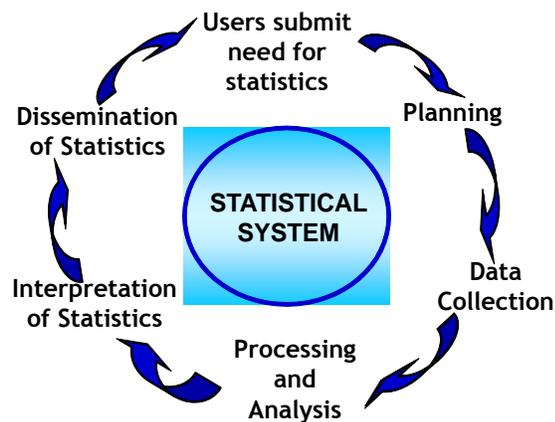


5.2 Statistical programmes; coordination within statistical systems

5.2.1 Adherence to Principal functions of Statistical Organisation

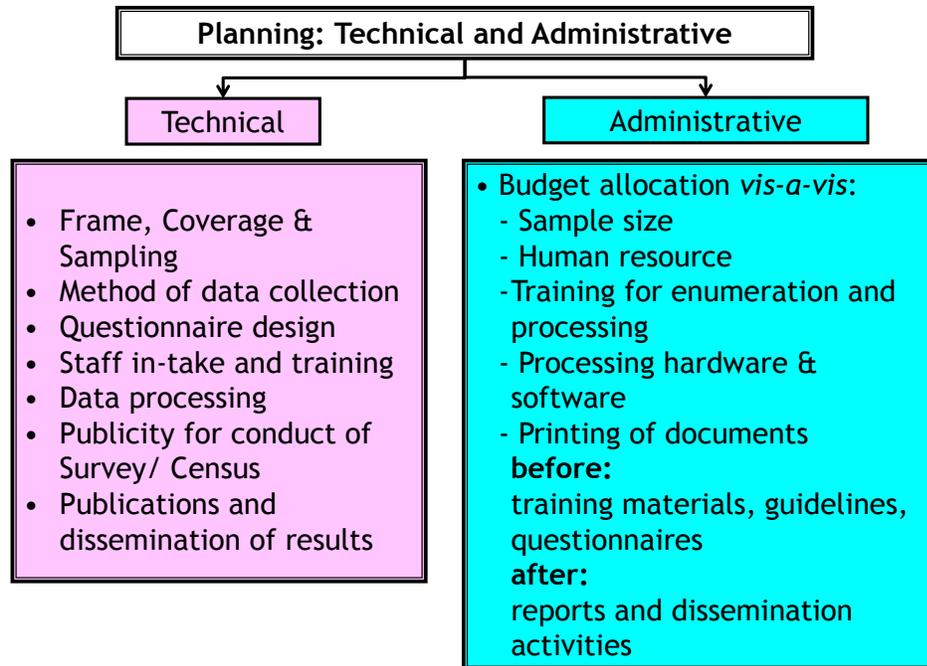
The Statistical System adheres to the overall definition of statistics encompassing the various stages of compilation, analysis, dissemination as well knowing up front the purpose of collecting the data. Diagrammatically, these stages in the Statistical System can be represented as such:



However, the implementation of the system depends on the setup of the organization and among concerns to be considered in the production of official statistics include:

- a centralized or decentralized system
- data source - primary or secondary
- in-house vs contracted processing
- conventional vs technology-enhanced dissemination

Crucial in the production of official statistics is the Planning stage. Planning begins with getting approval from the Governing Council of the National Statistical Organisation (NSO) which not only provides clearance for the conduct of the survey/census but also budget allocation. Subsequently, every step of the production has to be thought of so as to be in tandem with budget allocation. With this, planning encompass two main components namely the technical and the administrative, as depicted briefly in the figure below:

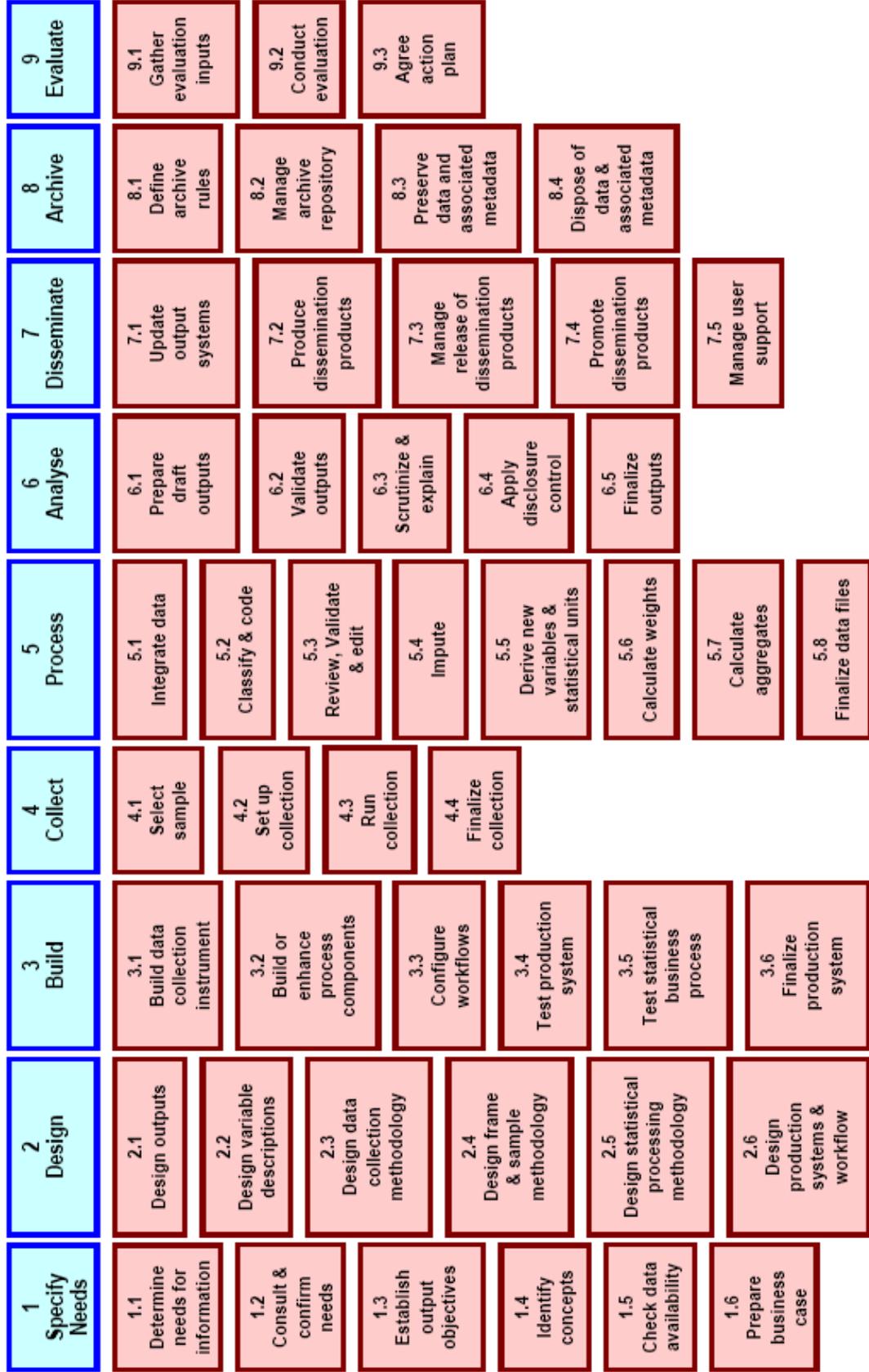


5.2.2 In order to keep abreast with advancement in updating registers and methodologies, statistical organisations should appropriately adapt/adopt the **Generic Statistical Business Process Model (GSBPM)**, developed by the UNECE and the Conference of European Statisticians Steering Group on Statistical Metadata (better known as "METIS"). Since its release in April 2009 and is intended to facilitate the convergence of statistical production processes, both within and between organisations.

The original aim of the GSBPM was to provide a basis for statistical organisations to agree on standard terminology to aid their discussions on developing statistical metadata systems. It was conceived as a flexible tool to describe and define the set of processes needed to produce official statistics. The GSBPM is, however, increasingly being used in other contexts such as harmonising statistical computing infrastructures, facilitating the sharing of software components, and providing a framework for process quality assessment and improvement.

The GSBPM is not intended to be a rigid framework in which all steps must be followed in a strict order, but rather a model that identifies the steps in the statistical production process, and the inter-dependencies between them.

Quality Management / Metadata Management



It aims to be sufficiently generic to be widely applicable, and to encourage a standard view of statistical production, without becoming either too restrictive or too abstract and theoretical. Different statistical production processes will follow different paths through the model, using different sub-processes, in different orders.

5.2.3 Collection and compilation of data

As mentioned previous chapter regarding maintaining public trust in official statistics, the conduct of survey/census must be compliant to the fundamental values and principles of a statistical organization including independence, relevance, credibility and respect for the rights of the respondents. Thus, each step in the production of the statistics has to jive with these values.

The onset of a survey/census begins with clearly defined objective to ensure that every facet of the data collected is reliable and its coverage is representative. This would entail clear and unambiguous definition of respondents and variables understudy, sampling methodology that is unbiased but representative, clearly defined coverage and its limitations, safeguarding respondents' confidentiality as well as timeliness in producing the statistics. While questionnaire design would field all the necessary questions to fulfill the objective of the survey/census, consideration has to be made to address respondents' as well as interviewers' burden.

Whilst sampling has its cost-saving advantages - saving money, labour and time - as well as permitting a higher overall level of accuracy, its effectiveness depends on the sampling frame. To ensure effectiveness of sample selection, statistical agencies need to constantly **update its statistical frame**, be it the household or establishment frame, to minimise "not available" cases.

Next in data collection is determining the most effective method of data collection, especially in these times of prudent spending. With technological advancement and inter-agency cooperation, the choice of data collection has become varied and statistical agencies can assess the returns to investment, particularly monetary and timeliness, of each method of collection. The

choice between **primary** or **secondary data** would depend on the timeliness, scope as well as budget allocation. While **primary data** is traditionally and is still collected through personal interviews, technological advancement has established the creation of data collection facilities such as CAPI (Computer-assisted personal interviewing) where data is directly recorded into laptop during a face-to-face interview or CATI (Computer-assisted telephones interviewing) whereby the interviewer asks questions by telephone and records answers on a computer. At the same time, establishments with internet facilities are encouraged to respond to survey/census via e-mail. With improved **on-line communications** as well as **inter-agency cooperation**, secondary data that **share the same definition and scope** can now be easily accessed, thus cutting down cost and time.

In the context of data compilation, it is also important to determine the processing method, both manual and computer, and also whether it should be in-house or contracted out. Manual processing is to ensure completeness of questionnaire as well as logic in the answers provided before call-backs are made.

5.2.4 Analysis

Analysis can be carried out by the statistical agency itself as is in the case of in-house requirements or by users who would rather perform their own stylized analysis after getting access to aggregated and anonymised micro-data. With in-house analysis, the staff should be encouraged to go beyond the cookie-cutter analysis to enable them identify & strengthen weaknesses in the data as well as seek solutions posed by users. The analysis stage is also an avenue to add/re-categorise/drop questions as well as strengthen the processing system.

5.2.5 Dissemination

There are various methods of dissemination carried out by the statistical agencies. Apart from the traditional hard copies, statistics are also made available in soft copies. As is practiced by most countries, the availability of the internet simplifies the process of statistics dissemination whereby users have a choice of purchasing publications on-line or access to free selected products. Users may also subscribe to periodic specific analysis. While a statistical office

may not disseminate all statistical information, it does have an obligation to ensure that fundamental statistical information is provided to all segments of the society on an equal basis.

5.3 Coordinating work within Statistical Organisations/between other Agencies

With a wide ranging specter of statistics collected and compiled by the statistical organisations, measures must be undertaken to ensure credibility and comparability of statistical products at national as well as international arena. To fulfill these standards, statistical organisations would turn to guidelines provided by renowned International Organisations as well as national organisations to ensure quality product.

Coordination between other Agencies may be hindered by legislation, scope or definition. Alternatively, Agencies should be encouraged to take part in a well-coordinated system via some form of incentives, including the following:

- Sharing information that would improve the ministry's capacity for statistical response, assuming it has the same attributes (classification, standards, coverage, etc.) as the statistics produced centrally
- Providing access to statistical expertise that complements the expertise available in the statistical cell in the ministry
- Providing input in determining priorities in all-purpose statistical initiatives such as the census of population or in relevant classification systems
- Engaging in joint statistical activities so as to provide leverage for its own budget.

5.3.1 Adoption/Adaptation of International Standards

Guidelines in the production of official statistics, be it at national or international level, are meant to assist statistical organizations stay on track in at every level of the production. Of importance are the codes and classification used to standardise, say, levels of education, occupation, industry, retail items and import/export items. Apart from these classifications, guidelines are also made available in statistical analysis. For example, the *UNSD Handbook on Poverty Statistics: Concepts, Methods and Policy Use* was very much referred to in revising the Malaysian Poverty Line Income (PLI, 2005).

However, countries are at liberty to either adopt or adapt these guidelines and make it country specific. For example, the *5-digit Malaysian Standard Classification of Occupation (MASCO, 2008)* is an adaptation of International Labour Organisations' *International Standard Classification of Occupation (ISCO,2008)*. With more new occupations appearing in the labour market, the Ministry of Human Resource, Malaysia has developed its own 6-digit MASCO (2013). The Department of Statistics, Malaysia uses the MASCO extensively in determining occupation codes and classifications in the Labour Force Survey as well as the Population Census.

Other subject-specific guidelines referred to, adopted/adapted are:

- i) International Recommendation of Distributive Trade Services
- ii) International Guidelines for Labour Statistics
- iii) UN Manuals for Population and Demography
- iv) Classification of Individual Consumption According to Purpose (COICOP) for classification of retail items/expenditure
- v) International Telecommunications Union (ITU) for ICT classification
- vi) International Standard Classification of Education (ISCED) for identifying various education perspectives, by the United Nations Educational, Scientific and Cultural Organization (UNESCO).

5.3.2 Statistical Main Users Committee/Council

The setup of the National Statistical Organisation may be under the purview of a Minister or a National Statistical Council. One should first look into the mission of the Council in order to establish coordination within the statistical systems. In this context, the *2003 Handbook of Statistical Organization* states that, among others:

- Monitor the development and functioning of the National Statistical System;
- Approve the respective programs of activities of the National Statistical Organisation and other contributors to the National Statistical System;
- Approve the Annual Budget of the National Statistical Organisation before submission thereof to the Cabinet of Ministers;
- Determine, from time to time, the National Statistical Agency's structure, staffing levels and terms and conditions of service;

- The council's proceedings would constitute a venue for registering opinions about the output of the statistical agency

With this as the queue, NSO would create relevant in-house committees to coordinate the smooth production of statistics

5.3.3 Specific Technical Working Committee

Certain areas of statistics have very specific users and before the dissemination of these statistics, an Inter-Agency Technical Committee (IATC) meeting will be called to discuss the draft report. An IATC meeting is of importance particularly when using secondary statistics provided by these agencies. This is also to resolve issues such as data inconsistencies, reclassification of variables and missing data.

5.4 Activities in HQ/Regional Office

To further coordinate the smooth flow of data collection, compilation and processing, measures have to be undertaken at both the headquarters as well as the regional office, depending on the location where each of the activities are being conducted. These comprise of pre and post enumeration activities.

5.4.1 To ensure uniformity during the data collection stage, it would be advantageous to conduct centralized **pre-survey training sessions** to enumerators and supervisors. This is to share with them the objectives of the survey and how the information gathered would be made useful to all parties. The training should be tailor-made, depending on the nature of data collection. For example, training of interviewers would include lectures, mock interviews in the office and in the field. Of importance is that the interviewer has to be aware of the information that is to be collected for each question. Main ingredient of training material is the **training manual** which is comprehensive, including a description of the survey's work, how the interviewer's job should be done as well as definitions used in the questionnaire.

5.4.2 During the conduct of the survey, should regional offices encounter **uncertainties/queries** during data collection, solutions provided by headquarters should be shared to all via a "**circular of solutions**". This is to

ensure coordinated course of action are undertaken across all regional offices.

- 5.4.3** To ensure that the **quality of data** collection and compilation are met, personnel from the HQ should “walk the talk” and **conduct random checks** in the field to observe the interviews. At the same time, random checks on **manual processing** such as the completeness and logical flow of information in the questionnaires should also be carried at the regional office. Should data processing be carried out in the regional offices, random checks are also an avenue to observe the **robustness of the processing system**, particularly in terms of validation of information and the merging of batches of questionnaires.
- 5.4.4** When the survey is over, it is essential to have a **post-survey post mortem** to recapitulate the experiences from the regional and HQ perspectives - **technical, administrative, observations** - and find ways to overcome, emulate and improvise these circumstances for future undertakings. However, caution must be drawn that there are instances where some situations are localized and require specific solutions.

5.5 Coordination of Decentralised Statistical Organisation

While most of the coordination tools mentioned earlier was reflective of a centralized statistical system, it is also applicable to a desentralise system but with some additional considerations including:

- The ability to control or at least to significantly influence the budgets of the statistical agencies;
- The ability to control whether or not an agency is allowed to carry out a data collection activity;
- The ability to decide on nomenclatures for the statistical system.

These coordinating functions may be executed by a separate body or by one of the several statistical agencies. Even if the above three tools are employed, there is one other important consideration. This has to do with the **manner of the application of the tools**. More specifically, the application can be done in an informal manner or there may be a formal process.

In the first instance, there may be an **informal agreement** between the statistical agencies and the agency that is doing the coordinating (or a separate coordinating body) to the effect that the coordinating agency will have the authority to apply the above tools. In well-established statistical systems, this informal application can be very powerful indeed. If there is a lengthy tradition behind the agreement, the pressure to continue their use will be very powerful. In new or reasonably new systems, however, this may not be the case, and a more powerful application mechanism may be needed.

This is the **formal process**. A weaker form of the formal approach is for the prime minister or president to issue an order; a stronger approach is through legislative action. While it may be difficult to influence either of these formal mechanisms, once they are in place the responsibilities of the members of the statistical system will be clear. The coordinating agency will also be in a much stronger position to apply these tools.

- 5.5.1 An alternative to a centralized versus decentralise statistical system is by creating a statistical unit in Government agencies and deploying personnel from the NSO as cadre officers to man the Unit. For example, Department of Statistics Malaysia practices this system and has various levels of statistical designations serving as cadre personnel in many Ministries/Authorities. The level of designation provided is of often determined by these Agencies, depending on their awareness of the management and production of statistics.
- 5.5.2 To ensure coordinated application of statistical tools, these cadre personnel are required to communicate with the NSO to seek advice and guidance in the conduct of various statistical activities. Through these communications, varying issues such as scope, definition, sampling as well as data processing can be discussed and/or resolved. Being in a non-statistical organization, the statistics required are usually purposive and this warrants a different mode of data collection such as non-random sampling approach. These experiences would provide a wealth of experience for the cadre personnel and also an avenue to **promote statistical literacy**.

5.6 **Setting up National Statistical Programmes**

These programmes are conducted within the NSO as well as with other users at large, involving a broad spectrum of users as well as data providers. They include stakeholders who utilise statistics for policy formulation, implementation and evaluation; business community for marketing of products; the academia as well as the common user. At the same time, programmes should also take into consideration of international statistical calendars as some of these international activities such as **ISI Conference** can be streamed and viewed/participate on real time.

5.6.1 **In-house Statistical Programmes**

A NSO would comprise many Divisions, managing and producing a wide ranging scope of statistics. Programmes such as presentation of technical papers by in-house as well as cadre personnel would provide a platform for knowledge sharing, particularly with regards to the role of the statistics produced in current issues, be it social or economic. At the same time, statistical personnel should be encouraged to contribute to scholarly articles in the **NSO's statistical Journals**. This can be regarded as an exercise to hone and improve technical as well as academic skills among statistical personnel.

5.6.2 **“Meet the Users’ Day”** are among the hailed in-house programmes as these sessions would encourage the users to come forward with their queries/uncertainties/suggestions which upon further investigation, may provide avenues for improvement in the production of official statistics.

5.6.3 As an appreciation to the various data providers, **regional NSO** are encouraged to have **Interactive Sessions** with the community, be it the households or business community, to get up close with them and share the importance of the information that has been provided. These include sharing how efforts are made with regards to safeguarding their confidentiality, the transformation of information into statistics, presented in official documents and how it is being utilized such as for business marketing or in the formulation of development Plans and Policies. These sessions are can also be a quest to the data providers to continuously provide cooperation to the NSO in forthcoming surveys.

5.6.4 Inter-agencies Programmes

Collaborative efforts with other Agencies should also be encouraged to enhance the importance of statistics as well as statistical literacy. Should funding be an issue, these collaborative efforts can be partnered with Agencies where the cadre personnel are deployed or with the Central Bank who, in most countries, are among the main users of official statistics. At the same time, NSO may also participate in “Open Day” events held in institutions of higher learning, to create an awareness of its products, statistical literacy as well as sharing experience of career in Statistics.

ESSENTIAL READING

United Nations (2003), *Handbook of Statistical Organisation (3rd Edition), The Operation and Organisation of a Statistical Agency*; United Nations Publication

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