I. THE FOUNDATION OF A STATISTICAL AGENCY

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.

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.

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.

4. These principles are codified in the Fundamental Principles of Official Statistics. [3]

A. Independence[4]

5. 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.

6. 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.

7. The characteristics related to independence include the following:

- Authority for professional decisions over the scope, content, and frequency of data compiled, analysed or published;

[3] See *Official Records of the Economic and Social Council, 1994, Supplement No.* 9 (E/1994/29), chap. V. Additional information is available in annex II or from http://www.un.org/Depts/unsd/statcom/1994docs/e1994.htm.

[4] Paragraphs 5-8 are based on Margaret E. Martin, Miron L. Straf and Constance F. Citro, Eds., *Principles and Practices for a Federal Statistical Agency: Second Edition* (Washington, D.C., National Academy Press, 2001).

- 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.

8. 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.

9. 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.

10. 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

11. 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.

12. 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.

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[5] See chap. II, sect. E for a more extensive explanation of statistical law.

[6] Government of Canada, *Statistics Act of 1918*. Today's formula does not differ. In the United Kingdom of Great Britain and Northern Ireland, the functions of the office, as identified in *Framework Document: Office for National* Statistics (London, 1996), include the collection of economic and social statistics. Several countries, including Australia, Israel, New Zealand, Pakistan and South Africa have similar broad formulations of the scope of the office.

[7] Some authors believe the term "relevance" is misplaced because it is obvious. They would prefer if the matter of relevance were discussed under the heading "priorities".

Indeed, as late as the end of the 1990s, most statistical agencies were still experimenting with operational frameworks that would enable them to deal in a meaningful way with the service sector.

13. 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.

14. 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.

15. 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;[8]

- 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.

16. Ensuring these capabilities gives the statistical agency a great amount of leverage in its attempt to adapt to problems arising from shifts in priorities.

17. 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,

[8] The latest experience in a number of statistical agencies was to help determine the preparedness of the business sector to deal with the "millennium bug" in computer systems. Statistics Canada has kept in a state of preparedness a group of survey takers who can deal with a moderately difficult subject in a period of ninety days from start to finish, provided that the number of sampled businesses does not exceed some two thousand.

very specific surveys, keeping in mind that policies may change unexpectedly, limiting the relevance of such surveys. In addition, it is essential 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.

18. In addition, it is not sufficient to engage only the head of the agency. Awareness has to extend to the entire agency; for this reason, in the third edition of the *Handbook* a considerable amount of space is devoted to this topic, particularly in chapter III.

C. Credibility

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.

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.[9]

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.

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

[9] Some statistical agencies (for example, the Australian Bureau of Statistics, Statistics Canada and Statistics New Zealand) go so far as to place their quality guidelines on their web site or Intranet.

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.

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

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.

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.

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.

27. Persuading respondents to part with information is a difficult task (see chapter 12 for a detailed presentation of this matter). 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.[10]

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

[10] See I.P. Fellegi and A.B. Sunter, "Balance between different sources of survey errors", in *Bulletin of the International Statistical Institute*, Proceedings of the Thirty-ninth Session of the ISI (Vienna, 1973).

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.

Conclusions

Statistical agencies are service organizations. Their reason for existing, growing and making a visible contribution to the affairs of their Government and society is rooted in their capacity to provide information for the solution of important issues. However, priorities can change more rapidly than the agency's capacity to modify its productive effort. For this reason, it is important for its senior officers to have the insight and contacts that allow them to detect serious problems and distinguish them from what may turn out to be no more than a passing fashion.

A strong position of independence is essential for a statistical organization in order to establish credibility among its users and create a relationship of mutual respect and trust. Collecting, analysing and disseminating statistical information should always be distinct from policy-making activities. The chief statistician should commit to impartiality when dealing with the collection and release of information.

A statistical organization must ensure the soundness of the statistical collection and compilation process, and its internal operations. For this soundness to be acceptable to the public, and inspiring to the staff of a statistical agency, a number of conditions must be met:

- The process must be logically sound;
- The machinery that produces it must be robust;
- The descriptions of the machinery and the process must be open for inspection and the result of inspection amenable to public debate;
- Both the process and the machinery must have the capacity to grow and adapt to new circumstances and a new environment.

Unless a statistical agency is able to ensure that the information provided to it by respondents is absolutely confidential, it will not be able to rely on the quality of information it collects, and the credibility of the agency will be in danger.