

BEST PRACTICES FOR COMPILATION OF OFFICIAL STATISTICS: WHERE ARE WE?

Mohd Uzir Mahidin, Kanageswary Ramasamy, Suhaily Safie and Mohd Firdaus Zaini¹

Abstrak

Jabatan Perangkaan Malaysia (JP) memainkan peranan penting dalam mengumpul, mentafsir dan menyebarkan statistik rasmi negara. Malaysia yang berlatar belakangkan kepelbagaian sosio-ekonomi, budaya dan etnik mempengaruhi 'milestone' JP dalam menghasilkan rangka kerja statistik rasmi yang lebih komprehensif dan terperinci. Aplikasi General Statistical Business Process Model (GSBPM) memberikan panduan yang sistematik bagi menjana proses statistik dalam cara yang konsisten serta membawa kepada pengumpulan dan penyebaran data yang lebih tersusun. Sementara itu, kemajuan teknologi dalam pengendalian data telah menjimatkan masa yang digunakan dalam pemprosesan data dan mengurangkan ralat bukan pensampelan dalam tangkapan data dan penyediaan tabulasi. Di samping itu, keperluan statistik yang lebih kompleks dan pelbagai memerlukan modal insan yang kompeten dan dilengkapi dengan pengetahuan dan pengalaman dalam bidang statistik, ekonomi, demografi dan Teknologi Maklumat dan Komunikasi. Persekitaran ekonomi yang dinamik dan keperluan statistik baru memerlukan inovasi dan peningkatan tanggungjawab JP dalam mewujudkan perhubungan yang erat dengan pihak awam, sama ada melalui penjelasan dengan bahasa yang jelas dan mudah atau melalui sesi perundingan dengan pihak pengguna utama serta mencari laluan dalam membuat keputusan yang tepat. Peningkatan hubungan dengan pelbagai agensi akan memberi kelebihan tambahan kepada JP dalam memenuhi permintaan statistik yang semakin meningkat. Kertas ini memberi fokus kepada perkembangan yang berlaku dalam sistem statistik negara dan perkongsian amalan terbaik yang diguna pakai oleh JP dalam menghasilkan statistik yang relevan dan berkualiti.

Perkataan utama: JP, GSBPM, pengumpulan dan penyebaran data.

Abstract

Department of Statistics Malaysia (DOSM) plays a significant role in collecting, interpreting and disseminating official statistics. The diverse, unique multi-cultural and multi-ethnicity in Malaysia has contributed to the milestones of DOSM in producing a more comprehensive and detailed framework in handling official statistics. The application of Generic Statistical Business Process Model (GSBPM) provides a systematic guide to generate each statistical process in a consistent way that leads to a

¹ Dr. Mohd Uzir Mahidin is currently the Director of Industrial Production and Construction Statistics Division, Kanageswary Ramasamy is Principal Assistant Director and Suhaily Safie and Mohd Firdaus Zaini are Assistant Directors of National Accounts Statistics Division, Department of Statistics, Malaysia.

more refined data collection and dissemination. Meanwhile, technological advancement in data handling has greatly reduced the time consumed in data processing and non-sampling error in data capturing and tabulation. In addition to this, the complexity and challenges in generating official statistics require the right human capital that is armed with knowledge and experience in the field of statistics, economics, demographics and Information and Communications Technology (ICT). The dynamic of economic environment and the need of new statistics warrants for various innovation and high responsibility for DOSM in reaching the public, either by explaining through clear and simple language or providing consultancy to the stakeholders and create a pathway in making the right decision. Building partnerships with various agencies will give a competitive advantage for DOSM to cater the increasing demand for statistics. This paper highlights the key development in the country statistical systems and share the best practices adopted by DOSM in producing relevant and quality statistics.

Keywords: DOSM, GSBPM, data collection and dissemination.

1.0 Introduction

1.1 Background of DOSM

The Department of Statistics Malaysia (DOSM) was formed in 1949 under the Statistics Ordinance 1949 and was formerly known as the Bureau of Statistics. DOSM was established to assume the responsibility as the leading statistical agency for the nation which is responsible to collect, interpret and disseminate official statistics.

In the early commissioning of the Bureau of Statistics, the data were produced mainly for the British Government's planning purposes and the main data available were external trade and estate agriculture statistics.² From 1957 onwards, the Bureau initiated data collection based on surveys such as Household Budget Survey, Population Census of Malaya and Retail Price Index. Recognising the importance of statistical services, a special committee was established on 5 March 1960 by the Federal Government to strengthen the statistical system. Furthermore, the unification of Federation of Malaya, Sabah and Sarawak in 1963 required an integrated and cohesive statistical data which reflects the overall statistics of Malaysia. The Statistics Ordinance 1949 was repealed and replaced by the Statistics Act 1965. The Bureau of Statistics then was renamed as the Department of Statistics Malaysia which is responsible to produce a more comprehensive socioeconomic statistics.

1.2 Malaysia Statistical System

Statistical system is a coordinating framework that integrate legal, general principle, data collection and dissemination guidelines. Every country upholds its own statistical system which is designed based on the countries' requirements and specifications as

² Department of Statistics Malaysia (2009a), p13.

well as the historical background. An established national statistical system ensures the efficiency and effectiveness in compiling official statistics. Malaysia adopts a centralised statistical system whereby the process of collection, compilation and dissemination of key official statistics is carried out by DOSM. Meanwhile, other agencies also collect statistical data for own purposes. This system is also applied by other developed countries through their national statistical agencies such as Statistics Canada and Australian Bureau of Statistics (ABS). Meanwhile, there are other countries that implement a decentralised system such as India, Japan and the United States of America (USA). However, some countries may practice the combination of both systems.³

The centralised statistical system enables DOSM to a large extent to coordinate and integrate the official statistics through standardised definitions, concepts, methodologies and classifications. In addition, it provides a platform in integrating the entire process of data collection, interpretation and dissemination in order to produce sound statistics. This system is also convenient and efficient for users to secure statistical information in various fields.

2.0 Reviewing DOSM's Delivery

2.1 Have We Met the Real Need of Statistics?

The evolution of DOSM has spanned over 60 years, while ABS and Statistics Canada have evolved over 90 years. Internationally, ABS and Statistics Canada's statistical framework systems have become the benchmark for most of the national statistics offices (NSO). In line with DOSM's vision "to become a leading statistical organisation internationally by 2020", the main challenges are:

- i. Serving the nation in providing relevant and comprehensive statistics; and
- ii. Fulfilling the needs of users, stakeholders and the public.

DOSM has delivered quality and timely statistics in line with international standards. Rapid changes in the economy and complexity of economic agents require comprehensive statistics to cater to the dynamic changes. Comprehensive and quality data at specific and frequent periods are vital to reflect the actual economy and social scenario, which serves as valuable input to formulate a relevant policy and informed decision. On this front, the major determinant in measuring the relevance of statistics is closely associated with the demands and requirements of users. In meeting this requirement, continuous engagement and mutual understanding with the relevant parties are paramount.

³ See Appendix 1 for the comparison of statistical systems between Japan, Canada and USA.

2.2 Fundamental Principles of Official Statistics

Fundamental Principles of Official Statistics by the United Nations Statistical Commission (UNSC) which was initiated in 1992 is widely adopted by DOSM as well as other NSOs. The UNSC has recommended ten fundamental requirements of official statistics⁴. Principle 2 highlights on the scientific principles and professional ethics on the methods and procedures for the collection, processing, storage and presentation of statistics. DOSM has always embraced these qualities in producing the official statistics.

2.3 Generic Statistical Business Process Model

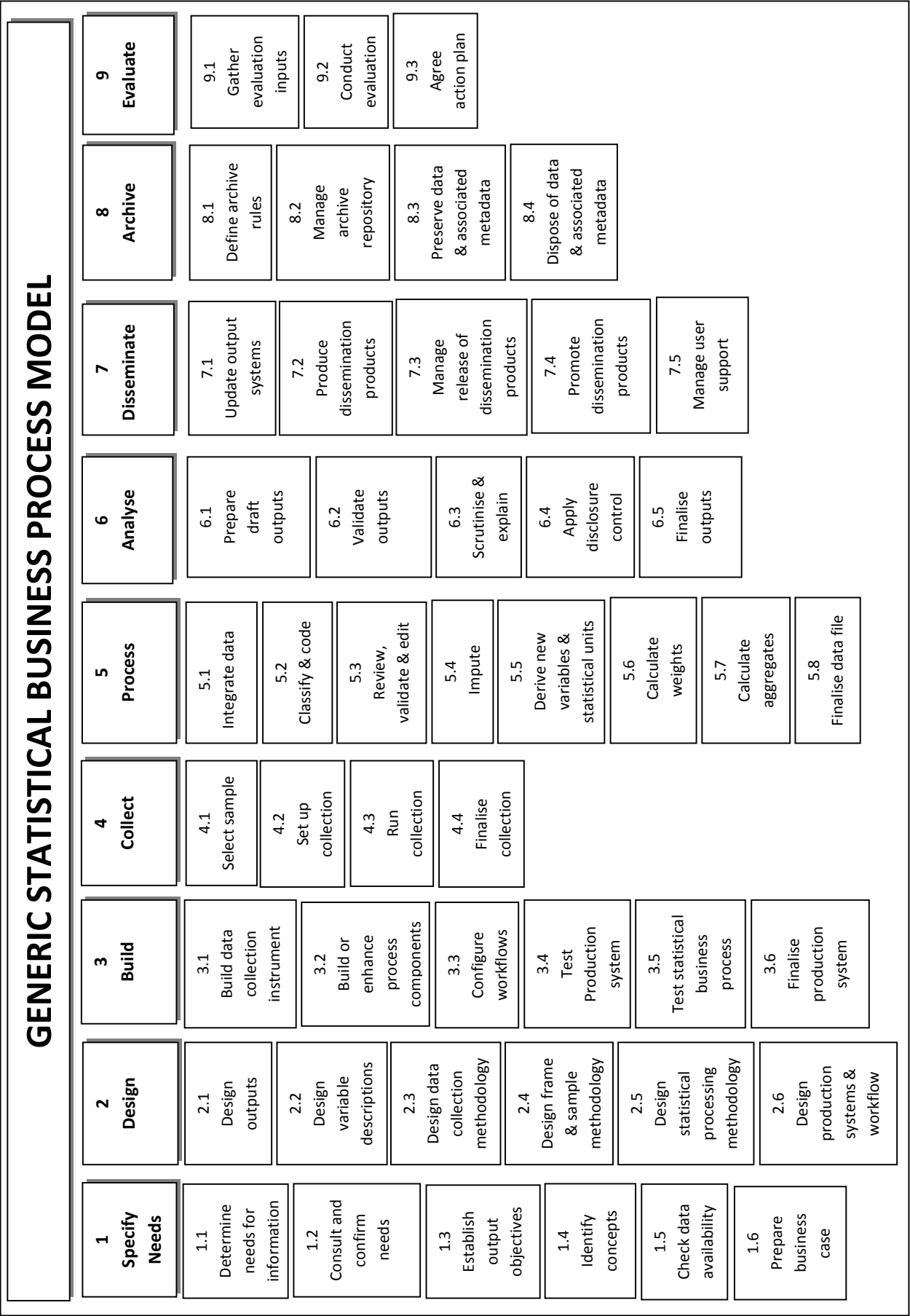
Besides the Fundamental Principles of Official Statistics, DOSM has also adopted Generic Statistical Business Process Model (GSBPM) in its work processes. GSBPM was developed by the United Nations Economic Commission for Europe Statistical Division (UNECE) which was initiated by Statistics New Zealand. The model has outlined nine important processes involved in the compilation of statistics starting with “specify needs” and ends with “evaluate”. Each process signifies standard steps that are required in producing quality statistics as shown in the following diagram (Figure 1).

The principles and model mentioned below emphasised on producing quality statistics. Statistics and quality are inseparable. Therefore, quality statistics has a multidimensional concept which does not only include the accuracy of statistics, but also stretches to include other dimensions of quality such as relevance, timeliness, coherence, interpretability, accessibility and reliability⁵. These seven dimensions of quality have been incorporated in DOSM's function which is collection, interpretation and dissemination of data

⁴ See Appendix 2

⁵ Farrell, D. (2007), p9.

Figure 1: Generic Statistical Business Process Model



2.3.1 Data Collection

The quality of official statistics depends largely on the cooperation of respondents in providing appropriate and reliable data to the NSOs. The most common challenge for all NSOs is to obtain quality data from respondent. Statistics Canada (2009) highlighted that the main quality element in data collection is accuracy. This element measures the response rates, processing error rates, follow-up rates and rates of non-response by reason.⁶ Trewin (2007) observes that lately most of the NSOs response rates on surveys are decreasing and he suggests that NSOs should formulate solutions to tackle the problems. In this regards, DOSM practices good rapport with the respondents and have managed to achieve good response rates for most of the surveys. Moving forward, and to lessen the burden of respondents, DOSM is gradually moving away from conventional methods of data collection to e-surveys, online response via emails, computer-assisted telephone interviewing (CATI), Big Data and smart technology equipment as alternative tools. Currently, the e-survey and other forms of electronic medium recorded on average 40 per cent of the response rates such as in the case of Monthly Manufacturing Survey. Nevertheless, DOSM is gearing up to achieve at least 80 per cent responses from e-survey in the near future. In the case of other countries such as Korea, they took about 3 to 5 years to reach the acceptable level of response rates via online. Furthermore, continuous engagements with private sector are held through seminars and “*Hari Bersama Pelanggan*” at every state to educate respondents and the public on the importance of their cooperation in submitting quality and timely data.

2.3.2 Data Interpretation and Processing

Subsequent to data collection, data interpretation is the most important stage prior to dissemination of statistics to the public. Statisticians’ comprehensive knowledge and experience as well as ICT tools will be integrated to produce reliable statistics. Statisticians need to be well equipped with knowledge and kept abreast of relevant issues to undertake data interrogation prior to release. In ensuring response errors are kept to a minimum, stringent verification and validation steps are embedded in the processing system.

Apart from human capabilities, ICT tools are also widely used to facilitate the work process. DOSM deals with huge volumes of data and ICT tools predominantly play an important role to minimise human error and assist staff in managing and processing the massive data more efficiently, and thus, shorten the processing time. After the process of verification and analysis, statisticians must know the effective way to present the findings to the users.

2.3.3 Data Dissemination

The other key function of DOSM is to disseminate statistics. Dissemination is defined as a process of releasing statistics through various medium e.g. printed and electronic

⁶ Statistics Canada (2009), p37.

media. Larry Hartke (1997) explains that an effective data dissemination means that statistical agencies should fully identify the potential data users community, actively solicit their needs and then respond promptly by providing the users with timely and affordable statistical data that meet those needs as close as possible⁷. Therefore, it is essential for the produced data to be accessible, timely and relevant.

In accordance with the international standards, the statistics disseminated by DOSM are accompanied with guidelines known as the metadata. The metadata provides supporting information on the source, concept, definition, methodology and details on collection, processing, interpretation and dissemination as well as availability of disaggregated data. This information helps user to have a better understanding on the published data, assisting in literature review and helps users in locating the existence of required data. The metadata information is available on DOSM's website.

Accessibility is a prerequisite in data dissemination which ensures statistics are easily reachable and in a readable format. Recognising statistics as public goods and to ensure it is widely used, the statistical services and products should be easy and quick to access (Chief Statistician of Malaysia, 2012). In the past, most of the information was disseminated in printed forms. In tandem with the recognition of statistics as public goods and the dynamic transformation of ICT, currently most of the statistics are being made available and accessible via electronic medium such as website and mobile short messaging service (SMS).

Since 2009, to facilitate fast access to statistical information, mySMS was introduced as part of e-KL initiatives for "Delivery services through an integrated and connected Klang Valley" via one SMS number that is 15888. Currently, seven data categories are disseminated via SMS and there are Population, Gross Domestic Product (GDP), Consumer Price Index, External Trade, Index of Industrial Production, Labour Force, and Monthly Manufacturing Statistics. More categories of data will be disseminated via this platform.

DOSM's website <http://www.statistics.gov.my> provides extensive statistical information via internet. The website has received a number of commendable awards and recognition for its contents and presentation format such as "5 Star Rating" under the Malaysia Government Portals and Websites Assessment 2011 and 2012 as well as Strategic Achievers in 2012.

In ensuring the official statistics are widely accessible, the data are also disseminated through other local and international agencies' websites such as Ministry of Finance (MOF), Ministry of International Trade and Industry (MITI), Ministry of Agriculture (MOA), Bank Negara Malaysia (BNM), Economic Planning Unit (EPU), Malaysian External Trade Development Corporation (MATRADE), Malaysian Investment Development Authority (MIDA), ASEAN Secretariat, International Monetary Fund (IMF) and United Nations Statistics Division (UNSD).

⁷ Larry Hartke (1997)

As at September 2012, there were 103 online publications in the format of Microsoft Excel and Portable Document Format (PDF) on DOSM's website. Within the period of January to September 2012, the publications have recorded 268,688 hits. Online publications provide better accessibility and are user friendly.

In accommodating the increasing number of data requests for external trade statistics, Malaysia External Trade Statistics (METS) was launched in December 2010. Since then, the number of ad-hoc data requests has reduced while the number of hits for METS has increased significantly to 22,889 in 2012. Currently, METS2 is in the development process which covers more comprehensive data. The coverage for METS2 will be up to 5-digit SITC and 6-digit HS code and it will be an interactive system where selection of individual codes is enabled.

DOSM has also introduced Population Quick Info to assist users in obtaining population data easier and faster. Users can download or print directly data which covers information on Intercensal Population Estimates 1970–2010, Current Population Estimates and Population Projections 2010–2040.

The online data dissemination was further enhanced by introducing the Malaysia Informative Data Centre (MysIDC) in 2012. MysIDC is a one stop information gateway for the social and economic data of Malaysia through a user friendly system which constitute data from DOSM and other government agencies. The available data in MysIDC include National Accounts, Balance of Payments (BOP) and Investment, External Trade, Indexes, Industrial Production by Sector, Monetary and Banking, Labour Market, Population, Household Income and Expenditures, Agriculture, Environment, Education and Other Social Indicators. MysIDC can be accessed at <http://mysidc.statistics.gov.my>.

In terms of timeliness, DOSM complies with the Special Data Dissemination Standard (SDDS) as depicted in Table 1. According to IMF Annual Observance Report of the Special Data Dissemination Standard for 2011, DOSM supersedes the SDDS in terms of timeliness requirements for national accounts, labour market, balance of payments, merchandise trade and international investment position statistics. For example, recognising the urgency of obtaining quarterly GDP and BOP data by stakeholders, DOSM managed to improve the timeliness of releasing these indicators from 9 weeks to 7 weeks.

Table 1: Special Data Dissemination Standard (SDDS)

SDDS Data Category	Periodicity		Timeliness	
	SDDS	DOSM	SDDS	DOSM
Index of Industrial Production	Monthly	Monthly	6 weeks	6 weeks
Salaries/Wages (Manufacturing)	Quarterly	Monthly	12 weeks	6 weeks
Consumer Price Index	Monthly	Monthly	4 weeks	3 weeks
Producer Price Index	Monthly	Monthly	4 weeks	4 weeks
External Trade	Monthly	Monthly	8 weeks	6 weeks
National Accounts	Quarterly	Quarterly	12 weeks	7 weeks
Employment/Unemployment	Quarterly	Quarterly	12 weeks	7 weeks
Balance of Payment	Quarterly	Quarterly	12 weeks	7 weeks

3.0 Evolution of DOSM in Steering the Country's Development

After 63 years, DOSM still strive in serving the needs of the nation. The statistics provided by DOSM are hard evidence statistics which is needed to measure the performance of the economy, demographic, social and environment as well as to monitor and evaluate the performance of Government's programmes and policies. By adhering to international standards, statistics produced by DOSM are comparable internationally and has enabled the Government to benchmark and monitor the performance of its policies.

DOSM has indeed evolved from a small organisation to become one of the leading statistical agencies in Asia and among developing countries. The evolution has taken place mainly in four areas which are products, technology, capacity building and community outreach.

3.1 Evolution in statistical products

Malaysia's diverse socio, economic and demographic led to the requirement of different types of statistics. These differences have led to special characteristics of DOSM as compared to other NSOs whereby DOSM has been producing more detailed statistics as compared to other NSOs in developed countries. The multi-culture and multi-ethnicity in Malaysia warrants more precise and specific social-economic policy and thus require comprehensive statistics.

In 1970s, the gap in income distribution among ethnics has given the need for a new economic policy. Thus, the New Economic Policy (NEP) was introduced and in formulating the policy more diverse, relevant and comprehensive statistics were needed. At this juncture, the theme of development was "growth with distribution" and

DOSM had step-up its role to provide more detailed statistics to the policy makers, especially statistics on demographic, household income and expenditure, and income distribution by ethnicity. Meticulous efforts made by policy makers armed with profound statistics had successfully helped the government to formulate relevant policies to elevate the quality of life of all Malaysians regardless of ethnicity.

It has been noted extensively in the economic literature that in early stage of development, the most important goal is to achieve higher rate of economic growth. This eventually translate into higher per capita income followed by higher employment rate; fair distribution of wealth among the population; and the stability of general price level. Economic performance of a country can be measured at least by 6 key economic indicators namely real GDP, unemployment rate, inflation rate, interest rate, level of stock market and exchange rate. DOSM is producing three of these indicators which are real GDP, unemployment rate and Consumer Price Index (CPI) since 1950's while the remainder is provided by BNM.

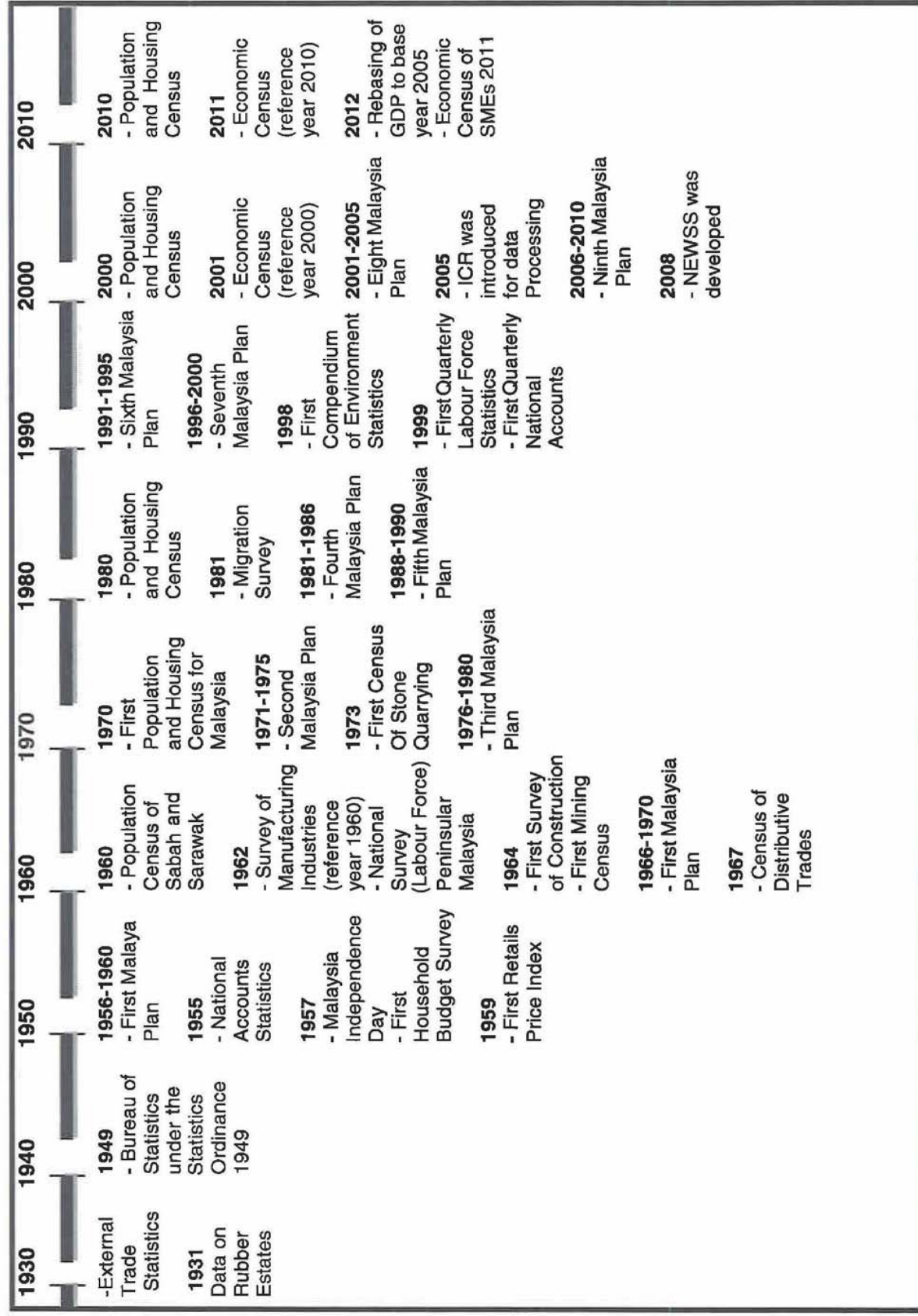
In 1997, most ASEAN countries were hit by the financial crisis which started in Thailand and later affected Malaysia. During this period, DOSM experienced insufficient and infrequent short term economic indicators such as quarterly GDP and BOP statistics. Hence, in 1999, the first quarterly GDP series were compiled and published with the time series from 1991 onwards.

Understanding the importance of short-term economic indicators in monitoring economic condition, over the years, DOSM has developed various short-term indicators such as Index of Distributive Trade (IoDT), Index of Services (IoS), Monthly Distributive Trade (MDT), Quarterly Labour Force Survey and Quarterly Construction Statistics. Comprehensive and wide-ranging short-term indicators enable the policy makers to foresee any calamity or distortion in the economy and to make timely and a fast turnaround decision. Nevertheless, some of the monthly and quarterly data are provided at aggregated level, as the information provided by respondents is still at preliminary/provisional stage and subject to revision upon completion of audit of the financial statements. The practice of providing monthly and quarterly data at aggregated level is to avoid recurrent revisions on the same set of data.

The borderless economy and the rapid structural changes have resulted in high expectations and a more diverse spectrum of official statistics. This entails a new set of indicators and more short term statistics to monitor and identify the changes. One of the new set of indicators developed by DOSM was the statistics on Small Medium Enterprises (SMEs). In 2009, DOSM has started the compilation of statistics on SMEs to examine the role of SMEs as the next engine of economic growth. Using these statistics, the SME Master Plan was formulated with the goal of stimulating the SMEs contribution in the economy. In addition to SMEs statistics, other statistics has been compiled as an input for micro planning purpose and investment programme such as Economic Transformation Programme (ETP) and Iskandar Malaysia projects.

The evolution of DOSM in developing statistical products in fulfilling the needs of stakeholders and the nation from 1930's to the present is illustrated in Figure 2.

Figure 2: Evolution of Selected Statistical Products



3.2 Evolution in Technology

Technological advancements enhance the effectiveness of NSOs in expediting statistical workflow. Prior to the 1950s, DOSM adopted hand-pick system whereby data were collected and captured manually. This practise was insufficient to capture and process the data that might lead to momentous non-sampling error. In year 1954 and 1957, ICT tabulator and Key Punch Machine were introduced to speed up the process in producing statistics, and in 1967, the workflow had migrated from mechanical to electronic data processing following the installation of main frame system. The system had been continuously upgraded up to 1980's, few generations of mainframe systems were installed to cope with the increasing usage and users' demand for timely data. DOSM started to use the Intelligent Character Recognition (ICR) for data processing in 2005. ICR has definitely reduced the time consumed in data processing and human error in data capturing.

Recently, DOSM has taken new initiatives to integrate different system applications and all statistical workflow through a computerised system known as National Enterprise-Wide Statistical System (NEWSS). The workflow includes designing, processing, collecting, analysing, interpreting and disseminating activities as highlighted in the GSBPM. The NEWSS project kicked off in 2008 and the first phase of development was completed and fully implemented in 2010. Ultimately, DOSM is moving towards developing NEWSS as an integrated system and serve the following purposes:

- i. To standardise, consolidate and improve the existing system/ application to support the strategic requirement and the operation of DOSM;
- ii. To simplify, improve and expedite the process of statistical data dissemination;
- iii. To develop an integrated business process management that adheres to international statistics standard; and
- iv. To built up a central repository to facilitate data sharing between DOSM and other government agencies.

The impact of NEWSS on DOSM can be categorised into the following areas⁸:

- i. Stakeholders
The stakeholders benefit from NEWSS whereby their requirements can be fulfilled in a shorter period with a better frame for sampling. NEWSS enables DOSM to customise the request from stakeholders in a timely manner.
- ii. Subject Matter Divisions (SMDs)
SMDs can easily view the gradual changes in tabulation based on the generated sets of data through the Performance Management System. This feature facilitates the SMDs to trace and rectify errors that surfaced during tabulation. Performance Management System enables management level to monitor the progress of all activities pertaining to censuses and surveys.

⁸ Mazlan Sulong (2011)

iii. Frame

Prerequisite data obtained from OGAs such as CCM, Construction Industry Development Board (CIDB), Employees Provident Fund (EPF) and GIS, provide DOSM with a consolidated view of all frames and statistics of each census and survey area. These updated and timely data help DOSM to formulate the right and accurate sampling.

iv. Central repository

The Central Repository Database facilities will elevate the level of data management in providing services to all customers.

v. Dissemination

Dissemination of statistics to external users by means of publications and data request are served through an enterprise portal. Customer management will be easier and service-oriented with the provision of online request and online payment, embedded in the enterprise portal.

vi. Hardware and software

The ICT infrastructure and software are designed to sustain reliability, availability and serviceability (RAS) of the equipment twenty four by seven. All hardware including servers and storage area network (SAN) are placed at server hosting (data collocation) which operate twenty four by seven with Service Level Guarantee (SLG) 99.1 per cent.

3.3 Capacity Building

Knowledgeable and skilled personnel are a prerequisite to produce the right statistics. The increasing need for a wide range and complex statistics requires skilled personnel with diverse knowledge and passion in the field of statistics, economics, demographics and ICT. To date, DOSM has 3,254 personnel who are responsible in wide areas of social-economic statistics and involved in nine important processes as outlined in GSBPM. Comparatively, the ABS has 3,542 employees while the Statistics Canada has approximately 6,000 workforce. The current ratio of statistician to total personnel is 1:10, which is comparatively lower than other developed NSOs. In shaping the statistician professions and reducing the gap ratio, DOSM is looking for a possible restructuring of the workforce whilst taking into consideration the appropriate ratio of professional and management group. It is hoped that this move will spearhead more comprehensive statistical analysis and interpretation.

Recognising the importance of the statistical services to cater to the increasing demand for new areas of statistics, in January 2008, the Government had reclassified the statistics profession from Administration and Supporting Service (N) Scheme to Economic Service (E) Scheme. This scheme acknowledges that the personnel in DOSM should be well equipped and specialised in statistical discipline along with technical and analytical knowledge in the macroeconomics discipline, including national accounts, balance of payments, international trade, prices, population, demographic,

labour and environment. With the acknowledgement of the E scheme, every statistics produced by DOSM are expected to be accompanied with quality reasoning and detailed elaborations.

In safeguarding a high level of proficiency and expertise in producing official statistics of the nation, personnel need to be cultured in appropriate subject matters/disciplines and exposed to hands-on training. In this regards, DOSM continues to collaborate with renowned NSOs and international institutions to enhance capacity building. Moreover, DOSM has also developed its own programme that is tailored to the specific needs of personnel at all levels. In recognition of the importance of statistical services, the Government has approved the establishment of the Statistical Training Institute of Malaysia (ILSM) in 2009 and commenced its operation in 2012. ILSM is able to conduct well-structured courses with established curriculums focusing on technical courses encompassing Social & Demography, Economics, Methodology, Research & Quality, ICT and Management. Moving forward, ILSM thrives to be the centre of excellence for official statistics domestically and internationally. Commencing 2013, ILSM has started to offer its courses to various government agencies and users as well as providing its facilities for international courses.

Apart from training in ILSM, DOSM's personnel will continue its engagements with international bodies such as UNSD, IMF and Asian Development Bank (ADB) in enhancing knowledge. Attachments with international statistical bodies are practiced in selected subjects so as to keep abreast with the latest international manuals and recommendations as well as in ensuring the methodology used is comparable internationally.

Besides providing statistical data to public, DOSM highly encourages its personnel to share their technical expertise in the form of writing articles or research for journals as well as presenting papers in seminars and workshops. Thus, public can have a better understanding and view on DOSM's methodology and statistical findings.

DOSM aspires to become one of the catalysts in the statistical community in the near future. Since the past decades, DOSM has extended its expertise internationally and regionally. Among the international contributions of DOSM include being a member of the Advisory Expert Group (AEG) of System of National Accounts, Expert Group on Industrial Statistics of International Recommendations for Industrial Statistics and Quarterly National Accounts Manual. DOSM has also shared its expertise in a number of areas such as CPI, Labour Force, National Accounts, Short-term Economic Indicators and etc, the most recent being with Organisation of Islamic Cooperation (OIC) countries such as Afghanistan, Pakistan and Maldives. The Department has also been receiving various study visits from other NSOs such as Mozambique, Vietnam, Ethiopia, Bangladesh, Bhutan and Korea. At Asia & the Pacific and ASEAN regions, the Department plays an active role in Economic and Social Commission for Asia and the Pacific (ESCAP) and ASEAN Secretariat. Towards One ASEAN One Community by 2015, Malaysia is actively involved in all designated programmes coordinated by ASEAN Secretariat. Following the Second Meeting of the ASEAN Community Statistical

System (ACSS) in 2012, the Department has been entrusted for a second term (2013-2014) to chair the Working Group on Data Dissemination and Analysis.

3.4 Reaching to the Community

Statistical data are also widely used for research and analysis purposes by research institutions and private sectors. As the country continues to develop, the community as well as the media have shown increasing interest towards official statistics. With diversity of users from different groups and background, statistical literacy becomes an ongoing concern for DOSM. Issues such as 'how the public will perceive the data' and 'possibility of misinterpretation of the statistics by media' may lead to misconstrued and misleading interpretation and application of the data.

Educating the community on statistics is one of the means in attaining statistical literacy among public. Statistical literacy might not become an issue for sophisticated users such as researchers, analysts or economists. However, it may be rather difficult for media, particularly journalists, to report and interpret statistics in a form that can be easily understood by the public.

Basically, there are two types of journalist; those who are statistically literate and general news journalist whom may be less statistically literate. It is a challenge for the department in facilitating the general news journalists. Statistical release should have an understandable, clear and concise explanation of the respective indicators. This approach will help to ease the predicament on the journalist to transmit the information to the general public. Subsequently, it can stimulate public interest towards statistics.

Growing interest towards statistics leads to increasing number of statistics being produced, not only by the NSOs but also by other agencies such as research houses. It is common for various agencies to compile statistics to serve their administrative purposes. Statistics which is compiled from diverse groups will produce different figures which are incomparable even on the same area of study. DOSM, as the official statistics producer will continue to undertake the role of statistical leadership by offering technical assistance, consultancy and technical support for any statistical work outside DOSM.

DOSM stepped in by educating the researchers on the importance of appropriate methodology, concepts, standards and classification in producing statistics in order to improve the confidence on data produced by researchers. Continuous consultation is also given to any agencies that require advice on the methodology of data collection, questionnaire and sampling design. DOSM has frequently been requested to give consultation services and feedbacks on various studies done by other government agencies. The Department is also appointed as member in Technical Working Groups (TWG) to assess / evaluate the studies carried-out by consultants / private institutions on behalf of government agencies.

4.0 Way Forward

Intensifies Smart Partnership

DOSM's Strategic Plan 2010 – 2014 launched on 22 January 2010 has embarked the Department's direction in five years. One of the strategic directions outlined is the strategy 'to expand networking with data providers and users'. In line with that, DOSM has moved towards intensifying data tapping on secondary and administrative data from other agencies instead of solely relying on the primary data to cater for the increasing demand for new statistics. This is vital in order to avoid duplication of efforts and to reduce respondents' burdens as well as to use the resources more effectively. Prior to data tapping, it is important that respective agencies accommodate to DOSM's data requirements. In addition, full understanding of the usage of the codes, classifications and concepts by the respective agencies is a must to ensure standardisation and compliance to international recommendations.

In line with our data tapping practice, several memorandums of understanding (MoUs) have been signed with other government agencies such as Malaysia Productivity Corporation (MPC), Companies Commission of Malaysia (CCM) and BNM. These MoUs serve to enhance mutual cooperation in garnering data, sharing expertise and providing current statistics.

In strengthening the smart partnership, DOSM extended its services to various relevant government agencies by placing statisticians as cadre officers to play the role as the technical arm of DOSM. As of today, a total of 208 cadres are placed in 30 government agencies. In this context, the cadre service is important in ensuring the production of quality data as well as in enhancing the cooperation between DOSM and the other agencies.

Currently, the Statistics Act empowers DOSM to collect information from individuals and businesses. However, unlike Statistics Canada, DOSM does not have the mandate to access individual record in the possession of other government agencies. It should be noted that Statistics Canada has full access to all records held by government agencies and specifically identifies all taxation and customs record as well as record of court.⁹ Similar steps needs to be undertaken by DOSM to set up a working group to establish a mutual understanding in accessing the records and statistics held by other government agencies.

Presently, most of the developed countries are imposing a ruling that companies must provide information to Inland Revenue Board and statistics offices whenever they register their businesses. However, such practice is yet to be implemented in Malaysia whereby companies are currently not obliged to report to DOSM. Thus, DOSM is working on the possibility to make it compulsory for any businesses that register with CCM is obliged to provide information to DOSM as well.

⁹ Chander, R. (2009) p5.

In garnering data, only selected individual or business entity are requested to fill up survey questionnaire. Though the Statistics Act has armed DOSM with the power to penalise for non-compliance in surveys, diplomacy and persuasive approaches are still the best and extensively practiced.

5.0 Conclusion

For the continuing development and prosperity of the country, the official statistical system must be the point of reference for policy formulation. The official statistical system has to provide quality statistics so that confidence in the system would not waiver. In order to achieve this, the system requires co-operation from other relevant parties such as other government agencies, the academia, the media, private sectors as well as the general public. In addition, it is also pertinent that the roles of coordination and engagement with all prospective users to continue to be expanded and shifted to a new level. These concerted efforts will lead to a successful statistical system that can contribute to the nation's social-economic legitimacy along with providing assistance in the implementation of national policies. Technology advancement has made a big headway in DOSM especially through the implementation of NEWSS, and with this, the delivery of statistical services will continue to be strengthened.

Despite the key role of DOSM to provide official statistics to the stakeholders, the success of official statistical system is also measured by its ability in fulfilling a variety of statistics that are required by the stakeholders, community, businesses and researchers on daily and real time basis. On this front, DOSM understands the importance of the statistics needed. However, the parties concerned have to understand that there are always potential constraints that may limit DOSM ability to serve their needs. Skilled statisticians and advanced tools can never fully complement the non-response from businesses and households. This is a real challenge where we believe that everyone plays an important role in creating awareness on the statistical request.

DOSM always strives to foresee new emerging statistics and is never complacent on the statistical products and services that it is currently providing. DOSM continues to evolve and keep abreast with the dynamic changes internally and externally and is committed and responsive to these changes. DOSM will keep producing relevant statistics to reflect these changes and fulfil the users' needs. The availability of relevant statistics is becoming more paramount as international competition will get stiffer fuelled by globalisation and the gathering momentum of trade liberalisations. With these experiences, DOSM is currently providing expertise in the various statistical fields to assist developing countries to enhance their statistical acumen. There is no doubt that the country's past successes in attaining the economic prosperity were done through years of planning combined with priceless statistics. To ensure this continues in the future, collective efforts by statisticians, policy makers and the statistical community will play a vital role in shaping the future and well-being of the nation.

Appendix 1: Comparison between Centralised and Decentralised Statistical System

	Statistical System in Japan	Statistical System in U.S.	Statistical System in Canada
Statistical System	Decentralised statistical system whereby statistical functions are spread out among individual administrative organisation.	Highly decentralised statistical system.	Centralised statistical system whereby the statistical functions are assigned to a single organisation.
Year of establishment	Established in year 1869.		Established in year 1867.
Statistics Organisation	• Cabinet Office; • Ministry of Internal Affairs and Communications; • Ministry of Justice; • Ministry of Finance; • Ministry of Education, Culture, Sports, Science and Technology; • Ministry of Health, Labour and Welfare; • Ministry of Agriculture, Forestry and Fisheries; • Ministry of Economy, Trade and Industry; • Ministry of Land, Infrastructure, Transport and Tourism; • Ministry of the Environment; • Local Branch Office of Central Government Agencies; and etc.	More than 100 agencies and each agency is responsible to produce social and economic federal statistics. The agencies include the US Census Bureau, Bureau of Economic Analysis (BEA), Bureau of Labour Statistics (BLS), Bureau of Justice Statistics, National Aeronautics and Space Administration, Bureau of Transportation Statistics, National Center for Health Statistics, Statistics of Income (IRS), National Center for Education Statistics, and etc.	Statistics Canada.

	Statistical System in Japan	Statistical System in U.S.	Statistical System in Canada
Advantages	- Statistics that respond to changes in the social and economic trends can be compiled. - Enables each organisation/ agency to utilise knowledge and experiences on the administration under its jurisdiction for planning and conducting statistical surveys. - Each statistical agency receives current year appropriations, either as a specific line item in the budget or through allocations from its parent organisation's budget.	- Policy relevance. - Strong statistical linkages to administrative management and information systems.	- Easy to capitalise on the professionalism of statistics. - A consistent statistical system is built more readily. - Has a single budget for the Statistics Canada which allows response to changing priorities through internal reallocations. - Convenient and efficient for users to secure statistical materials in a variety of fields from a single source.
Legal Framework	Statistics Act 1947 (Revised 2007) covers not only statistics compiled from census such as the Population Census and surveys, but also those compiled from administrative records and processed from other statistics such as the National Accounts. The Statistics Act is applicable across all agencies.	Statistical agencies generally operate under a number of laws, policies, or regulations governing the collection, use and confidentiality of the statistical information for which they are responsible. Some of these laws, policies, and regulations apply only to a specific agency. The legal framework also limits the extent of data sharing among agencies.	In Canada, a single law, the Statistics Act Of 1971, provides the authority for all activities of Statistics Canada, including the coordination of those parts of the Canadian statistical system not included in Statistics Canada, and applies to all components of Statistics Canada. Under the Statistics Act, Statistics Canada has broad access to administrative records, the authority to use data from several sources to construct composite records, and the authority to share data among different components of Statistics Canada. The Statistics Act also provides for the protection of the confidentiality of individual data providers, as does Canada's Access to Information Act and Privacy Act.

Appendix 2: Fundamental Principles of Official Statistics

Principle 1: Relevance, Impartiality and Equal Access

“Official statistics provide an indispensable element in the information system of a 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.”

Principle 2: Professional Standards, Scientific Principles and Professional Ethics

“To retain trust in official statistics, the statistical agencies need to decide according to strictly professional consideration, including scientific principles and professional ethics, on the methods and procedures for the collection, processing, storage and presentation of statistical data.”

Principle 3: Accountability and Transparency

“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.”

Principle 4: Prevention of Misuse

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

Principle 5: Sources for Official Statistics

“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.”

Principle 6: Confidentiality

“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.”

Principle 7: Legislation

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

Principle 8: National Coordination

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

Principle 9: Use of International Standards

“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.”

Principle 10: International Cooperation

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

Appendix 3: Statistical Capacity Building (StatCaB) Programme under Statistical, Economic and Social Research and Training Centre for Islamic Countries (SESRIC)

NO.	TRAINING PROGRAMME	COUNTRY	INSTITUTION	YEAR
1	Quarterly National Accounts	Maldives	Department of National Planning	2012
2	Labour Force	Afghanistan	Islamic State of Afghanistan	2012
3	Price Statistics and Indices	Afghanistan	Islamic State of Afghanistan	2012
4	Short-term Business Statistics	Pakistan		2012
5	National Accounts	Maldives	Department of National Planning	2010
5	National Accounts	Indonesia	Badan Pusat Statistik Indonesia	2007
6	General Statistics	Maldives	Ministry of Planning and National Development of Maldives	2007

References

- Chander, R. (2009). Effective national statistical systems: essential requirements. *Journal of the Department of Statistics, Malaysia*, 1(2009), 1-20.
- Department of Statistics Malaysia. (2009a). *Department of Statistics Malaysia: 60 Years Statistics*.
- Department of Statistics Malaysia. (2009b). *Metadata guideline*. Retrieved 19 September 2012 from: http://www.statistics.gov.my/portal/images/stories/files/methods/Metadata_Guideline.pdf
- Department of Statistics Malaysia. (2010). Department of Statistics Malaysia Strategic Plan 2010-2014 – Producer of National Statistics.
- Department of Statistics Malaysia. (2012, January 1). *New Year message from the Chief Statistician Malaysia*. Retrieved 19 September 2012 from: http://intranet.stats.gov.my/tekskp/Amanat_2012_KP_BI.pdf
- Farrell, D. (2007). *Information paper: Quality dimension of the Australian National Accounts*.
- International Monetary Fund. (2012). Annual Observance Report of the Special Data Dissemination Standard for 2011. Retrieved 9 October 2012, from: <http://dsbb.imf.org/>
- Kei, T. (2007). *On the recent reform of official statistics of Japan. Proceeding of the International Symposium on Development of Official Statistics, Tokyo, Japan*. Retrieved 5 October 2012 from: <http://www.stat.go.jp/english/info/meetings/sympo/pdf/sympos1.pdf>
- Larry Hartke. (1997). *Effective Data Dissemination Principles and Practices for Statistical Organisations and Agencies*, United States Bureau of the Census.
- Mazlan bin Sulong. (2011). *National Enterprise-wide Statistical System: Impact to Department of Statistics Malaysia*. Retrieved 28 October 2012 from www.unescap.org/stat/MSIS/egm-Jun2011/session1-Malaysia.pdf
- Nazaria Baharudin, Siti Salwani Ismail and Shamsinar Ibrahim (2011). Data communication- give users what they really need. *Journal of the Department of Statistics, Malaysia*, 2(2011), 1-17.
- National Enterprise-wide Statistical System*. Retrieved 19 September 2012, from <http://intranet.stats.gov.my/index.php?module=newss&nav=newss>

- Office for National Statistics. (2011). *GSS quality measurement and reporting: guidance and an example framework for reporting*. Retrieved 19 September 2012 from: <http://www.ons.gov.uk/ons/guide-method/best-practice/gss-best-practice/index.html>
- Pink, B., Borowik, J., and Lee, G. (2009). The case for an international statistical innovation program– transforming national and international statistics systems. *Statistical Journal of IAOS*, 26 (2009/2010), 125-133.
- Statistics Denmark. (2003). *Good Dissemination Practices in Statistics New Zealand and Statistics Denmark 2003*.
- Statistics Canada. (2009). *Statistics Canada quality guidelines* (5th Ed.). Ottawa: Statistics Canada.
- Trewin, D. (2007). The evolution of national statistical systems: trends and implications. *Statistical Journal of IAOS*, 24, 5-33.
- United Nations. (2001). *Best practices in designing websites for dissemination of statistics*. Geneva: United Nations.
- United Nations. (2003). *Handbook of statistical organization: the operation and organization of a statistical agency* (3rd Ed.). New York: United Nations.
- United States General Accounting Office. (1996). *A comparison of the US and Canadian statistical systems*. Washington, DC: U.S General Accounting Office.
- United Nations Statistical Commission. Retrieved 22 September 2012 from <http://unstats.un.org/unsd/methods/statorg/FP-English.htm>