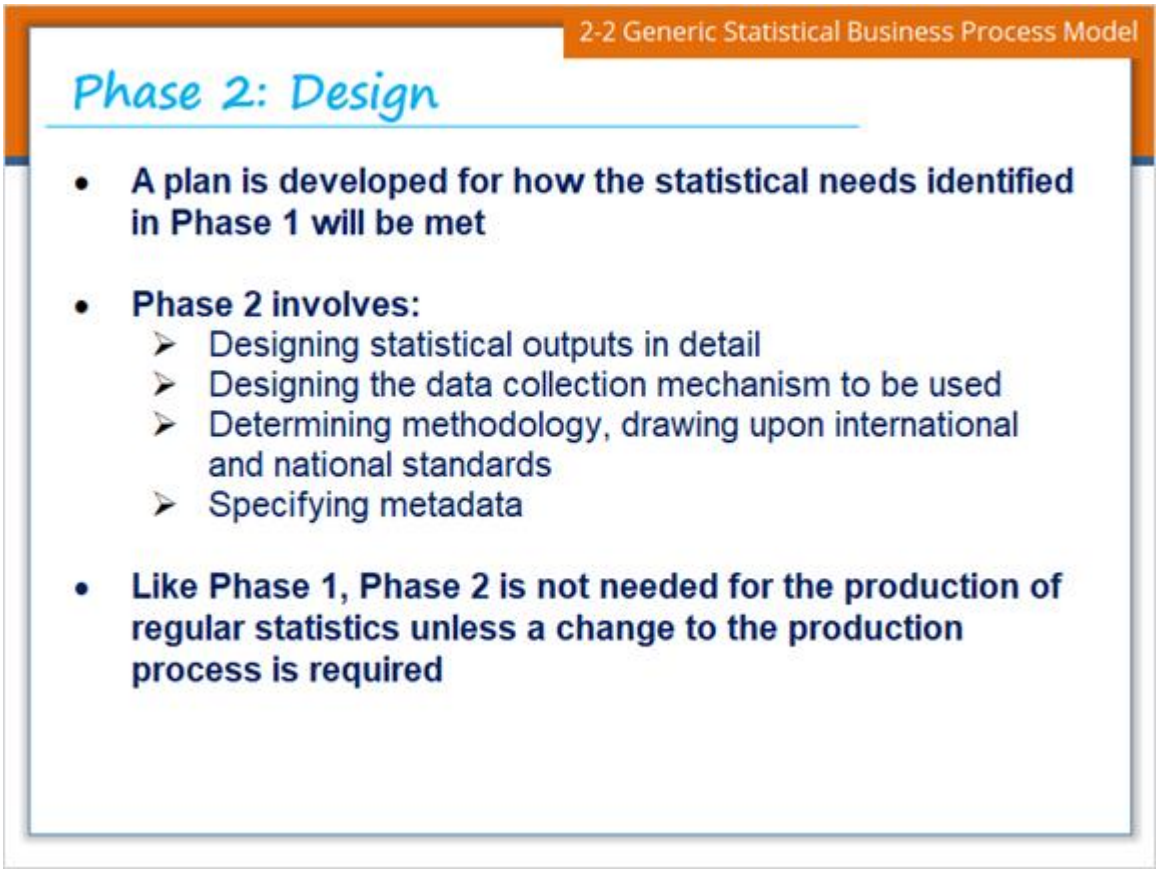
This sub-process checks whether current data sources could meet user requirements, and the conditions under which they would be available, including any restrictions on their use. An assessment of possible alternatives would normally include research into potential administrative or other non-statistical data sources, to determine whether they would be suitable for use for statistical purposes. When existing sources have been assessed, a strategy for filling any remaining gaps in the data requirement is prepared. This sub-process also includes a more general assessment of the legal framework in which data would be collected and used, and may therefore identify proposals for changes to existing legislation or the introduction of a new legal framework.

1.6. Prepare business case

This sub-process documents the findings of the other sub-processes in this phase in the form of a business case to get approval to implement the new or modified statistical business process. Such a business case would need to conform to the requirements of the approval body, but would typically include elements such as:

- A description of the present business process if it already exists, with information on how the current statistics are produced, highlighting any inefficiencies and issues to be addressed;
- The proposed future solution, detailing how the statistical business process will be developed to produce the new or revised statistics;
- An assessment of costs and benefits, as well as any external constraints.

2.14 Phase 2: Design



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This phase describes the development and design activities, and any associated practical research work needed to define the statistical outputs, concepts, methodologies, collection instruments and operational processes. It includes all the design elements needed to define or refine the statistical products or services identified in the business case. This phase specifies all relevant metadata, ready for use later in the statistical business process, as well as quality assurance procedures. For statistical outputs produced on a regular basis, this phase usually occurs for the first iteration, and whenever improvement actions are identified in the evaluate phase of a previous

iteration.

Design activities make substantial use of international and national standards, in order to reduce the length and cost of the design process, and enhance to comparability and usability of outputs. Organizations are also encouraged to reuse or adapt design elements from existing processes. Additionally, outputs of design processes may form the basis for future standards at the organization, national or international levels.

2.1. Design outputs

This sub-process contains the detailed design of the statistical outputs, products and services to be produced, including the related development work and preparation of the systems and tools used in the "Disseminate" phase. Disclosure control methods, as well as processes governing access to any confidential outputs are also designed here. Outputs should be designed to follow existing standards wherever possible, so inputs to this process may include metadata from similar or previous collections, international standards, and information about practices in other statistical organizations from sub-process 1.1 (Identify needs).

2.2. Design variable descriptions

This sub-process defines the statistical variables to be collected via the collection instrument, as well as any other variables that will be derived from them in sub-process 5.5 (Derive new variables and units), and any statistical classifications that will be used. It is expected that existing national and international standards will be followed wherever possible. This sub-process may need to run in parallel with sub-process 2.3 (Design collection), as the definition of the variables to be collected, and the choice of collection instrument may be inter-dependent to some degree. Preparation of metadata descriptions of collected and derived variables and classifications is a necessary precondition for subsequent phases.

2.3. Design collection

This sub-process determines the most appropriate collection method(s) and instrument(s). The actual activities in this sub-process will vary according to the type of collection instruments required, which can include computer assisted interviewing, paper questionnaires, administrative data interfaces and data integration techniques. This sub-process includes the design of collection instruments, questions and response templates in conjunction with the variables and statistical classifications designed in sub-process 2.2 (Design variable descriptions). It also includes the design of any formal agreements relating to data supply, such as memoranda of understanding, and confirmation of the legal basis for the data collection. This sub-process is enabled by tools such as question libraries to facilitate the reuse of questions and related attributes, questionnaire tools to enable the quick and easy compilation of questions into formats suitable for cognitive testing, and agreement templates to help standardise terms and conditions. This sub-process also includes the design of process-specific provider management systems.

2.4. Design frame and sample

This sub-process only applies to processes which involve data collection based on sampling, such as through statistical surveys. It identifies and specifies the population of interest, defines a sampling frame and, where necessary, the register from which it is derived, and determines the most appropriate sampling criteria and methodology which could include complete enumeration. Common sources for a sampling frame are administrative and statistical registers, censuses and information from other sample surveys. This sub-process describes how these sources can be combined if needed. Analysis of whether the frame covers the target population should be performed. A sampling plan should be made: The actual sample is created in sub-process 4.1 (Create frame and select sample), using the methodology specified in this sub-process.

2.5. Design processing and analysis

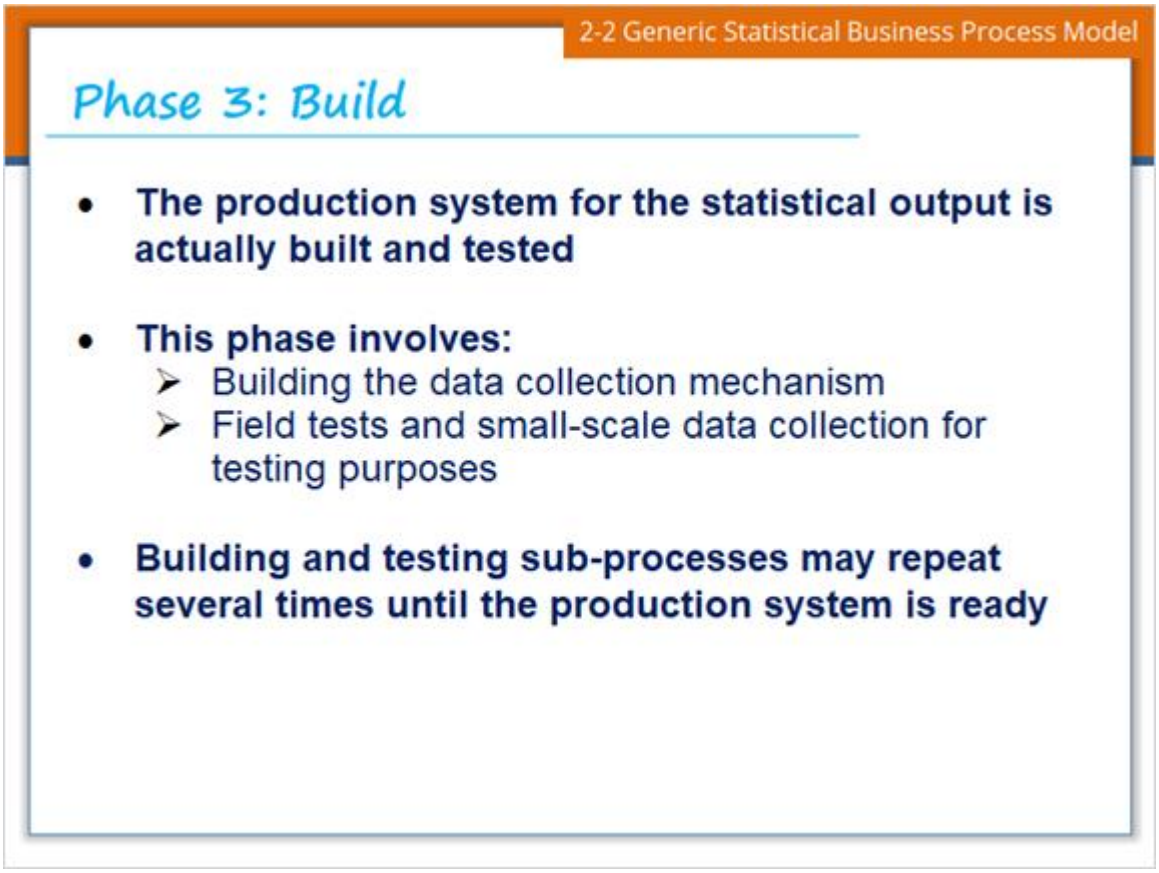
This sub-process designs the statistical processing methodology to be applied during the "Process" and "Analyse" phases. This can include specification of routines for coding, editing, imputing, estimating, integrating, validating and finalizing data sets.

2.6. Design production systems and workflow

This sub-process determines the workflow from data collection to dissemination, taking an overview of all the processes required within the whole statistical production process, and ensuring that they fit together efficiently with no gaps or redundancies. Various systems and databases are needed throughout the process. A general principle is to reuse processes and technology across many statistical business processes, so existing production solutions (e.g. services, systems and databases) should be examined first, to determine whether they are fit for purpose for this specific process, then, if any gaps are identified, how new solutions should be designed. This sub-process also considers how staff will interact with systems, and who will be responsible for what and when.

For GSBPM purposes, collection instruments are defined broadly to include any tool or routine to gather or extract data and metadata, from paper questionnaires to web-scraping tools.

2.15 Phase 3: Build



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This phase builds and tests the production solution to the point where it is ready for use in the "live" environment. The outputs of the "Design" phase direct the selection of reusable processes, instruments, information, and services that are assembled and configured in this phase to create the complete operational environment to run the process. New services are built by exception, created in response to gaps in the existing catalogue of services soured from within the organization and externally. These new services are constructed to be broadly reusable within the statistical production architecture.

For statistical outputs produced on a regular basis, this phase usually occurs for the first iteration, and following a review or a change in methodology or technology, rather than for every iteration.

3.1. Build collection instrument

This sub-process describes the activities to build the collection instruments to be used during the "Collect" phase. The collection instrument is generated or built based on the design specifications created during the "Design" phase. A collection

may use one or more modes to receive the data, e.g. personal or telephone interviews; paper, electronic or web questionnaires; SDMX hubs. SDMX will be explained in Lesson 4. Collection instruments may also be data extraction routines used to gather data from existing statistical or administrative data sets. This sub-process also includes preparing and testing the contents and functioning of that instrument (e.g. testing the questions in a questionnaire). It is recommended to consider the direct connection of collection instruments to the statistical metadata system, so that metadata can be more easily captured in the collection phase. Connection of metadata and data at the point of capture can save work in later phases. Capturing the metrics of data collection (paradata) is also an important consideration in this sub-process.

3.2. Build or enhance process components

This sub-process describes the activities to build new and enhance existing components and services needed for the “Process” and “Analyse” phases, as designed in the "Design" phase. Services may include dashboard functions and features, information services, transformation functions, workflow frameworks, provider and metadata management services.

3.3. Build or enhance dissemination components

This sub-process describes the activities to build new and enhance existing components and services needed for the dissemination of statistical products as designed in sub-process 2.1 (Design outputs). All types of dissemination components and services are included, from those that are used to produce traditional paper publications to those that provide web services, open data outputs, or access to micro-data.

3.4. Configure workflows

This sub-process configures the workflow, systems and transformations used within the statistical business processes, from data collection through to dissemination. It ensures that the workflow specified in sub-process 2.6 (Design production systems and workflow) works in practice.

3.5. Test production system

This sub-process is concerned with the testing of assembled and configured services and related workflows. It includes technical testing and sign-off of new programmes and routines, as well as confirmation that existing routines from other statistical business processes are suitable for use in this case. Whilst part of this activity concerning the testing of individual components and services could logically be linked with sub-process 3.2 (Build or enhance process components), this sub-process also includes testing of interactions between assembled and configured services, and ensuring that the production solution works as a coherent set of

processes, information and services.

3.6. Test statistical business process

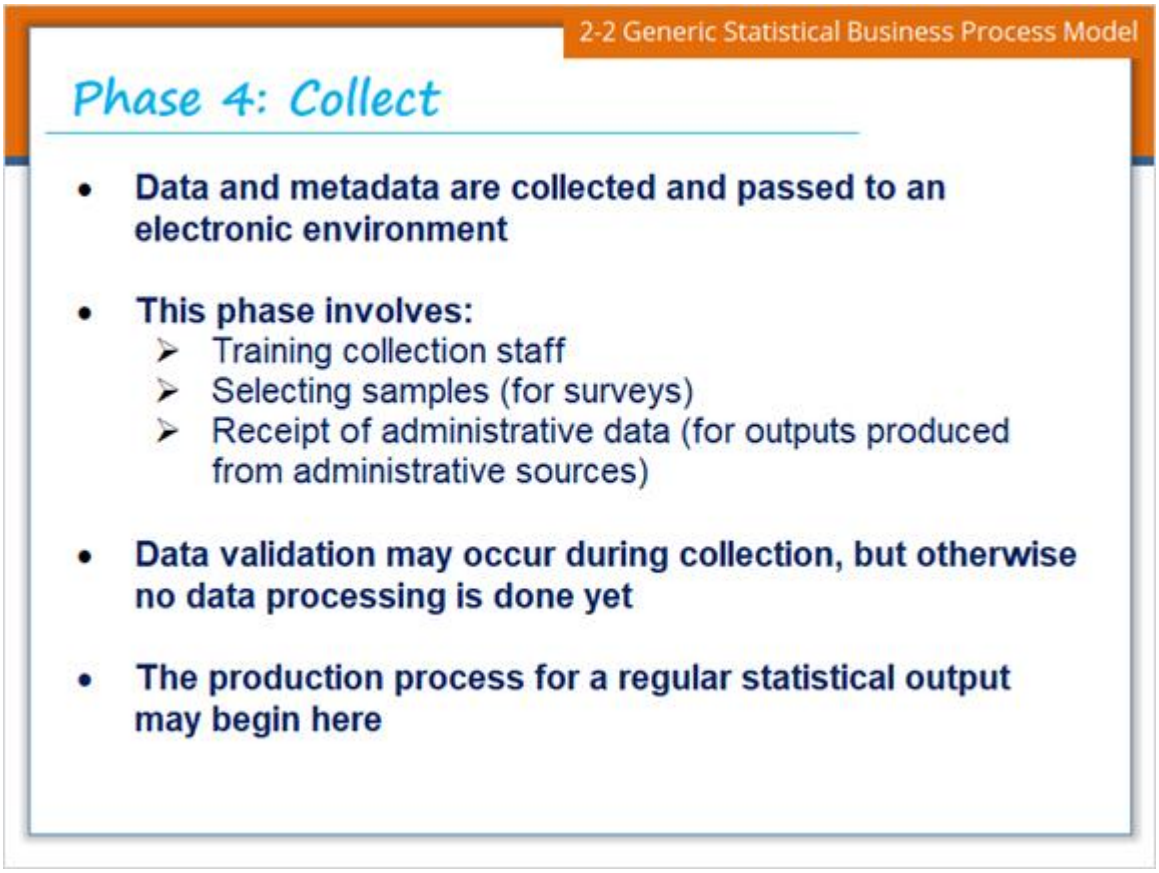
This sub-process describes the activities to manage a field test or pilot of the statistical business process. Typically it includes a small-scale data collection, to test collection instruments, followed by processing and analysis of the collected data, to ensure the statistical business process performs as expected. Following the pilot, it may be necessary to go back to a previous step and make adjustments to instruments, systems or components. For a major statistical business process, e.g. a Population Census, there may be several iterations until the process is working satisfactorily.

3.7. Finalize production systems

This sub-process includes activities to put the assembled and configured processes and services, including modified and newly created services into production ready for use by business areas. The activities include:

- Producing documentation about the process components, including technical documentation and user manuals
- Training the business users on how to operate the process
- Moving the process components into the production environment, and ensuring they work as expected in that environment (this activity may also be part of sub-process 3.5 (Test production system)).

2.16 Phase 4: Collect



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This phase collects or gathers all necessary information (data and metadata), using different collection modes (including extractions from statistical, administrative and other non-statistical registers and databases), and loads them into the appropriate environment for further processing. Whilst it can include validation of data set formats, it does not include any transformations of the data themselves, as these are all done in the "Process" phase. For statistical outputs produced regularly, this phase occurs in each iteration.

4.1. Create frame and select sample

This sub-process establishes the frame and selects the sample for this iteration of the collection, as specified in sub-process 2.4 (Design frame and sample). It also includes the coordination of samples between instances of the same statistical business process (for example to manage overlap or rotation), and between different processes using a common frame or register (for example to manage overlap or to spread response burden). Quality assurance and approval of the frame and the selected sample are also undertaken in this sub-process, though maintenance of underlying registers, from which frames for several statistical

business processes are drawn, is treated as a separate business process. The sampling aspect of this sub-process is not usually relevant for processes based entirely on the use of pre-existing sources (e.g. administrative sources), as such processes generally create frames from the available data and then follow a census approach.

4.2. Set up collection

This sub-process ensures that the people, processes and technology are ready to collect data and metadata, in all modes as designed. It takes place over a period of time, as it includes the strategy, planning and training activities in preparation for the specific instance of the statistical business process. Where the process is repeated regularly, some (or all) of these activities may not be explicitly required for each iteration. For one-off and new processes, these activities can be lengthy. This sub-process includes:

- preparing a collection strategy;
- training collection staff;
- ensuring collection resources are available e.g. laptops;
- agreeing terms with any intermediate collection bodies, e.g. sub-contractors for computer assisted telephone interviewing
- configuring collection systems to request and receive the data;
- ensuring the security of data to be collected;
- preparing collection instruments (e.g. printing questionnaires, pre-filling them with existing data, loading questionnaires and data onto interviewers' computers, etc.).

For non-survey sources, this sub-process will include ensuring that the necessary processes, systems and confidentiality procedures are in place, to receive or extract the necessary information from the source.

4.3. Run collection

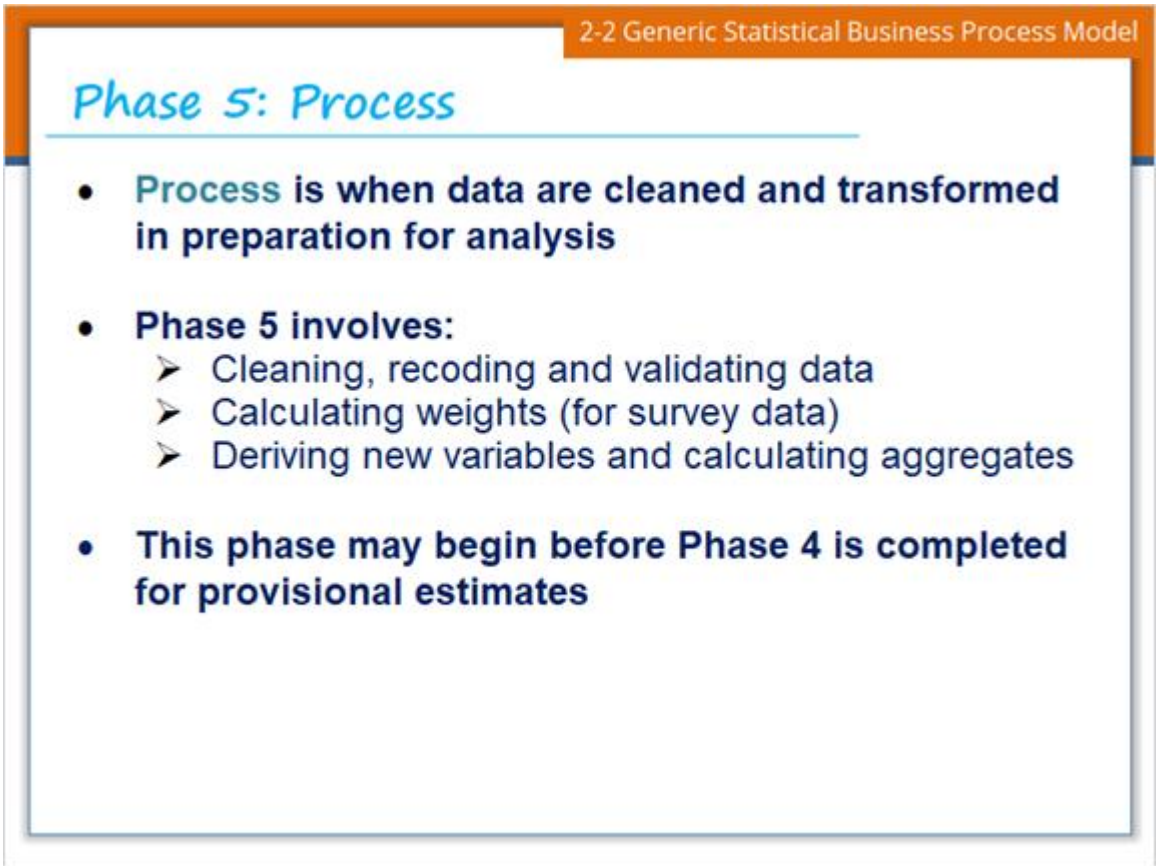
This sub-process is where the collection is implemented, with the different instruments being used to collect or gather the information, which may include raw micro-data or aggregates produced at the source, as well as any associated metadata. It includes the initial contact with providers and any subsequent follow-up or reminder actions. It may include manual data entry at the point of contact, or fieldwork management, depending on the source and collection mode. It records when and how providers were contacted, and whether they have responded. This sub-process also includes the management of the providers involved in the current collection, ensuring that the relationship between the statistical organization and data providers remains positive, and recording and responding to comments, queries and complaints. For administrative and other non-statistical sources, this process is brief: the provider is either contacted to send the information, or sends it

as scheduled. When the collection meets its targets, it is closed and a report on the collection is produced. Some basic validation of the structure and integrity of the information received may take place within this sub-process, e.g. checking that files are in the right format and contain the expected fields. All validation of the content takes place in Phase 5 (Process phase).

4.4. Finalise collection

This sub-process includes loading the collected data and metadata into a suitable electronic environment for further processing. It may include manual or automatic data take-on, for example using clerical staff or optical character recognition tools to extract information from paper questionnaires, or converting the formats of files received from other organizations. It may also include analysis of the process metadata (paradata) associated with collection to ensure the collection activities have met requirements. In cases where there is a physical collection instrument, such as a paper questionnaire, which is not needed for further processing, this sub-process manages the archiving of that material.

2.17 Phase 5: Process



Notes:

This phase describes the cleaning of data and their preparation for analysis. It is made up of sub-processes that check, clean, and transform input data, so that they can be analysed and disseminated as statistical outputs. It may be repeated several times if necessary. For statistical outputs produced regularly, this phase occurs in each iteration. The sub-processes in this phase can apply to data from both statistical and non-statistical sources with the possible exception of sub-process 5.6 (Calculate weights), which is usually specific to survey data.

The "Process" and "Analyse" phases can be iterative and parallel. Analysis can reveal a broader understanding of the data, which might make it apparent that additional processing is needed. Activities within the "Process" and "Analyse" phases may commence before the "Collect" phase is completed. This enables the compilation of provisional results where timeliness is an important concern for users, and increases the time available for analysis.

5.1. Integrate data

This sub-process integrates data from one or more sources. It is where the results of sub-processes in the "Collect" phase are combined. The input data can be from a mixture of external or internal data sources, and a variety of collection modes, including extracts of administrative data. The result is a set of linked data. Data integration can include:

- combining data from multiple sources, as part of the creation of integrated statistics such as national accounts
- matching/recording linkage routines, with the aim of linking micro or macro data from different sources
- prioritising, when two or more sources contain data for the same variable, with potentially different values

Data integration may take place at any point in this phase, before or after any of the other sub-processes. There may also be several instances of data integration in any statistical business process. Following integration, depending on data protection requirements, data may be synonymized, that is stripped of identifiers such as name and address, to help protect confidentiality.

5.2. Classify and code

This sub-process classifies and codes the input data. For example, automatic (or clerical) coding routines may assign numeric codes to text responses according to a pre-determined classification scheme.

5.3. Review and validate

This sub-process examines data to try to identify potential problems, errors and discrepancies such as outliers, item non-response and miscoding. It can also be referred

to as input data validation. It may be run interactively, validating data against predefined edit rules, usually in a set order. It may flag data for automatic or manual inspection or editing. Reviewing and validating can apply to data from any type of source, before and after integration. Whilst validation is treated as part of the “Process” phase, in practice, some elements of validation may occur alongside collection activities, particularly for modes such as web collection. Whilst this sub-process is concerned with detection of actual or potential errors, any correction activities that actually change the data are done in sub-process 5.4.

5.4. Edit and impute

Where data are considered incorrect, missing or unreliable, new values may be inserted in this sub-process. The terms editing and imputation cover a variety of methods to do this, often using a rule-based approach. Specific steps typically include:

- the determination of whether to add or change data;
- the selection of the method to be used;
- adding / changing data values;
- writing the new data values back to the data set, and flagging them as changed;
- the production of metadata on the editing and imputation process.

5.5. Derive new variables and units

This sub-process derives data for variables and units that are not explicitly provided in the collection, but are needed to deliver the required outputs. It derives new variables by applying arithmetic formulae to one or more of the variables that are already present in the dataset, or applying different model assumptions. This activity may need to be iterative, as some derived variables may themselves be based on other derived variables. It is therefore important to ensure that variables are derived in the correct order. New units may be derived by aggregating or splitting data for collection units, or by various other estimation methods. Examples include deriving households where the collection units are persons, or enterprises where the collection units are legal units.

5.6. Calculate weights

This sub process creates weights for unit data records according to the methodology created in sub-process 2.5 (Design processing and analysis). In the case of sample surveys, weights can be used to "gross-up" results to make them representative of the target population, or to adjust for non-response in total enumerations. In other situations, variables may need weighting for normalization purposes.

5.7. Calculate aggregates

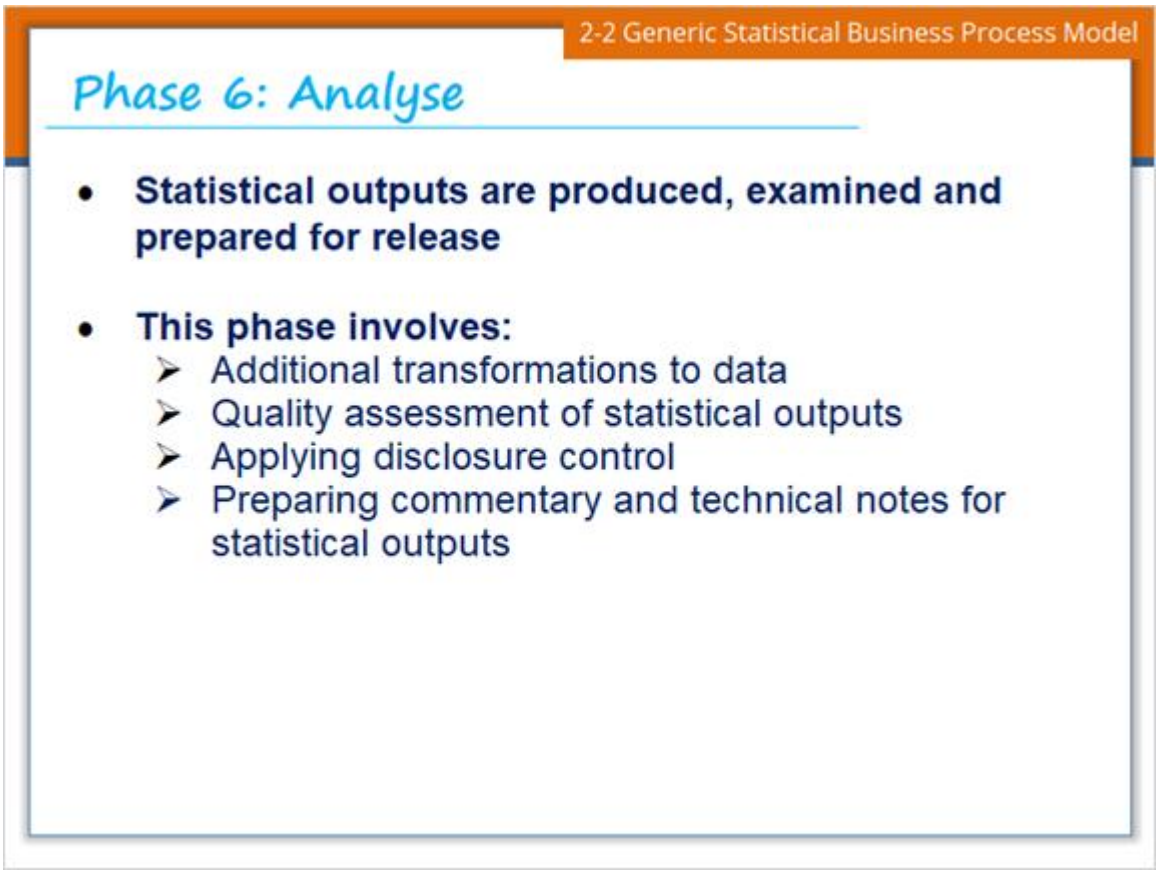
This sub process creates aggregate data and population totals from micro-data or lower-level aggregates. It includes summing data for records sharing certain characteristics, determining measures of average and dispersion, and applying weights from sub-process 5.6 to derive appropriate totals. In the case of sample surveys,

sampling errors may also be calculated in this sub-process, and associated to the relevant aggregates.

5.8. Finalise data files

This sub-process brings together the results of the other sub-processes in this phase and results in a data file (usually of macro-data), which is used as the input to the "Analyse" phase. Sometimes this may be an intermediate rather than a final file, particularly for business processes where there are strong time pressures, and a requirement to produce both preliminary and final estimates.

2.18 Phase 6: Analyse



Notes:

In this phase, statistical outputs are produced, examined in detail and made ready for dissemination. It includes preparing statistical content (including commentary, technical notes, etc.), and ensuring outputs are “fit for purpose” prior to dissemination to customers. This phase also includes the sub-processes and activities that enable statistical analysts to understand the statistics produced. For statistical outputs

produced regularly, this phase occurs in every iteration.

6.1. Prepare draft outputs

This sub-process is where the data are transformed into statistical outputs. It includes the production of additional measurements such as indices, trends or seasonally adjusted series, as well as the recording of quality characteristics.

6.2. Validate outputs

This sub-process is where statisticians validate the quality of the outputs produced, in accordance with a general quality framework and with expectations. This sub-process also includes activities involved with the gathering of intelligence, with the cumulative effect of building up a body of knowledge about a specific statistical domain. This knowledge is then applied to the current collection, in the current environment, to identify any divergence from expectations and to allow informed analyses. Validation activities can include:

- checking that the population coverage and response rates are as required;
- comparing the statistics with previous cycles (if applicable);
- checking that the associated metadata and paradata (process metadata) are present and in line with expectations
- confronting the statistics against other relevant data (both internal and external);
- investigating inconsistencies in the statistics;
- performing macro editing;
- validating the statistics against expectations and domain intelligence.

6.3. Interpret and explain outputs

This sub-process is where the in-depth understanding of the outputs is gained by statisticians. They use that understanding to interpret and explain the statistics produced for this cycle by assessing how well the statistics reflect their initial expectations, viewing the statistics from all perspectives using different tools and media, and carrying out in-depth statistical analyses.

6.4. Apply disclosure control

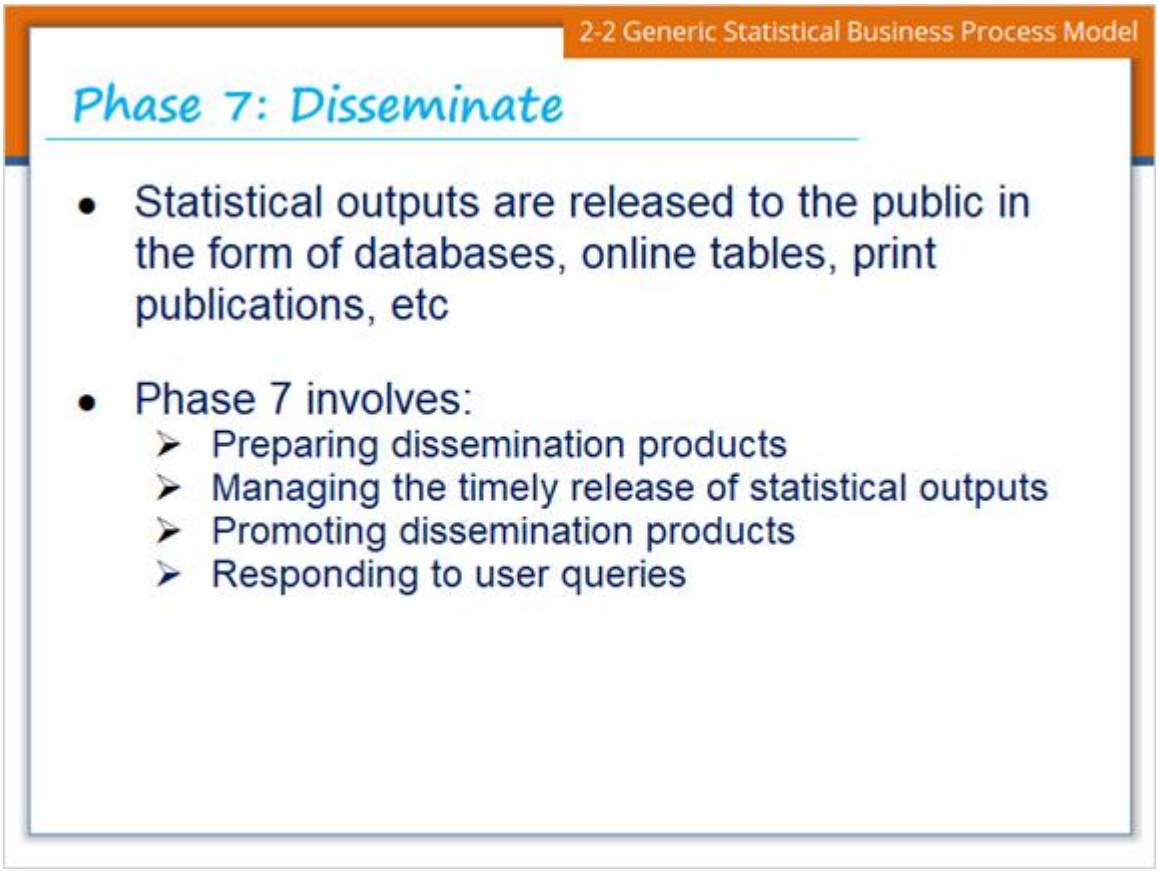
This sub-process ensures that the data (and metadata) to be disseminated do not breach the appropriate rules on confidentiality. This may include checks for primary and secondary disclosure, as well as the application of data suppression or perturbation techniques. The degree and method of disclosure control may vary for different types of outputs, for example the approach used for micro-data sets for research purposes will be different to that for published tables or maps.

6.5. Finalize outputs

This sub-process ensures the statistics and associated information are fit for purpose and reach the required quality level, and are thus ready for use. It includes:

- completing consistency checks;
- determining the level of release, and applying caveats;
- collating supporting information, including interpretation, commentary, technical notes, briefings, measures of uncertainty and any other necessary metadata;
- producing the supporting internal documents;
- pre-releasing discussion with appropriate internal subject matter experts;
- approving the statistical content for release.

2.19 Phase 7: Disseminate



Notes:

This phase manages the release of statistical products to customers. It includes all activities associated with assembling and releasing a range of static and dynamic products via a range of channels. These activities support customers to access and use the outputs released by the statistical organization.

7.1. Update output systems

This sub-process manages the update of systems where data and metadata are stored ready for dissemination purposes, including:

- formatting data and metadata ready to be put into output databases;
- loading data and metadata into output databases;
- ensuring data are linked to the relevant metadata.

Formatting, loading and linking of metadata should preferably mostly take place in earlier phases, but this sub-process includes a final check that all of the necessary metadata are in place ready for dissemination.

7.2. Produce dissemination products

This sub-process produces the products, as previously designed (in sub-process 2.1), to meet user needs. They could include printed publications, press releases and web sites. The products can take many forms including interactive graphics, tables, public-use micro-data sets and downloadable files. Typical steps include:

- preparing the product components (explanatory text, tables, charts, quality statements, etc.);
- assembling the components into products;
- editing the products and checking that they meet publication standards.

7.3. Manage release of dissemination products

This sub-process ensures that all elements for the release are in place including managing the timing of the release. It includes briefings for specific groups such as the press or ministers, as well as the arrangements for any pre-release embargoes. It also includes the provision of products to subscribers, and managing access to confidential data by authorised user groups, such as researchers. Sometimes an organization may need to retract a product, for example if an error is discovered. This is also included in this sub-process.

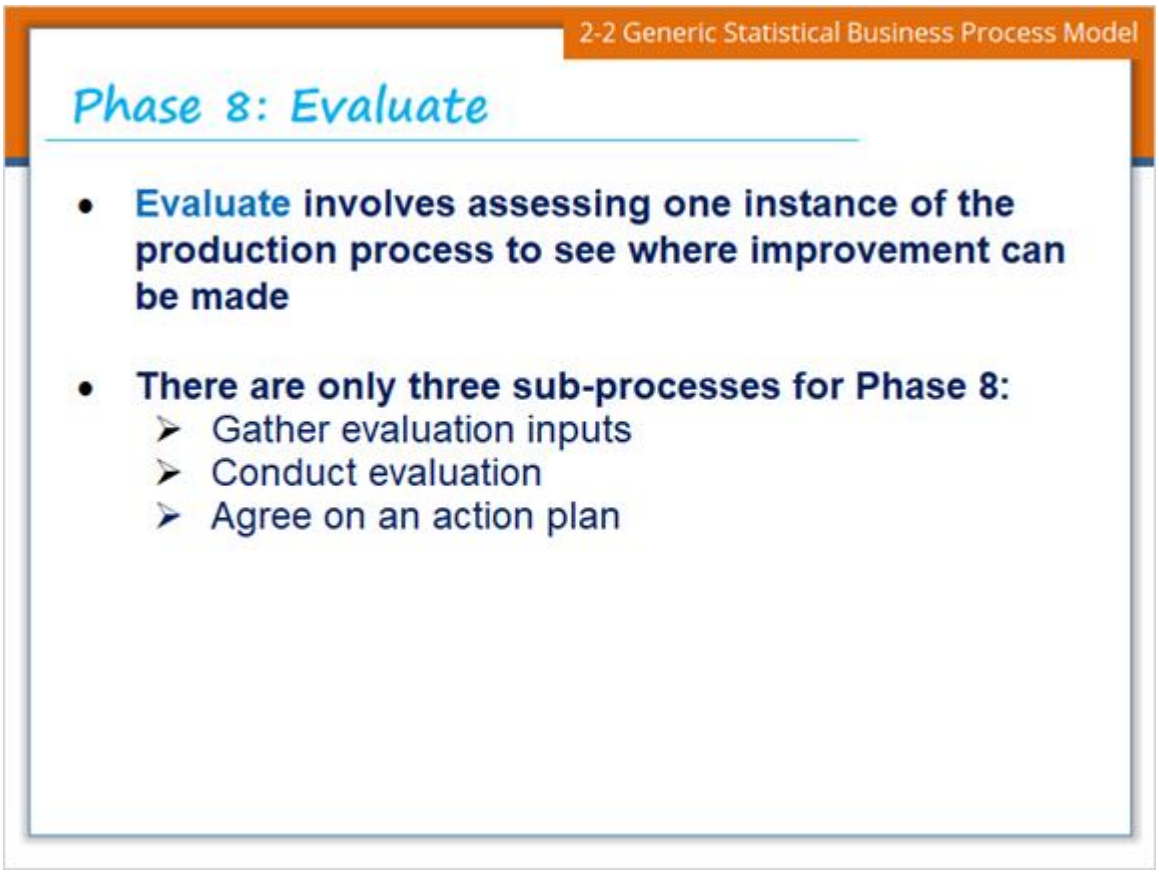
7.4. Promote dissemination products

Whilst marketing in general can be considered to be an over-arching process, this sub-process concerns the active promotion of the statistical products produced in a specific statistical business process, to help them reach the widest possible audience. It includes the use of customer relationship management tools, to better target potential users of the products, as well as the use of tools including web sites, wikis and blogs to facilitate the process of communicating statistical information to users.

7.5. Manage user support

This sub-process ensures that customer queries and requests for services such as micro-data access are recorded, and that responses are provided within agreed deadlines. These queries and requests should be regularly reviewed to provide an input to the over-arching quality management process, as they can indicate new or changing user needs.

2.20 Phase 8: Evaluate



Notes:

The last phase manages the evaluation of a specific instance of a statistical business process, as opposed to the more general over-arching process of statistical quality management. It logically takes place at the end of the instance of the process, but relies on inputs gathered throughout the different phases. It includes evaluating the success of a specific instance of the statistical business process, drawing on a range of quantitative and qualitative inputs, and identifying and prioritizing potential improvements.

For statistical outputs produced regularly, evaluation should, at least in theory occur for each iteration, determining whether future iterations should take place, and if so, whether any improvements should be implemented. However, in some cases, particularly for regular and well established statistical business processes, evaluation may not be formally carried out for each iteration. In such cases, this phase can be seen as providing the decision as to whether the next iteration should start from the “Specify Needs” phase, or from some later phase (often the “Collect” phase).

8.1. Gather evaluation inputs

Evaluation material can be produced in any other phase or sub-process. It may take many forms, including feedback from users, process metadata (paradata), system metrics, and staff suggestions. Reports of progress against an action plan agreed during a previous iteration may also form an input to evaluations of subsequent iterations. This sub-process gathers all of these inputs, and makes them available for the person or team producing the evaluation.

8.2. Conduct evaluation

This sub-process analyses the evaluation inputs and synthesises them into an evaluation report. The resulting report should note any quality issues specific to this iteration of the statistical business process, and should make recommendations for changes if appropriate. These recommendations can cover changes to any phase or sub-process for future iterations of the process, or can suggest that the process is not repeated.

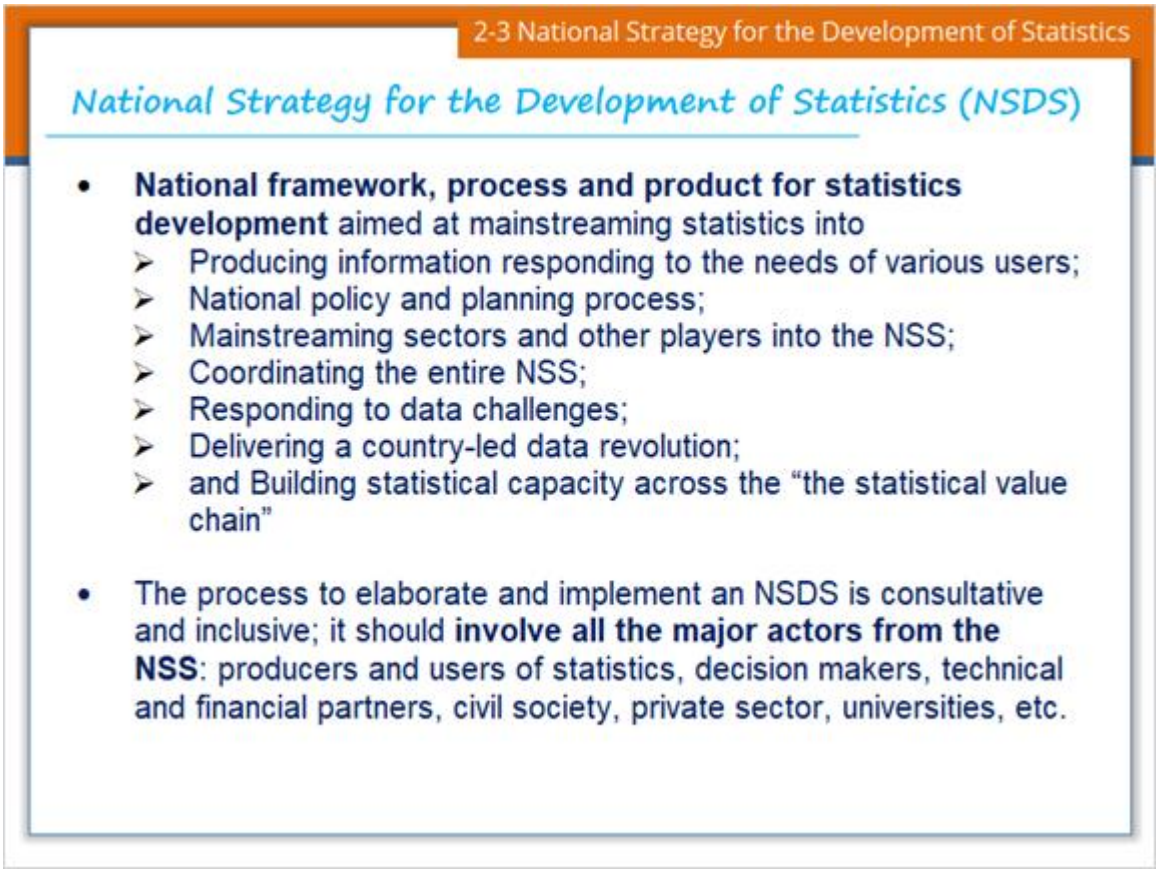
8.3. Agree on an action plan

This sub-process brings together the necessary decision-making power to form and agree on an action plan based on the evaluation report. It should also include consideration of a mechanism for monitoring the impact of these actions, which may, in turn, provide an input to evaluations of future iterations of the process.

2.21 2-3 National Strategy for the Development of Statistics

Notes:

2.22 National Strategy for the Development of Statistics (NSDS)



Notes:

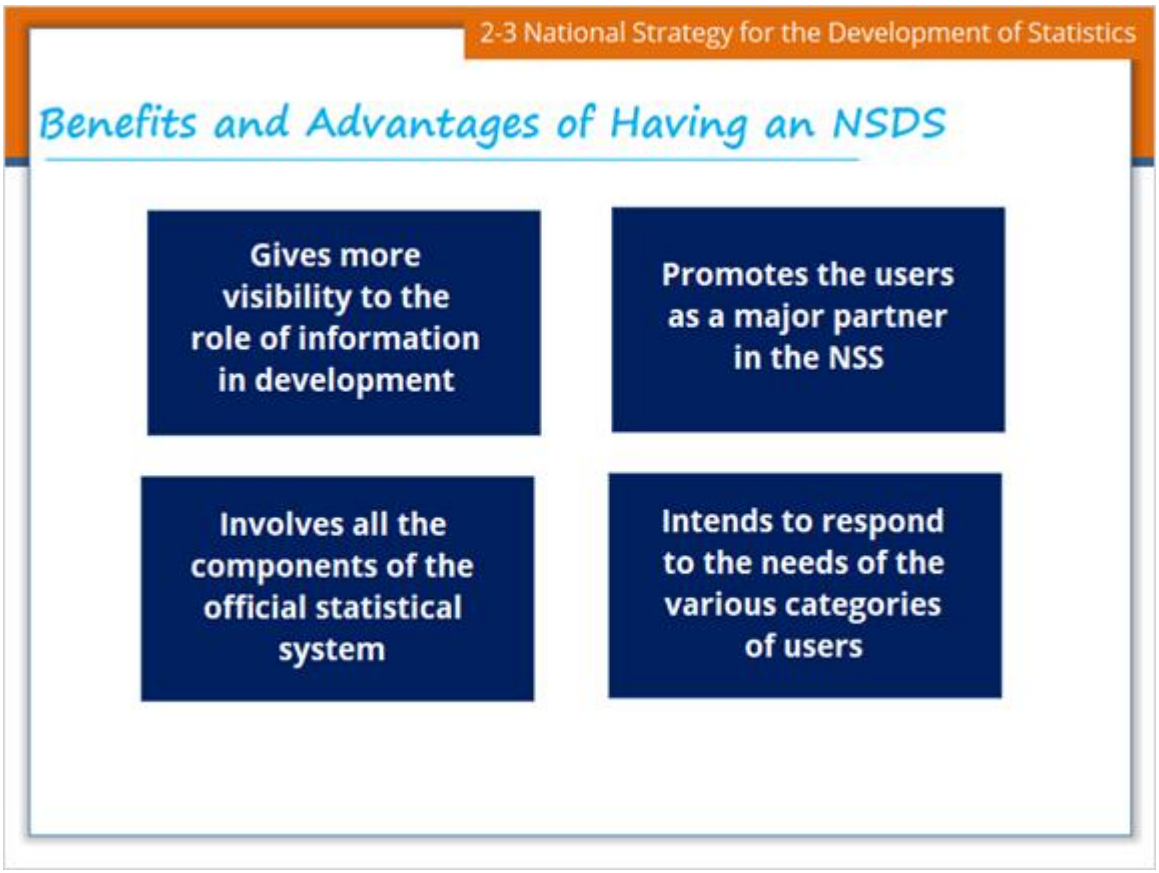
The reason why NSS needs to implement a National Strategy for the Development of Statistics (NSDS) is the following.

Countries need to have an overall vision of the development of their NSS which will include national, regional, and international needs; address the data requirements of the national development plan thus becoming a part of the national development process and poverty reduction policy; identify the priorities of statistical development programs rationalizing thus the conduct of statistical activities and allocation of funds; serve as a framework for international and bilateral assistance; include all parts of the data production units and address issues related to the analysis and use of data; follow the international standards including quality; and build on all past and existing activities and experiences.

The Partnership in Statistics for Development in the 21st Century (PARIS21) assists countries in designing, implementing and monitoring their NSDS. In 2004, PARIS21 developed guidelines on NSDSs and has since updated them annually. By 2016, nearly 100 developing countries have gained considerable experience in the NSDS process, and every year new NSDSs are prepared, implemented, and evaluated. In addition, new

tools are being developed to support countries in the preparation, costing, planning and evaluation of their NSDSs.

2.23 Benefits and Advantages of Having an NSDS



Notes:

Benefits and advantages of having an NSDS are the following.

NSDS is instrumental in the promotion of statistics as a major tool in the development process. It gives more visibility to the role of information in development. It aims at establishing statistics as one of the priorities in this process. It implies a strong political commitment for statistics at the highest level and it relies on the participation of data users in the definition of the objectives of the NSS and in their implementation.

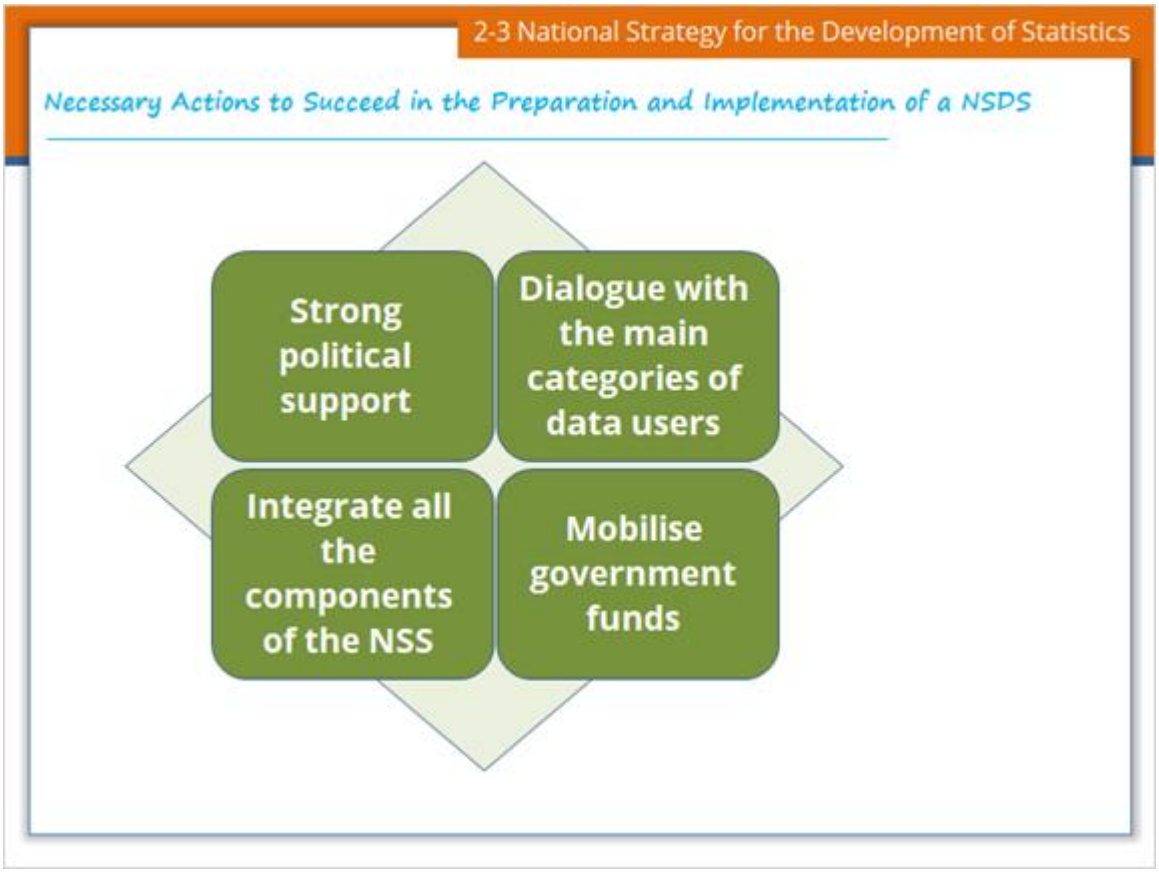
As the output of a participatory process, NSDSs intend to mobilize all the stakeholders around the promotion of a performing NSS. The NSDS approach insists on the importance of demand oriented data and promotes the users as a major partner in the NSS.

As an inclusive approach, an NSDS involves all the components of the official statistical

system. It implies harmonizing and coordinating the activities and objectives of the components, and the development of a common programming tool.

As a demand driven process, NSDS intends to respond to the needs of the various categories of users. It means that analysis of data and its dissemination to all users through the most convenient instruments of communication will be priorities for the NSSs. This will strengthen the support for a strong statistical system.

2.24 Necessary Actions to Succeed in the Preparation and Implementation of a NSDS



Notes:

To succeed in the preparation and implementation of a NSDS, the following is necessary.

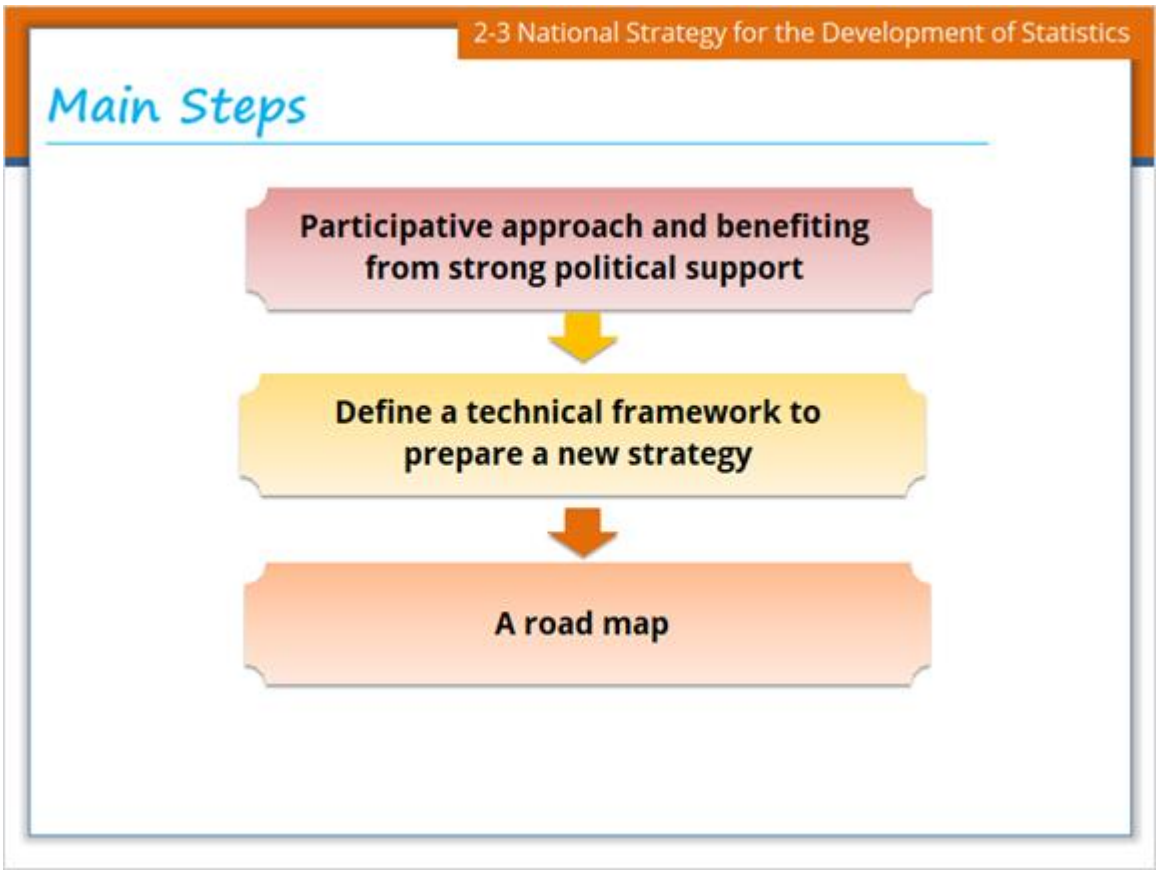
Strong political support and an explicit recognition of the role of statistics in development, confirmed by its mention as a priority in the most important national development strategy document;

Dialogue with the main categories of data users (government, private sector, civil society) in order to respond to their needs;

Integrate all the components of the NSS in a common strategy responding to the needs of the users and to the requirements of the monitoring and evaluation of the SDGs;

Mobilise government funds, and, as a complement, get support from coordinated partners.

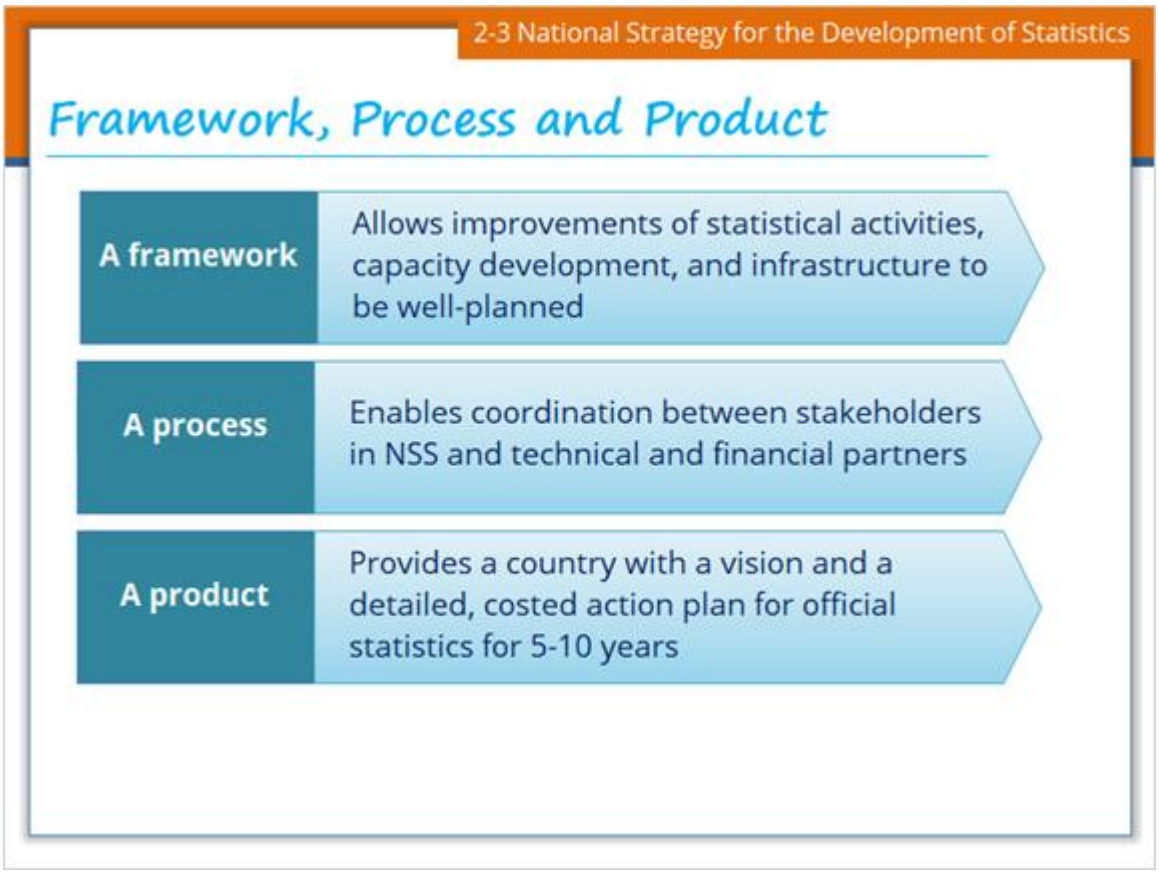
2.25 Main Steps



Notes:

The first step of NSDS will be to define a technical framework to prepare the new strategy, following a participative approach and benefiting from strong political support. This will lead to a **road map**. The main steps will then include: the preparation of a diagnosis of the NSS; the definition of a medium and long-term vision of the NSS; the definition of a medium-term strategy; and the preparation of action plans taking into account the resources available.

2.26 Framework, Process and Product



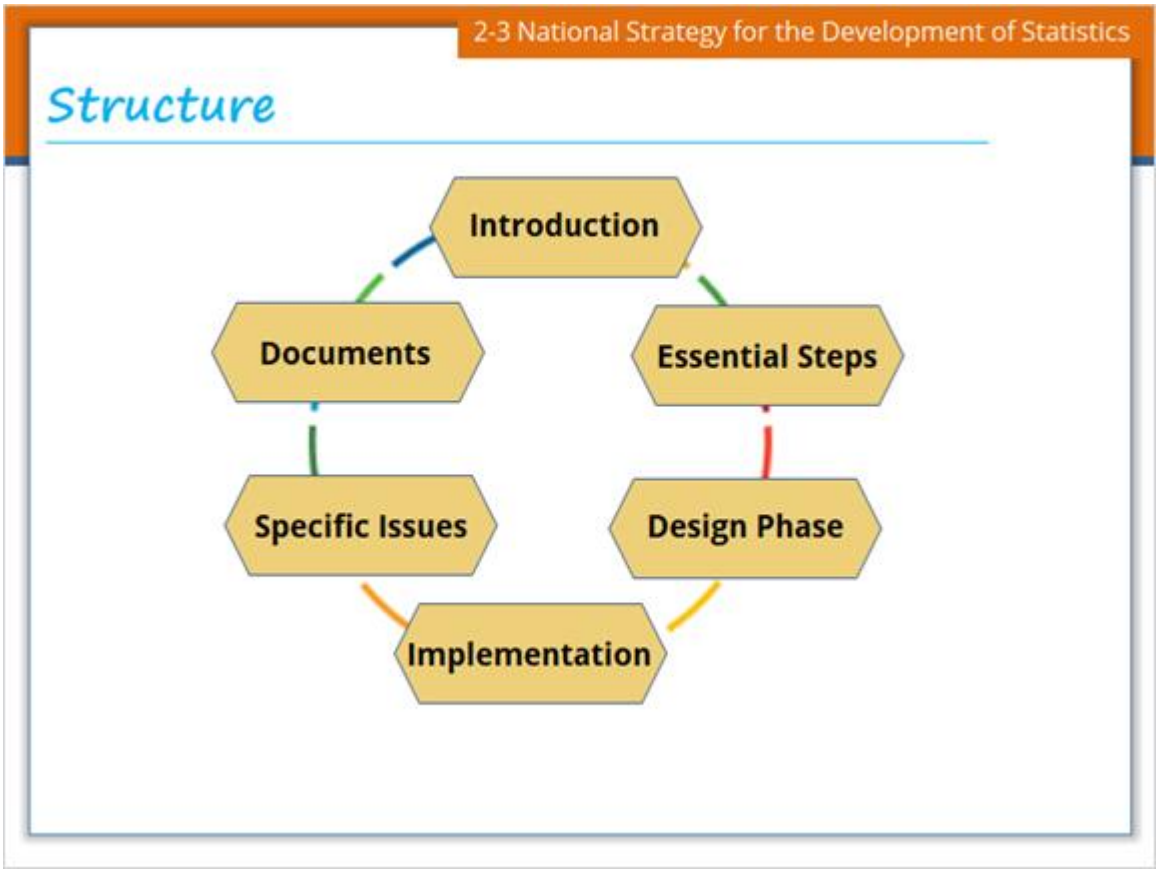
Notes:

NSDS provides three factors: a framework, a process and a product.

According to these factors countries should:

- Act on an action plan for capacity building and for funding decisions;
- Discuss coordination arrangements across the NSS and between donors;
- Provide a vision for the NSS in 5-10 years (medium- to long-term).

2.27 Structure



Notes:

The NSDS Guidelines website is structured along six major headings (**Introduction**, **Essential Steps**, **Design Phase**, **Implementation**, **Specific Issues**, and **Documents**).

Three of these headings (**Essential Steps**, **Design Phase**, and **Implementation**) are related to the generic NSDS design and implementation activities, and are subdivided according to sub-activities involved in the process. The NSDS design activity includes two types of processes: (i) Design carried out at a specific moment in time (sequenced processes) and (ii) Essential Steps is considered to be running during the entire design process. Before the Essential Steps and Design Phase are explained on the next slide, the following headings are summarized below.

Implementation is a continuous activity following the design of the first strategy. The design of a second strategy itself occurs on a shortened period of time and starts preferably with the assessment of the finishing NSDS cycle. Essential Steps are still running during the implementation phase.

Specific Issues present, in general terms, situations that have been identified as requiring special attention as they have often been improperly dealt with during the first round of NSDS.

The **Documents** section intends to be a repository of relevant resource documents that could be referred to in other parts of the site; they are classified according to the activities identified for the design of an NSDS and further categorized into whether they are tools, norms or good practices.

2.28 Essential Steps

Notes:

The NSDS design includes two types of processes: (i) those which are carried out at a specific moment in time (sequenced steps) and (ii) those which are to be considered as essential steps during the overall design process. By essential steps we understand horizontal activities such as: overall management - overall advocacy tasks - continuous political commitment or the overall process of monitoring-reviewing-evaluating. During the design phase, **7 sequenced steps** and **5 essential steps** are proposed.

The seven specific sequenced steps proposed for the design phase: **Acknowledging, recognizing** by government, by highest authority in statistics, **Understanding** the NSDS process and the context for developing it, **Preparing** the launching of the process, **Assessing** the existing NSS, **Envisioning** the future, **Identifying strategic goals,** and

Developing action plans.

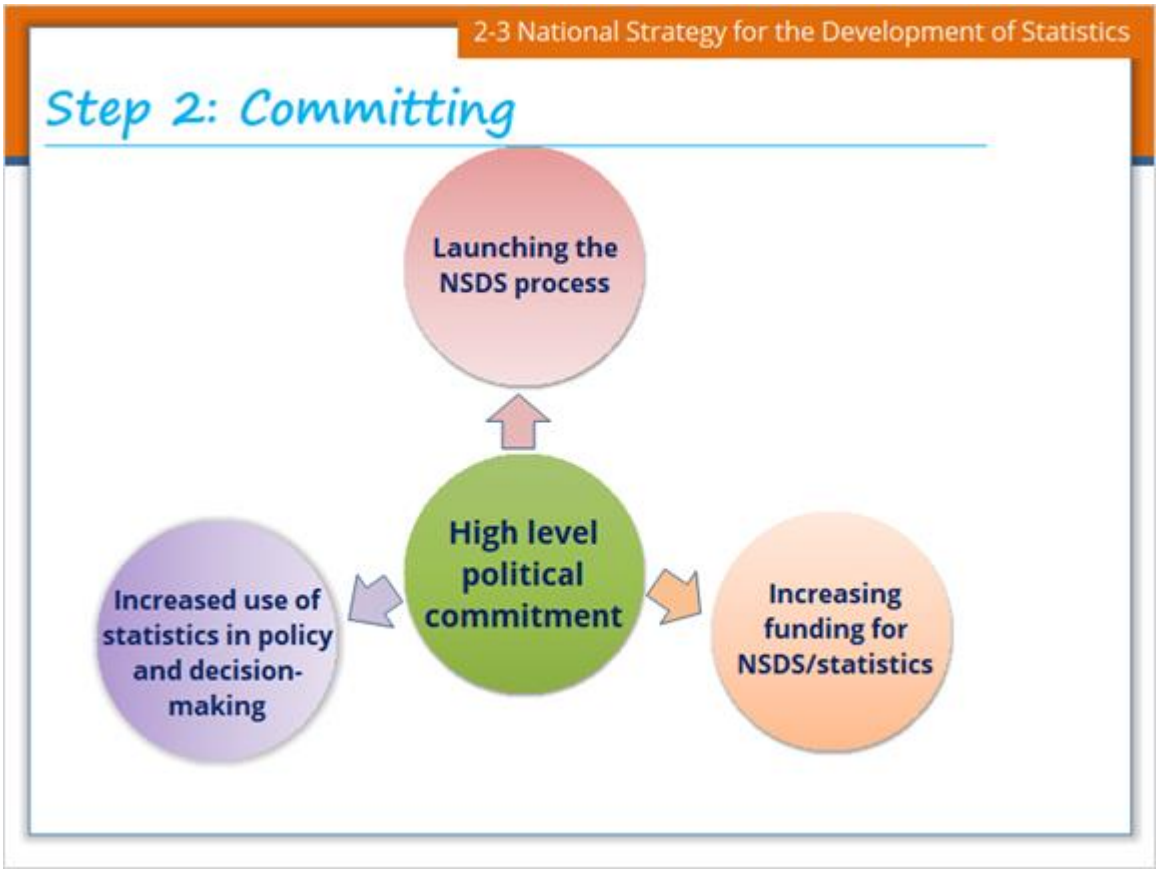
The five essential steps proposed concerning both design and implementation are on the slide.

2.29 Step 1: Managing

Notes:

Managing, which implies both leadership and management, is a key essential step in the NSDS process - a process which brings change that has to be managed adequately. Effective leadership and good management are thus required at the political level, with efficient NSDS champions, but also at organizational and operational levels, with a well-managed and coordinated NSS, aiming at a successful NSDS.

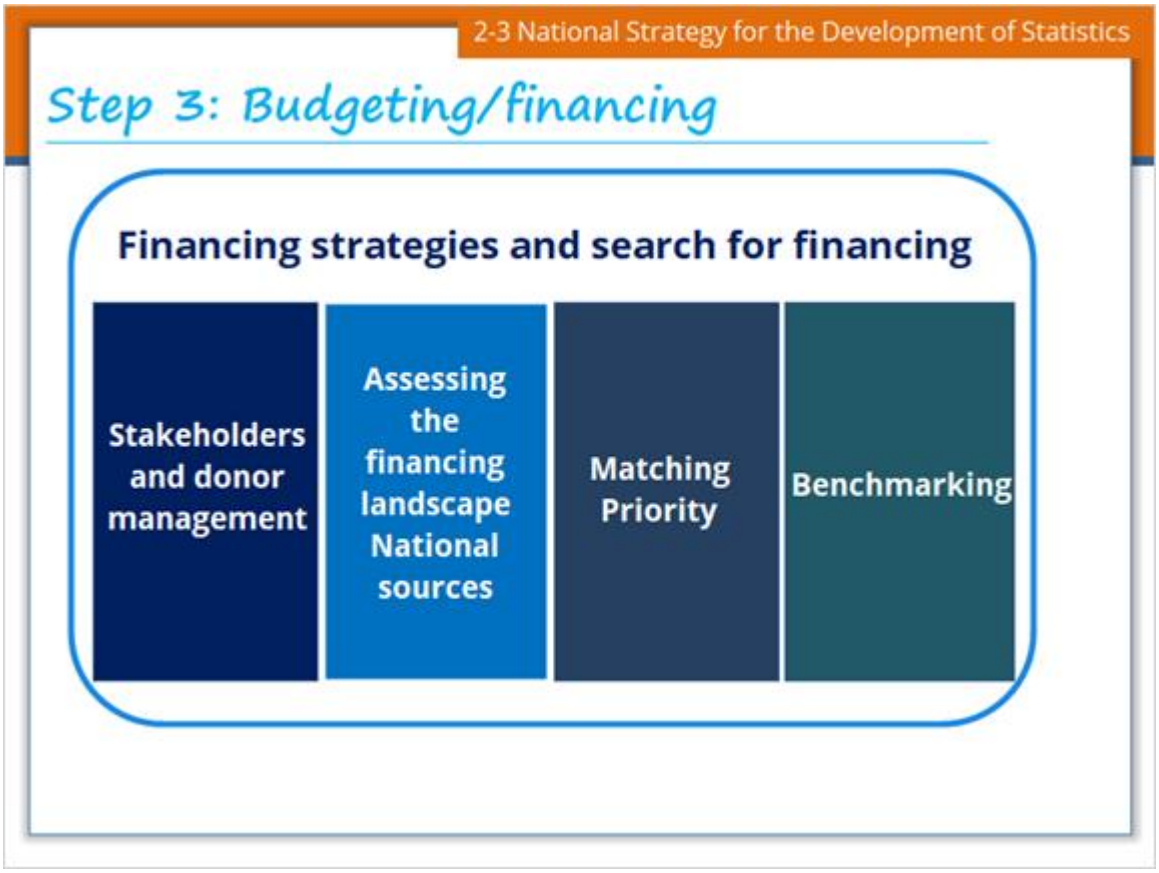
2.30 Step 2: Committing



Notes:

High-level political commitment is needed, not just for launching the NSDS process and for increasing funding but also for increasing the use of statistical information for policy and decision-making. Leadership at the political level will be required throughout the design phase and also during implementation. It will also be necessary to ensure that all major decisions are endorsed at the same level. The most challenging issue will be to obtain lasting political commitment.

2.31 Step 3: Budgeting/financing



Notes:

The financing of statistical activities is a constant endeavor for the leadership of the NSS. It is a core undertaking at the time of design and implementation of NSDS. A fundraising strategy should ensure that the sources of funding -with their specific requirements- contribute to achieving national strategic goals.

During the assessment phase, an evaluation of past funding mechanisms should be carried out, taking into account the following dimensions: source, continuity of support, amount, activities, type of funding instrument and specific conditions for fund management. The assessment will shed light on identifying those partnerships that are more adequate for attaining the NSS objectives.

In light of the assessment conclusions, new objectives and expected results are determined, and an action plan, covering all activities to be completed during the validity of the NSDS, is prepared. The action plan is accompanied by a timetable and a budget, on the basis of a costing. A new evaluation of the landscape of potential finders should be completed and each of the activities should include a funding source whether domestic, external or mixed.

There are several mechanisms for improving communication between the funding

authorities and those responsible for implementing and coordinating the NSDS. For international donors, results-based frameworks are commonly used to monitor the progress of a development project. The activities of the NSDS action plans can be financed from national or internal resources or from external sources. Usually, a combination of both is used. A common practice is to finance operational costs with national resources. Recourse to external funding can be justified in the case of additional investments (e.g. development of new tools, training and improvement of human resources, infrastructure development).

To mobilize the substantial financing required for the successful implementation of the NSDS, a balance between national and external resources should be guaranteed by the government, taking into account the priorities of the NSS, the public sector's financing capacity and the alternatives offered by bilateral and multilateral cooperation. **It must thus define a financing strategy, with an "optimal" combination of funding sources** that responds to NSS needs. It also implies balancing the mix of non-conditional funds over ear-marked ones (those aimed at a specific project or activity).

A financing strategy must be based on decisions taken at the highest level of government. For these decisions to favor the financing of the NSDS, they must be aligned with the National Development Plan (NDP) to improve co-ordination between the NSO and the Ministry of Planning. The development of a NSS is, above all, a political matter. Governments must decide the proportion of national resources devoted to statistical activities, and whether or not the system will be developed by having recourse to loans in the medium and long-term.

The NSDS financing strategy must be defined early, if possible at the end of the NSS assessment. The results of the assessment should be shared with technical and financial partners to establish a sound basis for discussion before and during the preparation of the NSDS action plan. This discussion will be more likely to succeed if the government has clearly determined the proportion of national resources that it anticipates allocating to the financing of the country's NSDS. At this point, thorough knowledge of external financing sources is also required.

A financing strategy should be designed to achieve the sustainability funds over time, at least during the validity of the NSDS. To promote longer-term planning, smooth disbursements should be prioritised over lump-sum ones. Looking for the right partners, especially external ones, is crucial to leverage not only financial resources but also the support for achieving NSDS objectives. The financing strategy should also include a communications plan with funding authorities, since a good flow of information is at the core of success.

National resources destined for the financing of statistical activities are derived from the national budget. While NSOs generally have their own budget, sector-based statistical services are often mixed up with those of the units from which they depend. For this reason, it is difficult, if not impossible, to estimate the public budget for sector-based statistical services. To respond to this challenge, the preparation of a consolidated budget integrating the needs of the whole NSS on a yearly basis would help.

In the case of NSOs, the units handling administrative and financial affairs are responsible for the preparation of a draft budget every year under the authority of the institute's director. This must observe the various stages of the timetable of preparation of the national budget and take account of the recruitment of personnel.

Generally speaking, the resources allocated to the official statistical system from government budgets will experience great difficulty in increasing more rapidly than the country's Gross Domestic Product (GDP) over a very long period, regardless of the priority the government places on the development of its statistical system. One way to increase the availability of funds targeting statistical activities would be to reform the structure of those statistical units in-line ministries that support the central statistical body so as to increase their profile and attract a suitable and dedicated budget.

NSOs that enjoy a level of independence should consider signing performance contracts with their government to guarantee a pre-defined volume of financial resources over a period of several years. Such an arrangement would require that the NSO deliver well defined statistical outputs. These NSOs should take full advantage of their independent status by offering paid services to third parties, while not losing sight of their public service mission.

In the case of a sector-based statistical department that does not have its own budget, its manager is responsible for requesting the necessary funding at the time of preparation of the draft budget.

The national budget is voted on by Parliament each year. In the case of investment expenditure, public investment programmes are also drawn up over two or more years. Increasingly, programme budgets are also prepared to meet the needs of results-based management.

Before deciding on a financing strategy, a country must conduct an exhaustive benchmark about the funding practices in other countries. This is especially true regarding government contribution to funding the NSS. When the NSDS is designed for meeting the needs of the national government, donors have a clearer panorama of what national priorities are, thus it becomes easier for them to align to them. At the same time, higher use results in higher domestic funding.

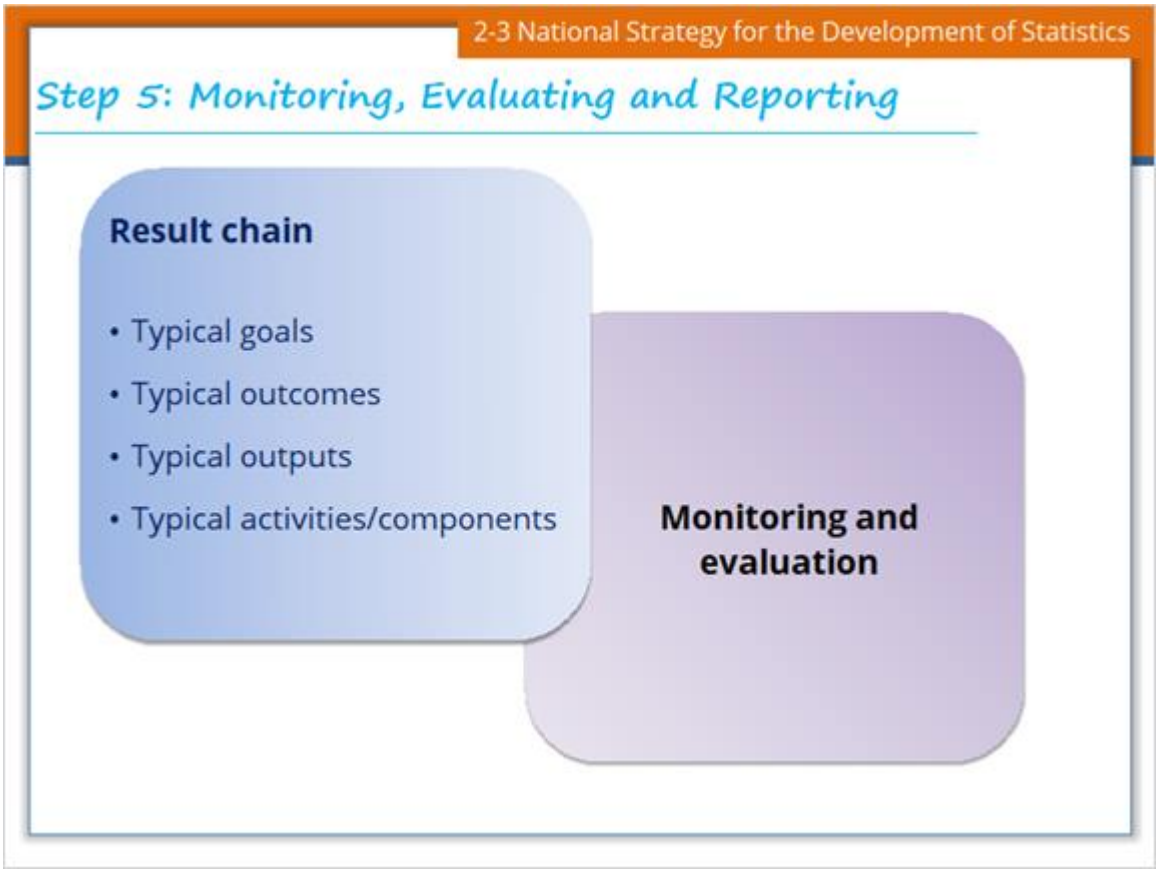
2.32 Step 4: Advocating

Notes:

The NSDS is a fantastic opportunity for statistical advocacy, in particular during its design phase where issues such as ownership, actors involved, dialogue between producers and users, political support, funding and governance of the NSS are debated. Advocacy has always been under-estimated and needs to be considered as a strategic component of the NSDS and as a continuous activity for raising the profile of statistics.

Statistical development is important to all members of society whether they are users or producers of data. There is need for vigorous and effective advocacy to enable each group to understand and play an effective role at first in the NSDS design, and then in the NSDS implementation. Advocacy should be undertaken before and throughout NSDS design. It needs to be maintained during implementation and seen as a continuous activity. An advocacy strategy will thus be helpful and will need to be drawn carefully, be supported by staff time and a budget. Ideally, efforts will be made to instill a culture of constant effort to justify and explain statistical activities to all stakeholders on a continuous basis.

2.33 Step 5: Monitoring, Evaluating and Reporting



Notes:

Monitoring and evaluating the NSDS process is important for the NSDS cycle. Even if some of these tasks are carried out at a specific period of time, they are considered as a continuous tool feeding important information to fully enable the managing step during the whole NSDS process and thus classified as essential tasks. In particular, monitoring requires a constant organization of activities aiming at tracking or alerting management to potential problems. Reporting is also a task which has to be seriously taken into account.

To give an overview of the NSDS, a logical framework is prepared, highlighting the relationships between the different elements (vision, goals, expected results, activities, and means) and the underlying assumptions for a successful implementation of the strategy.

A results chain describes the following sequence: means-activities-outputs-results (outcomes)-goals, and their interrelations. The means outline the resources necessary for the implementation of activities. They include material resources, human resources, financial resources, the legal and institutional framework, etc. The activities can take various forms: the preparation of methodological guides to improve the quality and

dissemination of data, evaluation of the NSS's organizational framework, organization of training workshops, surveys and censuses, etc. Outputs may be available statistical publications, improved statistical series, the number of trained statisticians, etc. Results (outcomes) correspond to changes such as increased capacity to produce statistics, improved dialogue between users and producers, increased demand for statistics, etc.

One can define "monitoring" as a continuous process of collecting and analyzing information to judge the quality of the implementation of an NSDS. This process regularly informs managers and the different stakeholders of progress and difficulties in achieving results, compares achievements with those expected from the outset, and enables parties to take any necessary corrective measures. Strong monitoring requires the design of a plan laid out as follows: after having defined the main goals to be achieved, one must specify the indicators that will be used to monitor progress and collect basic information on each indicator to establish a baseline. The means, frequency, and person responsible for compiling each indicator must be clearly defined. The compiled indicators must then be evaluated and reports prepared to sketch out trends and arrive at a consensus on the necessary changes to be implemented regarding inputs and activities, not to mention results and goals. Experience shows that in the process of identification of the indicators, not enough attention is paid to the feasibility and regular availability of the indicators. Another limitation is linked to the lack of precise identification and adequate sensitization of the people in charge of compiling the data.

The evaluation will judge the relevance, performance, and success of the NSDS. It reveals to what extent the NSDS achieved its goals. Monitoring and evaluation constitute two inextricably linked processes. Monitoring focuses on activity implementation and output delivery. Evaluation concerns the achievement of results, the effects and impacts on the global goal of the NSDS. It helps draw lessons and capitalize on experience for a future NSDS.

The system of evaluation must incorporate the flexibility necessary to take account of the inevitable changes that will occur during the strategy's implementation period. These changes may result in more or less significant adjustments to the strategic goals selected and/or the result obtained, which will require changes to the schedule of activities and the activities themselves. Evaluation must identify which expected results have not been achieved, and the reasons for this, in order to re-direct the strategy. Evaluation generally includes two key meetings: mid-point evaluation and final evaluation. The mid-point evaluation enables an analysis of the differences between recorded results and expected results in order to enable the necessary changes to be made, including to the schedule of activities for the second half of the strategy period. The final evaluation allows lessons to be learned and progress to be built on for a future NSDS.

2.34 Design Phase

Notes:

Government and the highest authorities of the NSS should acknowledge and recognize that statistics are indispensable for development, that the existing statistical system is sometimes fragile and does not always fully match the demand, and that it is important to adopt a strategic planning approach such as NSDS to bring change.

Experience has shown that the success of the NSDS process was highly correlated with appropriate awareness and ownership of the stakeholders. It is therefore a strong prerequisite that stakeholders are appropriately informed and aware that designing and further implementing a good NSDS will need to match a series of basic principles. These principles have been grouped around 10 “essentials”:

1. Backed by political support, nationally led and owned
2. Designed through a sound methodological approach
3. Policy and results-based with a quality fit for purpose
4. Taking into account what is in place and international commitments
5. Drawing on international statistical standards

6. Covering the whole NSS

7. Setting out an integrated statistical capacity building programme

8. Funded as a priority by governments

9. Serving as a coherence framework for external assistance

10. Incorporating monitoring, evaluation and reporting

Once the need to develop a strategy is **acknowledged** and the main principles, steps and constraints linked with the NSDS process **understood**, **preparation** work may start. An official commitment at the highest political level is sought, a constituency and a design team have to be put in place, a roadmap has to be designed setting out what needs to be done, by whom, when and how it will be financed and the document of the roadmap has to be officially endorsed and shared with stakeholders.

As well as political leadership, the NSDS will need technical management and leadership to coordinate the design of the strategy, working closely with staff and other stakeholders of the NSS.

It cannot be over-emphasised that for the NSDS process to succeed, there has to be good preparatory planning for it. It is, therefore, critical that as part of the preliminary phase of the NSDS process, a roadmap is designed, documented, and agreed on by key stakeholders. It is a reference document for all actors involved in the design of an NSDS.

Before elaborating an NSDS, it is desirable to carry out an in-depth **assessment** of the current status of the statistical system in order to set the priorities for statistics development. The assessment is aimed at answering the question “Where are we?” through a full description of the NSS. It should lead to an understanding of the data demands, adequacy and quality of the statistical outputs, strengths and challenges, and the organization and management of the NSS as a whole.

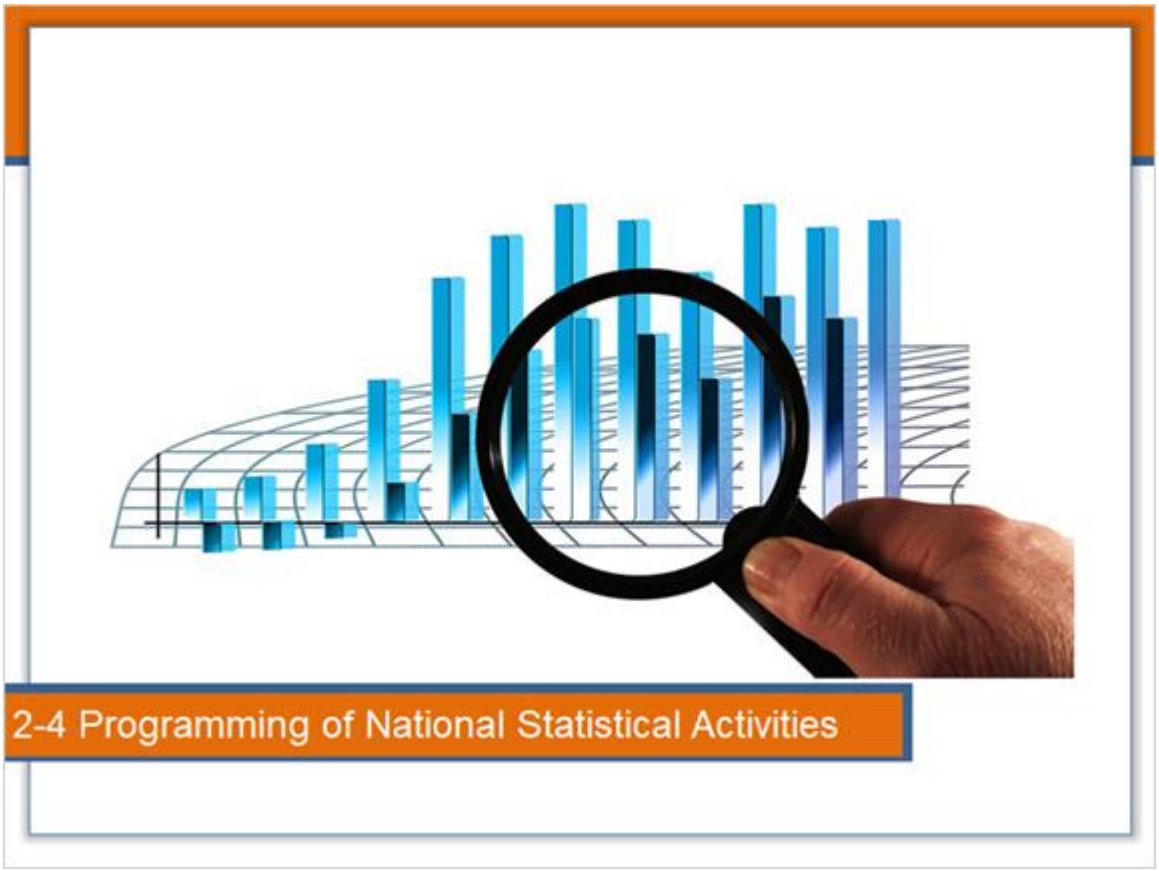
The **Envisioning** step is key to strategic planning. During the Assessment step of the NSDS design process, the main questions were “Where are we now?” and “Where are we heading?”- Agreeing on a mission and a vision will help answer respectively: “Where do we want to go”? - Why ?” and “What can we do”? - How ?” A clear mission and vision, expressed in the form of concise and positive statements, will lead to an inspiring common vision of the future and will set the basis for the development of the strategies. The mission and vision are partially built on assessment results as the assessment will have shown what has to be structurally changed.

Knowing clearly where we stand (Assessment) and where we are heading (Vision), will help to **identify the strategic goals** and the methods or strategies to reach them. The strategic goals will be all the more relevant, depending on the quality of the assessment exercise and the level of vision sharing.

Elaborating Action Plans is an important step to prepare the implementation of a strategy for the development of statistics. The strategy defined in the NSDS needs to be translated into an action plan, which sets out more precisely what needs to be done, by whom, when and at what cost. The action plans should be organized along the strategic

objectives, outcomes and outputs which will be achieved.

2.35 2-4 Programming of National Statistical Activities



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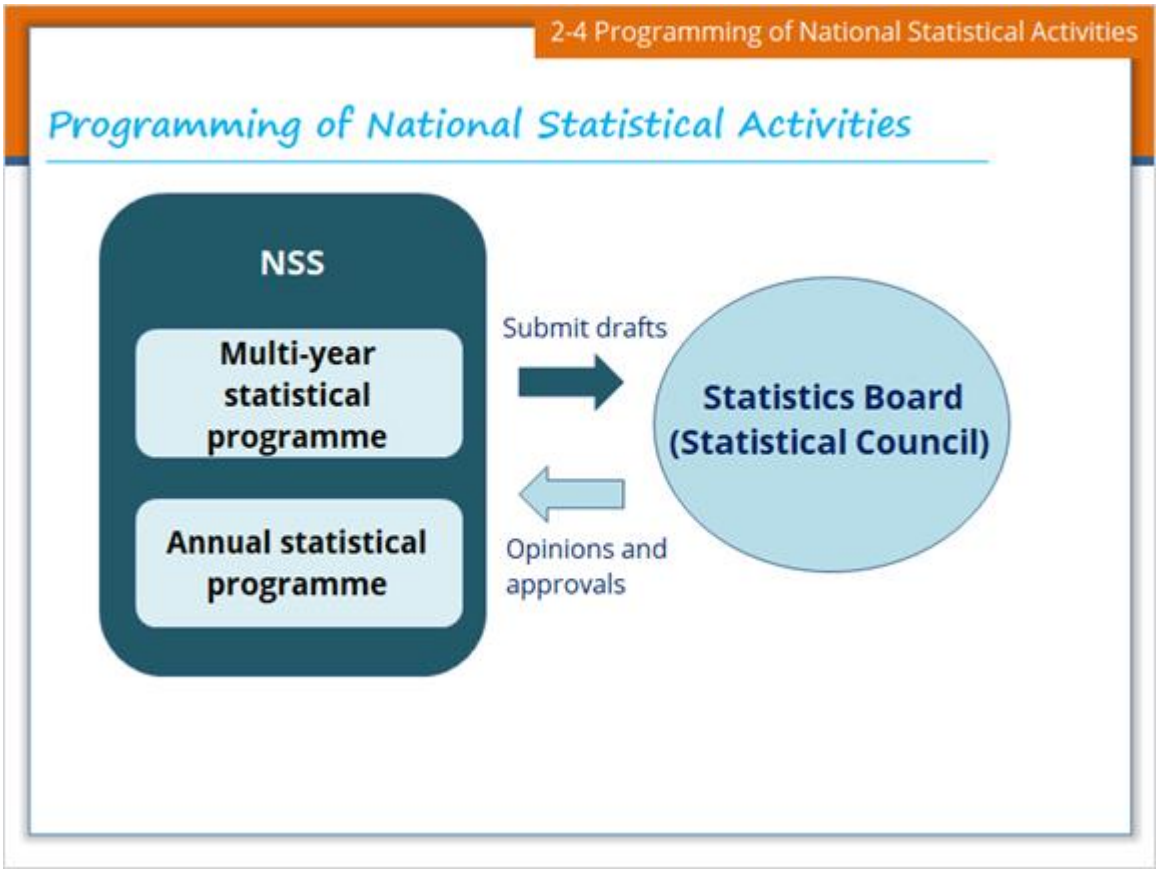
2.36 Programming of National Statistical Activities



Notes:

Statistical programmes, including a multi-year statistical programme and an annual statistical programme, shall be established as key instruments for effective strategic and operational management and coordination of activities in the NSS.

The NSO shall be in charge of preparing the statistical programmes, in close consultation with users of statistics, respondents and administrative data providers. Other Producers of Official Statistics shall be involved in the process and provide the NSO with the necessary inputs.

A multi-year statistical programme shall be established for the NSS to define the strategic development of official statistics, aiming at satisfying existing and emerging user needs.

The multi-year statistical programme shall provide a vision and priorities for the development of the NSS for the next five or other number years and establish the required deliveries and development actions, weighing them against the necessary resources.

An annual statistical programme of the NSS shall be established each year as an operational translation of the multi-year statistical programme to update the list of

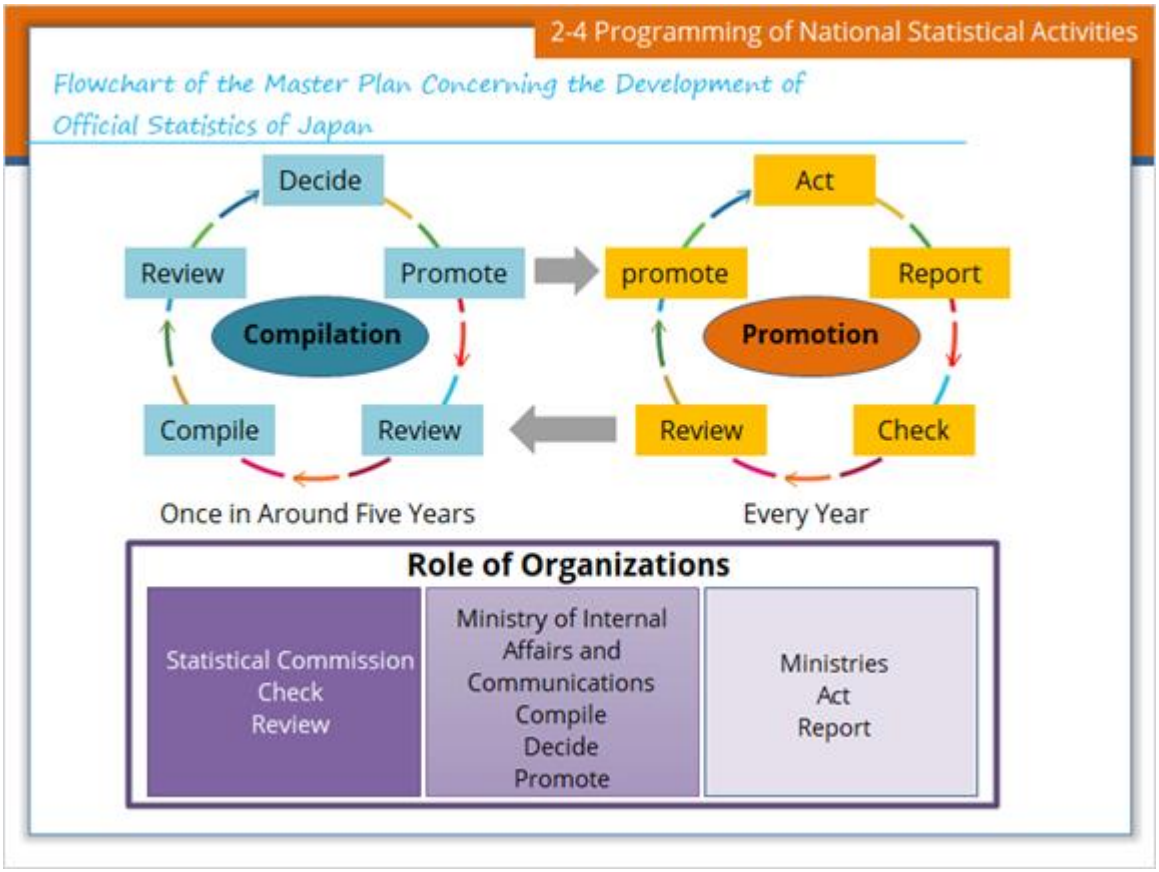
producers of official statistics and to provide the legal basis for:

- All official statistics to be released;
- All statistical surveys to be carried out by the producers of official statistics;
- All transmissions of administrative data or data from other existing sources to producers of official statistics;
- Main development activities of official statistics;
- Statistical registers to be maintained and developed.

The NSO shall submit the multi-year and the annual statistical programmes to the Statistics Board (Statistical Council) for opinion and subsequently to the government for adoption no later than 2-3 months before the start of the reference period of the programme. The Statistics Board shall provide its opinion to the government.

Statistical planning and securing resources to deliver plans are integral functions of statistical systems. These plans need to ensure that core statistical programmes such as censuses, civil registration and vital statistics, and National Accounts are prioritised.

2.37 Flowchart of the Master Plan Concerning the Development of Official Statistics of Japan

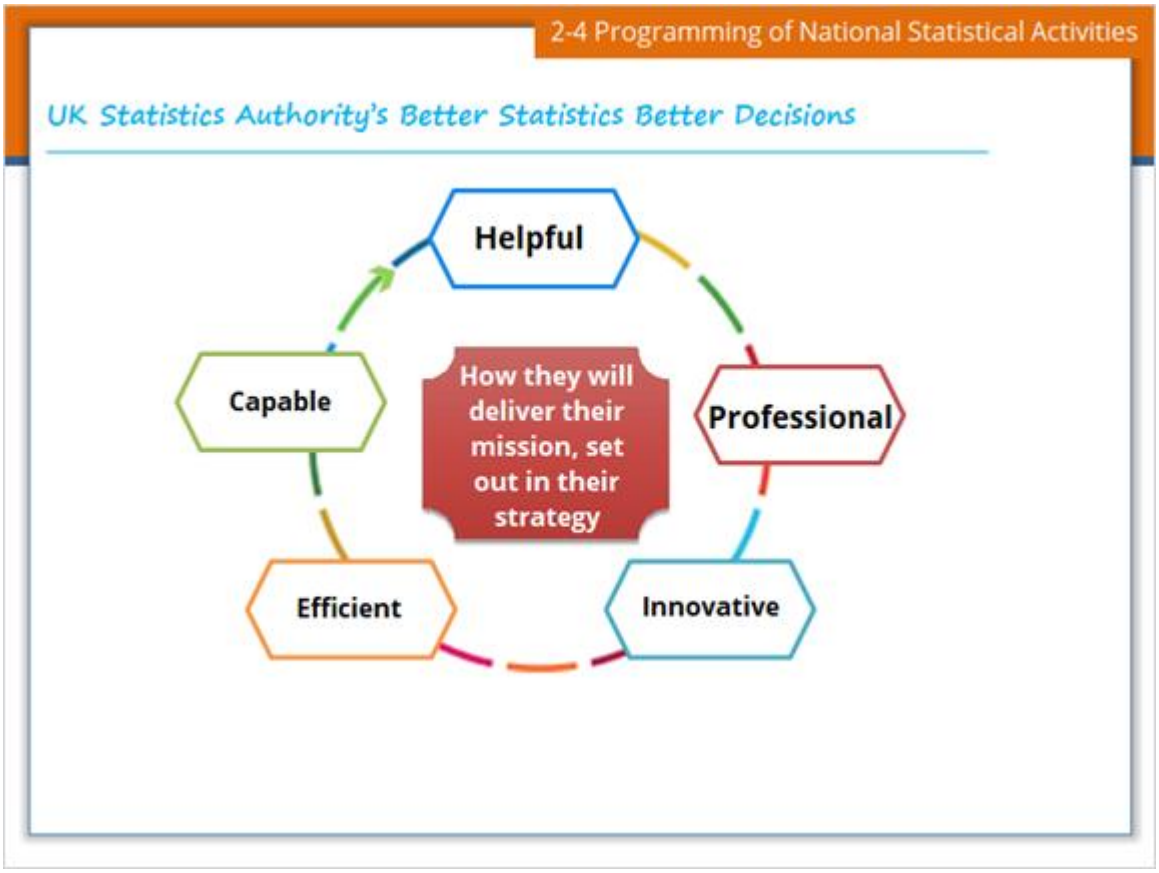


Notes:

This is an example of the Master Plan of Japan.

In keeping with Article 4 in the Statistics Act, the government establishes a Master Plan concerning the Development of Official Statistics in order to promote measures comprehensively and systematically. The Ministry of Internal Affairs and Communications compiles the Master Plan based on comments from the Statistical Commission and the public and requests the Cabinet Decision. After the decision, the Master Plan is promoted by the Ministry of Internal Affairs and Communications and acted on by Ministries. The current plan started in April 2018 and will end in March 2023. As one of the methodologies for promotion, the progress is followed up every year.

2.38 UK Statistics Authority's Better Statistics Better Decisions



Notes:

The UK Statistics Authority's Better Statistics Better Decisions is a five-year strategy for the UK official statistics system which sets out their aims, priorities, missions and values.

The Authority's Business Plan outlines how this Strategy supports professional oversight of the UK system of official statistics and exclusive responsibility for the Office for National Statistics. The current plan started in April 2018 and will end in March 2022.

The Authority reports on the progress of the Strategy in its Annual Report.

The slide shows the five perspectives of their strategy.

2.39 2-5 Transformative Agenda

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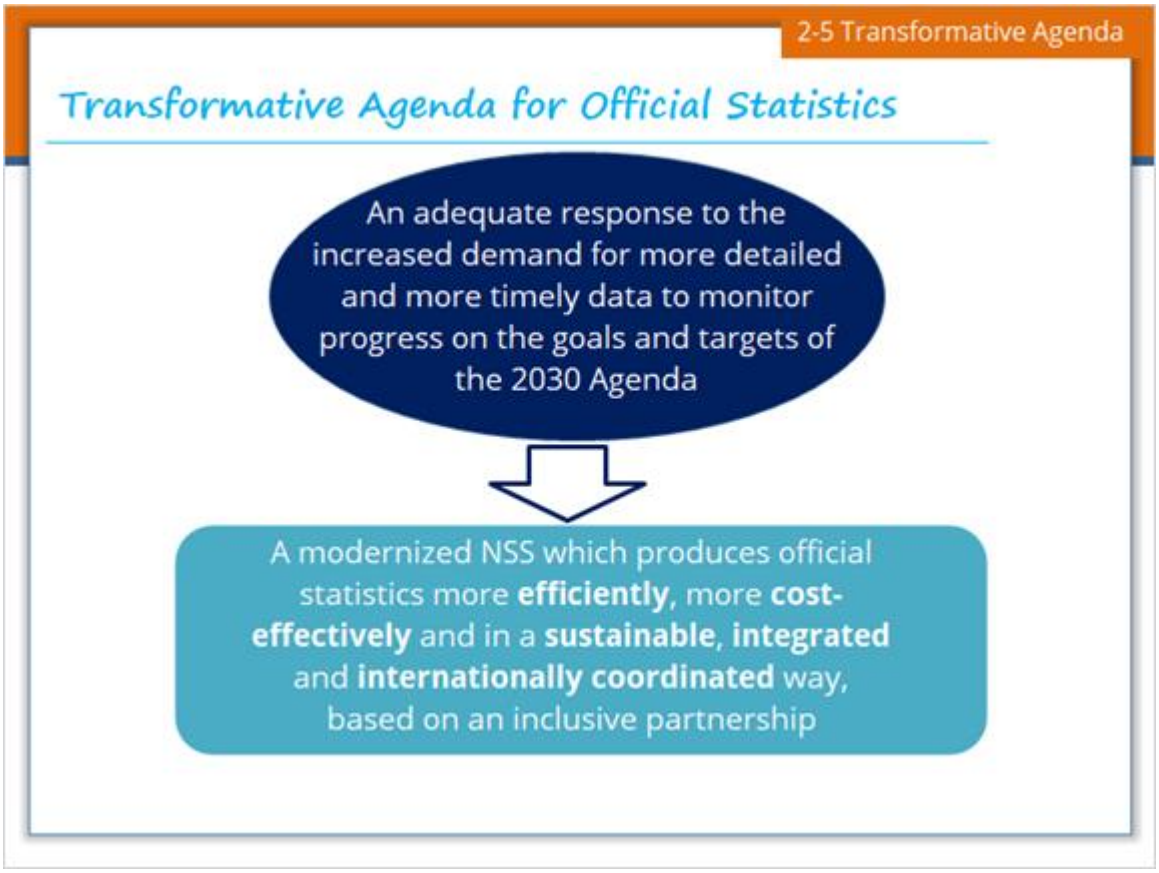
2.40 Transformative Agenda for Official Statistics



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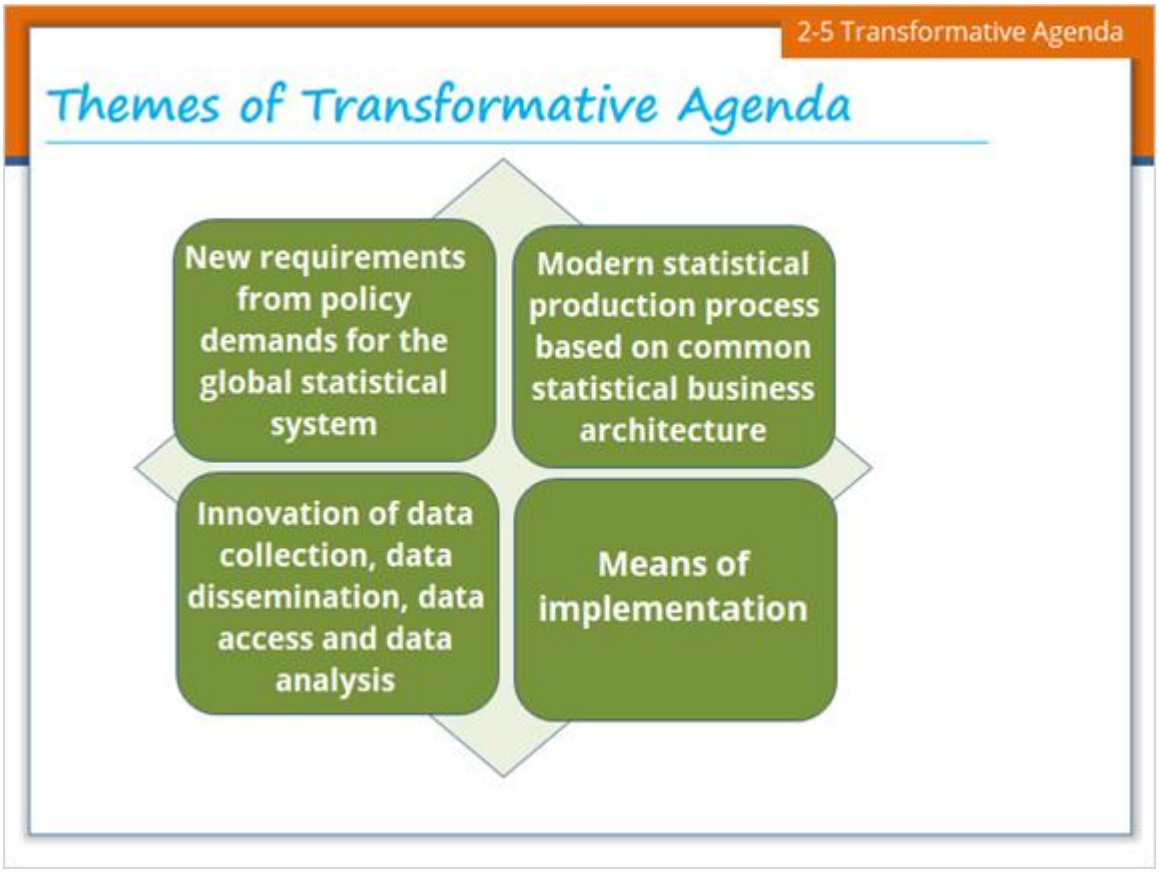
This transformative agenda should be an adequate response to the increased demand for more detailed and more timely data to monitor progress on the goals and targets of the 2030 Agenda. These goals and targets are universal in the sense that they concern all UN Member States, but at the same time, they are specific in the way they are formulated at the subnational, national and regional levels. These new demands require a modernized NSS which produces official statistics more efficiently, more cost-effectively and in a sustainable, integrated and internationally coordinated way, based on an inclusive partnership.

2.41 Themes of Transformative Agenda



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In the outcome document of the UN Conference on Sustainable Development, entitled "The future we want", world leaders recognized that progress towards the achievement of the goals needs to be assessed and accompanied by targets and indicators, while taking into account different national circumstances, capacities and levels of development.

In that context, the Conference also recognized the need for integrated social, economic and environmental information and called for holistic and integrated approaches to sustainable development for decision-making at the national, subnational and local levels. The ability of the NSOs and NSSs of countries to effectively, efficiently and sustainably measure and report progress towards meeting the Sustainable Development Goals and targets through the use of relevant indicators is therefore a key component of the 2030 Agenda.

The second theme focuses on the modernization of statistical production processes. The business case is increasingly made for why and how NSOs and their statistical systems need to transform their statistical production processes to meet the emerging multi-dimensional and integrated data demands of the 2030 Agenda; how this

transformation process can be financially assisted; and what other institutional and management implications at the national, regional and global levels exist or should be addressed.

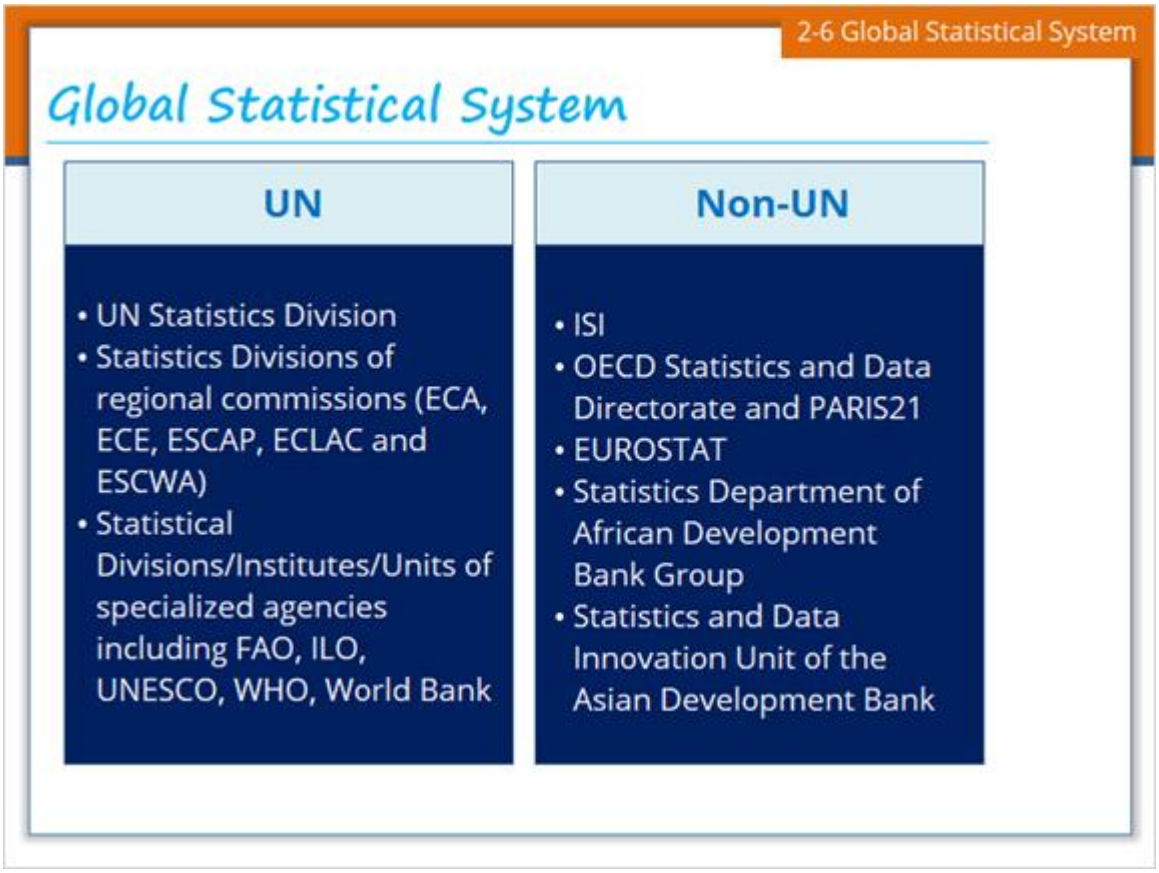
The new integrated production architecture will also introduce innovations to incorporate non-traditional sources of data, including big data that thus far have either not been used or have been underutilized in producing official statistics. Notwithstanding their potential benefits, the suitability of new, non-traditional data sources for official statistical purposes needs to be thoroughly examined and evaluated. Ways should be found to exploit their potential benefits by creating links between the traditional and non-traditional data sources and incorporating them into official statistics while maintaining the existing strict quality and other requirements followed by official statistics. Therefore, the use of non-traditional sources should follow the professional standards of official statistics laid down in the Fundamental Principles of Official Statistics and not compromise the public trust in official statistics at either the country or international level.

The way in which the transition can be made from the existing situation to a modern NSS which meets the data-reporting requirements of the 2030 Agenda should be explored. These data should support evidence-based decision-making for sustainable development policies with interlinked social, economic and environmental components at the national, regional and global levels.

2.42 2-6 Global Statistical System

Notes:

2.43 Global Statistical System



Notes:

The **Global Statistical System** is made up of statistical agencies involved in international statistical work. These are typically statistics agencies/divisions of international organizations. The UN Statistics Division (UNSD) compiles and disseminates global statistical information, develops standards and norms for statistical activities including the integration of geospatial, statistical and other information, and supports countries' efforts to strengthen their national statistical and geospatial systems. In regional commissions: Economic Commission for Africa (ECA), Economic Commission for Europe (ECE), Economic and Social Commission for Asia and the Pacific (ESCAP), Economic Commission for Latin America and the Caribbean (ECLAC) and Economic and Social Commission for West Asia (ESCWA), Statistics Divisions exist and act a similar role to that of UNSD in respective regions.

The website for the International Statistical Institute (ISI) lists many of the agencies in the Global Statistical System, UN-related and otherwise.

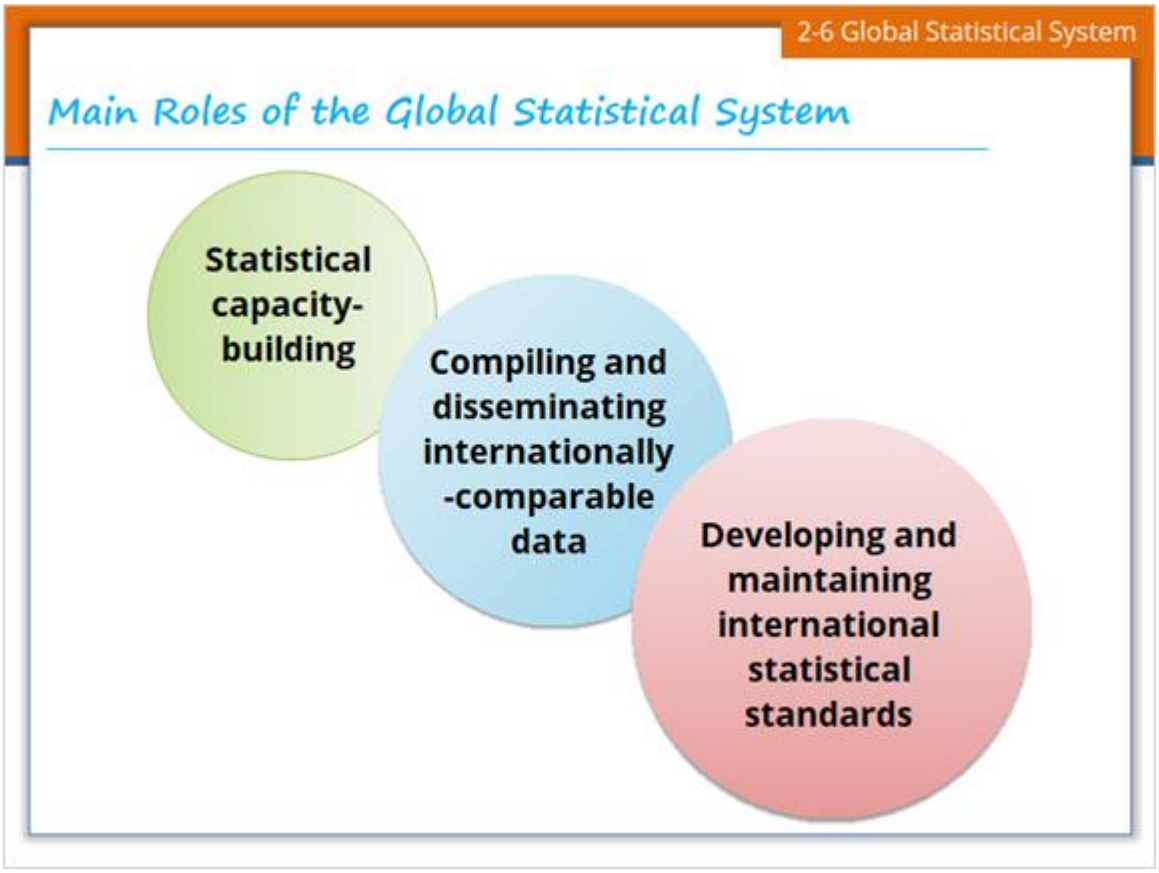
Some of the same organizational patterns that we saw in NSSs also appear in the Global Statistical System.

There is subject-matter centralization/decentralization for the Global Statistical System.

Overall statistical roles are taken by UNSD but statistical divisions exist in each subject in specialized agencies.

There is also region-matter centralization/decentralization. There are Statistics Divisions of regional commissions in the UN and statistical experts in regional offices in specialized agencies.

2.44 Main Roles of the Global Statistical System



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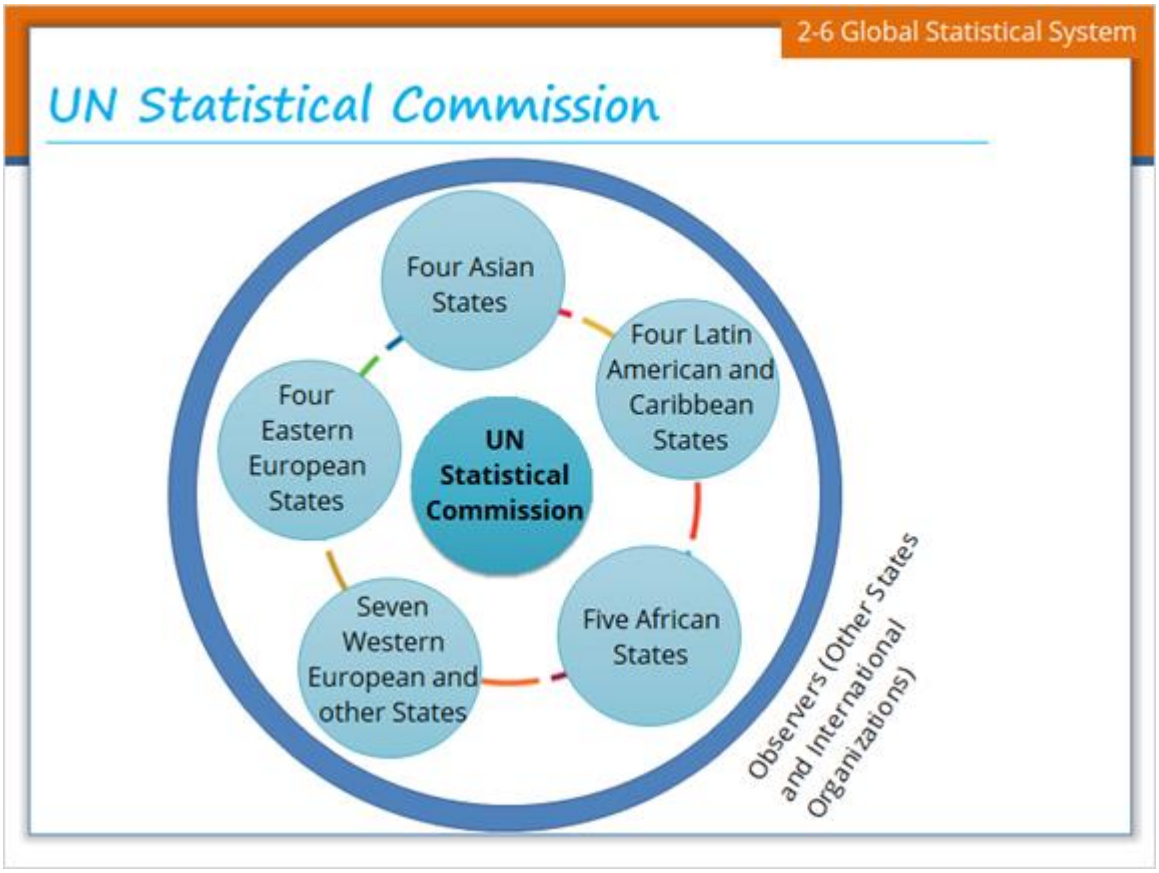
There are three main roles of the Global Statistical System: developing and maintaining international statistical standards, compiling and disseminating internationally-comparable data, and statistical capacity-building.

2.45 UN Statistical Commission



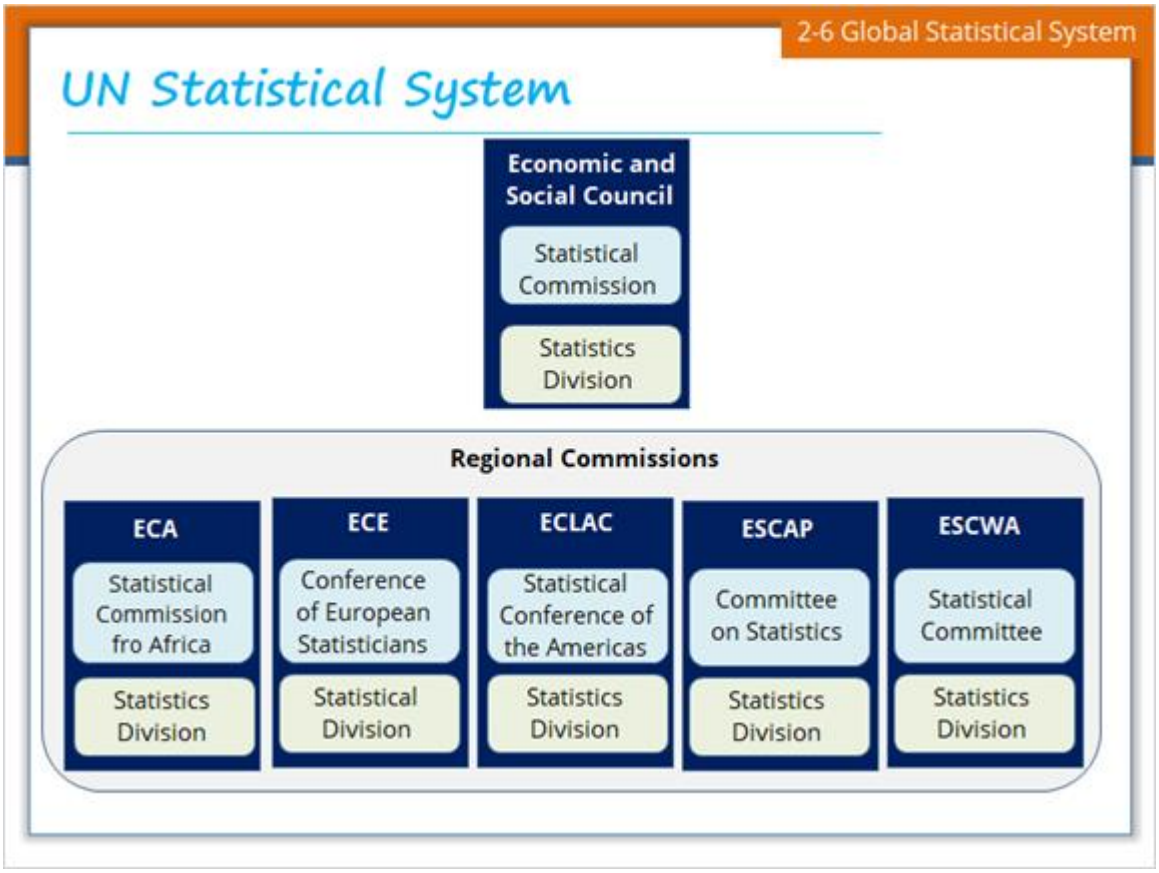
Notes:

The UN Statistical Commission is the highest-level decision-making body in the Global Statistical System.

Meetings are held annually and hosted by UNSD. They are attended by other states and international statistical agencies who act as observers but are allowed to express opinions. Decisions are made by consensus. Thus, there is little substantial difference between members and observers.

The Statistical Commission discusses a broad range of issues related to statistical methodologies and international statistical development. One of the key roles of the Statistical Commission is to coordinate international statistical programmes.

2.46 UN Statistical System



Notes:

In each UN regional commission, there is a Statistical Commission: the regional version of the UN Statistical Commission and Statistics Division: the regional version of UNSD.

This is the end of Lesson 2.

2.47 Summary of Lesson 2

Summary of Lesson 2

- The Law defines the National Statistical Office (NSO) as the leading authority of the National Statistical System (NSS) and as a professionally independent body organized under the authority of the President, Prime Minister, and a Minister for the coordination of a country.
- The Generic Statistical Business Process Model (GSBPM) is the processes used for the production of statistics, from specifying the needs, through design and building, data collection, processing and analyzing to dissemination.
- The National Strategy for the Development of Statistics (NSDS) is the national framework, process and product for statistics development.
- Statistical programmes, including a multi-year statistical programme and an annual statistical programme, shall be established as key instruments for effective strategic and operational management and coordination of activities in the NSS.
- The Global Statistical System is developing and maintaining international statistical standards, compiling and disseminating internationally-comparable data, and statistical capacity-building, made up of statistical agencies involved in international statistical work.

Notes:

2.48 End of Lesson

Notes: