

5.1 Institutional framework and principles; role and organization of official statistics

1. Introduction

This chapter is a guide to understanding the institutional frameworks and principles, role and organization of official statistics. As is practiced in most countries, the National Statistical Organisation (NSO) played pivotal roles in the nations' statistical system. As such, there is a need to understand the nature as well as the need for official statistics, the underlying foundation of statistical organisations as well as the functioning and coordination of the statistical system.

1.1 Why official statistics?

The growing awareness for the need of statistics cuts across a plethora of users and reasons, from the individuals or establishments as a basis for business venture, to the Government for socio-economic policy formulation, implementation and evaluation. The realization that statistics form the basis for informed decisions saw the production of a plethora of statistics. These statistics can be produced and disseminated by various parties but of importance to the users are two crucial factors: reliability and representativeness of these statistics. With this in mind, users would turn the source of statistics that would be able to facilitate these concerns, that is official statistics.

Official statistics

Official statistics are [statistics](#) published by [government agencies](#) or other public bodies such as international organizations. They provide quantitative or qualitative information on all major areas of citizens' lives, such as economic and social development, living conditions, [health](#), [education](#), and the environment. The collection, compilation and dissemination of these are conducted impartially.

Across countries, there are many parallels in the definition of **official statistics**, particularly the term “government departments”. Here are some examples:

Official statistics are all statistics produced by government departments and specified crown entities. They are the cornerstones of good government, and support public confidence in good government. They provide a window to the work and performance of government by showing the scale of activity in areas of public policy, and by allowing citizens to assess the impact of public policies and actions. It is a government responsibility to provide such statistics and to maintain their long-term sustainability.

- New Zealand

The Statistics and Registration Service Act 2007 defines 'official statistics' as all those statistical outputs produced by the UK Statistics Authority's executive office (the Office for National Statistics), by central Government departments and agencies, by the devolved administrations in Northern Ireland, Scotland and Wales, and by other Crown bodies (over 200 bodies in total). This definition goes much wider, therefore, than the portfolio of statistical outputs produced by members of the Government Statistical Service (GSS).

- United Kingdom

The trust in official statistics is rooted in the knowledge that the conduct of producing these statistics are in compliance with international guidelines and practices, that are either adopted or adapted to accommodate local situation. At the same time, it is based on the foundation of the Statistical Agency.

1.2 Foundation of Statistical Agency

1.2.1 National statistical offices exist to provide information to the general public, Government and the business community in the economic, demographic, social and environmental fields. This information is essential for development in these areas and for mutual knowledge and trade among the States and peoples of the world.

1.2.2 The quality of official statistics depends largely on the cooperation of citizens, enterprises and other respondents in providing appropriate and reliable data to statistical agencies.

1.2.3 In order for the public to trust official statistics, a statistical agency must have a set of **fundamental values and principles** that earn the respect of the

public. These include **independence**, **relevance** and **credibility** as well as **respect for the rights of respondents**.

A. Independence

- 1.2.4 A widely acknowledged position of independence is necessary for a statistical agency to have credibility and to carry out its function to provide an unhindered flow of useful, high-quality information for the public and policy makers. Without the credibility that comes from a strong degree of independence, users may lose trust in the accuracy and objectivity of agency data, and data providers may become less willing to cooperate with agency requests.
- 1.2.5 In essence, a statistical agency should be distinct from those parts of the Government that carry out enforcement and policy-making activities. It should be impartial and avoid even the appearance that its collection, analysis and reporting processes might be manipulated for political purposes or that individually identifiable data might be turned over for administrative, regulatory or enforcement purposes.
- 1.2.6 The characteristics related to independence include the following:
- Authority for professional decisions over the scope, content, and frequency of data compiled, analysed or published;
 - Authority for selection and promotion of professional, technical and operational staff;
 - Recognition by policy officials outside the statistical agency of its authority to release statistical information without prior clearance;
 - Authority for the chief statistician and qualified staff to speak about the agency's statistics before the Government and public bodies;
 - Adherence to predetermined schedules in public release of important economic or other indicator data to prevent even the appearance of manipulation of release dates for political purposes;
 - Maintenance of a clear distinction between the release of statistical information and policy interpretations of such information by the senior members of the Government;

- Dissemination policies that foster regular, frequent release of major findings from an agency's statistical programmes to the public via the media, the Internet and other means.

1.2.7 In 2000, the National Research Council in writing *Principles and Practices for a Federal Statistical Agency: Second Edition*, recognized the following as fundamental goals of a statistical system:

- Protect confidentiality of responses;
- Minimize the burden on the people who provide the responses;
- Ensure accuracy, which requires proper concern for consistency across geographical areas and across time, as well as statistical measures of errors in the data;
- Ensure timeliness, which requires concern for issuing data as frequently as needed to reflect important changes in what is being studied, as well as disseminating data as soon as practicable after they are collected;
- Ensure relevance, which requires concern for improving data that help users meet their current needs for decision-making and analysis, as well as anticipating future data needs;
- Establish credibility, which requires concern for both the reality and appearance of impartiality, and of independence from political control.

1.2.8 For a statistical agency to operate from a strong position of independence, it is necessary to know how its objectives and priorities are fixed. In fact, its objectives are fixed by law,⁵ and its priorities must be decided by the chief statistician. The objectives are often seemingly very simple. For example, the law governing the statistical agency of Canada states that there shall be a bureau, and that its duties shall be to collect, abstract, compile and publish statistical information relative to the commercial, industrial, social, economic and general activities and condition of the people.⁶ However, in a 1989 strategic overview, the chief statistician of Canada stated that the agency's medium-term priorities were, inter alia, provincial statistics, the service sector and science and technology. The law describes the agency's accountability; the strategic overview is the chief statistician's best interpretation of what the agency should do in the medium-term in the light of the perceived demand and the conditions necessary to meet it.

1.2.9 A statistical agency is a service agency, so its independence is related to its methods and results, not to its objectives. For this reason, the overview of organizational matters begins with the topic of relevance.⁷ There is no question that the products of a statistical agency must be national in scope - that is to say, they must apply to all sectors of a nation's society and economy. However, what does 'relevance' mean? What are the constraints, both physical and psychological, that limit any attempt to be relevant?

B. Relevance

1.2.10 Statistical agencies should continually seek to improve their data systems in order to provide information that is accurate, timely and relevant for changing public policy needs. One problem with this, however, is that policy interests may change at a faster pace than a statistical system can accommodate. It takes little time for a concern to emerge; first as an item of curiosity, next as a subject of discussion and lastly as a matter of substantial importance to policy makers. For example, the question of the existence of a 'new economy', not accounted for by conventional statisticians, first surfaced in the early 1990s in the press and in popular literature. Within two or three years, this issue had become a political priority in a number of advanced countries, and eventually called into question whether statisticians had correctly measured the gross domestic product (GDP) of their respective countries. If this concern had justified the creation of a new research programme, leading to the possible replacement of the current system of economic accounts and basic supporting data, it would have taken years if not decades for such a programme to yield useful measurements.

1.2.11 Another example concerns the service sector. Although it took only two to three years for the issue of the service sector - its configuration, productivity and quality of jobs - to become a serious political concern, it took over a decade to formulate, accept and institute the basic international classifications required to collect service sector data.

1.2.14 From these two examples it follows that recognizing a problem takes far less time than deploying the necessary means to measure its extent or making the measurement internationally comparable. Given this disparity, a statistical agency striving to be instantly relevant could become systematically irrelevant in the face of rapidly shifting priorities.

- 1.2.15 For the statistical agency, there is little point in attempting to deal with concerns perceived as transient. By the time a programme devised to deal with them is implemented, the policy agenda will have changed several times over. In fact, when examining priority options, the statistical agency will have to sort out the transient from the more permanent concerns.
- 1.2.16 Once a priority is determined, it is difficult for a statistical agency to modify it as fast as policy concerns appear to change. This is why it is crucial to exercise good judgement in setting priorities and to foresee accurately changes in policy direction. The chief statistician's planning involves four important elements:
- Devising programmes that are sufficiently general to adapt easily to small changes in policy direction;
 - Building up a reserve of capacity and creating a state of preparedness such that unforeseen contingencies can be addressed without disturbing the regular functioning of the statistical agency;
 - Developing human resource policies designed to make the staff of statistical agencies adaptable and redeployable so as to meet effectively changes in agency programmes;
 - Sharing technical information and ideas with other statistical agencies. Such sharing can stimulate the development of innovative data collection, analysis and dissemination methods.
- 1.2.17 Ensuring these capabilities gives the statistical agency a great amount of leverage in its attempt to adapt to problems arising from shifts in priorities.
- 1.2.18 In an environment of social turbulence, if it is necessary to answer to a Government using statistical information for planning and allocating resources, the chief statistician is advised to remain flexible. Also, he or she should avoid overly detailed, very specific surveys, keeping in mind that policies may change unexpectedly, limiting the relevance of such surveys. In addition, it is necessary to gain advance information on issues troubling policy makers themselves, so that the statistician is aware of impending changes in the priorities of the policy agenda. No matter how small the office, the chief statistician must spend a significant amount of time in the company of senior government officials in order to gain the necessary awareness of impending changes.

C. Credibility

- 1.2.19 A special circumstance affects statistics: the results of the activities of statistical agencies must be replicable to be believable, but realistically the user cannot replicate them. This is why a statistical agency must work hard to bolster credibility, and why there is such extreme sensitivity to any attack on credibility or to notions of a loss of public faith in the reliability of a statistical agency's output.
- 1.2.20 Statistical agencies must be extremely rigorous with respect to the standards that data collection must meet, the methods of processing the data and the derivation of the results. In addition, they must instil in their staff an ethos of quality on a par with such high standards. In this way, the sense that what is produced is the result of quality inputs, as well as quality methods of production and control, is constantly reinforced.
- 1.2.21 The need to inspire an ethos of quality, and to convince all users of the quality of adopted production processes, has a number of organizational consequences. For example, it is reassuring to users if periodically the methods adopted by a statistical agency are subject to an outside process of evaluation and the findings are made public and open to discussion. However, no matter how high a quality involved in the compilation of the national accounts, there is an inevitable residue of estimation based on assumptions that may be plausible but are not necessarily backed by evidence. Conveying this bald fact to the public may give an impression of arbitrariness that in turn could bring the rest of the structure into disrepute. Any sophisticated analyst would know the limits to the effects of these assumptions in the light of the system of identities imposed by the accounting framework. How to convey this to the public in a manner that is not harmful is a matter for careful thought above all in an environment where open inspection of methods is actively encouraged.
- 1.2.22 The underlying issue in the discussion of credibility is how one part of the statistical system can obtain information from a part preceding it in the production chain with complete faith that quality has not been compromised in the process. To make certain that quality is preserved, a subtle combination of subjective elements must be in place. The spirit of quality shared by the staff of the agency must never falter, and methods of inspection and control - of checks and balances - that are powerful enough to

detect, correct and prevent future avoidable errors must always be exercised.

- 1.2.23 Credibility is enhanced when statisticians interact in a manner to ensure that respondents provide the best possible answers to the questions that statistical agencies put to them. “Best possible” means that the required information should be made available to the official statistical agency, without distortion caused by respondents. fear of subsequent use or by their failure to comprehend survey questions and without reluctance arising from the agency.s perceived disrespect for the respondents’ time and privacy.

D. Respondent policy

- 1.2.24 The objectives highlighted in the above paragraphs are easier to state than to achieve, and no single method exists to achieve them. All methods tried so far rely on a combination of four basic elements: legal instruments to force compliance or discourage disobedience; appeals to respondents. sense of morality to encourage cooperation; assurances that the information will not be misused; and increasingly in some countries, a variety of incentives are being used.
- 1.2.25 The confidentiality of individual information is probably the greatest concern among respondents. Agencies that have not yet managed to persuade respondents that the information provided to a statistical agency is absolutely confidential cannot rely on the quality of the information they collect.
- 1.2.26 The power given to statistical agencies by law to solicit information is of little use unless all sectors of society are willing to cooperate. Those offices that have made a strenuous effort to convince respondents that the information they provide is valuable and that the time taken to provide statistical information is respected and appreciated, tend to be the ones with the highest response rates. It should be clear that low response rates are as much of a flaw in statistical work as is carelessness in the editing and dissemination of data.
- 1.2.27 Persuading respondents to part with information is a difficult task. Nevertheless, success in this endeavour may have a high rate of return in improving overall quality. In this connection, the national statistical office should be aware of the relationship between the marginal additional expense of improving cooperation and its impact on the overall quality of the resulting statistics. However, other factors must also be taken into consideration. For

example, the rate of return on the marginal expense of improving editing might be higher than that of improving response rates.

1.2.28 All offices must have a unit dedicated to interacting with respondents. That unit may be part of the office's field organization, or the matter may be of sufficient importance to justify a higher profile unit dealing exclusively with the matter of respondent policies. The objectives of a respondent policy unit are to help raise response rates and ensure that respondents provide information willingly. The staff of the unit must be equipped to answer questions about the use of the information, the care with which it is handled and the general attitude of their agency. They must avoid the appearance of harassment and of heavy-handedness in quoting from the law, and must be fair and consistent in the way they treat businesses and households. If there is a perceived crisis in relations with respondents, the chief statistician is advised to address the matter at his level by placing in charge someone who has his trust and who reports to as high a level in the organization as possible. Reporting directly to the chief statistician at this level may be a good way to show reluctant respondents the seriousness with which the agency views the matter.

1.3 Statistical Agency: How defined?

Statistical Agency is the agency that has been entrusted with the responsibility of collecting, compiling, analysis, interpretation and dissemination of statistics. Thus, a federal statistical agency is a unit of the federal government whose principal function is the compilation and analysis of data and the dissemination of information for statistical purposes. The reasons the establishment of a statistical agency include:

- the opportunity to achieve higher data quality and greater efficiency of statistical production through a consolidated and professional activity,
- the need for ongoing, up-to-date information in a subject area that extends beyond the scope of individual operating units, possibly involving other departments or agencies
- the need to protect the confidentiality of responses of data providers, both individuals and organizations, and
- the need for data series that are independent—not subject to control by policy makers or regulatory or enforcement agencies and readily available on an equal basis to all users.

2. Importance of comprehending the statistical framework

Fundamental values and principles are interchangeable, whereby the four basic principles that statistical agencies must embody in order to carry out their mission fully are:

- (i) they must produce data that are relevant to policy issues;
- (ii) they must achieve and maintain credibility among data users;
- (iii) they must achieve and maintain trust among data providers; and
- (iv) they must achieve and maintain independence from the appearance and reality of political or other undue external influence in developing, producing, and disseminating statistics.

2.1 Fundamental Principles of Statistical Organisation

The fundamental principles of **Official Statistics** as stipulated by the Resolution adopted by the General Assembly on 29 January 2014 states that:

1. Official statistics provide an indispensable element in the information system of a democratic society, serving the Government, the economy and the public with data about the economic, demographic, social and environmental situation. To this end, official statistics that meet the test of practical utility are to be compiled and made available on an impartial basis by official statistical agencies to honor citizens' entitlement to public information.
2. To retain trust in official statistics, the statistical agencies need to decide according to strictly professional considerations, including scientific principles and professional ethics, on the methods and procedures for the collection, processing, storage and presentation of statistical data.
3. To facilitate a correct interpretation of the data, the statistical agencies are to present information according to scientific standards on the sources, methods and procedures of the statistics.
4. The statistical agencies are entitled to comment on erroneous interpretation and misuse of statistics.
5. Data for statistical purposes may be drawn from all types of sources, be they statistical surveys or administrative records. Statistical agencies are

to choose the source with regard to quality, timeliness, costs and the burden on respondents.

6. Individual data collected by statistical agencies for statistical compilation, whether they refer to natural or legal persons, are to be strictly confidential and used exclusively for statistical purposes.
7. The laws, regulations and measures under which the statistical systems operate are to be made public.
8. Coordination among statistical agencies within countries is essential to achieve consistency and efficiency in the statistical system.
9. The use by statistical agencies in each country of international concepts, classifications and methods promotes the consistency and efficiency of statistical systems at all official levels.
10. Bilateral and multilateral cooperation in statistics contributes to the improvement of systems of official statistics in all countries.

With these as the foundation, thus the fundamental principles of **Statistical Organisation** are as follows:

2.1.1 Principle 1: Relevance to Policy Issues

A statistical agency must be knowledgeable about the issues and requirements of public policy and federal programs and able to provide information that is relevant to policy and program needs. In establishing priorities for statistical programs for this purpose, a statistical agency must work closely with the users of such information in the executive branch, Congress, and elsewhere. Statistical agencies must also provide objective, accurate, and timely information on the subject area(s) in their purview that is useful to a broad range of private- and public-sector users as well as the public. To establish priorities for such information, a statistical agency must engage with a broad spectrum of users in state and local governments, businesses, academia, and other sectors.

2.1.2 Principle 2: Credibility Among Data Users

It is essential that a statistical agency strive to maintain credibility for itself and for its data. Few data users are in a position to verify the completeness

and accuracy of statistical information; they must rely on an agency's reputation as a credible source of accurate and useful statistics. Credibility derives from the respect and trust of users in the statistical agency and its data. Such respect results not only from an agency's production of data that merit acceptance as relevant, accurate, timely, and free from political and other undue external influence, but also from many aspects of an agency's policies and practices. Key among these are wide dissemination of data on an equal basis to all users; openness about the sources and processes used to produce data and the limitations of the data; commitment to quality and professional practice; a strong internal and external evaluation program to assess and improve an agency's data systems; a willingness to understand and strive to meet user needs, even though users may not clearly articulate their needs; and a posture of respect and trust in the users of an agency's data.

2.1.3 Principle 3: Trust Among Data Providers

Data providers, such as respondents to surveys and custodians of administrative records, must be able to rely on the word of a statistical agency that the information they provide about themselves or others needs to be collected and will be used only for the purposes that the agency has described. Importantly, data providers must be able to trust that a statistical agency will honor its pledges to protect the confidentiality of their responses. Such protection, in particular, precludes the use of individually identifiable information collected and maintained by a statistical agency under a pledge of confidentiality—whatever its source—for any administrative, regulatory, or law enforcement purpose.

The trust of data providers is also achieved by respecting their privacy and autonomy.² Such respect requires that an agency minimize the intrusiveness of questions and the time and effort to respond to them to the extent that is compatible with the agency's requirements for information. An agency's data collection staff should take care to treat respondents with courtesy and appreciation for their time. Respect also requires that an agency provide sufficient information for the provider to make an informed decision about whether to supply the requested data, including the intended uses of the

data being collected, their relevance for important public purposes, and the extent of confidentiality protection that will be provided.

2.1.4 Principle 4: Independence from Political and Other Undue External Influence

To fulfill its mission to provide objective, useful, accurate, and timely information, a statistical agency must not only be distinct from those parts of a department that carry out administrative, regulatory, law enforcement, or policy-making activities, but it also must have a widely acknowledged position of independence from political and other undue external influences and the necessary authority to protect independence. It must be able to execute its mission without being subject to pressures to advance a political agenda. It must be impartial and avoid even the appearance that its collection, analysis, and reporting processes might be manipulated for political purposes or that individually identifiable data collected under a pledge of confidentiality might be turned over for administrative, regulatory, or law enforcement purposes. Independence from any undue outside influence is an essential element of credibility with data users and the public so that they maintain confidence in the accuracy and objectivity of a statistical agency's data. It is also essential for trust among data providers so that they continue to be willing to cooperate with agency requests.

2.2 Practices of Statistical Organisation

The effective operation of a federal statistical agency must begin with a clearly defined and well-accepted **mission**. With this prerequisite, effective operation involves a wide range of practices, including:

- i) necessary authority to protect independence,
- ii) continual development of more useful data,
- iii) openness about sources and limitations of the data provided,
- iv) wide dissemination with ample documentation of data,
- v) cooperation with data users, respect for privacy and autonomy of data providers,
- vi) protection of confidentiality of providers' information,
- vii) commitment to quality and professional standards of practice,

- viii) an active research program,
- ix) professional advancement of staff,
- x) a strong internal and external evaluation program, and
- xi) coordination and collaboration with other statistical agencies.

2.2.1 Practice 1: A Clearly Defined and Well-Accepted Mission

An agency's mission should include responsibility for all elements of its programs for providing statistical information—determining sources of data, measurement methods, efficient methods of data collection and processing, and appropriate methods of analysis—and ensuring the public availability not only of the data, but also of documentation and explanation of the methods used to obtain and process the data and their quality. The mission should include the responsibility for continually assessing information needs and priorities through proactive engagement with policy makers and other users of its data. The mission should also include the responsibility for identifying, evaluating, implementing, documenting, and explaining new ways to meet user needs, such as by the establishment, modification, or discontinuance of a survey or census or by the implementation of another method of data collection, such as extracting information from administrative records, private-sector data, or selected relevant Internet sources that meet quality standards.

2.2.2 Practice 2: Necessary Authority to Protect Independence

Protection from political or other undue outside influence requires that a statistical agency have the necessary authority for professional decisions on the **scope, content, and frequency of data compiled, analyzed, and disseminated within the limits of budgetary resources, departmental requirements and review by a Statistical Council**. It should also have authority over selection and promotion of professional, technical, and operational staff; processing, storage, and maintenance of the data that it collects; and the timing and content of data releases, including accompanying public announcements and documentation, without prior external clearance.

An agency's independence is enhanced by adhering to fixed schedules that are announced in advance for the public release of important statistical indicators to prevent even the appearance of manipulation of release dates

for political purposes. Independence is also fostered by an agency's maintaining a clear distinction between statistical information and policy interpretations of such information by executive branch officials and having dissemination policies that foster regular, frequent release of statistical findings and any data limitations to the public through the traditional media, the Internet, and other appropriate means. To bolster public credibility with regard to an agency's independence, an agency's website should include a clear description of the procedures it follows, such as accompanying technical notes of each survey conducted, to protect against undue external influence in such matters as data dissemination.

2.2.3 Practice 3: Continual Development of More Useful Data

Statistical agencies should continually look to improve their data systems to provide information that is accurate, timely, and relevant for changing public policy and data user needs. They should also continually seek to improve the cost-effectiveness of their programs for collecting, analyzing, and disseminating statistical information.

There are many ways for an agency to achieve these goals:

- Seek opportunities to **combine data from multiple surveys or to integrate survey data with other kinds of data**, with appropriate safeguards for protection of confidentiality and the maintenance of quality standards. When separate datasets are collected and analyzed in such a manner that they may be used together, the value of the resulting information and the efficiency of obtaining it may be greatly enhanced.
- Use **administrative records** that are maintained by government agencies for program operations to improve the quality and cost-effectiveness of some kinds of statistics. Such uses could include producing data series derived from one or more administrative datasets, using administrative records to improve the quality of imputations for missing data in surveys or to adjust survey responses for misreporting or population undercoverage, and combining administrative and survey data in models to produce estimates with improved accuracy for small geographic areas or small population groups.
- **Explore the use of other sources** (e.g., data from selected Internet sources or private-sector transactions) to improve the relevance and

timeliness of some information. For example, an Internet source might provide the basis for timely information, which is later revised on the basis of data from a survey or administrative records, or it might provide the basis for an additional indicator that is not otherwise readily available. Care must always be taken to **evaluate a source of data** before deciding to use it, perhaps initially on an experimental basis, and to fully explain the source and its limitations.

- **Share technical information** and ideas with other statistical agencies. Such sharing can stimulate the development of innovative data collection, analysis, and dissemination methods that improve the accuracy and timeliness of information and the efficiency of data operations.

2.2.4 Practice 4: Openness About Sources and Limitations of the Data Provided

A statistical agency should be open about the strengths and limitations of its data, taking as much care to understand and explain how its statistics may fall short of accuracy as it does to produce accurate data. Data releases from a statistical program should be accompanied by a full description of the purpose of the program; the methods and assumptions used for data collection, processing, and reporting; what is known and not known about the quality and relevance of the data; sufficient information for estimating variability in the data; appropriate methods for analysis that take account of variability and other sources of error; and the results of research on the methods and data.

When problems are found in a previously released statistic that could affect its use, an agency should issue a correction promptly and publicly. It should also consider maintaining an online list of previous corrections to assist both new and long-standing users. Generally, an agency should be proactive in seeking ways to alert known and likely users of the data about the nature of a problem and the appropriate corrective action that it is taking or that users should take.

2.2.5 Practice 5: Wide Dissemination of Data

A statistical agency should strive continually for the widest possible dissemination of the data it compiles in formats that are widely accessible. Data dissemination should be timely, and information should be made readily

available on an equal basis to all users. Also, measures should be taken to ensure that data are preserved and accessible for use in future years. There are many elements of an effective dissemination program:

- An established publications policy should describe, for a data collection program, the types of reports and other data releases to be made available, the formats to be used, the audience to be served, and the frequency of release.
- A variety of avenues for data dissemination should be chosen to reach as broad a public as reasonably possible—including, but not limited to, an agency's Internet website, government depository libraries, conference exhibits and programs, newsletters and journals, email address lists, social media and blogs, and the traditional media for regular communication of major findings.
- Data should be released in a variety of forms, including printed reports, easily accessible website displays and databases, public-use microdata, and other publicly available computer-readable files, so that the information can be accessed by users with varying skills and needs for data retrieval and analysis. All data releases should be suitably processed to protect confidentiality and accompanied by careful and complete documentation, including explanatory material to assist users in appropriate interpretation. Particularly for complex databases, user training should be provided through such forums as webinars, online tutorials, and sessions at appropriate conferences.
- For research and other statistical purposes, an agency should provide access to relevant information that is not publicly available through restricted access modes that protect confidentiality. Such modes include protected research data centers, remote monitored online access systems, and licensing of datasets to individual researchers.
- Policies should be in place for the preservation of data that guide what data to retain and how they are to be archived and made accessible for future secondary analysis.

2.2.6 Practice 6: Cooperation with Data Users

A statistical agency shows cooperation with data users by facilitating their access to and ability to use data through well-designed websites and other dissemination vehicles, careful and complete documentation, and user

training adapted to varying skills and needs. In addition, a statistical agency should seek input from users on every aspect of its programs. The goal is to make its data as relevant, accurate, timely, and accessible as possible to a broad range of users. It should:

- seek advice on data concepts, content, processing, estimation, products, and documentation from a wide spectrum of data users, as well as from professional and technical subject-matter and methodological experts, using a variety of formal and informal means of communication that are appropriate to the types of input sought;
- seek advice on its statistical programs and priorities from external groups, including those with relevant subject-matter and technical expertise; and
- widely disseminate its responses to those who have provided input.

In developing and implementing new methods or data sources to produce statistical information, it is particularly important to reach out to policy makers and other key data users so that they understand an agency's criteria and decision process for the new methods or data. Statistics that are based on models (for example, for small geographic areas) or that use nontraditional data sources will likely require an explanation of their benefits and limitations that is more extensive than is usually provided. Reaching out to policy makers and other key data users when new data sources or methods are in a developmental stage can help in identifying and responding to users' concerns and earning their acceptance of the resulting data products.

2.2.7 Practice 7: Respect for the Privacy and Autonomy of Data Providers

To maintain a relationship of respect and trust with survey participants and other data providers, a statistical agency should respect their privacy and minimize the burden imposed on them. Two key data collection practices demonstrate an agency's respect for and fair treatment of data providers:

- Prior to collection of information, data providers should be informed of the purposes of data collection and the anticipated uses of the information, the expected burden of participation, whether their participation is mandatory or voluntary, and, if voluntary, using appropriate informed consent procedures to obtain their participation.
- The data collection method should minimize—to the extent possible and consistent with the need for the data—the intrusiveness of questions and

the time and effort needed to respond. For items that may be perceived as burdensome, an agency should provide an explanation of their purpose.

In addition, agencies can recognize the value of respondents' participation in data collection programs by accurately representing the statistical information they provide and by making it widely available on an equal basis to all.

2.2.8 Practice 8: Protection of the Confidentiality of Data Providers' Information

To earn the respect and trust of data subjects and other data providers, it is essential for a statistical agency to protect the confidentiality of the information it collects for statistical purposes. An agency should have policies and procedures to maintain the confidentiality of data—whether collected directly in surveys or obtained from administrative records or other sources—so that individual data collected under a pledge of confidentiality cannot be used for administrative, regulatory, law enforcement, or any other non-statistical purpose. As part of confidentiality protection, an agency should have the authority to manage the storage of confidential micro-data on secure servers that are controlled by the agency and not by a department wide information technology system. A statistical agency should also have policies and procedures to inform data providers of the manner and level of confidentiality protection and the kinds of research and analysis that will be allowed with the data.

2.2.9 Practice 9: Commitment to Quality and Professional Standards of Practice

A statistical agency should:

- keep abreast of and use modern statistical theory and sound statistical practice in all technical work;
- document concepts, definitions, data collection methodologies, and measures of uncertainty and discuss possible sources of error in reports and other data releases to the public;
- develop strong staff expertise in the disciplines relevant to its mission, in the theory and practice of statistics, and in data collection, processing, analysis, and dissemination techniques;

- develop an understanding of the validity and accuracy of its data and convey the resulting measures of quality to users in ways that are comprehensible to non-experts;
- maintain quality assurance programs to improve data quality and to improve the processes of compiling, editing, and analyzing data; and
- develop a strong and continuous relationship with appropriate professional organizations in the fields of statistics and relevant subject-matter areas.

2.2.10 Practice 10: An Active Research Program

A statistical agency should have a research program that is relevant to its activities. Because a small agency may not be able to afford an appropriate research program, **agencies should collaborate and share** research results and methods. Agencies can also augment their staff resources for research by using outside experts through consulting or other arrangements as appropriate. Several elements should be part of a statistical agency's research program:

- Research should be conducted on the substantive issues for which the agency's data are compiled. Such research should be conducted not only to provide useful objective analytical results, but also as a means to identify potential improvements to the content of the data, suggest improvements in the design and operation of the data collection, and provide fuller understanding of the limitations of the data.
- An agency's program should include research to evaluate and improve statistical methods, including the identification and creation of new statistical measures; improved methods for analyzing reporting and other errors in the data; ways to reduce the time and effort requested of respondents; and means to improve the timeliness, accuracy, and efficiency of data collection, analysis, and dissemination procedures.
- Research should be conducted to understand and estimate new sources of risk to confidentiality protection and to enhance mechanisms for access to data in ways that guard against disclosure, for example induce respondents' anonymity when sharing micro-data.
- Research should be conducted to understand how the agency's information is used, in order to make the data more relevant to policy concerns and more useful for policy research and decision making. For example feedback from Statistical Council or Technical Committee of Official Agencies Users.

2.2.11 Practice 11: Professional Advancement of Staff

A statistical agency should recruit, develop, and support professional staff who are committed to the highest standards of quality work, professional practice, and professional ethics. To develop and maintain a high-caliber staff, a statistical agency must recruit qualified people with relevant skills for efficient and effective operations, including analysts in fields relevant to its mission (e.g., demographers, economists), statistical methodologists who specialize in data collection and analysis, and other skilled staff (e.g., computer specialists). To retain and make the most effective use of its staff, an agency should provide opportunities for work on challenging projects in addition to more routine, production-oriented assignments.

An agency's personnel policies, supported with significant resources, should enable staff to extend their technical capabilities through appropriate professional and developmental activities, such as **attendance and participation** in professional meetings, participation in **relevant training programs**, **rotation of assignments**, and involvement in **collaborative activities with other statistical agencies**.

An agency should also seek opportunities to reinforce the **commitment of its staff to ethical standards of practice**. Such standards are the foundation of an agency's credibility as a source of relevant, accurate, and timely information obtained through fair treatment of data providers and data users.

2.2.12 Practice 12: A Strong Internal and External Evaluation Program

Statistical agencies should have regular, ongoing programs of evaluation for major statistical programs and program components and for their overall portfolio of programs. **Regular formal reviews** of major data collection programs and their components should consider, among other topics, **how to produce** relevant, accurate, and timely data in the most cost-effective manner possible and **evaluate** whether there are ways to **improve cost-effectiveness** by combining data from multiple sources.

Regular formal reviews of an agency's portfolio should consider ways to **reduce duplication, fill gaps, and adjust priorities** so that the suite of

programs remains as relevant as possible to the information needs of policy makers and the public given the available resources. Such evaluations should include internal reviews by staff and external reviews by independent groups.

2.2.13 Practice 13: Coordination and Collaboration with Other Statistical Agencies, Academia and the Private Sector

A statistical agency should actively seek opportunities to collaborate with other statistical agencies to enhance the value of its own information and that of other agencies in the federal statistical system. Although agencies differ in their subject-matter focus, there is overlap in their missions and a common interest in serving the public need for credible, relevant, accurate, and timely statistics gathered as efficiently and fairly as possible. This is particularly true in times of economic downturn. Apart from collaboration, these are about the best times for statistical agencies to innovate and not duplicate.

When possible and appropriate, federal statistical agencies should collaborate not only with each other, but also with **state and local statistical agencies** in providing data for **subnational areas**. Federal statistical agencies should also collaborate with **foreign and international statistical agencies** to exchange information on both data and methods and to develop appropriate common classifications and procedures to promote international comparability of information.

Such collaborative activities as **integrating data** compiled by different statistical agencies, **standardizing concepts and measures**, sharing data among agencies, and identifying ways to **reduce unneeded duplication** invariably require effort to overcome differences in agency missions and operations. Yet with **constrained budgets** and **increasing demand** for more relevant, accurate, and timely statistical information, the importance of **proactive collaboration and coordination** among statistical agencies cannot be overstated.

To achieve the most effective integration of their work for the public good, agencies must be willing to take a long view and to **strive to accommodate other agencies**. The **rewards** can be data that are more efficiently obtained

and more relevant to policy concerns. Another reward can be a stronger, more effective statistical system as a whole. To achieve these rewards, **statistical agencies need to act as partners**, not only in the development of statistical information for public use but also including the definition and updating of concepts and classifications and the continual improvement of measurement methods, analytical tools, means for confidentiality protection, and modes of data dissemination.

Collaboration should also be carried out with Industry players as the rewards would be in the form of updating establishment frame. At the same time, collaboration exercises can also be extended to the academia whereby students can share the findings of their analysis in return for micro-data shared.

2.3 Legal aspects of operating statistical organization

The **Fundamental Principles of Official Statistics** (Principle 7) state that: 'The laws, regulations and measures under which the statistical systems operate are to be made public'.

It is impossible to set out very specific rules for statistical legislation. Much depends on the legal culture and traditions in countries. Many countries have a formal 'general statistics law', but in others the statistical legislation is scattered over a series of specific laws and various other documents. Neither situation, however, is a guarantee that official statistics are in good shape, because laws obviously cannot solve all problems. In some countries that do not have a 'general statistics law', many good statistical practices are adhered to, while other countries may have a statistical law which is perfectly formulated, but in practice is not much more than just another piece of paper. Nevertheless, the agreed view is that having a general statistics law is the preferred situation.

What should the law cover?

Specialists in the area of statistical legislation have stipulated that it should cover all or most of the following basic points, in order of importance:

- The general position of the national statistical office/system, including points such as who decides on the work program, who decides on methodological issues, how are data collected, what **are the relations** between the national statistical office -if any- and other government agencies doing statistical work, what are the relations between the statistical system and the government/parliament etc.
- The position of the head of the national statistical office/system, including points like who appoints and dismisses, to whom does the ‘national statistician’ report and about what, does he/she have any specific responsibilities etc.
- Basic rules of data collection and confidentiality: voluntary and statutory data collection, any penalties for non-compliance with compulsory data collections, general and specific confidentiality rules

In view of this, the question to be asked is: how good is the statistical legislation in a country, in terms of clearly setting out the mission and the competencies of statistical agencies, the protection of their statutory independence, legal obligations to provide information for statistical purposes and the protection of confidentiality of individual data?

In addition, some implementation aspects of statistical legislation or of the principles for good statistical conduct are to be taken into account when it comes to the ‘performance’ of statistical systems. In particular, it is generally considered to be not more than sensible and decent when respondents are always properly informed about the legitimate basis for statistical data collections and other activities of statistical agencies, for instance by briefing them explicitly about the statutory or non-statutory nature of data collections.

In the longer run, this is a matter of self-interest for the statisticians: ‘honesty is the best policy’. A special issue in this regard is ‘informed consent’ of respondents as to any use of the provided (individual) information for non-statistical or research purposes.

Usually the ‘general statistical law’ **defines the main actors** and their rights and accountabilities:

- The minister who is politically responsible for statistics
- The chief statistician
- The statistical agency and its staff
- The agency responsible for the coordination of the statistical system
- The respondents

The statistical law may also define a set of relationships with other bodies that could include:

- Other government offices
- International or supranational institutions
- Professional societies
- Trade and other associations

In the case of countries with federal constitutions, the act will define the relationship between the federal statistical agency, the statistical agencies located in the governments of members of the federation and other government agencies of the members of the federation.

The law: short or long

The length of the law is a matter of preference, but its implications are real. A lengthy law stems from the desire to provide it with sufficient detail to avoid political arbitrariness once it has been implemented and is acted upon. For example, specifying in detail the membership of the coordinating agency or of the national statistical council guards against its manipulation for political favors or nepotism. However, the more detail is added to the law, the less it is able to adjust to changing circumstances. Over time, environmental changes and other unforeseen circumstances would require legal changes and it is always very difficult to solicit political interest in modifying a statistics act.

Both cursory and detailed laws offer benefits. In some situations, a very generally formulated law that gives a great deal of flexibility to the statistical agency has worked well. Conversely, lengthy and painstakingly detailed laws have afforded key actors a great deal of protection. What this suggests is that a workable compromise between these two possibilities

should be found and that the success of the lawmaker lies in getting the compromise right.

The law: deterrence and enforcement

Legal power to demand response, accompanied by legal sanction for failure to respond, can do much to ensure high response rates that are in turn essential for the overall quality of statistics. Nevertheless, the matter is not as simple as that. In fact, the existence of legal powers to ensure compliance inherently serves as a formal deterrent. In most countries where such powers are well defined in law, the statistical agency has never used them or else has used them very, very occasionally.

Today the usual pattern is to operate a mixed system, either tacitly or openly. Mixing options take various forms. One is to regard all inquiries from enterprises as compulsory and the law may as well be unambiguous on this matter. At the same time, all surveys of persons or households are usually regarded as voluntary. Whether this is stated openly or only if challenged depends to a great extent on the political and legal environment and the way the public views invasions of privacy. Whatever the system, although cooperative relations will play a preponderant role in determining response rates, the law may be a necessary condition upon which to build such relations.

Access to information protected by other laws

It is best if the statistics act makes clear provision for the statistical agency's right of access to other government data holdings. This should be done partly to streamline government operations but, more importantly, to alleviate excessive paperwork on the part of respondents.

The right of access by the statistical agency to administrative holdings of information useful for statistical purposes should be explicitly recognized as an exception in the legislation that protects such holdings or in general, administrative registers. An ideal state of affairs is one of reciprocity, where the statistical legislation lays down the rights and conditions of access, and the specific legislation that protects administrative holdings, wherever they

may be within Government, recognizes as an exception the right of access by the statistical agency for statistical purposes.

Legal advice

Even though the structure and content of a statistics act should be straightforward, a **chief statistician should have access to legal advice**, preferably a specialized legal adviser who is an expert in the interpretation of the statistics act and in the treatment of its various exceptions. The legal adviser will be of great value in cases of conflict between the statistics act's provisions for rights of access and the formal restrictions embodied in other acts.

Special legal arrangements in decentralized systems

In the case of decentralized systems, the statistical act should apply to all the members of the statistical system. For example, if a statistical agency or research department is located within the central bank, is its legal authority to collect data from other banks determined by the general authority of the central bank or by a specific law or regulation authorizing the responsible department to collect supplementary information for statistical purposes? If there are discrete statistical agencies in ministries, what are their legal rights and restrictions in terms of the collection of data, access to micro-data and the form in which individual records are stored and accessed? How does the central statistical agency decide whether the particular cell is or should be a bona fide member of the statistical system?

Ideally, the following minimum legal provisions would apply:

- All members of a statistical system should have a legal basis for their collection operations;
- All members should have provisions defining their legitimacy, accountability and obligation to respect data confidentiality, as well as the sanctions to be applied if those obligations are not heeded;
- All members should be bound to the same rules and safeguards under which individual information (micro-data) can be shared for purposes of statistical integration and generally for effective analytical work;

- The act should contain provisions acknowledging the need for, and definition of, statistical coordination, as well as guidelines on how it is carried out.

2.4 Promotional of Official Statistics

Generally, the quality of statistics produced by Statistical Organisations is of pristine quality, having been compliant, to the very best of each country's capability, to the fundamentals, principles and practices as stipulated by the UN Statistical Commission. With this as the foundation, coupled with the increasing awareness by a plethora of users of the advantage of utilising statistics as a tool towards making informed decisions, it is utterly important to promote official statistics.

Why promote official statistics? Official statistics has often been considered the bane of many a user, among the famous being this:

Figures often beguile me, particularly when I have the arranging of them myself; in which case the remark attributed to Disraeli would often apply with justice and force: "There are three kinds of lies: lies, damned lies and statistics."

- Mark Twain's Own Autobiography: *The Chapters from the North American Review*

"the only statistics you can trust are the ones you have falsified yourself"
- Winston Churchill

The promotion of official statistics is necessary as it is geared towards facilitating statistical literacy. A better comprehension of statistics and the underlying principles would enable users to appreciate its significance. At the same time, promotion of official statistics would enhance better advocacy from users and in return, would garner funding support from the Government to broaden and strengthen the scope of the statistical organisation's activities.

Thus, to whom should Official statistics be promoted to and with whom should statistical agencies advocate with? Promotion should firstly be to Government Users as proof that the compilation of relevant and quality

statistics can be utilized in policy formulation. At the same time, it is to promote the application of statistics within the Government as well as to gain their support to secure better funding for statistical programmes. Next comes the General User, Business sector, the Academia, researchers and the media. For example, with statistical literacy, the media would be better equipped to translate the “mind-boggling rows and columns of numbers” into comprehensible information, easily understood across all level of users.

In terms of promotion and advocacy, data suppliers need not be left out as it is their prerogative to know how the data that they have imparted have been transformed into meaningful statistics. This also acts as evidence of how their confidentiality has been safeguarded, how the data provided has been transformed and how they can facilitate towards measures to facilitate/reduce data reporting.

RESOURCES

ESSENTIAL READING

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

UNECE Virtual Standards Helpdesk, (December 2013), *Generic Statistical Business Process Model (GSBPM)*,

<http://www1.unece.org/stat/platform/display/GSBPM/GSBPM+v5.0>

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