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Implementation of the Fundamental Principles of Official Statistics

Background document
Available in English only

Implementation guideline of all the United Nations Fundamental Principles (FPOS)

Prepared by the Friends of the Chair

Principle 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 honour citizens' entitlement to public information.

The use and benefit of official statistics is dependent on their credibility and confidence towards users. Professional independence of statistical agencies, scientific competence of their staff and impartiality are the crucial preconditions of trust in official statistics.

Secondly the benefits of statistics are increasingly recognised as essential tools for Transparency, Accountability, Results and Transformation (START)[1]. The High Level Panel of the Secretary General argues that the data revolution should have two objectives: the integration of statistics into public and private decision making; and building trust between society and states through transparency and accountability (HLP Secretariat 2013). The explicit assignment of the responsibility to statistics as a system of accountability has implications on how the system interacts with society and subsequently its relative positioning.

PROFESSIONAL INDEPENDENCE AND IMPARTIALITY

I. Objective

The overall purpose of official statistics is to serve the information system of democracies. This is a big, demanding and complicated role to play. In addition to traditional economic, social and environment dimensions, new ones have emerged, e.g. peace and security. Official statistics have to serve not only governments but all the stakeholders involved in the political debates and all the users including the

[1] High level Panel on Aid Effectiveness in Busan: presentation by Pali Lehohla Statistician General South Africa on Statistics for Transparency, Accountability, Results and Transformation (START).

public at large when monitoring all kinds of development. Several preconditions have to be fulfilled to guarantee that official statistics can play this demanding role.

The independence of statistical agencies is essential for the credibility and integrity of official statistics. “Professional independence” is not an objective per se, it is rather a means to provide objective statistical information free from any pressures from political or interest groups. It covers elements of institutional independence, such as a possibility of setting up and publishing statistical work programmes autonomously (programme planning), a responsibility to manage the budget of the statistical agency[2] and a prominent role of the head of the agency. The independence in developing, producing and disseminating statistics, in particular the selection of definitions, methods and data sources, and decisions on the timing and content of all forms of dissemination, is best assured via the professional independence of the head of the statistical agency and transparent recruitment and dismissal procedures based on clear professional criteria and not on political grounds.

Independence and impartiality are interrelated. Similarly to professional independence, “Impartiality” means that statistics must be developed compiled and disseminated in a neutral manner (determined by statistical considerations when deciding on choices of data and methods), and in addition, all users must be given equal treatment and equal access to statistical information.

Objectives of this Principle are closely related to objectives of Principle 2 dealing with professional standards and ethics.

II. Scope of application

A strong position of independence is essential for a statistical agency in order to establish credibility among its users and create a relationship of mutual respect and trust (see UN Handbook of Statistical Organization 2003, page 5).

Professional independence and impartiality have to be followed throughout the whole production process covering development, compilation and dissemination of official statistics. However, in the development phase it is recommended to consult users in order to enhance relevance of statistics and the scientific community on potential

[2] Different terms are used synonymously in this document: Statistical agency, national statistical agency, statistical institute, national statistical office (NSO), and national statistics office.

methods in order to increase transparency, robustness and also potential advocacy. Compilation and release of data should be free from any interference, so as to ensure impartiality of the national statistical agency (see UN General Review 2013, page 6).

1. Legal framework

- A law or formal provision is in force, which specifies that statistical agencies are professionally independent and impartial, develop, produce and disseminate statistics following professional standards, and treat all users in the same way. The laws, regulations and measures under which the statistical systems operate are made public (see NQAF 5).

Examples for "legal framework":

- The Treaty of the EU:

  (http://eur-lex.europa.eu/en/treaties/index.htm#current)
- Regulation on European statistics:
  (http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2009:087:0164:0173:en:PDF)
- Communication from the Commission to the European Parliament and to the Council on the independence, integrity and accountability of the national and Community statistical authorities and Recommendation of the European Commission on independence, integrity and accountability: (http://epp.eurostat.ec.europa.eu/portal/page/portal/esgab/documents/Commission_recommendation_COM_2005_217_final.pdf)
- National statistical law
- Decision establishing the European Statistical Governance Advisory Board:
  (http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2008:073:0017:0019:EN:PDF)

Examples for "legal tools":

- European Statistics Code of Practice (principles 1 Professional independence, 6 Impartiality and objectivity, 15 Accessibility and clarity): (http://epp.eurostat.ec.europa.eu/cache/ITY_OFFPUB/KS-32-11-955/EN/KS-32-11-955-EN.PDF)
- UK Code of Practice for Official statistics (principles 2 Impartiality and objectivity, 3 Integrity, 8 Frankness and accessibility, Protocol 2 Release practices): (http://www.ons.gov.uk/ons/guide-method/the-national-statistics-standard/code-of-practice/index.html)
- Irish Statistical System Code of Practice (principles 1 Professional independence, 2 Timeliness and punctuality, 3 Accessibility and clarity, 4 Commitment to quality): (http://www.isscop.ie/)
- Código de Buenas Prácticas de las Estadísticas Chilenas (Chile): (http://unstats.un.org/unsd/dnss/docs-nqaf/Chile-buenaspracticas_pag.pdf)
- Public commitment on European statistics by the ESCB: (http://www.ecb.europa.eu/stats/html/pcstats.en.html)
- ISI Declaration on Professional Ethics: (http://www.isi-web.org/images/about/Declaration-UK2010.pdf)
- Italian Code of Official Statistics (Gazz. Uff. 13/10/2010, n.240): (http://www3.istat.it/istat/comunicazionilegali/CodiceStatisticheUfficiali.pdf)
- Independent external bodies overseeing independence of statistical agencies and impartiality of statistics (European Statistical Governance Advisory body, UK Statistics Authority, Swiss Ethics Board etc.)

2. Professional independence of the statistical agency

2.1 Transparent procedures for recruitment and dismissal of Head of the statistical agency are in place.

2.2 Head of the statistical agency is responsible for the budget management and has a right to publicly comment on the budget allocated to the statistical agency.

2.3 Head of the statistical agency has sufficiently high hierarchical standing to ensure senior-level access to policy authorities and administrative public bodies.

2.4 Statistical agency, when appropriate, comments publicly on statistical issues, including criticism and misuses of official statistics.

3. Compilation of statistics / statistical practices (should be free from political interference)

3.1 Statistics are compiled on the basis of common standards determined only by statistical considerations.

- E.g. guidelines for assuring impartiality and objectivity explain the compilation of statistics, …

3.2 Choices of sources and statistical methods as well as decisions about the dissemination of statistics are only made by statistical considerations.[3]

- E.g. regular assessments statistically validate the collection mode and the methodology used, …

4. Information on methods and procedures used in statistics (should be free from political interference)

4.1 Information on methods and procedures is publically available.

- E.g. Meta-information, documentation of the production process, …

5. Statistical releases

5.1 Statistical releases[4] and statements made in press conferences are objective and non-partisan.

5.2 Statistical releases are clearly distinguished from political statements.

- Policies and procedures exist for dealing with actual or perceived, or potential conflicts of interest, …

[3] See principles 2 “Professional standards and ethics” and 3 “Accountability and transparency”.

[4] See principle 4 “Prevention of misuse”.

5.3 Statistical release dates and times are pre-announced (release calendar).

- Deviations from the release calendar are announced and justified to the users.

6. Equal Access

6.1 All users have equal access to statistical releases at the same time. There is no privileged access for governmental representatives. Any privilege pre-release access to any outside user is limited, controlled and publicised.

6.2 If leaks of statistical information occur, pre-release arrangements are revised so as to ensure impartiality. To that purpose specific procedures are put in place and make publicised.

7. Changes to statistical data

- Advance notice is given on changes to methods or classifications and revisions in general Revision policy for those outputs that are subject to scheduled and non-scheduled revisions is publicised errors discovered in published statistics are corrected at the earliest possible date and publicised. Internal procedures for error reporting and correcting are in place.

8. Supplementary statistical services

- Supplementary statistical services for which a charge is made follow a clear pricing policy. When custom-designed analyses are provided, the public is informed.

9. Human Resources System

- An effective human resources system to objectively manage the appointment and promotion of the agency’s staff: Recruitment and promotion of the staff responsible for the development, production and dissemination of statistical information is based on relevant aptitude and expertise in statistics.

Examples / good practices:

- Statistics Portugal: Revisions policy: (http://www.ine.pt/xportal/xmain?xpid=INE&xpgid=ine_cont_inst&INST=70084023)
- Federal Statistical Office of Germany: Guideline on how to deal with publication errors: (https://www.destatis.de/EN/Methods/Quality/Publication_Errors.html)
- Eurostat's Impartiality protocol: (http://epp.eurostat.ec.europa.eu/cache/ITY_PUBLIC/IMPARTIAL_ACCESS_2012_OCT/EN/IMPARTIAL_ACCESS_2012_OCT-EN.PDF)
- Council for Official Statistics Sweden: Guidelines for Sufficient Quality in Official Statistics: (http://unstats.un.org/unsd/dnss/docs-nqaf/Sweden-OV9999_2006A01_BR_X42OP0602.pdf)
- United Nations Country Practice Website: (https://unstats.un.org/unsd/dnss/GP/searchgp.aspx)
- Guidelines for the template for a generic national quality assurance framework (NQAF, United States): (http://unstats.un.org/unsd/dnss/docs-nqaf/GUIDELINES%208%20Feb%202012.pdf)
- Australian Bureau of Statistics Statistical Quality Management: (http://www.abs.gov.au/websitedbs/D3310114.nsf/home/Quality:+Statistical+Quality+Management)
- Quality Management of Statistical Processes Using Quality Gates, Dec 2010 (Australia): (http://www.abs.gov.au/AUSSTATS/abs@.nsf//Lookup/1540.0Main+Features1Dec+2010)
- Commitment to quality (Austria): (http://www.statistik.at/web_en/about_us/responsibilities_and_principles/commitment_to_quality/index.html)
- Guidelines on Professional Ethics (Finland) : (http://tilastokeskus.fi/org/periaatteet/eettinenopas_en.pdf)

- Protocol on Professional competence (United Kingdom): (http://www.ons.gov.uk/ons/guide-method/the-national-statistics-standard/code-of-practice/protocols/index.html)
- Data Quality Assessment Framework (DQAF) (International Monetary Fund): (http://dsbb.imf.org/Pages/DQRS/DQAF.aspx)
- Guidelines of "Quality Assurance" of the Official Statistics of Japan: (http://www.stat.go.jp/english/index/seido/pdf/qa_gl.pdf)
- Quality Framework for OECD Statistical Activities, 17 January 2012: (http://www.oecd.org/std/qualityframeworkforoecdstatisticalactivities.htm)
- South African Statistical Quality Assessment Framework (SASQAF): (http://www.statssa.gov.za/inside_statssa/standardisation_SASQAF.asp)
- Statistical Data Quality in the UNECE , 2010 Version: (http://unstats.un.org/unsd/dnss/docs-nqaf/UNECE-Quality%20Improvement%20Programme%202010.pdf)
- Guidelines for Ensuring and Maximizing the Quality, Objectivity, Utility, and Integrity of Information Disseminated by Federal Agencies (United States Office of Management and Budget): (http://www.whitehouse.gov/omb/fedreg_reproducible/)
- A Framework or Assessing the Quality of Education Statistics (World Bank): (http://unstats.un.org/unsd/dnss/docs-nqaf/WB-UNESCO-DQAF%20for%20education%20statistics.pdf)
- The Principles Governing the Activities of the State Statistics Bodies of Ukraine:

  (http://www.ukrstat.gov.ua/)

RELEVANCE

I. Objective

"Relevance" is the degree to which statistics meet current and potential users' needs, when necessary.

Official statistics compiled by National statistical agencies and international and supranational organisations exist to provide information to the general public,

governments, business and research communities in the economic, demographic, social and environmental fields. This information is essential for evidence based decision making, for mutual knowledge and trade among the States and peoples of the world. Official statistics as an important public good in democratic societies have to meet the needs of users and - as mentioned above in order to be credible and trusted - must be compiled in an objective, transparent and independent manner and in respect of the rights of respondents, and must be disseminated in an impartial way (see the UN Handbook of Statistical Organization 2003, page 7 and UN General Review 2013, page 6).

To meet the test of practical utility statistics must be relevant, of suitable quality and in a form that facilitates easy and correct use. The key to achieving this is maintaining an understanding of users' needs. Statistical agencies use various instruments to interact with users. As indicated in part 1, it is in particular recommended that during the development phase users and the scientific community are consulted. In addition, good planning (including priority setting) is essential in order to respond to the changing needs of users.

II. Scope of application

Statistical agencies are advised to organise regular dialogues with users to well understand their needs and the purpose statistics should serve (Fit-for-purpose paradigm). Scientific community should be involved in open debates on statistical methodology and research.

1. Legal framework

Multiannual and/or annual work programmes in the form of implementing legislation or administrative documents elaborated in consultation with users and approved by User Councils represent the frameworks for development, production and dissemination of official statistics.

Examples for "legal framework":

- National statistical programmes, e.g. Strategy and programme planning 2013-17 (Germany)

- European statistical programme 2013-17

Examples for "legal tools":

- The European Statistics Code of Practice (user orientation at the centre)
- UK Code of Practice for Official statistics (user orientation at the centre of principle 1)

2. Consultation of users

2.1 Identify users.

2.2 Engage effectively with users of statistics to promote trust and maximise public value.

- E.g. advisory councils, working groups, meetings with stakeholders,…

2.3 Investigate and document the needs of users of official statistics, the use made of existing statistics and the types of decision they inform.

- E.g. by user satisfaction surveys.
- Quality control measures referring to relevance, timeliness, frequency.

2.4 Involve users in the evaluation of statistics.

2.5 Consult users before making changes that affect statistics.

3. Work programme

3.1 Develop strategic goals and work programme plans in such a way that judgments can be made about competing user needs.

3.2 Adopt systematic statistical planning arrangements, including transparent priority setting, that reflect the obligation to serve the public good.

4. Informing users

4.1 Publish information about users' experiences of statistical services, data quality, and the format and timing of reports.

4.2 Informing about gaps between the measured statistical concept and the user's concept of interest (e.g. in quality reports).

Examples for good practices:

- Annual user satisfaction survey of Eurostat and user surveys conducted by national statistical agencies: (http://epp.eurostat.ec.europa.eu/portal/page/portal/quality/documents/Report_2012_USS_final.pdf)
- Programme reviews - consultations with data users (Canada): (http://www.statcan.gc.ca/about-apercu/consultations2009-2010-eng.htm)
- Annual reports published by national statistical agencies
- Annual ESS report published by Eurostat: (http://epp.eurostat.ec.europa.eu/cache/ITY_OFFPUB/KS-FN-12-001/EN/KS-FN-12-001-EN.PDF)

III. Risks:

The real or perceived lack of professional independence of the national statistical agency and its head, lack of scientific competence of the staff and breaches of the principle of impartiality can undermine the credibility of statistics produced. If statistics are used for evidence based policy making, the credibility of those policies will be also affected.

National statistical agencies are expected to provide statistics which meet the needs of users. A lack of relevance of official statistics in the era of information society means that the agency is undermining its role and position on the information market and will be marginalised.

Principle 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.

PROFESSIONAL STANDARDS AND ETHICS

I. Objective

Public trust in statistics relies heavily on the strict adherence by statistical agencies to scientific principles. To do this, the Chief Statistician and staff of the National Statistical Office(s) need a profound understanding of official statistics and the relevant scientific principles. It is also necessary that staff and statistical experts follow and respect professional ethics for statistics. Laws, regulations, and other mechanisms reinforce adherence to scientific principles and professional ethics.

The National Statistical Office(s) must guarantee that official statistics are based on scientific principles, and, therefore, that inference is useful, objective and of high quality. Users may have access to other data and statistics that do not guarantee that inference is based on solid scientific ground. Statistics is a strong tool when the scientific principles are followed but may be misleading when these principles are not followed.

In addition, official statistics is an exercise where statistical methods are combined with methods and models from various other sciences such as economics, demography and sociology. Scientific principles from other sciences have to be combined with statistical principles and methods.

“Professional ethics” may be defined for various scientific professions. For statistics, there are international standards, as well as several other national principles of ethics. While ethics is often conceived of as an individual code of conduct, the National Statistical Office(s) must also reflect professional ethics in organizational conduct and practice.

Building and maintaining public trust requires not only transparency of methodology, application of professional ethical guidelines, and objectivity of reporting, but also the assurance that all statistical decisions are based on scientific criteria.

Any failure to uphold professional standards and ethics can compromise public trust – and the ability of official statistics to provide meaningful information to support public and private decision making. This principle incorporates the concepts of "scientific independence" and "professional independence" described in an accompanying document. This principle further extends the impartiality element of principle 1.

II. Scope of application

The following sources of professional standards and ethics provide best practices in the implementation of this principle, which a National Statistical Office is advised to take into account when implementing this principle or when developing it further. Concrete examples complement the dimensions.

1. Legal framework

It is essential that clear provisions are laid down in law to uphold scientific standards and professional ethics and provide safeguards protecting scientific independence. This gains credibility with the public by ensuring impartiality in the collection and production of data. Ethical principles linked to confidentiality have to be strong – and laws should support and not interfere in this.

1.1. There must be clear provisions in the law to ensure scientific standards

1.2. The legislation must guarantee the National Statistical Office(s) protection of scientific independence and provide safeguards against political interference (International Statistical Institute 2010, NQAF 4)

1.3. Legislation or regulation must be transparent regarding the selection, appointment, and dismissal of the head(s) of the National Statistical Office(s)

1.4. Regulations must provide the chief statistician and statistical office(s) with authority over professional decisions, including:

- Scope, content, and frequency of data compiled
- Selection and promotion of staff
- Release of statistical information and accompanying press materials and documentation without prior clearance regarding the statistical content of the release

- Direct communication about the agency's statistics before political authorities and public bodies (National Research Council 2013, General Review 2013, NQAF 4 and 5)

1.5. There must be clear provisions in the law to ensure professional ethics

1.6. Laws and regulations must require that statistical agencies protect confidential data, as described in the implementation guide for principle 6

1.7. Laws or regulations provide entities that can audit a statistical agency, such as an inspector general, or resolve private complaints against a statistical office, such as an ombudsman (NQAF 8, HSO 143)

Examples / good practices for "legal framework"

Scientific Standards

- The United States' Paperwork Reduction Act of 1995 provides the governance structure for the U.S. Federal statistical system and provides the authority and duties of the Director and Chief Statistician for the system.

Professional Ethics

- The United States' Inspector General Act of 1978 installed inspector general offices within the federal government to audit federal agencies and the Budget and Accounting Act of 1921 created the Government Accountability Office, which evaluates public expenditures.
- Even if not directly linked to statistics, the Code of Conduct of the European Parliament is an example of how to address professional ethics: (http://www.europarl.europa.eu/pdf/meps/201206_Code_of_conduct_EN.pdf)
- Statistics Finland (2006): Guidelines on Professional Ethics, (http://tilastokeskus.fi/org/periaatteet/eettinenopas_en.pdf)

2. Policies and mechanisms supporting professional standards, scientific principles, and ethics

Developed policies on scientific standards and on professional ethics are an essential element to establishing and upholding scientific practices, scientific independence, and professional integrity.

2.1. The head(s) of the National Statistical Office(s) is (are) of the highest professional caliber and adhere to the strictest quality standards (CoP 1.2., HSO 608)

2.1.1 Staff of the National Statistical Offices(s) is recruited using high professional criteria

2.1.2. Staff receives statistical training and undertakes research and analysis (General Review 2013, CoP 7.6., International Statistical Institute 2010)

2.1.3. Guidelines support innovation and improvement (General Review 2013, CoP 12.3., LAC 6.3.)

2.1.4. Statistical offices have sufficient funding to support staff training, innovation, and improvement

2.2. Policies issued by the chief statistician provide standards and guidelines concerning statistical collection procedures and methods, statistical data classifications, and statistical information presentation and dissemination, so that statistical information is of high quality (U.S. Public Law 104-13 1995, HSO 40)

2.3. Standards support sound statistical collection procedures and methods

2.3.1. Standards provide requirements and best practices for information collection designs (NQAF 10)

2.3.2. Standards provide requirements for informed consent from data providers for voluntary information collections (NQAF 13)

2.3.3. Policies, standards, and organizational procedures are in place to plan, monitor, and enforce the quality of statistical production (CoP 4, U.S. Public Law 104-13 1995, SCQAF 5.1)

2.4. Policies provide standards for statistical data classifications, concepts, and definitions so that data are comparable across surveys, over time, and internationally (CoP 7.2., CoP 14.3., LAC 9.1., NQAF 3)

2.4.1. Core topics for classification standards are:

- Geographic units
- Industries and businesses
- Business products
- Occupations and jobs

2.4.2. Additional topics for classification standards include:

- Diseases and other health conditions
- Occupational injuries
- Population characteristics such as race, ethnicity, and ancestry

2.4.3. Classification standards adhere to those described in the implementation guide for principle 9

2.5. Standards and guidelines support sound statistical methods for the presentation and dissemination of statistics

2.5.1. Standards determine transparent, timely release schedules of key economic and social indicators and measurements (CoP 6.5., U.S. OMB 1985, U.S. OMB 2008, NQAF 6)

2.5.2. Standards preserve the distinction between the policy-neutral release of data by statistical agencies and their interpretation by policy officials (U.S. OMB 1985, U.S. OMB 2008, CoP 1.6. and 6.8., ISI 3)

2.5.3. Standards embody statistical agencies' best practices for dissemination (U.S. OMB 1985, International Statistical Institute 2010)

2.5.4. Standards require public dissemination of documentation on data collection, processing, statistical methods employed, and all metadata (U.S. OMB 1985, U.S. OMB 2008, CoP 6.4., CoP 15.5., NQAF 19)

2.5.5. Statistical agencies are transparent to the public when diverging from published schedules or making major changes in data collection and processing methods (CoP 13.4. and 15.6.)

2.5.6. Standards and guidelines adhere to those described in the implementation guides for principles 3 and 4

2.6. The chief statistician, policies, and organizational oversight ensure ethical practices

2.6.1. Ethical codes are codified for civil servants in general (General Review 2013)

2.6.2. Ethical codes established specifically for statistics provide guidance on ethical behaviour (General Review 2013, LAC 7.7.)

2.6.3. Standards of conduct protect the confidentiality of the data as described in the implementation guide for fundamental principle 6

2.6.4. Standards of conduct ensure impartiality of staff members and prevent personal conflicts of interest (International Statistical Institute 2010, LAC 7.7.)

Examples / good practices for "policies on professional standards and ethics"

Scientific Standards

- The United States' Office of Management and Budget (OMB) provides policies, standards, and guidance for designing surveys and information collections in Standards and Guidelines for Statistical Surveys. The United States also provides guidelines for scientific integrity and its implementation in (i) Guidelines for Ensuring and Maximizing the Quality, Objectivity, Utility, and Integrity of Information Disseminated by Federal Agencies, and (ii) Memorandum for the Heads of Executive Departments and Agencies: Scientific Integrity.

Professional Ethics

- The United States' statistical agencies have policies on ethics, data stewardship, and other codes of conduct, and provide mandatory training on those practices.
- Stephen B. Vardeman and Max D. Morris (2002): Statistics and Ethics: Some Advice for Young Statisticians, (http://www.amstat.org/committees/ethics/linksdir/TAS2003Vardeman.pdf)
- The Czech Republic´s State Statistical Service Act No.89/1995: Article 5 a) states "In performing the State Statistical Service, the Czech Statistical Office follows the law and other legal regulations, applies expert opinions and requirements for practical use and professional ethics, and uses scientific methods in statistical work.", (http://www.czso.cz/eng/redakce.nsf/i/5_guarantees_of_the_impartiality_of_the_state_statistical_service)

3. Professional associations and other third party resources

Professional associations and other third party resources reinforce scientific practices, including innovation in practices, and monitor ethical conduct.

3.1. Entities from a variety of spheres provide quality assurance of scientific practices of the National Statistical Office(s), including:

- International or regional councils or committees
- National councils or committees
- Statistical or methodological councils or professional associations

- Advisory groups
- External experts and consultants (NQAF 8)

3.2. These entities provide external standards and guidelines on scientific quality

3.3. These entities serve in an advisory capacity to the National Statistical Office(s) (NQAF 8)

3.4. These entities provide expert review and peer review (NQAF 8)

3.5. These entities share recent advances in scientific practices, methodology, and concepts (NQAF 8)

3.6. Entities from a variety of spheres monitor the ethical practices and conduct of the National Statistical Office(s) and its (their)staff(s), including:

- International or regional councils or committees
- National councils or committees
- Statistical or methodological councils or professional associations
- Advisory groups
- Watchdog organizations and other private citizens
- Media

3.7. These entities provide external standards and guidelines on professional ethics and integrity

3.8. These entities may audit statistical offices and their programs

3.9. These entities report violations of ethical principles to an external authority

Examples / good practices for "professional associations and other third party resources"

Scientific Standards

- U.S. Example - The Committee on National Statistics (CNSTAT) is a non-governmental statistical expert body established at the National Academies—a private entity established by an Act of Congress— to improve statistical methods and information on which public policy decisions are based. CNSTAT is supported by a consortium of federal agencies and publishes Principles and Practices for a Federal Statistical Agency.

  The United States additionally has regulations allowing civil servants to serve as officials and directors of scientific and professional organizations as part of professional development; See Government Employees Serving in Official

Capacity in Non-profit Organizations; Sector Unit Investment Trusts.

Professional Ethics

- The International Statistical Institute (2010) provides a "Declaration on Professional Ethics" describing shared professional values and ethical principles for statisticians, (http://www.isi-web.org/images/about/Declaration-UK2010.pdf)
- American Statistical Association/Committee on Professional Ethics (1999): Ethical Guidelines for Statistical Practice, (http://www.amstat.org/about/ethicalguidelines.cfm)
- NC State University (2006): Professional Ethics for Statisticians. Issues and Advice, (http://www.stat.ncsu.edu/people/fuentes/courses/st810a/ethics.pdf)

III. Risks

Real or perceived threats to the professional standards, scientific principles, and ethics adhered to by a national statistical institute and its employees present a serious challenge to the trust with which statistical products are held. Even minor offenses or unsubstantiated accusations may lead to damage of the image and reputation of the statistical institutions in the long term, with potential implications for other government institutions. To reverse these damaging impacts afterwards is extremely difficult. Therefore statistical agencies are challenged to safeguard their independence and objectivity, be transparent in their methodology, and communicate openly with the public.

IV. Used sources[5]

- International Statistical Institute (2010): Declaration on Professional Ethics, http://www.isi-web.org/images/about/Declaration-EN2010.pdf
- National Research Council (2013): Principles and Practices for a Federal Statistical Agency, Fifth Edition, http://sites.nationalacademies.org/DBASSE/CNSTAT/Principles_and_Practices_for_a_Federal_Statistical_Agency/index.htm

[5] Apart from the Used sources (main sources of reference) on page 89.

- U.S. Office of Government Ethics (2013): Government Employees Serving in Official Capacity in Non-profit Organizations; Sector Unit Investment Trusts, http://www.gpo.gov/fdsys/pkg/FR-2013-03-06/html/2013-05243.htm
- U.S. Office of Management and Budget (1985): Statistical Policy Directive No. 3: Compilation, Release, and Evaluation of Principal Federal Economic Indicators, http://www.whitehouse.gov/sites/default/files/omb/assets/omb/inforeg/statpolicy/dir_3_fr_09251985.pdf
- U.S. Office of Management and Budget (2002): Guidelines for Ensuring and Maximizing the Quality, Objectivity, Utility, and Integrity of Information Disseminated by Federal Agencies, http://www.whitehouse.gov/sites/default/files/omb/assets/omb/fedreg/reproducible2.pdf
- U.S. Office of Management and Budget (2006): Standards and Guidelines for Statistical Surveys, http://www.whitehouse.gov/sites/default/files/omb/assets/omb/inforeg/statpolicy/standards_stat_surveys.pdf
- U.S. Office of Management and Budget (2008): Statistical Policy Directive No. 4: Release and Dissemination of Statistical Products Produced by Federal Statistical Agencies, http://www.whitehouse.gov/sites/default/files/omb/assets/omb/fedreg/2008/030708_directive-4.pdf
- U.S. Office of Science and Technology Policy (2010): Memorandum for the Heads of Executive Departments and Agencies: Scientific Integrity, http://www.whitehouse.gov/sites/default/files/microsites/ostp/scientific-integrity-memo-12172010.pdf
- U.S. Public Law 104-13 Paperwork Reduction Act (1995), http://www.gpo.gov/fdsys/pkg/PLAW-104publ13/html/PLAW-104publ13.htm

Principle 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.

ACCOUNTABILITY AND TRANSPARENCY

I. Objective

To guarantee user access to necessary information to understand the characteristics and quality of official statistics by describing and making available policies and practices surrounding statistical production and dissemination in order to facilitate correct interpretation by the user and thereby improving the use of statistics.

Official statistics need to have high ambitions as regards the use and benefit for the users but also indirectly for all society. Transparency on the sources, methods and procedures used to produce official statistics readily available to users will enable them to judge the *fitness of use of the data*. Transparency therefore contributes greatly to increase the confidence and trust of users in statistics and thereby increasing use of statistics as evidence in decisions.

For the qualified users it is necessary not only to read the pure statistical results but also to have a professional understanding of how the statistics have been produced. The qualified user will reach the necessary understanding on how to use the statistical results only after knowledge about data sources methods and procedures. This is why it is important that every statistics includes relevant and scientific documentation. Metadata is an important part of the standard dissemination procedure for official statistics.

According to the Principles governing International statistical activities, Good practices on Transparency include:

- Aiming continuously to introduce methodological improvements and systems to manage and improve the quality and transparency of statistics
- Enhancing the professional level of staff by encouraging them to attend training courses, to do analytical work, to publish scientific papers and to participate in seminars and conferences

- Documenting the concepts, definitions and classifications, as well as data collection and processing procedures used and the quality assessments carried out and making this information publicly accessible
- Documenting how data are collected, processed and disseminated, including information about editing mechanisms applied to country data
- Making officially agreed standards publicly available

II. Scope of application

In order to institutionalise the principle of Accountability and Transparency across the national statistics system, it must be encapsulated into statistical legislation, national policy and statistical practices within each entity or organ of state that is responsible for producing official statistics.

1. Legal framework

It is essential that clear provisions are laid down in the statistical law to ensure transparency.

1.1 The principle of transparency is specified in statistical legislations.
1.2 Rules how to react in case of non-compliance
1.3 The domestic law governing the statistical system must be made available to the public.

*Examples/ good practices for "*Legal framework*"*

- South Africa's Statistics Act (6 of 1999): (http://www.statssa.gov.za). See Section 3: Purpose of Official Statistics and Statistical Principles (subsection 2) "Official statistics must be compiled, reported and documented in a scientific and transparent manner."
- Namibia's Statistics Act: (http://www.nsa.org.na) See Section 4(c) Purpose of National Statistics System and principles of statistics (subsection c) "compiled, produced and analyzed in a scientific and transparent manner"

2. National/Regional policy or framework

The principle of transparency of methods applied is described in a regional and national policy or framework to guide implementation by all producing agencies. The national policy or framework must make reference to:

a) Transparency on international standards and methods used
b) Transparency on concepts and definitions used
c) Rules and guidelines on accessibility of information on statistical practices and information

*Examples/ good practices for "*National/Regional Policy or framework*"*

Assuring transparency

European statistics Code of Practice	CoP 6.3: Errors discovered in published statistics are corrected at the earliest possible date and publicised CoP 6.4: Information on the methods and procedures used is publicly available CoP 6.5: Statistical release dates and times are pre-announced. CoP 6.6: Advance notice is given on major revisions or changes in methodologies CoP 8.6: Revisions follow standard, well-established and transparent procedures
IMF DQAF	1.2.1 The terms and conditions under which statistics are collected, processed, and disseminated are available to the public 1.2.2 Internal governmental access to statistics prior to their release is publicly identified. 1.2.3 Products of statistical agencies/units are clearly identified as such 1.2.4 Advanced notice is given of major changes in methodology, source data, and statistical techniques
Latin America and the Caribbean	LAC 7.1 Statistical operations and research are implemented using methodologies and processes which are documented, are based on impartiality and transparency, and pursue clearly established aims

Regional Code of Good Statistical Practice	LAC 7.2 The standards, classifications, methods and processes used in the production of statistics (design, collection, processing and release) are documented and made available to the public LAC 10.5. The revisions follow standard processes and consolidate in accordance with the schedule and comments that may be required. The studies and analysis of revisions are made available to specialized users LAC 15.3. A specific date and time is laid down for the release of all statistics. Any changes to the dissemination time schedule are made known in advance with explained and a new release date is set
National Code of Good Practice for Official Statistics (Colombia)	4.8. Announce the release calendar, prior to the publication of results. 4.10. Correct and communicate the errors discovered in published statistics in a timely manner. 6.2. To document the information needs of the users and its prioritization. 6.3. Any modifications made to the methodological aspects of official statistics that have been produced, must be announced prior to the publication of results.
African Charter on Statistics	Principle 1: Professional independence **Transparency:** To facilitate proper interpretation of data, Statistics authorities shall provide information on their sources, methods and procedures that have been used in line with scientific standards. The domestic law governing operation of the statistical systems must be made available to the public.
Statistics Canada NQAF	CAN.12 Managing institutional infrastructure -. confidentiality, security, transparency, professional independence, impartiality, objectivity
Statistics South Africa	Quality dimension 8: Integrity Professional and ethical standards in guiding policies and practices,

SASQAF	which should be reinforced by their **transparency** standards
Norwegian Dissemination policy	**….** Transparency Correcting errors Statistics Norway endeavours to explain errors encountered in statistics and publications in a **transparent** and professional manner, and corrections are to be documented**…**

3. Institutional Implementation through Manuals/protocols/guides etc.

National Statistics Offices and other producing agencies must document and publish all phases of the production cycle in line with international standards and best practice:

- Compile and publish a manual(s) on data collection, data processing, data analysis, and data presentation for example:
  - the editing process,
  - quality checking process,
  - the estimations process,
  - analytical procedures as seasonal adjustment,
  - errors and stochastic properties have to be described.

- Compile and publish a manual(s) of concepts and definitions on including information on:
  - the units,
  - the population,
  - the variables, etc.

- Compile and publish rules and guidelines on revisions and error policy
- Compile and publish a guide on the interpretation of the data used and estimates of each statistical series
- Compile and publish a guide on impartial and equal access

Documented policies and practices must be easily accessible to the public.

The documentation should all together serve the purpose of submitting relevant information to the user. The users should be empowered to understand and evaluate the various quality dimensions of each of the official statistics.

The UN Handbook of Statistical organization 2003 gives in chapter XI Getting information to the user's relevant information on how to bring the metadata to the users.

*Examples/ good practices for "*Institutional Implementation*"*

- Statistics Sweden: Publish Sweden's standard industrial classification and various Publications about statistical methods on the website for public access. (http://www.scb.se/en_/Documentation/Publications-about-statistical-methods)
- Australian Bureau of Statistics: Webpage on Methods, Standards and Classifications. This page contains methodological research papers and information on time series and data quality. You can also find the standards and classifications used to collect, process, and present ABS data. (http://www.abs.gov.au/websitedbs/D3310114.nsf/home/Methods,+Classifications,+Concepts+&+Standards?opendocument#from-banner=GT)
- Statistics Canada: Webpage on statistical methods. Information and sources that describe methods of a statistical and mathematical nature used in gathering, processing and disseminating sample surveys, censuses or administrative data are available. (http://www5.statcan.gc.ca/subject-sujet/theme-theme.action?pid=1356&lang=eng&more=0&HPA)
- Statistics New Zealand: Webpage on methods. It contains information about how data collection is organised and the code used, methods in data analysis, Information about data integration – the combining of data from different sources to produce richer information etc. (http://www.stats.govt.nz/methods.aspx)
- The United States: The Office of Management and Budget (OMB) provides policies, standards, and guidance for designing surveys and information collections in Standards and Guidelines for Statistical Surveys. (www.whitehouse.gov/sites/default/files/omb/assets/omb/inforeg/statpolicy/standards_stat_surveys.pdf)

III. Risks

The risk that producing agencies do not comply with the national policy or framework on transparency and that there are no consequences for non-compliance to the legislation and policy on transparency may lead to the mistrust of users.

One of the necessities of official statistics is transparency to every detail as regards methods and procedures and full confidentiality only for individual micro data. A strong prerequisite for the total quality is that the principle 3 is respected and the quality for the user and the confidence in the results relies on adequate documentation.

Principle 4

The statistical agencies are entitled to comment on erroneous interpretation and misuse of statistics.

PREVENTION OF MISUSE

I. Objective

To comment and respond to erroneous interpretation and misuse of official statistics in order to ensure that trust in statistics are maintained and thereby improving the use and understanding of statistics. To develop interventions to educate users on the correct interpretation of official statistics is therefore crucial.

Statistics can be used and interpreted in many different ways. Statistics are sometimes misused in advertising and politics. It is important to maintain trust in, and the credibility of, official statistics. Hence, statistical agencies should draw attention to obvious public incorrect use or interpretation.

According to Wikipedia "A misuse of statistics occurs when a statistical argument asserts a falsehood. In some cases, the misuse may be accidental. In others, it is purposeful and for the gain of the perpetrator. When the statistical reason involved is false or misapplied, this constitutes a statistical fallacy. Misuses can be easy to fall into. Professional scientists, even mathematicians and professional statisticians, can be fooled by even some simple methods, even if they are careful to check everything. Scientists have been known to fool themselves with statistics due to lack of knowledge of probability theory and lack of standardization of their tests."

Types of misuse include: Discarding unfavourable data, loaded questions, overgeneralization, biased samples, misreporting or misunderstanding of estimated error, false causality, proof of the null hypothesis, data dredging, data manipulation, non-enduring class fallacies, etc.

According to the Principles governing international statistical activities good practices include:

- Responding to perceived erroneous interpretation and misuse of statistics

- Enhancing the use of statistics by developing educational material for important user groups

II. Scope of application

In order to institutionalise the principle of Prevention of misuse of statistics, it might be encapsulated into statistical legislation, national policy and statistical practices within the national statistics system.

1. Legal framework

One possibility to prevent misuse is to lay down clear provisions in the statistical law to ensure that statistics are not misused or erroneously interpreted.

1.1 The principle of prevention of misuse is specified in statistical legislations.

1.2 Laws or regulations provide entities and processes for reporting and investigating statistical offices' misuse of data, as described in the implementation guide for principle 2.

*Examples/ good practices for "*Legal framework*"*

- South Africa's Statistics Act (6 of 1999): (http://www.statssa.gov.za). See Section 14: Statistical coordination (subsection 8) "The Statistician-General may - at his or her own instance or at the request of the Council, the Minister or any other Minister review and comment on the production, analysis, documentation, storage, dissemination, interpretation and use of official or other statistics of any other organ of state."
- New Zealand's Statistics Act: (http://www.legislation.govt.nz/act/public/1975/0001/latest/DLM430774.html?search=sw_096be8ed80cd73d3_interpretation_25_se&p=1&sr=2) Section 14(l) "to examine and comment, where the Statistician considers necessary, on the interpretation and validity of any published unofficial statistics; and to publish any such statistics and comment thereon as the Statistician considers necessary"

2. National/Regional policy or framework

The principle of Prevention of misuse is described in a supranational and national policy or framework to guide implementation. The national policy or framework must make reference to:

- The right of the Head of the National Statistical Office/Statistics Authority and Head of the Regional body to comment publicly on the misuse or erroneous interpretation of official statistics.

*Examples/ good practices for "*National/Regional Policy or framework*"*

Assuring transparency

European statistics Code of Practice	CoP 1.7: The National Statistical Institute and Eurostat and, where appropriate, other statistical authorities, comment publicly on statistical issues, including criticisms and misuses of statistics as far as considered suitable. See also Federal Statistics of Germany PP presentation.
IMF DQAF	1.1.3 The appropriate statistical entity is entitled to comment on erroneous interpretation and misuse of statistics.
Latin America and the Caribbean Regional Code of Good Statistical Practice	LAC 1.7. When appropriate, the heads of the statistical services of the national statistical system issue public statements on statistical issues, which include criticisms and address misuses of official statistics.
National Code of Good Practice for Official Statistics of	4.11. In the event of misinterpretations of official statistics, clarifications must be formulated.

Colombia	
African Charter on Statistics	Principle 1: Professional independence **Responsibility:** Statistics authorities and African statisticians shall employ unambiguous and relevant methods in the collection, processing, analysis and presentation of statistical data. Statistical authorities shall also have the right and duty to make observations on erroneous interpretation and improper use of the statistical information that they disseminate.

3. Institutional Implementation through Manuals/protocols/guides etc.

The National Statistical Office must have the right to comment on erroneous use of statistics or incorrect interpretation of official statistics in public when necessary.

Other measures to prevent misuse include the publication of documentation explaining key statistics and education programs for users to increase awareness and knowledge of official statistics. More attention should be paid to giving guidance to data users about the proper use and misuse of statistics.

This can be achieved by:

- General research on concepts and compilation methods.
- Investigating user practice.
- Modifying guidelines.
- Supplementing statistics with other information.
- Change the presentation of statistics to increase better understanding and knowledge.
- Training of users in the proper use of statistics.
- Transparent publications policy.

Another measure it to work with an “Open Copyright” (for example: Federal Statistical Office of Germany): Dissemination and duplication of official statistics will be allowed free of charge if the source is mentioned correctly (as long as the rights of third parties remain untouched). The free access is an incentive for users to rather refer to official statistics.

*Examples/ good practices for "*Institutional Implementation*"*

- British Medical Journal (1998): Statistics on misuse of drugs have been misused. (http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1114263/)
- Frits Bos (2007): Use, misuse and proper use of national accounts statistics. (http://www.cbs.nl/nr/rdonlyres/1dbebb42-89e2-4a59-9554-dc20c553203e/0/2007096p30pub.pdf)
- Federal Statistics Office of Germany where they outline and provide guidelines on (i) the typology of misuse, (ii) identifying sources of misuse (iii) determining level of reaction and (iv) procedures for terms and conditions for reaction and escalation

III. Risks

The risk that statistics are misused can cause major damage to the credibility of the national statistics office and negatively impact on the public confidence and trust of users in official statistics.

It is important to also acknowledge that the National Statistical Office also takes some risks by entering into a public debate about misuse of their statistics, so responses need to be carefully measured. Depending on how it responds, a National Statistical Office could be perceived as being defensive or no longer impartial.

The risk that statistics are misused can cause incorrect policy decisions. This can be quite damaging to the quest for knowledge and correct decision making. For example, in medical science, correcting a falsehood may take decades and cost lives.

Principle 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.

SOURCES OF OFFICIAL STATISTICS

I. Objective

To ensure that producers and statistical operations, as well as the characteristics of the production process and the quality of the data generated are fully identified and are governed by the rules established to meet the demands of information.

To produce statistics is a costly and labour-intensive task for statistical offices as well as for respondents. Therefore, statisticians have to apply methods in a least intrusive way and have to choose sources that are most cost-efficient (without losing sight of quality requirements).That is why the use of existing administrative records is often recommended. By choosing among the different sources of official statistics, some other aspects should also be considered such as quality, timeliness and response burden.

II. Scope of application

The observation of this principle requires clear policy, mandatory oriented, to strengthen the regulatory role in the national statistical production. The main aspects to be considered are listed below.

This principle shall be applied in all sorts of surveys (planned and existing ones).

Quality aspects are to be born in mind for all the dimensions of principle 5.In fact, a wide range of existing frameworks contributes to fix quality management and is often the basis for national assurance frameworks: the General Data Dissemination System, the Data Quality Assessment Framework, the European Foundation for Quality Management, European Code of Practice, the European Statistical System Quality Assurance Framework, Total Quality Management and ISO EN 9001 and others.

The following dimensions have to be taken into account:

1. Legal framework

The legal framework is a key factor guiding the statistical production. There are recognized models for quality assessment, like the Data Quality Assessment Framework (DQAF) developed by the International Monetary Fund. The legal framework is constituted by all laws, decrees, regulations, agreements or other regulations governing a statistical operation.

There are basic, cross-cutting or other specific regulations/legislation that affect all producers of the national statistical system. An Act of the national statistical system involves the regulation of institutional mechanisms to strengthen the statistical production process. International experience shows the ability to combine various frames to create your own. Before adopting a law or general rule, it is desirable that statistical offices consider if they can make use of administrative records in order to reduce the burden on respondents. But, there must be clear provisions in statistical law or a policy or commitment that lays down the rights and conditions of access to administrative data.

Access may be granted through bi-lateral agreements with relevant agencies.

The quality of official statistics depends largely on the cooperation of society as a whole, governmental institutions mainly, but also private entities. It would be important that law, in any way, contemplates the provision of obligation of the private sector for providing information. On the other hand, there are a number of problems that must be addressed in the law as to ensure private information providers maximum confidentiality, applying the international recommendations.

In terms of quality through surveys the information is better controlled but it is much more expensive. In contrast, the advantages of the administrative records are lower cost, and imply less burden on respondents. Depending on the quality of records, they can be a source of constantly updated information.

In developing countries the administrative records are limited in terms of duplication, obsolescence and low cover. This is a challenge for the NSOs to coordinate the national statistical systems.

Examples / good practices for "legal framework"

- Law on Official Statistics of the Republic of Albania, Article 6 and 8 (https://unstats.un.org/unsd/dnss/docViewer.aspx?docID=430&catID=5&catID=26&catID=27&catID=28#start)
- UK´s Code of Practice for Official Statistics, Cost-effectiveness (https://unstats.un.org/unsd/dnss/SearchResults.aspx)
- **Colombia:**

El Plan Nacional de Información Oficial Básica - Planib

https://unstats.un.org/unsd/dnss/SearchResults.aspx

Código Nacional de Buenas Prácticas Estadísticas

(http://www.dane.gov.co/files/sen/bp/Codigo_nal_buenas_practicas.pdf)

Metodología de Fortalecimiento de Registros administrativos

(http://www.dane.gov.co/files/sen/planificacion/metodologia/planes_fortalecimiento_RA.pdf)

Ley 79 1993, artículo 5

(http://www.dane.gov.co/files/acerca/Normatividad/Ley79_1993.pdf)

Sala de consulta y servicio civil del Consejo de Estado

(http://190.24.134.67/sentencias/SALA%20DE%20CONSULTA/2003/CE-SC-RAD2003-N1209.doc)

Aspectos Generales del Aseguramiento de la Calidad Estadística

(http://www.dane.gov.co/index.php/es/calidad-estadistica/aspectos-generales)

Evaluación del Proceso Estadístico

(http://www.dane.gov.co/index.php/es/calidad-estadistica/evaluacion-del-proceso-estadistico)

Mejoramiento Continuo

(http://www.dane.gov.co/index.php/es/calidad-estadistica/mejoramiento-continuo)

- **México**

Ley del Sistema Nacional de Información Estadística y Geográfica

(https://unstats.un.org/unsd/dnss/SearchResults.aspx)

Norma para el acceso difusión y promoción de la información estadística y geográfica que genera el Instituto Nacional de Estadística y Geografía (http://sc.inegi.org.mx/repositorioNormateca/On23Feb12.pdf)

Ley del SNIEG (http://www.snieg.mx/contenidos/espanol/normatividad/marcojuridico/LSNIEG.pdf)

Norma Técnica para la generación de estadísticas básicas (htpp://www.snieg.mx/contenidos/espanol/normatividad/tecnica/Norma%20T%C3%A9cnica%20para%20la%20Generaci%C3%B3n%20de%20Estad%C3%ADstica%20B%C3%A1sica.pdf)

Reglamento interior del INEGI (http://sc.inegi.org.mx/repositorioNormateca/Oda_ri.pdf)

Código de Ética para los integrantes del SNIEG (http://www.inegi.org.mx)

Aspectos Normativos y Metodológicos. Planeación y Control Administrativos en Proyectos Estadìsticos (http://www3.inegi.org.mx/sistemas/biblioteca/detalle.aspx?c=29021&upc=702825003330&s=est&tg=0&f=2&pf=Eco)

- **Brasil**

Lei n° 5534, de 14/11, Art. 1º (http://www.ibge.gov.br/home/disseminacao/eventos/missao/leiobrigatoriedade.shtm)

Lei n. 5878, de 11/05/73, Art 8°, (http://www.planalto.gov.br/ccivil_03/leis/L5878.htm)

Decreto n. 77624, de 17/05/76 Art. 1º (http://www2.camara.leg.br/legin/fed/decret/1970-1979/decreto-77624-17-maio-1976- 426694-publicacaooriginal-1-pe.html)

Código de Boas Práticas das Estatísticas do IBGE, Princípios 11 y 12

(http://www.ibge.gov.br/home/disseminacao/eventos/missao/codigo_boas_praticas.shtm)

- **Spain**

Ley Estadística Nacional

(http://www.boe.es/buscar/doc.php?id=BOE-A-1989-10767)

- Regulation of the European Parliament and of the Council. Amending regulation (ec) no 223/2009 on European Statistics,

(http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2012:0167:FIN:EN:PDF)

2. Conceptual and methodological framework

The conceptual and methodological framework for statistical production, which is the basis for approval or statistical harmonization, include the precise conceptual definition of variables, documentation (metadata), response categories, using classifiers and coding as well as the establishment of methodological processes from the scope of its objectives until analysis and dissemination, through the collection, processing and data validation. These aspects form, as well as the legal framework, the reference framework of the statistical operation.

3. Reliability: Problems in data collection and processing

The reliability of statistical information criteria is present in various models of statistical quality assessment. It implies the absence of non-sampling errors in the case of operations from administrative records such as design, register or sub-register, misclassification, partial responses, etc. It also implies the reduction of non-response and data reliability by applying rules of internal and external validation in the case of sample surveys. Reliability rests largely on the work of collecting the data and performing the analysis in its consistency. If there are ailures in these processes, reliability is affected directly, so that measures should take place to prevent this.

4. Management problems

Productivity in the generation of statistics depends on the factors of production such as models of organization and management, sufficient and qualified staff, equipment and technology according to defined production standards, and adequate budgetary resources to production goals. The proper definition of roles and division of labor when production is interinstitutional is another factor that affects significantly on productivity.

5. Statistical coordination

The issue of statistical coordination is based on the conceptualization of coordination as the set of processes and procedures for consolidating and achieving official statistics within an institution or between institutions. Coordination usually involves two fields, conceptual harmonization and institutional management.

The conceptual harmonization implies that, for all participants institutions in the management of an official statistics, the variables have the same definition, are known and shared by national or international classifications of the subject, is encoded in the same way, the methodology is shared in all phases of the life cycle of the statistical operation, and in the best scenario, the databases are shared.

Interagency coordination and management aims at the efficient management process within or between institutions, ie, mechanisms of communication, monitoring and control, and processes and procedures of articulation.

6. Coherence and consistency

The weak coordination in the field of statistical harmonization and the interagency management is largely a result of managerial inefficiency. Identification of statistics involving the participation of various entities and agencies in one or more stages of the life cycle of their production to analyze the conceptual and institutional management harmonization is the first activity to recommend in order to cover this aspect.

Duplicity is the situation in which two institutions or two departments within the same institution produced a single statistic, based on the same study population, and the same target same statistical technique for data collection (administrative record,

survey or census). This is focused in the statistical operation, not the indicator. Duplicity can be accompanied (and usually is) by divergent data, resulting from the use of different methods of collection or processing.

There are several situations in which two different sources of information provide the same data based on a variable or set of variables. The data can come from a survey and an administrative record and this allows cross-validation of data, known as validation between sources.

7. Administrative records and statistical register

In order to reduce the burden on respondents, statistical offices shall have access to administrative data sources, from within their respective public administrative system.

Furthermore, they should be consulted on and involved in the initial design, subsequent development and discontinuation of administrative records built up and maintained by other bodies, thus facilitating the further use of these records.

To put it in a nutshell: The objective is to develop administrative records further or to develop it from scratch on the basis of statistical requirements. Thereby, a direct use of data is possible and a loss of quality can be avoided.

Nevertheless, the direct use of the content of administrative records is often not possible, because the content is not consistent with statistical requirements.If this is the case the development of a specific statistical register might be reasonable as an intermediate step.

Another aspect can be mentioned in this context: Data-matching or data-linking is an efficient way to use existing frameworks for new statistics.

The statistical sub-register refers to the statistical operation does not capture or record all the units of analysis or events related to the subject matter of the same and becomes a cause of loss of quality of statistical operation resulting from the loss of information. The sub-register in the vital statistics of births, for example, is caused by the lack of reports from private to public health ministry or loss of information in transit from the health centre to the central level, where statistics is produced.

8. Information Technology

Specific standards should be established to preserve, capture, analysis and exchange of information by electronic means between the national statistical agency and the main producers of the national statistical system. It is necessary to remove different types of file formats of various statistical applications, various database engines, software development with extensions or proprietary formats that hinder exchange, buy commercial software with limited exchange, use of different applications for consistency and data processing.

9. Training

Training and professional expertise in statistics benefits the consolidation of a national training system. Accurate statistical demand for the public sector with a comprehensive training curriculum, comprising basic, means and specialization courses estimate is needed for different types of students with different backgrounds and interests that can be incorporated into the whole or in any point thereof. Information on the supply of existing providers in the country, with an inventory of experts and a certification mechanism of skill in the art is recommended.

III. Risks

The absence of a legal framework of the national statistical system to govern the universe leads to severe institutional weaknesses in statistical production. Poor administrative register, lack of uniformity in the data capture format, delays in process monitoring, lack of management systems databases, use of units of measurement and different formats that affect the processing quality, understaffed, lack of technical training, inadequate definition of roles, tasks are not met, high staff turnover, unmotivated staff, inadequate technological equipment, as well as failure to follow the classifications and standards, among other deficiencies prevents to count on reliable and current statistical information, necessary for decision-making that enables the implementation of the national development strategy of a nation.

The definition of a regulatory framework for statistical production, to guide producers throughout the life cycle of the statistical operation performed, whether derived basic statistics (surveys, censuses, and / or administrative records) is a task aimed at

standardizing key stages of production. This is a commitment that requires political will from the highest authority of the state and involves all government institutions.

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- Ministerio de Economía Planificación y Desarrollo: Sistema Nacional de Planificación: Nuevo Marco Institucional para la Planificación Nacional.

[6] Apart from the sources used in “blue boxes” and Used sources (main sources of reference) on page 89.

República Dominicana: Ministerio de Economía Planificación y Desarrollo, http://www.stp.gov.do/eWeb%5CArchivos%5CLibros%5C2008120420332_La_Nueva_Institucionalidad.pdf

- Eurostat (n/d.): The European Self-Assessment Checklist for Survey Managers, http://epp.eurostat.ec.europa.eu/portal/page/portal/quality/documents/desap%20G0-LEG-20031010-EN.pdf
- Fondo Monetario Internacional (2003): Marco de Evaluación de la Calidad de los Datos (MECAD) correspondientes a las Estadísticas de la deuda externa.

Principle 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.

CONFIDENTIALITY

I. Objective

A fundamental requirement for official statistics is confidence and acceptance of public. Accurate and timely data are reliant on public goodwill and cooperation – no matter if their participation is facultative or if it is based on compulsory response. In order to maintain the trust of respondents it is the utmost concern of official statistics, to secure the privacy of data providers (like households or enterprises) by assuring that no data is published that might be related to an identifiable person or business. At the same time this guarantees quality by avoiding loss of accurate data. Confidentiality protection is supposed to be implemented on each level of the statistical process – from the preparation of surveys up to the dissemination of statistical products.

II. Scope of application

In the following are listed several dimensions of confidentiality, which a Statistical Institute is advised to take into account when implementing this principle or when developing it further. Concrete examples complement the dimensions.

1. Legal framework

It is essential that clear provisions are laid down in the statistical law to ensure the statistical confidentiality.

1.1. There must be clear provisions in the statistical law or a policy or commitment that ensures the statistical confidentiality. (CoP 5.1, QAF 5.1.1 institutional level; SASQAF 1.4.1.)

1.2. The legislation or policy absolutely guarantees:

- the privacy of data providers (households, enterprises, administrations and other respondents) and the confidentiality of the information they provide,
- the security of information received from data providers,
- its use only for statistical purposes. (CoP Intro, LAC 4.1., NQAF – agency level, SASQAF)

1.3. Penalties are laid down in in the statistical law or other legal provisions and are prescribed against persons (statistical staff or other personnel) who wilfully breach the statistical confidentiality leading to the release of confidential data (NQAF – agency level, NQAF – supporting mechanisms, CoP 5.3.)

1.4. The statistical law distinguishes between various types of infractions, like carelessness, improper behaviour, behaviour with malicious intent and the use of confidential information for personal benefit. (QAF Method: 5.3.1 at institutional level, Handbook, S. 156)

1.5. Sanctions exist on administrative, penal and disciplinary level. (QAF Method: 5.3.1 at institutional level)

Examples / good practices for "legal framework" and "penalties"

- Canada's Statistics Act (http://www.statcan.gc.ca/about-apercu/act-loi-eng.htm), see for example: Prohibition against divulging information, exception to prohibition, disclosing secret information
- Canada's Privacy Act (http://www.statcan.gc.ca/about-apercu/law-acte-eng.htm) is a very detailed document, see for example: personal information may be disclosed, right of access to personal information, etc.
- Iceland's Rules of Procedure for Treating Confidential Data (http://www.statice.is/pages/480), a comprehensive regulation which deals in a very comprehensive manner with statistical confidentiality.
- South Africa's Statistics Act (http://beta2.statssa.gov.za/?page_id=677), see section on confidentiality and disclosure as well as offences and penalties.

- New Zealand's privacy act (http://www.legislation.govt.nz/act/public/1993/0028/latest/DLM296639.html?search=ts_act%40bill%40regulation%40deemedreg_privacy+act_resel_25_h&p=1) lays out, besides other, the functions of the privacy commissioner.

- The French Code pénal 2013 (Article 226-13) provides for any breach of statistical confidentiality a sentence of up to one year imprisonment and a fine of up to €15,000. Sanctions may be more severe in the case of violating the law of 1978 on data processing, data files and individual liberties.
- The United States' Confidential Information Protection and Statistical Efficiency Act of 2002 (CIPSEA) (http://www.whitehouse.gov/sites/default/files/omb/assets/omb/inforeg/cipsea/cipsea_statute.pdf) provides strong confidentiality protections for statistical information collections with penalties for intentional disclosure of imprisonment for up to five years and fines up to US$250,000.

2. Confidentiality policy and supporting mechanisms

Developing a comprehensive confidentiality policy is an essential element to establish principles for a trustful and confidential cooperation with respondents. Adequate mechanisms secure the successful implementation of data confidentiality.

2.1. A confidentiality policy is prepared by the statistical authority, is provided to the staff and is made publicly available (CoP 5.4., QAF Method: 5.4.3 at institutional level, NQAF supporting mechanisms).

2.2. The confidentiality policy lays out principles and commitments related to statistical confidentiality. (CoP 5.4., QAF 5.4.1 at institutional level)

2.2.1. The confidentiality policy sets out how statistics are to be produced and disseminated to users in regard of the confidentiality. (CoP 5.4., NQAF, agency level, CoP 5.4., QAF Method: 5.4.3 at institutional level, NQAF supporting mechanisms)

- Prior to or during data collection respondents are informed that the statistical authority fully commits to data protection and statistical confidentiality and that the data are only used for statistical purposes and personal data are put forward under no circumstances (QAF Method: 5.4.5 at institutional level).
- Respondents are informed of the main uses and limitations in terms of access to the information that they provide. (LAC, principle 4)

2.2.2. The confidentiality policy sets out under what circumstances micro data (i.e. statistical information relating to individual respondents) may be made available for research and further analysis. (CoP 5.4., NQAF, agency level, CoP 5.4., QAF Method: 5.4.3 at institutional level, NQAF supporting mechanisms)

- Statistical data producers apply statistical disclosure control methods prior to the release of statistical information (aggregated data and micro data) (QAF 5.4.6. product level, QAF 5.4.7 product level, NQAF – agency stage)

2.3. Mechanisms to guarantee the privacy of data

2.3.1. During data collection and data processing:

- No entry of individual names of persons or enterprises in the databases; (General Review 2013)
- Personal data and questionnaires are kept secure and are destroyed after some time. (General Review 2013)

2.3.2. For publication of aggregated data:

- Suppression of information if the number of respondents allows easy disclosure of individual data; (General Review 2013)
- Standard software applied for checking tabulations and micro data against disclosure, and use of other special software; (General Review 2013)
- Review by authorized staff of all data prepared for dissemination for possible indirect disclosure. (General Review 2013)

2.3.3. When releasing individual data:

- Examination of all applications for access to confidential data by a statistical disclosure committee at the national statistical office and in some countries by the data protection authority (General Review 2013)
- Release of individual data only as anonymized micro data for research purposes; (General Review 2013)
- Limiting geographic details, limiting the number of variables, recoding and (sub) sampling. (General Review 2013)

2.4. The confidentiality policy contains that persons (staff and external parties[7]) with access to individual or confidential information must sign a confidentiality

[7] External parties which undertake work on behalf of the statistical authority.

commitment on appointment. (LAC 4.2., CoP 5.2, QAF 5.2.1.an institutional level, QAF 5.2.1.b institutional level, NQAF supporting mechanisms)

2.4.1. In this confidentiality commitment they ensure their respect for confidentiality and take note of the penalties for non-compliance. (LAC 4.2., CoP 5.2, QAF 5.2.1.an institutional level, QAF 5.2.1.b institutional level, NQAF supporting mechanisms)

2.4.2. In case of modification, such agreements should be updated and signed again by all staff or parties concerned. (QAF Method: 5.2.1c at institutional level)

Examples / good practices for "confidentiality policy":

- Video from USA informing the users regarding the methods used in the Population Census (http://www.census.gov/2010census/).
- France's Guide to Statistical Confidentiality (http://www.insee.fr/en/insee-statistique-publique/statistique-publique/guide-secret-18-10-2010.pdf), guidelines and instructions are provided to staff on the protection of statistical confidentiality in the production and dissemination process.
- Canada's ten privacy principles (http://www.statcan.gc.ca/about-apercu/pia-efrvp/section-partie1-eng.htm) guarantee confidentiality during the legal and organizational aspects in the frame of producing a statistical survey.
- Canada's Privacy Notice (http://www.statcan.gc.ca/reference/privacy-privee-eng.htm) informs respondents and users in a very clear way; explains how confidentiality is kept in spite of using social media.
- Canada's privacy impact assessment (http://www.statcan.gc.ca/about-apercu/pia-efrvp/pai-efvp-eng.htm), for each survey Statistics Canada assesses if and to which degree confidentiality is violated. Developing measures to eliminate identified breaches.
- New Zealand's webpage on safeguarding confidentiality (http://www.stats.govt.nz/about_us/policies-and-protocols/confidentiality-of-info-supplied-to-snz/safeguarding-confidentiality.aspx) provides an overview of how data is adjusted to make sure that individual responses remain confidential and how the data may be affected by these adjustments; this page covers the different techniques used for different types of output: tables and micro data.

3. Micro data for research purposes

Providing anonymized data is an essential contribution of statistical institutes to third persons. Circumstances and conditions must be clearly defined.

3.1. Clear conditions for granting researcher access to confidential data for scientific purposes are set in the statistical law or relevant regulations. These conditions are publicly available on the website of the statistical authority. (QAF 5.6.1a institutional level, QAF 5.6.1b at institutional level)

3.2. Users of confidential information are bound to sign legally enforceable contracts of usage of micro data/public use files, which include

- information about existing sanctions for violation of statistical confidentiality. (NQAF, supporting mechanisms, QAF Method: 5.6.2b at institutional level, QAF Method: 5.3.2 at institutional level, CoP 5.6.)
- information about a possible loss of information due to procedures, which ensure anonymized micro data. (NQAF, programme implementation stage)

3.3. Ways of granting access to micro data

3.3.1. Access to statistical information takes place in a secure environment (e.g. remote access, safe centre, remote execution). (QAF 5.4.7 product level, QAF Method: 5.5.4b institutional level, General Review 2013)

3.3.2. Micro data are provided through a joint research project between the researcher and the national statistical office, with the researcher becoming a deemed employee of the national statistical office. (General Review 2013)

3.4. In order to ensure privacy of micro data before publishing

- Statistical agencies have established appropriate procedures and processes (e.g. anonymization) before passing over the data to researches. (NQAF – agency level)
- Additionally, the use of micro data is monitored in order to immediately apply corrective actions when circumstances appear in which confidentiality is violated (for example through file matching). (NQAF, post-collection evaluation stage, QAF Method:5.6.4 at product level)

Examples / good practices for "micro data for research purposes":

- UNECE-Handbook on Managing Statistical Confidentiality and Micro data Access (http://www.unece.org/fileadmin/DAM/stats/publications/Managing.statistical.confidentiality.and.microdata.access.pdf), listing principles, guidelines and international case studies of good practice on handling micro data issues.
- European Commission Regulation No. 557/2013 (http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2013:164:0016:0019:EN:PDF) establishes the conditions under which access to confidential data transmitted to the Commission (Eurostat) may be granted for enabling statistical analyses for scientific purposes, and the rules of cooperation between Eurostat and national statistical authorities in order to facilitate such access.
- Sri Lanka's micro-data dissemination policy of the Department of Census and Statistics (http://www.statistics.gov.lk/databases/data%20dissemination/DataDissaPolicy_2007Oct26.pdf) describes the procedures in place to ensure that information relating to any particular individual person, household or enterprise will be kept strictly confidential and will not be submitted to external parties.
- South Africa's document on providing access to micro data (Gavin et al., 2007: Providing Access to Micro data: A Perspective from Statistics South Africa) explains how to meet users' needs on statistical releases while ensuring respondent confidentiality; additionally, examples of micro data products distributed are outlined.
- Australia's webpage concerning micro data (http://www.abs.gov.au/websitedbs/D3310114.nsf/89a5f3d8684682b6ca256de4002c809b/ea3125287ffe3a4cca257202007840b5!OpenDocument) explains in detail different data sets and informs researchers in a comprehensive way about access to micro data.
- Slovenia's webpage on basic instructions concerning the access and the use of statistically protected micro data (http://www.stat.si/eng/drz_stat_mikro.asp) provides an insight into the issues of statistically protected micro data for research purposes; provides

forms for obtaining the statistically protected micro data, declarations on protection of data and contracts for researchers and research institutions.

4. IT-security

Statistical data is subject to threats in regard of its availability, confidentiality and integrity. In order to guarantee privacy of data Statistical Agencies are challenged to fend off these threats by establishing efficient IT-security systems.

4.1. An IT-security policy for the protection and security of personal data is in place. It establishes guidelines on the security and integrity of statistical databases, covering all legal and technical safeguards to protect confidential information. (LAC 4.4., QAF Method: 5.6.2a at institutional level, QAF Method: 5.5.2 at institutional level)

4.2. An IT-security policy should cover the following three dimensions:

- Availability: Statistical agencies provide internal and external users access to data to the required extent.
- Integrity: Statistical agencies secure adequate survey methods and processing methods and guarantee that data are not falsified by human or technical misbehaviour.
- Confidentiality: Statistical agencies assure that provisions regarding confidentiality and data protection are guaranteed and that data is only used for statistical purposes.

4.3. The IT-security policy is widely known to the staff of the statistical authority. (QAF Method: 5.5.2 at institutional level)

4.4. Security measures are in place on physical, technological and organisational level to protect the security and integrity of statistical data (SASQAF 1.4., NQAF, implementation stage, CoP 5.5, QAF Method: 5.5.1 at institutional level)

4.4.1. User rights are recorded and kept up-to-date to prevent unauthorized access. (QAF Method: 5.5.4c at institutional level)

4.4.2. Names and addresses or other personal identifiers are deleted as early as possible. (QAF Method: 5.5.4d at institutional level)

4.4.3. Systematic security audits on the data security system of the statistical authority are carried out. The audit evaluates every tool and safeguard to

protect the security and integrity of statistical databases. (QAF Method: 5.5.3 at institutional level)

4.4.4. Information must be stored in secured environments (that prevent access by unauthorized persons), in accordance with established security and confidentiality protocols and existing standards. (LAC 4.7., QAF Method: 5.5.4a at institutional level)

4.5. Appropriate procedures for measuring the risk of violating confidentiality are in place:

- to assess the risk that individual respondents can be identified from the public release of statistics or of micro data,
- to ensure that individual data are kept confidential, and used for statistical purposes only
- to prevent duplication of data (data illegally copied or not deleted after use). (QAF 5.6.3 at institutional level, SASQAF 1.4., NQAF, implementation stage)

4.6. All access to statistical databases is strictly monitored and recorded. (QAF 5.4.7 product level, QAF Method: 5.5.4b institutional level, General Review 2013)

4.7. Statistical agencies identify the risk of publishing statistics or micro data and if the risk of identification of individuals is above a minimum level, there must be a consideration whether data or micro data is disseminated or not. (NQAF, implementation stage)

4.8. All procedures that are taken to eliminate or adequately reduce the risk of identification are properly documented and made available as part of the metadata related to the statistical dataset (NQAF, implementation stage).

4.9. Procedures are in line with the confidentiality policy to eliminate or minimize this risk (NQAF, implementation stage).

4.10. Procedures in use for data protection are periodically examined and are selected in a way to counteract the trade-off between the risk of identification and the loss of information in an optimal way. (QAF 5.4.4b institutional level, QAF 5.4.2 institutional level)

Examples / good practices for "IT-security" and measurement of risks:

- Germany's research data centres of the Federal Statistical Office and the Statistical Offices of the Länder (http://www.forschungsdatenzentrum.de/en/index.asp) provide access to selected micro data of official statistics to German and international researchers for scientific purposes. Different form of access to selected micro data of official statistics is provided.
- International Household Survey Network (IHSN): Document on Tools and Guidelines on Micro data anonymization (http://www.ihsn.org/home/node/118) the website contains information on main principles associated with micro data anonymization, various techniques used for measuring the disclosure risk, methods available for reducing the disclosure risk, methods for assessing the resulting information loss, links to available tools are also provided, as well as a compilation of practices.
- New Zealand's data integration policy (http://www.stats.govt.nz/about_us/policies-and-protocols/data-integration-policy-2012.aspx) ensures that Statistics New Zealand minimizes risks concerning personal privacy when integrating personal data.
- Slovenia's rules on procedures and measures for the protection of data collected through programs of statistical research (http://www.stat.si/eng/stat_notranji.asp) regulate the internal organization of work in a manner that ensures protection of data collected through programs of statistical research, in order to prevent unauthorized access, processing, use, destruction, modification or transmission of the data.
- Sweden's IT policy (Statistics Sweden (2007): Statistics Sweden's IT policy) covers IT activities focusing on systems development and methods, as well as IT activities during the actual statistics production.

5. Organization, staff and research

All dimensions of confidentiality are supported by additional measures, which enforce the efforts of Statistical agencies to secure the privacy of data.

5.1. Appropriate organizational structure

- Statistical agencies consider whether establishing an appropriate organizational structure or establishing external bodies to ensure confidentiality.

5.2. General security measures within the office regarding the staff

- Ethics of the profession and/or internal regulations do exists, which may include that staff take an “oath of office”. (General Review 2013)
- Training of staff on confidentiality rules and practices is essential. (General Review 2013, NQAF supporting mechanisms)

5.3. On-going research

- The on-going research in the field of confidentiality is observed permanently. (QAF 5.4.4a institutional level)

Examples / good practices for organizational structure, staff and research

- France’s Statistical Confidentiality Committee (http://www.cnis.fr/cms/Accueil/activites/_trois_comites/Comite_du_secret_statistique): the Statistical Confidentiality Committee is responsible for enforcing strict compliance with the confidentiality of individual data and provides access to individual data, for which individual contracts are then signed with the accredited researchers or bodies.
- Finland’s Data Protection Ombudsman (http://www.tietosuoja.fi/1560.htm), provides guidance and advice on all issues related to the processing of personal data and controls the observance of the law.
- Data without Boundaries (http://www.dwbproject.org/), a research project to support equal and easy access to official micro data for the European Research Area, within a structured framework in which responsibilities and liability are equally shared.
- UNESCO Chair in Data privacy (http://unescoprivacychair.urv.cat/index.php), it is an agreement between UNESCO and an academic institution (University Rovira i Virgili). It provides research, training and dissemination in a field regarding data privacy.

III. Risks

Violating confidentiality is based on different impulses, like carelessness, improper behaviour, malicious intent or personal profit. In any case, statistical agencies are challenged to avoid any publication of private data due to severe negative consequences. Not only that applicable statistical law is offended and individual persons or enterprises may be harmed – it rather damages the image and reputation of statistical institutions in long term. Even minor offenses lead to tremendous negative effects and may discredit as well other governmental institutions or democracy itself. To reverse these damaging impacts afterwards is nearly impossible. Therefore statistical agencies are challenged to anticipate a possible loss of trust by investing in confidentiality protection at each stage of the statistical production process. To enhance these efforts, a transparent and continuous communication with public is required.

Principle 7

The laws, regulations and measures under which the statistical systems operate are to be made public.

LEGISLATION

I. Objective

High quality legislation is critical to the effective performance of a national statistical system. Such legislation should clearly set out the authority and powers of the national statistical office and establish its independence. Openness in all aspects of the production of official statistics is important for maintaining the trust of the providers of data and the credibility of the statistics produced. This openness is facilitated by the public availability of laws, regulations and measures under which a national statistical system operates.

II. Scope of application

In the following several dimension of legislation are listed, which a national government is advised to take into account when implementing this principle or taking it forward.

1. Legal framework

It is essential to the effective functioning of a national statistical system that it is governed by a high quality legal framework.

1.1 There should be clear laws and regulations governing official statistical activities within a country

1.2 The laws and regulations should be consistent with, and give effect to, the Fundamental Principles of Official Statistics

1.3 The independence of official statistics should be clearly set out in legislation

- There should be transparent procedures for the recruitment and dismissal of the chief statistician

- The chief statistician should be responsible for the budget of the national statistical office
- The chief statistician should be responsible for choices of sources and statistical methods and decisions about the dissemination of statistics

1.4 The laws and regulations should be modern and up-to-date

1.5 The laws and regulations should cover the activities of the national statistical office as well as the activities of other organisations involved in official statistics[8]

1.6 Ideally, there should be a specific statistics law

1.7 The laws and regulations should be comprehensive and provide sufficient detail to ensure that roles and responsibilities are properly understood and to avoid political arbitrariness. However, laws and regulations that are unduly prescriptive can be cumbersome and reduce flexibility to adjust to changing circumstances.

1.8 Critical aspects of the national statistical system should be established in legislation, with regulations and other measures providing supporting detail.

1.9 There should be consistency between the statistical laws and regulations and other laws and regulations governing the activities of the national statistical office and the national statistical system.

Examples/good practice for nature of the legal framework

- European Union - Regulation on European Statistics (http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:32009R0223:EN:NOT)
- INSEE – Official Statistics: a Strong Identity (http://www.insee.fr/en/insee-statistique-publique/default.asp?page=statistique-publique/identite.htm)
- Legal Framework of Slovene National Statistics (http://www.stat.si/eng/drz_stat_zakonski.asp)
- Australian Bureau of Statistics --Legislative Framework (http://www.abs.gov.au/websitedbs/D3310114.nsf/51c9a3d36edfd0dfca256acb00118404/339a2ca3e39bc7e8ca2569d8000085ff!OpenDocument)

See also specific examples of statistical legislation in section II.2 below

[8] See also the Implementation guideline for principle 8.

2. Matters covered in laws and regulations

It is essential that laws and regulations cover the full range of activities and responsibilities of the national statistical office, and others involved in the national statistical system.

2.1 The following matters should be covered in laws and regulations:

- The nature of official statistics, which could include principles for official statistics
- The role of the minister or other institutional body (e.g. parliament) responsible for statistics
- The role and status of the chief statistician
- The status and functions of the national statistical office
- The staff of the national statistical office
- The role and membership of the national statistical council
- The coordination of statistical activities across government (and, for countries with federal systems, with state/provincial governments), including the roles and responsibilities of other agencies[9]
- The matters to be covered by the statistical work program, and the manner by which the statistical work program is determined
- The collection of statistics, including powers of entry and compliance obligations
- Access to administrative data
- Secrecy, confidentiality and privacy obligations[10]
- Compilation, analysis, dissemination (including micro data) and archiving
- Public accountability
- Participation in international statistical activities[11]
- Offences and penalties (e.g. for failure to comply with a request to provide information, for breaches of secrecy etc.)

[9] In countries with decentralised systems, all members should have provisions defining their legitimacy, accountability and obligations to hold information in trust, as well as the sanctions to be applied if those obligations are not heeded.

[10] See also Implementation guideline for principle 6.

[11] See also Implementation guideline for principle 10.

Examples/good practice for matters covered in laws and regulations

- South Africa Statistics Act (http://www.statssa.gov.za/about_statssa/statistics_act.asp) The South African Statistics Act is a good example of modern statistical legislation.
- New Zealand Statistics Act (http://www.legislation.govt.nz/act/public/1975/0001/latest/whole.html)
- Germany Law on Statistics for Federal Purposes (https://www.destatis.de/DE/Methoden/Rechtsgrundlagen/Statistikbereiche/Inhalte/010a_BStatG_Engl.pdf?__blob=publicationFile)
- Canada Statistics Act (http://laws-lois.justice.gc.ca/eng/acts/S-19/FullText.html)
- Ireland Statistics Act (http://www.irishstatutebook.ie/1993/en/act/pub/0021/)
- The United States publishes laws and regulations related to statistics in a Federal Register notice to the public as well as on a public government website. Some relevant laws and regulations include the Paperwork Reduction Act of 1995, which provides the governance structure for the U.S. Federal statistical system, and the Confidential Information Protection and Statistical Efficiency Act of 2002 (CIPSEA), which provides confidentiality protections of statistical information and activities (http://www.whitehouse.gov/omb/inforeg_statpolicy)

3. Public availability of laws, regulations and measures

It is essential to the trust and credibility of official statistics that laws, regulations and other measures are made public

3.1 Laws, regulations and measures governing the operations of the national statistical office and the national statistical system should be easily discoverable and readily available to the public

3.2 These laws, regulations and measures should be published on the website of the national statistical agency, either directly or through links, and this should be kept up-to-date

3.3 The national statistical agency's website should have a clear section relating to matters of public accountability

3.4 Annual reports, statistical work programs, reports and any evaluation reports and audits of statistical activities should be made public

3.5 Decision making processes about what statistics are collected and how statistics are collected and compiled should be made public

3.6 Statistical agencies should provide readily accessible information on the sources, methods and procedures used to produce official statistics[12]

Examples/good practice for public availability of laws, regulations and measures

- Statistics South Africa - Corporate Information (http://beta2.statssa.gov.za/?page_id=627)
- Australian Bureau of Statistics -- About Us (http://www.abs.gov.au/websitedbs/D3310114.nsf/Home/About+Us?opendocument#from-banner=GT)
- Statistics Austria -- Responsibilities and Principles (http://www.statistik.at/web_en/about_us/responsibilities_and_principles/index.html)
- Statistics New Zealand -- Policies and Protocols (http://www.stats.govt.nz/about_us/policies-and-protocols.aspx)
- Statistics Netherland: Methods – (http://www.cbs.nl/en-GB/menu/methoden/default.htm)
- Australian Bureau of Statistics -- Methods, Standards and Classifications (http://www.abs.gov.au/websitedbs/D3310114.nsf/home/Methods,+Classifications,+Concepts+&+Standards?opendocument#from-banner=GT)
- The United States publishes statistical policies and implementation guidance in a Federal Register notice to the public as well as on a public government website, including collection standards, classifications and other guidance (http://www.whitehouse.gov/omb/inforeg_statpolicy)

III. Risks

Poor quality laws and regulations, including laws and regulations that are not comprehensive and/or enable political arbitrariness can cause significant damage to the reputation of the national statistical office and the credibility of official statistics.

[12] See also Implementation guideline for principle 3.

It can also significant hamper the effective operations of the statistical system and can cause damage to the interests of individuals and organisations if the laws and regulations provide insufficient protection for the confidentiality of their information. The persons responsible for formulating laws and regulations, and those responsible for enacting them, often have only limited understanding of official statistics and the issues and risks relating to the official statistical system. Because of this, it is essential that the time and effort is taken by the chief statistician and his or her senior staff to work with law-makers to ensure that there are high quality laws and regulations. Such involvement with legislative processes does not diminish the independence of the statistical system and indeed can be critical in ensuring that the system is indeed independent. Even if there are high quality laws and regulations, a lack of public access to these will undermine the trust in the official statistical system by both providers and users. More generally, trust in the system will be enhanced by the regular publication of reports, etc. about the activities of the statistical system, including decision making processes and the time and effort to ensure this should be seen as critical work of the national statistical office.

IV. Used sources[13]

- Eurostat (2010): Legal Framework for European Statistics. The Statistical Law.
- What do the fundamental principles of official statistics mean in practice, presentation by Heinrich Brungger, Director Statistics Division UNECE, to 2005 Management Seminar for the Heads of National Statistical Offices in Asia and Pacific.

[13] Apart from the sources used in “blue boxes” and Used sources (main sources of reference) on page 89.

Principle 8

Coordination among statistical agencies within countries is essential to achieve consistency and efficiency in the statistical system.

NATIONAL COORDINATION

I. Objective

To describe how national statistical offices effectively coordinate statistical activities and thereby improve the consistency and efficiency of their statistical systems.

National statistical offices vary by means of the context, complexity, and reach of the "system" in which they reside. Irrespective of this diversity, all national statistical offices must adopt methods of ensuring that national statistical activities are well coordinated. Therefore, the guidance presented here applies to all countries with national statistical systems, ranging from more centralized national statistical offices (such as Statistics Canada) to less centralized national statistical offices (such as the United States) and numerous variations in between (such as Germany).

According to United Nations Statistics Division's General Review 2013, "No matter what the organizational arrangements are for producing national statistics, coordination of statistical activities should be undertaken to avoid duplication of work, to minimize the reporting burden of respondents and to facilitate the integration of data from different sources through the use of statistical standards" (General Review 2013). It is important to note that the National Coordination principle is among the least implemented of the Fundamental Principles of Official Statistics - and major improvements to statistical efficiency could result from increased implementation of this principle.

II. Scope of application

Institutional framework for coordination role and set of activities, mechanism and tools applied by national statistics offices which ensure that statistics produced by other members of the national statistical system meet the relevant quality standards.

1. Legal framework:

The institutional arrangement should meet the challenges and scope determined by each country according to its legal framework, recognizing the benefits of having a national statistical information system that upholds quality, relevance, objectivity and accessibility of the statistical information.

We have to keep in mind that a properly working national statistical information system in each country is a necessary condition so that a United Nations Statistical Activities coordination system may function.

In the absence of a legal framework that makes effective Principle 8 of the Fundamental Principles of Official Statistics, an alternative is that the NSO proposes legislation containing the obligation to publish a Code of Ethics and a Code of Best Practices, inspired by the Fundamental Principles, that includes as one of its principles the coordination of statistical agencies as a key factor to ensure consistency and effectiveness of the National Statistical System. This code, first, shall apply to the Government Agencies that generate statistical information and should be promoted widely within the entire national statistical community.

*Examples/ good practices for "*Legal framework*"*

A good example of a suitable legal framework establishing a National System of Statistical Information that facilitates coordination between the different actors involved in the production of statistical information is the case of Mexico, where in April 7th 2006, the decree that reformed Articles 26 and 73 fraction XXIX-D of the Mexican Constitution was enacted, establishing that the Mexican State will have a National System of Statistical and Geographical Information whose data will be considered official. Section B of Article 26 states that "The responsibility of regulating and coordinating that System will be in charge of an organization with technical and managerial autonomy, legal personality and with its own patrimony, with the necessary powers to regulate collection, processing and publication of the information generated…"

Two years later, on April 16th 2008, the regulatory law of that Constitutional amendment was enacted: the National System of Statistical and Geographical Information Law.

2. National policy:

2.1 Maintain relevancy of national statistics

- In order to maintain relevancy of national statistics, coordination among statistical agencies within countries is essential, this means that it is mandatory, compulsory and obligatory, and this coordination system consistency derives from the information generated and disseminated by the National Statistical Offices in each country, and to be considered official, must

be bounded within a legal and institutional framework, which will determine the coordination rules, structure and processes, according to each country legal system.

- The coordination system´s efficiency must be the result of each country formally adopted institutional arrangement, according to their legal framework and their commitment to the Fundamental Principles of Official Statistics.

2.2 Ensure that statistical methods used by producers of official national statistics are appropriate for intended uses

- Coordination by national statistics office ensure that it engages fully with those being coordinated in such a way that the overall strategic goals and objectives are attained and that each actor makes a contribution according to standard and quality frameworks. The coordination ensures the use of international standards and appropriate statistical methods enhancing quality of national statistics. National statistical offices produce guidelines, methodological manuals, handbooks, and other common rules for guiding all national statistical producers or setting up standardized methods and processes.
- Technical knowledge exchange, including training courses, for members of the system, workshops and working groups can support the use of common conceptual framework, processes and appropriate statistical methods.

2.3 Monitor agencies' use of classification standards

The office responsible for coordination should be equipped to perform a monitoring role to be able to assure others producers of national statistical system use common classification standards, in order to enhance the comparability of the statistics.

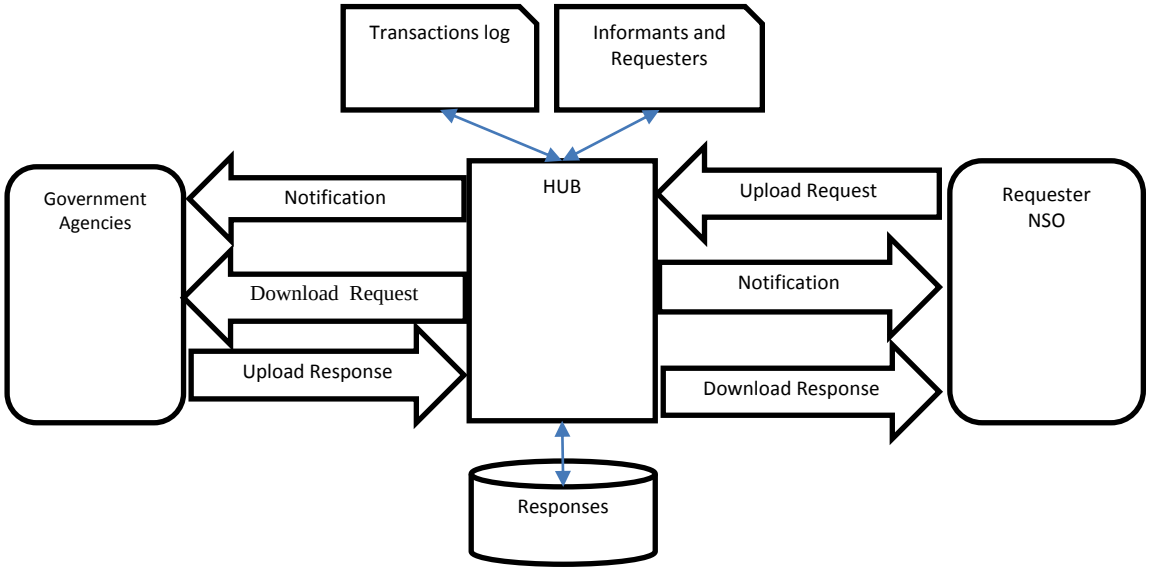
This role extends to development of guidelines on classification standards and formal checks/audits of activity and compliance with standards.

2.4 Facilitate the integration of data from different sources through the use of statistical standards

2.5 Coordinate collections carried out by various agencies

- A core feature of a legal framework that ensures the coordination of the National Statistical System is a model of information exchange to ensure an

efficient response to each request, that could be schematically represented as follows:



2.6 Prevent duplicative requests and thereby duplication of work

2.7 Reduce respondent burden

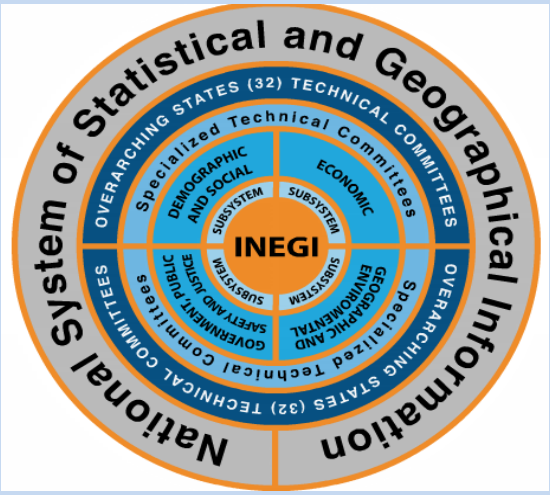
3. Methods of coordination:

3.1 National Statistical Office coordination

- In many countries, a National Statistical Office coordinates statistics at the Federal level.
- Internationally, coordinating bodies include National Statistical Offices, central banks, line ministries and departments, and sub-national producers of regional statistics (General Review 2013). In a 2012 UNSD survey completed by 126 Member States' National Statistics Offices and the Palestinian Central Bureau of Statistics regarding the implementation of the Fundamental Principles, 87 per cent of NSOs reported use of one or more of the following national coordination methods:
    - ". . . regulations, agreements or laws;"
    - "Through supervisory, advisory, or technical committees;"
    - "As specified in the annual or multi-annual plan for data collection" (General Review 2013);
    - Joint data collection; and
    - Pre-approval of survey methodologies.

Examples/ good practices for "national statistical office coordination"

Mexico, by constitutional mandate, has developed the National System of Statistical and Geographical Information, which is the set of Information generated by the Federal and States Government (executive, Congress and Judiciary) organized through four Information Subsystems, coordinated by Mexico´s NSO INEGI, and articulated by a national information network with the purpose of producing and disseminating information, which could be schematically represented as follows:



When considering the ability of the National Statistical Office to provide meaningful coordination, it could be useful to review the explicit goals of the system: "Do the objectives of the coordinating body of the national statistical system include: planning, implementing, coordinating, regulating and evaluating the development, production and dissemination of official statistics and ensuring their quality?" (NQAF 1: Coordinating the national statistical system). The following questions provide additional guidance:

- "Do guidelines exist for the exchange, among members of the national statistical system, of unit records or other data?" (NQAF 1)
- "Are mechanisms in place to facilitate the agreement, among the members of the national statistical system, on priorities for the production of statistics?" (NQAF 1)

The Code of Good Practice in Statistics for Latin America and the Caribbean states that coordination of the national statistical system "will enable the statistics producing entities to plan and implement national statistical activity in a participatory manner, maintain close contact and work jointly to improve the quality, comparability and consistency of official statistics" (LAC).

In the European context, the European Statistics Code of Practice Principle 14 offers indicators of coherence and comparability which include:
"14.1: Statistics are internally coherent and consistent . . ."
"14.3: Statistics are compiled on the basis of common standards with respect to scope, definitions, units and classifications in the different surveys and sources."
"14.5: Cross-national comparability of the data is ensured within the European Statistical System through periodical exchanges between the European Statistical System and other statistical systems. Methodological studies are carried out in close co-operation between the Member States and Eurostat" (CoP).

In the U.S., the Office of the Chief Statistician, housed in the Office of Management and Budget, provides this coordination. Its responsibilities are outlined in the Paperwork Reduction Act and include:

- Budget review—particularly monitoring those agencies with significant statistical activities;
- Establishing statistical directives, policies; guidance, and standards;
- Reviewing and approving all collections of information from the public; and
- Fostering informal collaboration through interagency working groups and identifying shared goals.

The Office also coordinates participation in statistical activities with international organizations such as the United Nations, the Organization for Economic Cooperation and Development (OECD), the World Bank, and the International Monetary Fund.

3.2 Data user/provider coordination

- Coordination by National Statistical Offices and others is important not only among Federal data producers but also between those Federal entities and their data users/providers. “The statistical agencies should build and sustain very good relationships with all of their key stakeholders, including users, data providers, funding agencies, senior government officials, relevant community organizations, and the media” (NQAF 2: Managing relationships with data users and data providers).
- One important goal of national coordination is the reduction of respondent burden. Coordinating bodies should conduct “an assessment of the need to collect the information, the use of data from administrative sources or other surveys, and the use of sound statistical and survey methods to keep the burden to a minimum” (NQAF 13: Managing the respondent burden).

Examples/ good practices for “managing relationships with data users/providers”

When working to manage data user/provider relationships effectively, it can be helpful to answer the following questions:

- “Has the statistical agency clearly identified all of its stakeholders?” (NQAF 2)
- “Is the nature of the relationships between the statistical agency and each of its stakeholders defined and understood by both sides?” (NQAF 2)
- “Are processes in place to consult stakeholders on their needs and concerns?” (NQAF 2)
- “Are stakeholders kept informed in actions taken to address their needs and concerns?” (NQAF 2)
- “Are there subject-specific user committees?” (NQAF 2)
- “Are there arrangements in place for periodic high-level discussions with key users?” (NQAF 2)
- “Does the statistical agency have a provider management policy and/or a provider charter?” (NQAF 2)
- “Does the statistical agency have access to records maintained by any government department, corporation, business or organization that could be used for statistical purposes?” (NQAF 2)

- "Does the statistical agency have memoranda of understanding or other arrangements with administrative agencies to ensure that by-product administrative data provided to it will be suitable for statistical purposes?" (NQAF 2)
- "Does the statistical agency maintain continuing liaison with the providers of administrative records to strengthen the statistical value and usage of the administrative source?" (NQAF 2)
- "Does the statistical agency have a strategy to manage media relationships and does it maintain regular contact with the media?" (NQAF 2)

In Canada, "cooperative arrangements with suppliers . . . are pursued through:

- "a respondent relations program"
- "a response burden management program"
- "bilateral committees (e.g., with Canada Customs and Revenue Agency)"
- "engagement with the small business community"
- "a small business ombudsman"
- "electronic reporting initiatives"
- "recognition of respondents in publications"

"These are supported by the Policy on Informing Survey Respondents (Policy 1.1), and through the activities of Data Access and Control Division" (SCQAF).

3.3 Standard setting

- Standard-setting is another important statistical coordination tool. In a 2012 UNSD survey completed by 126 Member States' National Statistics Offices and the Palestinian Central Bureau of Statistics regarding the implementation of the Fundamental Principles, "[e]ighty-six per cent of the countries indicated that they had organizational arrangements for setting statistical standards at the national level" (General Review 2013). This standard setting was reported typically to be the responsibility of one body and to involve issuance of policies from the national statistical office and/ or passage of legislation; creation of committees addressing specific areas of coordination; and collaboration with data users.

Examples/ good practices for "standard-setting"

When considering the usefulness of statistical standards, it can be helpful to answer the following questions:

- "Does the agency have an organizational unit responsible for taking the lead in the development of statistical standards and for supporting statistical programmes/domains in its efforts to develop standards, where such standards don't exist or have become outdated? Is this responsibility assigned to staff with the appropriate level of seniority?" (NQAF3: Managing Statistical Standards)
- "Does the agency monitor the extent to which statistical standards are used by the statistical programmes/domains?" (NQAF3)
- "Are all relevant staff aware of statistical standards and any changes made to them?" (NQAF3)
- "Do statistical standards include a statement regarding the degree to which their application is compulsory?" (NQAF3)
- "Are statistical programmes/domains held accountable to apply the statistical standards?" (NQAF3)
- "Are statistical standards regularly reviewed and revised, if necessary, to ensure their quality, notably their relevance, coherence and clarity?" (NQAF3)

3.4 Intra-governmental and nongovernmental coordination

- Intra-governmental and nongovernmental groups play an important role internationally in facilitating statistical coordination, including standard setting.

Examples/good practices for "intra-governmental and nongovernmental coordination"

In the U.S., numerous groups provide this intra-governmental and nongovernmental coordination. They include:

- The Interagency Council on Statistical Policy (ICSP) consists of the heads of the major Federal statistical agencies and is charged in statute with advising and assisting the Chief Statistician in coordinating the Federal statistical system;
- The Federal Committee on Statistical Methodology (FCSM) is chaired by the Chief Statistician's office and consists of Federal statistical experts. The FCSM is charged with informing and advising the Office of Management and Budget and the ICSP on methodological and statistical issues that affect the quality of federal statistics;
- The Statistical Community of Practice and Engagement (SCOPE), a body of Federal statistical representatives who "[coordinate] system-wide projects on standards, practices, policies and protocols that address the current barriers and inconsistencies across agencies" (SPUSG); and
- The Committee on National Statistics (CNSTAT) is a non-governmental statistical expert body established at the National Academies - a private entity established by an Act of Congress - to improve statistical methods and information on which public policy decisions are based. CNSTAT is supported by a consortium of federal agencies and publishes Principles and Practices for a Federal Statistical Agency.

3.5 Additional sources of statistical coordination

- Other coordination for national statistics comes from sources including national government experts, technical committees, and regulations and agreements.

III. Risks

Poor or non-existent coordination at national level has serious consequences, such as:

1. Information inconsistencies could mislead statistical information users. This is particularly worrying in the case of public policy makers, as they may base their decisions on misinterpretations of inconsistent information.

2. With waste of resources as a result of duplicated statistical information.

3. Inconsistencies and duplication of statistical information transferences to international organizations will cause confusion in its use and interpretation.

4. Statistical Information is sent to international organizations from different sources; international agencies should review the legal framework of each country to ensure that the information received comes from the official source.

5. Poor coordination of the national statistical system of each country undermines the credibility of Official Statistics.

IV. Used sources[14]

- Executive Office of the President (2013): Statistical Programs of the United States Government: Fiscal Year 2014.

[14] Apart from the sources used in “blue boxes” and Used sources (main sources of reference) on page 89.

Principle 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.

USE OF INTERNATIONAL STANDARDS

I. Objective

Without common standards and metadata, comparability of data produced by different agencies would be impossible. This applies equally within a country, and between countries.

Comparability is an important dimension of quality. If data are not comparable, they lose a lot of their utility. If data lose their utility, the agency that produces them loses relevance. It is also a key principle of work to modernise official statistics production and services, that the use of common standards improves efficiency, both within individual agencies, and within the official statistics “industry” as a whole.

The objective of this Fundamental Principle is therefore to ensure that official statistics (and their producers) remain relevant to users, and provide good value for money to national governments. This principle further extends the scientific principles and standards aspect of principle 2.

II. Scope of application

This section includes a number of important considerations related to the use of international standards. These are illustrated where possible by concrete examples.

1. Legal framework

The use of international standards may, in some cases, be required by law, or by quasi-legal (or moral) obligations resulting from membership of an international organisation.

A recent example of national legislation requiring the use of international standards is the Law of the Kyrgyz Republic on State Statistics[15] (amended February 22, 2013), which states in Article 5 that:

> *"The governmental bodies and local self-government providing the official statistical service shall be obliged to present the following:*
>
> - *application of the scientifically-based statistical methodology meeting the requirements of international standards and principles of the official statistics, legislation of the Kyrgyz Republic;*
> - *use of the uniform standards in application of information technologies and state classifiers of technical and economic and social information, their comparability and interaction in the integrated information space of the Kyrgyz Republic;*
> - *conformity of the statistical indicators to the internationally-accepted standards;"*

This example clearly shows that the value of using international standards, even for sub-national statistics, is understood and supported at the political level.

Membership of international or supra-national organisations can also result in legal requirements regarding the use of international standards. The best example of this is the European Union, whose 28 member countries are required to produce statistics according to a wide range of supra-national legal acts. Paragraph 11 of the preamble to Regulation (EC) No 223/2009 of the European Parliament and Council (commonly known as the "statistical law") states that:

> *"International recommendations and best practices should be taken into account in the development, production and dissemination of European statistics."*

The use of specific standards, concepts, classifications and methods is required in many of the pieces of subject-matter specific legislation, though in some cases the required standards are European Union versions of wider international standards, for example the "European System of Accounts", which is based on the global "System of National Accounts".

[15] http://stat.kg/index.php?option=com_content&task=blogsection&id=9&Itemid=37

Similarly, membership of international organisations may impose requirements that are not strictly legal in nature, but are still a form of obligation. An example of this is the use of the Special Data Dissemination Standard (SDDS) for the provision of economic and financial data to the International Monetary Fund (IMF). According to the IMF website[16]:

> *"Although subscription is voluntary, it carries a commitment by a subscribing member to observe the standard and to provide certain information to the IMF about its practices in disseminating economic and financial data."*

2. Which standard?

Sometimes more than one international standard may be relevant in a specific set of circumstances. For example the Eurostat Concepts and Definitions Database (CODED)[17] lists no less than twelve definitions of the concept "employment". All of these can be considered as international standards. Some are very domain-specific, for example relating to inland waterway transport, whilst others are more general, such as the standard definition published by the International Labour Organization.

Statisticians faced with such a choice of possible standards for just one concept, may often be unclear which one they should use. Unfortunately there is rarely a simple answer.

To make matters worse, there are even cases where different international organisations require a country to report the same data according to different standards. For data by economic activity, European Union reporting requirements are specified in terms of NACE (Nomenclature statistique des activités économiques dans la Communauté européenne – or Statistical classification of economic activities in the European Community), whilst United Nations bodies tend to use the more global ISIC (International Standard Industry Classification). The two classifications are related, but differ at the more detailed levels, requiring mappings and other adjustments when converting from one to the other.

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[16] http://dsbb.imf.org/Pages/SDDS/Overview.aspx

[17] http://ec.europa.eu/eurostat/ramon/nomenclatures/index.cfm?TargetUrl=LST_NOM_DTL_GLOSSARY&StrNom=CODED2&StrLanguageCode=EN

Whilst the longer-term solution is clearly greater alignment of different international standards covering the same topic, the most pragmatic short-term solution is often to use the standard most frequently requested by users, and to maintain documentation on differences, including mappings where applicable, to facilitate reporting according to alternative standards when necessary.

3. The quality perspective

In 2012, the United Nations Statistical Commission endorsed a generic national quality assurance framework (NQAF) template, developed by an expert group comprising representatives of national and international statistical organisations. The template is a tool to provide the general structure within which countries can develop and enhance their national quality frameworks.

Nineteen "NQAF lines" set out elements to be assured and supporting mechanisms. Several of these NQAF lines stress the importance of using international standards, and ask questions that aim to guide statistical agencies towards best practices. Some of the most relevant quotes from the NQAF documentation[18] are included below.

NQAF3 - Managing statistical standards

- *Are agency statistical standards accompanied by a statement of conformity to corresponding international or national standards?*
- *Are divergences from the corresponding international or national statistical standards documented and explained?*
- *Are there detailed concordances to corresponding international and national standards?*

NQAF10 - Assuring methodological soundness

- *In developing and compiling statistics, a statistical agency should use sound statistical methodologies based on internationally agreed standards, guidelines or best practices and consistent with established scientific principles. Effective and efficient statistical procedures should be*

[18] http://unstats.un.org/unsd/dnss/QualityNQAF/nqaf.aspx

implemented throughout the statistical production chain.

- *Is the overall methodological framework of the statistical agency consistent with international standards, guidelines and good practices?*
- *If not, are divergences from international standards explained?*

NQAF12 - Assuring soundness of implementation

- *In order to produce timely, reliable and accurate statistics, a statistical agency should carefully plan the implementation process of its statistical activities based on internationally agreed standards and guidelines and the application of sound and scientific methods.*

NQAF17 - Assuring accessibility and clarity

- *Are procedures in place to ensure that any differences from internationally accepted standards, guidelines, or good practices are consistently annotated?*

NQAF18 - Assuring coherence and comparability

- *Is compliance with international or national standards for statistical production periodically assessed?*
- *Are deviations from international or national standards made explicit and are users informed about the reasons for such deviations?*
- *Are the international and national standards concerning definitions, units and classifications known and followed?*
- *Coherence and comparability is promoted throughout the statistical agency by promoting the adoption of national or international standards*

The European Statistics Code of Practice[19] also stresses the principle that "sound methodology underpins quality statistics". In particular, principle 7.1 states that:

> *The overall methodological framework used for European Statistics follows European and other international standards, guidelines, and good practices.*

[19] http://epp.eurostat.ec.europa.eu/portal/page/portal/product_details/publication?p_product_code=KS-32-11-955

The Data Quality Assurance Framework (DQAF) published by the International Monetary Fund[20] also includes similar principles:

- *2.1.1 The overall structure in terms of concepts and definitions follows internationally accepted standards, guidelines, or good practices.*
- *2.2.1 The scope is broadly consistent with internationally accepted standards, guidelines, or good practices.*
- *2.3.1 Classification/sectorization systems used are broadly consistent with internationally accepted standards, guidelines, or good practices.*

The examples above clearly show the importance of using international standards from the perspective of the quality of statistical outputs. Compliance with international standards is often seen as a guarantee, or at least a strong indicator, of output quality. See also fundamental principle 2 for how international quality standards are related to scientific principles.

4. Standards for international collaboration

Collaboration between different agencies is greatly facilitated by the use of common standards. Standards provide a common framework of understanding and a shared vocabulary, which form the basis for communication, particularly between different languages.

In recent years there has been a growing emphasis on improving collaboration between statistical agencies, particularly in the areas of shared development activities and statistical modernisation. The High-Level Group for the Modernisation of Statistical Production and Services (HLG)[21] has recognised the fundamental importance of international standards, and promotes an agenda of “standards-based modernisation”. It has reviewed the standards necessary to support collaboration between agencies, and launched several major international projects to develop and enhance these standards.

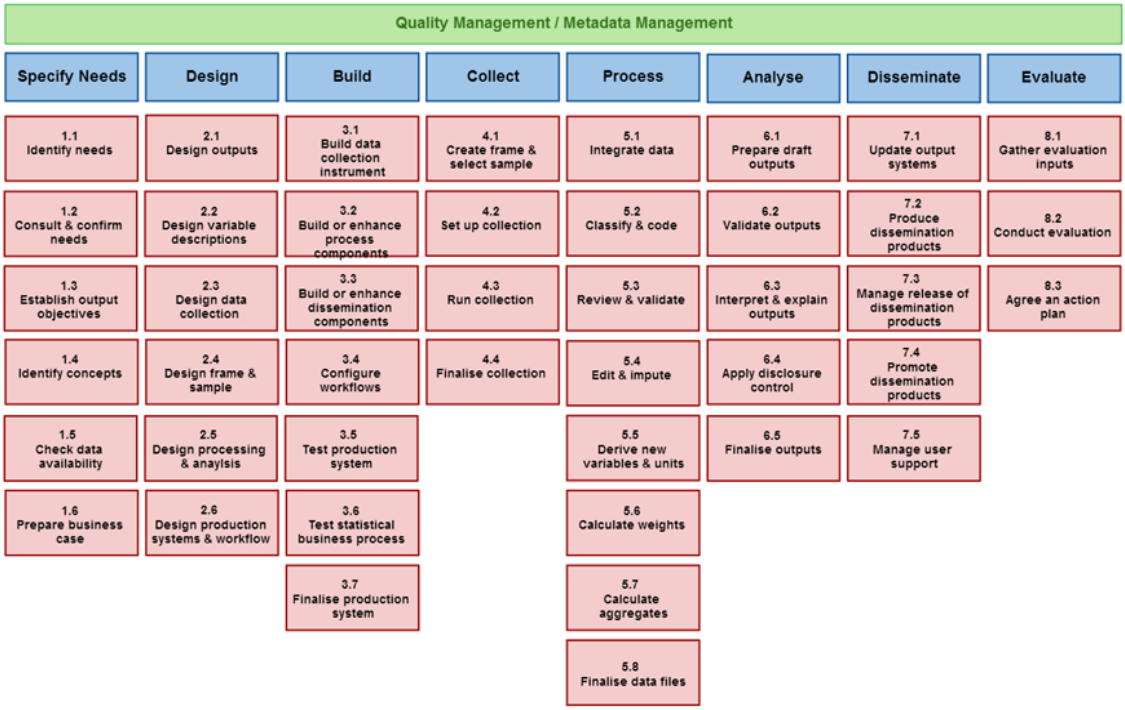
According to the HLG, the key international standards to support greater collaboration between statistical agencies are:

[20] http://dsbb.imf.org/pages/dqrs/dqaf.aspx

[21] http://www1.unece.org/stat/platform/display/hlgbas

a) The Generic Statistical Business Process Model (GSBPM)

The GSBPM[22] was first released in 2009, version 5.0 was released in December 2013. It provides a framework of standard terminology to describe and define the set of business processes needed to produce official statistics.



The GSBPM is intended to apply to all activities undertaken by producers of statistics, at both national and international levels, which result in data outputs. It is designed to be independent of the data source, so it can be used for the description and quality assessment of processes based on surveys, censuses, administrative records, and other non-statistical or mixed sources.

The rapid adoption of the GSBPM (or closely related national versions) by statistical agencies around the world, shows a wide acceptance of the idea that all statistical production can be modelled in terms of different combinations of less than 50 generic sub-processes. By mapping current and planned statistical processes to the GSBPM, it becomes easier to see where synergies can be found between processes, both within and across agencies. This, in turn helps to identify good practices and improve efficiency. The GSBPM is also increasingly being used as a tool to identify the cost of

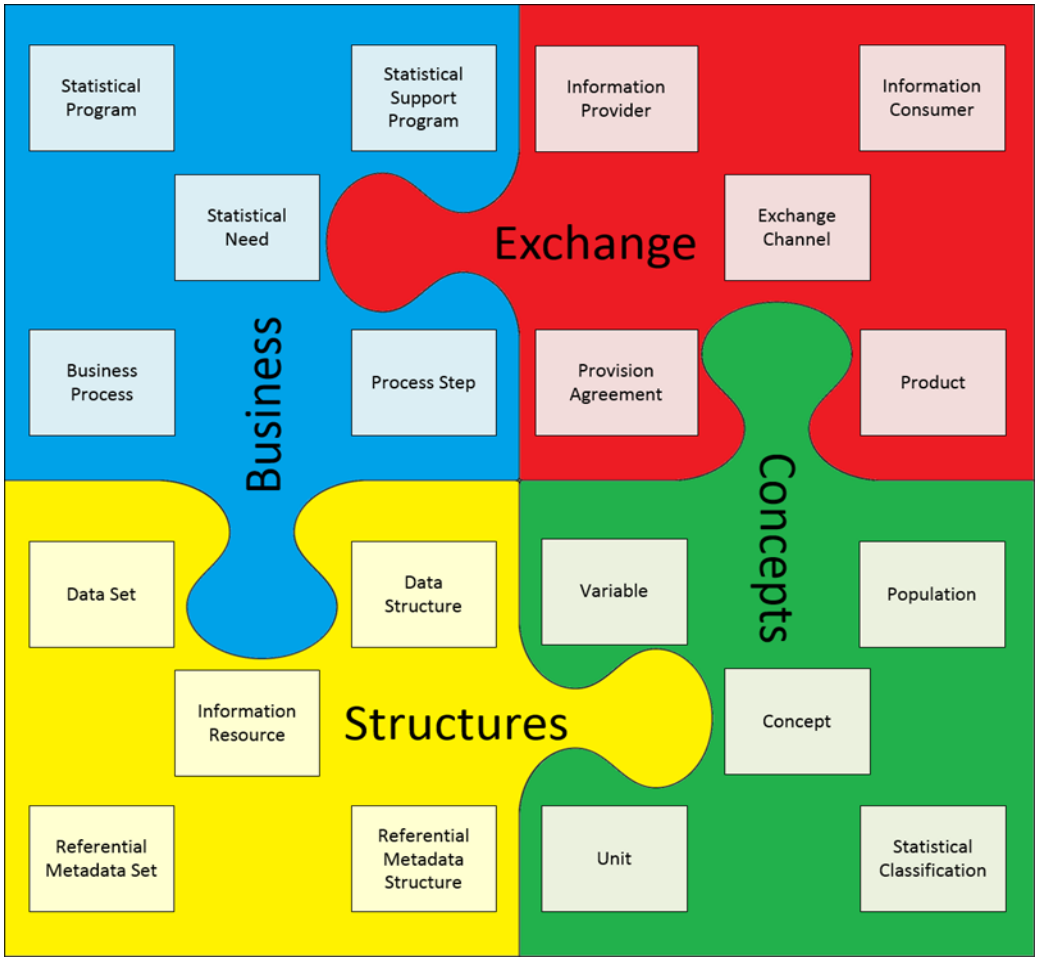
[22] http://www.unece.org/stats/gsbpm

different parts of the production process, and to inform strategic decisions on resource allocation.

b) The Generic Statistical Information Model (GSIM)

In 2011, the HLG decided to accelerate the development of a Generic Statistical Information Model (GSIM), which would complement the GSBPM and provide a link to data and metadata standards such as DDI (Data Documentation Initiative) and SDMX (Statistical Data and Metadata eXchange). Version 1.0 was released in December 2012 and version 1.1, incorporating feedback from early implementations, was released in December 2013

The GSIM is a reference framework of information objects, which enables generic descriptions of the definition, management and use of data and metadata throughout the statistical production process. It provides a set of standardized, consistently described information objects, which are the inputs and outputs in the design and production of statistics. GSIM identifies around 110 information objects, which can be presented in terms of four top-level groups. The diagram below gives some examples of these information objects.



The GSIM and the GSBPM are fully complementary, in that the former describes the building blocks of the statistical production process, whilst the latter describes the objects that flow through that process.

c) The Common Statistical Production Architecture (CSPA)

The CSPA is a set of design principles to allow statistical agencies to develop components and services for the statistical production process, in a way that allows these components and services to be easily combined and shared between agencies, regardless of underlying technological platforms. In this way, the CSPA aims to provide the “industry architecture” for official statistics.

CSPA Services are defined in terms of GSBPM process steps, and their inputs and outputs are defined in terms of GSIM information objects. Version 1.0 of the CSPA was developed under a HLG project, and released in December 2013.

5. Organizational and human resources implications

Whilst the principle of using international standards is widely accepted, in practice there can sometimes be resistance from some parts of an agency. The argument “but we are a special case” will be familiar to anyone responsible for standardisation initiatives. Compromises may be required in the application of international standards to suit the conditions and requirements of the users within each country, and in some cases, a domain specific or local standard might be optimal for a specific type of statistical output. A survey reported in the review of the implementation of the Fundamental Principles, presented to the United Nations Statistical Commission in 2013, found that approximately half of respondent countries applied domain specific international standards as they were recommended, whilst half adapted the international standards to national circumstances.

However, any adaptations have the potential to reduce comparability, so it may be necessary to take a wider view and consider which standards are optimal at the level of the agency, the country, or even the international statistical community as a whole. Similarly, adapted standards may be convenient for producers, but are not necessarily optimal for all types of users of statistics.

Persuading staff to see the benefits of standardisation is therefore a strategic issue, often requiring the active involvement of senior management, and specialists in human resources management, communication and training.

Some agencies have moved from organisation structures based on statistical domains to structures based on functions, for example, by consolidating all data collection activities within one organisational unit. This approach can reinforce the use of international cross-domain standards, but may reduce the use of domain specific international standards. It is too early to say what the optimal organisation structure is for a statistical agency is, and in any case, this may change over time. One approach that could be a reasonable compromise is to adopt a matrix structure with both domain-specific and functional dimensions (as in Statistics Sweden).

III. Risks

As stated in Section I, the main risks associated with not using international standards are inefficiency and loss of relevance. In an increasingly globalised world, cross-country comparisons are becoming more and more important for users of official statistics. Without common international standards, comparability cannot be guaranteed, and therefore the data lose much of their utility.

Users of non-comparable data risk making mis-informed decisions, which could have negative consequences. If this happens, it is very likely that they will blame the data, and the agencies that provided the data. This would clearly have negative consequences for the image and reputation of official statistics.

An interesting discussion on the utility of data with different degrees of comparability (based on levels of compliance with international standards) is contained in section IV.B of the "In-depth review of entrepreneurship statistics" prepared by the OECD and Eurostat for the Bureau of the Conference of European Statisticians in October 2013[23]

IV. Used sources[24]

- Law of the Kyrgyz Republic on State Statistics (amended February 22, 2013).
- European Parliament and Council (2009): Regulation (EC) No 223/2009.
- Special Data Dissemination Standard (SDDS) of the International Monetary Fund (IMF).
- Eurostat Concepts and Definitions Database (CODED).
- Vision and Strategy of the High-Level Group for the Modernisation of Statistical Production and Services.
- The Generic Statistical Business Process Model, version 5.0.
- The Generic Statistical Information Model, version 1.1.
- The Common Statistical Production Architecture, version 1.0.
- "In-depth review of entrepreneurship statistics" prepared by the OECD and

[23] http://www.unece.org/fileadmin/DAM/stats/documents/ece/ces/bur/2013/october/3-In-depth_review_of_entrepreneurship_stats.pdf

[24] Apart from the sources used in "blue boxes" and Used sources (main sources of reference) on page 89.

Eurostat for the Bureau of the Conference of European Statisticians.

Principle 10

Bilateral and multilateral cooperation in statistics contributes to the improvement of systems of official statistics in all countries.

INTERNATIONAL COOPERATION

I. Objective

An essential requirement so as to have high-quality statistics is to know the lessons learned and share the best practices of the Statistical Institutes with the purpose of implementing the best models/methods available according to international standards. In order to guarantee sustainability, statistical capacities have to be established as fundament for producing high-quality statistics, which is first of all the modernization of the Statistical Institute as an effective authority and at the same time ensuring the permanent implementation of statistical knowledge.

Also, based on partnership and ownership, the Statistical Institutes should actively participate in the main discussion forums pertaining to statistics, such as the United Nations Statistical Commission, in order to ensure continuous improvement of statistics at the international level. Finally, due to the scarcity of international cooperation resources that are allocated to statistics, the issues where cooperation will be requested pertaining to statistics need to be prioritized and different forms of cooperation and new sources of cooperation with the private sector need to be explored.

II. Scope of application:

The following dimensions should be considered by National Statistical Institutes in the development of strategies for the implementation of the principle of international cooperation.

1. **Legal framework**

   In most countries the Statistical Cooperation is not subject of the Statistics Law itself, but it is laid down in other forms of legal regulations between partner countries:

1.1. International treaties on political level based on the developing, foreign and economic policy of a country

1.2. Bilateral agreements on the level of the Statistical Institute itself based on strategic partnerships of countries or on cooperation requests of Statistical Institutes

1.3. In political agreements between the country and international organisations, such as the European Partnerships, the Stabilisation and Association Agreements, the Association Agreements, etc.

1.4. Project contracts with national and international donors in order to guarantee the funding of the statistical cooperation, e.g. for EU-Twinning-projects, World Bank-Twinning-projects

1.5. Contracts with private consulting projects based on public tender offers

Examples / good practices for "international treaties and bilateral agreements"

- The Slovenian National Statistics Act: (https://unstats.un.org/unsd/dnss/docViewer.aspx?docID=269&catID=10)
- The statistical system of Benin: see UN best practice website: (https://unstats.un.org/unsd/dnss/SearchResults.aspx)
- Bilateral cooperation and projects of the Federal Statistical Office (Germany): (https://www.destatis.de/EN/AboutUs/OurMission/InternationalCooperation/StatisticalCooperation/StatisticalCooperation.html (refer to "target countries"))

2. Application of International Cooperation frameworks and plans

Besides treaties and contracts mentioned under dimension 1, cooperation frameworks and plans exist, which result from international commitments in regard of development policy and statistical capacity building. In order to ensure the effective use of the international cooperation resources, it is necessary that the Statistical Institutes perform their activities according to the cooperation frameworks and plans that are in effect.

a. The Statistical Institutes should know and implement the international cooperation frameworks in place.

b. The Statistical Institutes must know and implement the action plans and cooperation agreements pertaining to statistics.

c. Recipients and providers of cooperation pertaining to Statistics should be responsible for the results of the cooperation projects, their impact upon development and for the sustainability of results.
d. The United Nations Statistical Commission, Regional and Sub-regional Commissions on Statistics must have medium-term cooperation strategies and programs.
e. Institutes should participate in the main statistical commissions, particularly those in which international standards are defined (examples: United Nations Statistical Commission, Regional and Sub-regional Statistical Commissions).

Examples / good practices for "cooperation frameworks, agreements and plans"

- Paris Declaration on Aid Effectiveness: (http://www.oecd.org/development/effectiveness/34428351.pdf)
- Busan Action Plan for Statistics: (http://paris21.org/sites/default/files/Busanactionplan_nov2011.pdf)
- Report of the Activities of Regional and International Cooperation Activities Biennial Program 2012 - 2013 and proposed activities schedule 2014 - 2015 of the Statistical Conference of the Americas of the Economic Commission for Latin America and the Caribbean: (http://www.eclac.cl/deype/noticias/documentosdetrabajo/3/51383/LCL3664e.pdf)
- European Consensus on Development: (http://ec.europa.eu/development/icenter/repository/european_consensus_2005_en.pdf)
- European Neighbourhood Policy, Action plans: (http://eeas.europa.eu/enp/documents/action-plans/index_en.htm)

3. Strategy and organization of Statistical Institutes in regard of Statistical Cooperation

In order to empower Statistical Institutes for the field of Statistical Cooperation, clear specifications in regard to the internal strategy and the organizational structure are required.

3.1. In accordance to the focus of the national political strategies, priorities and agreements (mentioned under dimension 1 and 2) the Institutes should define their priorities in terms of cooperation in statistics.

3.2. Statistical Institutes should have an organizational structure and personnel capacities that ensure the effectiveness of cooperation resources

3.2.1. Institutes should have in place a special division or a high-level committee responsible for organizing and disseminating cooperation activities.

3.2.2. International organizations and institutes should develop monitoring and impact indicators of international cooperation projects that enable a clear identification of their contribution to the development of the country benefiting from cooperation.

3.2.3. Institutes must have knowledge management mechanisms so as to make international cooperation more effective

3.2.4. Statistical Institutes should enhance their coordination networks (such as coordination with other producers of statistics) which are a multiplying factor.

3.2.5. Statistical Institutes receiving support from other institutes/international organizations should have the capacity and structures in place to coordinate statistical assistance so as to maximize its impact.

3.3 Limited financial and human resources of the Statistical Institutes can be compensated by working together with private or government cooperation agencies of their countries. They can overtake the organizational and financial management of projects, whereas the Statistical Institutes themselves provide statistical experts.

3.4. The Institutes should advocate for the inclusion of strengthening statistical capacity and cooperation within the National Strategies for Cooperation.

Examples / good practices for "Organisation and Government Cooperation Agencies"

Organisation:

- Twinning project of SIDA: (http://www.sida.se/PageFiles/32004/TWINNING%20PROJECT%20FICHE%20final%2030%2011%202010.pdf)
- Twinning projects of Destatis: (https://www.destatis.de/EN/AboutUs/OurMission/InternationalCooperation/StatisticalCooperation/ConsultingProjects.html)

Fight against poverty:

- Statistics - a tool in the fight against poverty: (http://www.sida.se/English/Countries-and-regions/Africa/Mali/Programmes-and-projects/Statistics--a-tool-in-the-fight-against-poverty/)
- See also "Demographic statistics for better health" of SIDA: (http://www.sida.se/English/current-topics-archive/2012/Demographic-statistics-for-better-health/)
- Statistics – DFID:

(https://www.gov.uk/government/organisations/department-for-international-development/about/statistics)

Government Cooperation Agencies:

- Korean International Cooperation Agency (government agency): (http://kostat.go.kr/portal/english/International/6/index.static)

4. Exchange between Statistical Institutes

Continuous exchange of views and knowledge between Statistical Institutes is an essential prerequisite to ensure effectiveness in the Statistical Cooperation for both sides – the recipients and providers of assistance. Advantages of an existing close partnership between Statistical Institutes are besides others the establishment of strong consortiums in order to cope with large-scale projects and the facilitation of the implementation of the consulting project itself. Advantages of a close partnership between the Statistical Institutes receiving assistance is the possibility to learn, to implement East-East and South-South cooperation and to benefit from best practices.

4.1. Official visits of Heads of Statistical Institutions

4.2. Meetings at working level to exchange knowledge

4.3. Newsletters and webpage to inform about current projects

4.4. Hosting trainees from other Statistical Institutes

4.5. International training programs for exchange of best practices (e.g. European Statistical Training Program ESTP and Training Program of the Statistical Institute for Asia and the Pacific SIAP)

4.6. Institutes should have a space on the website of the Statistical Institute for disseminating best practices and lessons learned that can be applied by other statistical institutes.

Examples / good practices for "Websites and International training programs"

- Dissemination of international cooperation activities of Statistics Korea: (http://kostat.go.kr/portal/english/International/1/index.board)
- Publication of Destatis: "Statistics across boarders": (https://www.destatis.de/EN/AboutUs/OurMission/InternationalCooperation/StatisticalCooperation/Publications/I2013.html)
- Statistical Cooperation of Statistics Denmark: (http://www.dst.dk/en/consulting/projects.aspx)
- Newsletter of Statistics Finland: (http://www.stat.fi/org/kvyhteistyo/consulting_news_2013.pdf)
- World Bank informing in a comprehensive way about Statistical Capacity Building: (http://web.worldbank.org/WBSITE/EXTERNAL/DATASTATISTICS/SCBEXTERNAL/0,,contentMDK:20100922~hlPK:1144291~menuPK:229526~pagePK:229544~piPK:229605~theSitePK:239427,00.html)

International training programs:

- Andean Statistical Formation and Training Center (CANDANE) Website: (http://www.dane.gov.co/candane/)
- United States Census Bureau, seminars Webpage: (http://www.census.gov/research/seminars/)
- European Commission: European Statistical Training Program (ESTP): (http://epp.eurostat.ec.europa.eu/portal/page/portal/pgp_ess/about_ess/estp)

- Training Program of the Statistical Institute for Asia and the Pacific SIAP: (http://www.unsiap.or.jp/)

III. Risks:

The difficulties in accessing international cooperation and the limited resources of the NSOs and multilateral bodies are reflected in the lack of exchange activities on knowledge, good practices and lessons learned in statistics.

This affects the implementation of quality standards that contribute to the improvement of national statistical institutes and their statistical systems.

ANNEX

Used sources (main sources of reference) in alphabetical order:

CoP	Eurostat (2011): European Statistics Code of Practice.
DQAF	International Monetary Fund (2003): Data Quality Assessment Framework.
General Review	United Nations Statistics Division (2013): Implementation of the Fundamental Principles of Official Statistics Background Document.
LAC	Statistical Council of the Americas of the Economic Commission for Latin America and the Caribbean (SCA-ECLAC) (2011): Code of Good Practice in Statistics for Latin America and the Caribbean.
HSO	United Nations Statistics Division (2003): Handbook of Statistical Organization, Third Edition: The Operation and Organization of a Statistical Agency.
NQAF	United Nations Statistics Division (2012): Guidelines for the template for a generic national quality assurance framework.
EQAF	Eurostat (2012): Quality Assurance Framework of the European Statistical System.
SASQAF	Statistics South Africa (2008): South African Statistical Quality Assessment Framework.
SAQ	Task Force to Develop the Methodology of the Peer Reviews (2013): Self-assessment questionnaire for the NSIs (Draft).
SCQAF	Statistics Canada (2002): Statistics Canada’s Quality Assurance Framework.