



Statistics as instruments for prosperous, transparent and democratic societies.

Carlo Malaguerra

Former Director General of the Swiss Federal Statistical Office, Sion, Valais, Switzerland –

carlo.malaguerra@gmail.com

Alphonse L. MacDonald

Former Senior Official of the United Nations Population Fund, UNFPA, New York, USA –

fonzhan@gmail.com

Abstract

In January 2014 the General Assembly of the United Nations endorsed the Fundamental Principles of Official Statistics, which was adopted by the Statistical Commission in April 1994, following an initiative of the Conference of European Statisticians. Consequently the Fundamental Principles of Official Statistics have universal acceptance and should be adhered to by all nations and societies. Valid and reliable information is essential for the management of the affairs of a democratic society aiming at generalised wellbeing and prosperity. It is important that users and stakeholders of official statistics and the citizens at large have total confidence in statistics. To produce valid and reliable statistics it is necessary that Governments provide the legal framework and resources to the statistical system of their countries to allow statisticians to produce the required statistical information, without interference using the best available methodology and techniques from the best suited sources of information. Respondents, be they individual, enterprises or organisations, have to provide the required information truthfully and as completely as possible. Official statistics have to guarantee that such individual information will be used for statistical purposes only. Moreover the results of statistical enquiries have to be made available to all users without distinction. Such basic requirements of official statistics were not respected in the central planned economies before 1989. During the transition process toward democracies and market economies of the countries from Eastern and Central Europe it was recognized that official statistics plays an essential role for preserving democracy and its special and unique role be recognized in the government services. The Conference of European Statisticians took the initiative to propose to its member countries the acceptance of a Charter called “Fundamental Principles of Official Statistics”. As years passed, it was recognized that these “Principles” should have a universal validity. This was reached in 2014 with the acceptance of the “Principles” by the United Nations General Assembly.

Keywords: Fundamental Principles of Official Statistics, democratic society; functional independence

1. Introduction

Currently, citizens of most, if not all countries, expect to have access to up-to-date, valid and reliable statistical information about their society and the world at large. Valid and reliable statistical information is essential for the management of the affairs of a democratic society aiming at generalised wellbeing and prosperity. It's therefore important that users of official statistics and the citizens at large have total confidence in the quality of the statistics. To produce valid and reliable statistics it is necessary that Governments provide the legal framework and resources to the statistical system of their countries to allow statisticians to produce the required statistical information, without interference, using the best available methodology and techniques from the best suited sources of information. Respondents, be they individuals, enterprises or organisations have to provide the required information truthfully and as complete as possible. Statistical laws guarantee that such individual information will be used for statistical purposes only. Moreover the results of statistical enquiries have to be made available to all users without distinction. This appreciation of statistical

information and the way it is produced is of recent origin. Twenty five years or so ago the situation was very different in many countries.

2. Statistics : nature and early developments

Historically all societies of a certain complexity have information that allows and enables them to regulate the affairs of their society. There is physical and literary evidence that classical historical societies, such as Babylon and Egypt had well developed mathematical systems which were used to prepare records on population, size of agricultural unit, production, trade patterns and transactions. It is said that numeracy predates literacy; this is exemplified by the Inca empire in South America which had no writing, but a well-developed accountancy system based on the *quipu*, a mnemonic device consisting of 'rows of strings in which the colour of the threads and the loops of the knots represented arithmetical units or recording categories' Hemming (1972, p.61). After the conquest of Peru, until about 1600, the Spanish authorities recognised the *quipus* as valid records in judicial processes and allowed them to be used as instruments of data collection by natives clerks employed in their administration Loza (1998).

In medieval Europe the administrators of city states, duchies and kingdoms kept records, in more or less systematic fashion, on issues that were of interest to the rulers, mainly for taxation and defence (abled bodied men) purposes¹. This was of most importance after the conquest of new lands, and probably the most exact and comprehensive data collection exercise ever carried out was the compilation of the so-called Domesday Book, covering much of England and part of Wales after the Norman Conquest in 1067. Ecclesiastical authorities kept detailed records on their parishioners, including birth, deaths and marriages.

Since the Enlightenment, persons interested in the advancement of knowledge, science and society established "learned societies" in which topics of scientific and societal interest were discussed. Individual scholars carried out numerical studies on a wide range of population, social, economic and health phenomena, which gave rise to the development of 'political arithmetic', a term introduced by William Petty in England (Meitzen & Falkner, 1891, p.30 and Sitgler, 2005, p.223). Their studies were an early form of descriptive statistics, or accountancy of the nation, considered to be of national interest and which contributed to its power and prestige. Political arithmetic was an instrument for enhancement of public administration of a nation. The findings of these studies were not always to the liking of those in power, as was exemplified by the case of Johan Heinrich Waser, a "burgher" (citizen) and scientist of the city of Zürich, Switzerland, whose study on buildings and the risks of fire was considered an act of treason. He was decapitated on 27 March 1780 (Graber, 1980). The Founding Fathers of the United States of America were probably the first to establish a link between democracy, governance and statistics when they formulated the Constitution. In Article 1, clause 3² they mandated that the number of Representatives and the direct taxes should be based on the number of residents in each States, which would be established by a decennial enumeration. Parallel to the compilation and

¹ An excellent overview of the development of statistics up to the end of the 19th century can be found in: Meitzen, A. and Falkner, R.A., Science, History, Theory, and Technique of Statistics. Part First: History of Statistics, in: Annals of the American Academy of Political and Social Science, Vol. 1, Supplement 2, Part 1 (Mar., 1891), pp. 1+3-100 (Stable URL: <http://www.jstor.org/stable/1008943> Accessed: 27-03-2015 20:07 UTC)

² See <http://constitution.findlaw.com/articles.html>. This article was modified by the 13th (1865) and 14th (1868) Amendments. See http://www.senate.gov/civics/constitution_item/constitution.htm#amendments



the analysis of numerical information of the nations, statistical techniques and methods were devised and in mathematics, theories of probability and of errors were developed which would provide the theoretical underpinning of the emerging modern science of statistics. Given the political fragmentation of Europe the early statistical compilations used a wide variety of methods, and studies on the same subject very often were not comparable.

3. Standardisation, impact, convergence and divergence

The data requirements of Napoleonic France and post- Napoleonic France and Prussia had important consequences for the development of public (official) statistics. The 19th century was a period of rapid and profound political, economic and social change, which had important consequences for the development of statistics. In the early 19th century the establishment of statistical societies (Société de Statistiques de Paris, 1803, the Royal Statistical Society of London, 1834 and the American Statistical Association, 1839) promoted and contributed to the standardisation of methods and procedures. These efforts culminated in a series of International Statistical Conferences between 1853 and 1885, originally organised under the dynamic leadership of Adolphe Quetelet, which in 1885 led to the establishment of the International Statistical Institute (ISI) (De Neumann Spallart, 1866). The results of statistical enquiries carried out by independent scholars influenced the growth of national consciousness (Switzerland) and contributed to the creation of nation states (Italy and Germany). In several European countries the creation of National Statistical Commissions had a positive impact on the acceptance of statistical information and its usefulness for governance. Several countries started to include statistics in their public administration, by creating statistical units in ministries or, later, by establishing (national and sub-national) statistical offices. This confirmed the importance of statistical information for policy development and governance. At the same time statisticians in government service became civil servants subject to rules and regulations of the civil service, which could endanger their scientific independence. The substitution of authoritarian regimes for liberal democratic ones changed the nature of official statistics. They were not only necessary for policy formulation and development, but became means of verification of governmental compliance with policies by parliament, the electorate and ultimately by the population at large.

4. The birth of the Fundamental Principle³

In the twentieth century important developments in theoretical and applied statistics were realised. Parallel to the efforts of the International Statistical Institute (ISI) to promote “administrative and scientific statistics” the Conference of European Statisticians (CES)⁴ established in 1953, but having its origins in the work of the League of Nations and especially the first International Conference of Economic Statistics in 1928, provided a forum for Directors of National Statistical Offices to discuss issues concerning statistical standards. Up until the nineteen sixties the main players in the development of statistics were European, North American, some members of the British

³ This section is based on the Keynote speech by Carlo Malaguerra at the Conference European Statisticians, Paris, France; see:
http://www.unece.org/fileadmin/DAM/stats/documents/ece/ces/2012/Malaguerra_keynote_address.pdf

⁴ In spite of its name the Conference is open to Directors of National Statistical Office of all countries provided they participate regularly in the activities of the Conference. At present the regular membership consists of all members states of the United Nations Economic Commission for Europe, (UNECE) which include Canada and the USA, the OECD member countries and some other countries outside the region for example Brazil, China, Colombia and Mongolia See Conference of European Statisticians. Members' Guidebook at
http://www.unece.org/fileadmin/DAM/stats/documents/ece/ces/bur/2014/October/CES_Members_Guidebook.pdf



Commonwealth, with limited contributions from Latin Americans and Asians. The creation of the Soviet Union in the beginning of the 20th century and the establishment of the ‘Eastern bloc’ after World War II created two main antagonistic political blocs consisting of the “liberal free market economies” and “centrally planned socialist economies”. These have differing political views and practices in the use of science in general and statistics in particular. After a period of antagonism they developed a modus vivendi, in which the divergence in ideologies and the objectives and application of statistics were mutually respected.

The activities of the Conference of European Statisticians were concentrated in technical issues of common interest and the political and ideological issues underlying the two systems and the way statistics were collected and used were avoided. It was common knowledge that in the socialist countries statistics served mainly the interest of the government (the party) and that information could be falsified, distorted or suppressed and that only selected information was made available to the research community and wider public. In such situations issues related to the independence of statistical offices and statisticians were simply not discussed. Statistical offices in the democratic countries were thought to be guided by what would become the fundamental principles of official statistics. However, similar and other issues affecting their statistical offices could equally not be discussed within the activities of the CES. As result the public debate on the role of statistics, statisticians and statistical office did not take place.

The fall of the Berlin Wall on 9 November 1989 altered the geopolitical structure of world; engendered public optimism about future developments based on the principles of democracy, including transparency and accountability, and created a fundamental change in the mind-set of the members of the CES. Three months after the fall of the Berlin wall in an extraordinary meeting of the CES its members started the discussion about the consequences of the geopolitical changes for international statistical cooperation. The consequences of the change were considered for both the former socialist countries and the free market economy countries. Thereafter, statisticians discussed and reached a preliminary consensus on the nature of statistical information, as a public good, its role in governance and for the democratisation of the society. More importantly, the statisticians were the ones that brought the importance of statistics for governance to the attention of the politicians and the public at large.

The CES was one of the first institutions, if not the first institution, to draw conclusions on the changed world outlook and to propose new arrangements for their profession within the newly emerging geopolitical structure. It was the Polish delegation, through Mr. Jozef Olenski, who, to the surprise of some of the delegations of the democratic countries, requested that CES would develop and proclaim an international convention of official statistics. In the ensuing discussions the idea attracted considerable support, but it was decided that what was needed would be a Charter of fundamental principles, which would be applicable to all countries, not only the countries in transition from a socialist to a free market economy. The Bureau of the CES requested the Polish National Statistical Office to develop a draft of the Fundamental Principles of Official Statistics for the next annual (1990) meeting.

The formulation of the Fundamental Principles involved considerable reflection and discussion, as within the CES there were two streams: on the one hand those that would like to see a formalisation of the functions, duties and privileges of statisticians and statistical offices and those who were in favour of a more flexible practical political approach. Members of CES and staff of the UNECE secretariat spent many hours discussing proposals and counterproposals. A compromise between these two approaches and of the language of the document was achieved, and at the 1991 meeting of the Conference of European Statisticians the Fundamental Principles of Official Statistics were approved. The statisticians had completed their task to agree on common principals for their profession to



operate within society. It was up to the political leadership to play their part, first in Europe and afterwards globally to establish these Principals as universal.

5. Conclusions

Following the adoption of the Fundamental Principles by the United Nations Economic Commission for Europe (UNECE) in 1992, the Statistical Commission of the United Nations endorsed them in 1994, hence indicating the global validity of these principles. Although the Fundamental Principles were originally conceived to assist former socialist economies to modernise their national statistical system, they appealed to statisticians in the developing countries as well. Many of the countries had only achieved national independence after World War II and had inherited an antiquated sometimes authoritarian statistical service which was based on the interest of the colonial power and was not oriented towards national development. Consequently many developing countries adopted the Fundamental Principles as guidelines for the organisation of their national statistical systems and the execution of their statistical programmes. In 2009 the African Union adopted the African Charter on Statistics⁵ which according to Article 3 fully incorporates the Fundamental Principles. In 2013 the Economic and Social Council (ECOSOC) endorsed the Fundamental Principles for Official Statistics (E/2013/21) and on 29 January 2014 they were endorsed by the General Assembly of the United Nations thereby giving them universal applicability.

Political leaders, including parliamentarians, statisticians and the public at large are well advised to consider the injunction of an American statistician on the role of statistics on governance and world peace. The role of statistics in promoting (global) governance and world peace was evoked by the Assistant Secretary and Statistician of the Carnegie Endowment for International Peace Dr, S.N.D. North at the Commemoration of the Seventy Fifth anniversary of the American Statistical Association in 1918 who stated: “Statistics is the twin sister of international law, in multiplying the ways and methods of mutual help, cooperation and understanding between the nations. Both sciences supply indispensable links in the lengthening chain of world unity.”⁶

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⁵ See: http://www.au.int/en/sites/default/files/AFRICAN_CHARTER_ON_STATISTICS.pdf

⁶ Koren, John (ed), *The history of statistics. Their development and progress in many countries*, In *Memoirs to commemorate the Seventy Fifth anniversary of the American Statistical Association*, New York (The Macmillan company of New York), 1918, p. 48.



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