Developing National Capacity in Population and Social Statistics in Asia and the Pacific:

A framework

Technical Advisory Group on Population and Social Statistics

Committee on Statistics of the Economic and Social Commission for Asia and the Pacific

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The secretariat provided support under the guidance of Ms Haishan Fu.

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Chapter I. Introduction

Goals of the Economic and Social Commission of Asia and the Pacific (ESCAP)

In December 2010, governments of the Economic and Social Commission of Asia and the Pacific (ESCAP) discussed the future direction of the region's statistics development. They agreed on the strategic goal:

'Ensuring that all countries in the region by 2020 have the capability to provide an agreed basic range of population, economic, social and environment statistics'.

Having leaders of National Statistical Systems (NSS) in the region set this goal reflected the urgent need for quality statistics to support sound, evidence–based policies that promote an economically, socially and environmental sustainable future for all. It also reflected the resolve by the governments to meet such a need.[1]

Technical Advisory Group (TAG)

The Committee on Statistics of ESCAP, the highest level inter-governmental forum in the region, established a Technical Advisory Group (TAG). The TAG provides recommendations on strategies, as well as substantive and methodological guidelines for achieving goals in the area of population and social statistics. As a first step, the TAG developed a core set of population and social statistics covering 11 domains of social concern that might reasonably be expected to be available by 2020 for all countries of the region. The core set was endorsed by the Committee on Statistics at its third session in December 2012[2] and subsequently by the Commission in resolution 69/16[3] as a guide to focus national and regional efforts to improve the scope of core population and social statistics in the region.

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[1] ESCAP, *Report of the Committee on Statistics on its second session* (E/ESCAP/CST(2)/9), available from: http://www.unescap.org/stat/cst/2/CST2-9E-report.pdf

[2] ESCAP, *Report of the Committee on Statistics on its third session* (E/ESCAP/CST(3)/17), available from: http://www.unescap.org/stat/cst/3/CST3-17E-report.pdf

[3] ESCAP, *Annual Report* (E/ESCAP/69/27), available from: http://www.un.org/ga/search/view_doc.asp?symbol=e/escap/69/27

The TAG also considered the key elements of an NSS that underpin and assist in producing these core statistics. With the assistance of experts, the TAG has developed this framework, which is intended to guide national and regional actions for capacity building in population and social statistics.

The Framework: how this report is set out.

The framework consists of three parts, which are outlined in the following three chapters:

- Chapter II – The core set of population and social statistics for Asia and the Pacific
- Chapter III – Managing statistical output
- Chapter IV – Characteristics which determine the sustained capability of a National Statistical System to produce the core set of population and social statistics

Chapter II

Chapter II of this report focuses on the core set of population and social statistics, by describing the 11 domains of social statistics, helping to provide answers to questions such as:

- What population and social statistics should we collect?
- What breakdowns of the statistics are most relevant?
- Which population groups should we focus on?

Part A of Chapter II examines the policy context and challenges for measuring population and social statistics. These challenges include the lack of an accepted unifying framework or ways of measuring population and social statistics, the fact that there are fewer (economic) incentives to standardise population and social statistics, and the broad scope of population and social statistics when compared with economic statistics.

Part B of Chapter II describes the11 domains of population and social statistics: the core set. The domains are: population; health; income, wealth and expenditure; employment; education and training; housing and infrastructure; information and communication; crime and justice; family and community; culture and leisure and governance. Part B explains why these domains are important to countries, the key policy issues associated with each, and possible indicators and standards of each domain.

This part of the framework can be used to help identify a nation's priority information needs. It can also be used to help identify gaps in collecting, compiling, processing, analysing and disseminating population and social statistics. It also provides a regional policy context which provides both a framework that countries can use and a tool against which the country's priorities can be compared.

Chapter III

Chapter III sets out the five dimensions of data quality for an effective set of population and social statistics using the United Nations (UN) Statistical Commission's 'Guidelines for the template for A Generic National Quality Assurance Framework'. The five dimensions are: relevance; accuracy and reliability; timeliness and punctuality; accessibility and clarity; and coherence and comparability.

This part of the framework will assist a country reviewing its statistics in two ways:

- To help to clarify the quality requirements for a set of statistics. For example, are the key questions of interest answered in the statistics being produced? What timeliness is required? What access is needed?
- To help countries assess whether currently available statistics meet key user requirements, and in where improvements may be needed. This will enable countries to develop a good understanding of where new statistical collection, analysis and dissemination are needed. It will also assist the NSS to identify where current statistical collection, analysis and dissemination needs to be enhanced to meet their need for a sustainable set of core population and social statistics.

Chapter IV

Chapter IV considers the core capabilities needed within a National Statistical System (NSS). The NSS is the set of organisations, groups and individuals that together produce and disseminate official statistics on behalf of the national government.

This section provides a capacity framework of characteristics for which countries can compare their strengths and weaknesses in producing population and social statistics. The key characteristics are: engagement; impartiality and professionalism; funding; data sources; skills and statistical infrastructure.

Overall aim of this framework

This framework can be used to help countries:

- Review their priorities for population and social statistics, and assess key gaps in the availability and quality of statistics and other information;
- Assess the underlying causes of those gaps in the NSS; and
- Prioritise statistical development issues that need to be addressed.

In summary, this framework is intended to help guide countries in assessing current national practices in collecting, compiling, processing, analysing and disseminating core set of population and social statistics. It can also be used to identify opportunities to improve the capacity of the NSS through technical assistance, training, research and methodological development, advocacy and experience sharing.

The intended audience for this framework are those interested in national capacity development in population and social statistics in the Asia and the Pacific region. This includes members of national and international statistical communities interested in Asia and the Pacific, but also includes those who advocate for developing statistics in the region.

Chapter II The core set of population and social statistics for Asia and the Pacific

A. Defining domains in population and social statistics to provide structure

1. Population and social statistics cover a wide range of activities, stakeholders and areas of interest. To decide which areas of statistics are the most important to develop in order to inform the community, facilitate research, and support evidence-based policy development in the social arena, it is important to create a structure to aid discussion.

2. In population and social statistics, the key concept of interest is wellbeing. Just as with economic statistics, where value can be added to a single product across a number of industries (for example, manufacture, wholesaling, retailing, servicing, insuring), a person's wellbeing can be added to or subtracted from by a number of aspects of their social circumstances. For example, their health, their housing, their income, their feelings of safety, and their freedom to do the things they enjoy, their ability to be involved in community-based decisions all contribute to a person's wellbeing, even though there is no single unit of measure available to combine the impacts across these influences.

3. The different aspects of social circumstances which contribute to wellbeing can be called "domains of social concern", for the purpose of achieving a workable structure within population and social statistics. Countries typically organise themselves in terms of how they deliver social services and develop social policy into these domains, forming a natural approach to organising population and social statistics.

Challenges of population and social statistics

4. Building sustainable capacity to produce population and social statistics presents some specific challenges. Some of these challenges are explored in Figure 1 when compared with economic statistics.

(a) No unifying framework

5. There is no unifying framework in population and social statistics to consolidate elements of the core set. For example, the statistical output from the health, employment, crime and governance domains are never (or rarely) presented together in a unified way to assess a country's social development. This contrasts with the component parts of economic statistics and environment statistics, which are brought together under common frameworks, such as the System of National Accounts (SNA) and the System of Environmental-Economic Accounting (SEEA).

(b) No unifying measure

6. Population and social statistics do not have a single unit of measure available to compare and combine the impacts of a person's health, housing, income, feelings of safety, freedom to do the things they enjoy and their ability to be involved in community-based decisions. The underlying measure across these domains is wellbeing, but it is not practical or desirable to quantify all social statistics on this basis.

7. The different aspects of social circumstances which contribute to wellbeing can be called "domains of social concern". Countries typically deliver social services and develop social policy by these domains, forming a natural approach to organising of population and social statistics.

8. In contrast, economic statistics and activities across industries can be combined using a single unit of measure, such as currency.

(c) Fewer incentives for standardisation

9. There are fewer perceived incentives for countries to develop and adopt international best practice and frameworks for population and social statistics.

10. This contrasts with economic statistics. For example, high quality, transparent and objective economic statistics can drive markets and are critical to lending money from private and international organisations. There are also strong incentives for countries to agree on and use standard frameworks to measure areas of transnational interest within economic accounting, such as air quality and climate change.

(d) The scope of population and social statistics

11. The range of government policy and activity covered by the core set of population and social statistics is wide. For example, in many countries, separate departments are accountable for health, education, labour and crime. The issues within each domain may differ substantially.

12. As a result there is unlikely to be a single factor or focus that will unify capacity building efforts.

	Economic statistics	Social statistics
Key users have less control over government resources	Key users of economic statistics are generally within the Treasury Department or Ministry of Finance, and the Central Bank.	Key users of social statistics tend to be government agencies with responsibility for the policy and services in a particular domain, for example, health.
Social statistics are a lower priority for governments	There is a strong international interest in a country's economic statistics and its credit rating. Foreign investments in countries are influenced by economic statistics and their quality	They do not generally move markets or affect credit ratings, with the exception of labour market and labour force participation statistics.
There are fewer incentives to produce high quality social statistics	A key concern for users of economic statistics lies in the transparency of their production and dissemination..	The users of social statistics may see greater value in the control of the statistical information, than in its accessibility to the public. In this case, if agencies are the key funders and/or producers of statistics for that domain, the potential conflict of interest may see the development and dissemination of statistics in that domain suffering.
Social statistics are less prominent in the media	Key economic statistics are produced regularly and frequently and have good media coverage. The reputation of a National Statistical Office (NSO) rests significantly on the availability and quality of these statistics and they tend to be seen as core outputs.	In contrast to economic statistics, social statistics do not have as much media prominence
Social statistics have no single measure of output	Economic statistics for activities across industries can be combined using a single unit of measure, the dollar	Population and social statistics do not have a single unit of measure available to compare and combine the impacts of a person's health, housing, income, feelings of safety, freedom to do the things they enjoy and their ability to be involved in community-based decisions, and so on. The underlying measure across these domains is well-being, but it is not practical or desirable to quantify all social statistics on this basis.
Social statistics have no unifying framework	Conceptually, economic data from a variety of collections needs to be brought together in a consistent framework within the System of National Accounts, necessitating a strong degree of consistency and co-ordination across many potentially disparate areas of economic statistics.	There is no unifying framework in population and social statistics to consolidate elements of the core set. The statistical output from the health, employment, crime and governance domains for example are never (or very rarely) presented together in a unified way to provide an assessment of the social development in a country.
Coordination of social statistics is complicated by the breadth of activity	Because the collection of economic data is an imposition on business, there is strong pressure to co-ordinate activities across producers and minimise the load imposed	The production of key official social statistics across such a wide range of agencies, increases the challenge of building skills and infrastructure, and achieving highly coordinated work programs and consistent statistics.The production of social statistics may be further complicated in countries with multiple levels of government, with different responsibilities at different geographic levels across the domains. For example, employment related policy and services may be run at the national level, while education, or elements of health may be run at the provincial level government

Figure 1. Summary of challenges of measuring social statistics

13. There is a large value in building statistical information to support effective policy and intervention. Governments spent a lot on social services and interventions, which are important to improving national wellbeing. Despite the aforementioned difficulties faced by population and social statistics, it is important to measure progress in these areas, for the benefit of countries and their people.

B. Meeting the essential information needs of population and social concern: the core set

What are the domains of population and social concern?

Following consultation in the ESCAP region, 11 domains of population and social statistics have been identified as important for informing social issues within countries in region. These are depicted in Figure 2.

Figure 2 Eleven domains of population and social concern

14. Some of the domains are more established in social statistics frameworks than others. For example, health is a widely agreed area of social concern, whereas governance is seen by many as an emerging aspirational domain. As the objective is to articulate a set of basic or core statistics that might reasonably be expected to be available by 2020 for all countries of the region, aspirational as well as current domains are important to consider.

15. What are the most important domains? The population and social statistics that are most important are those that answer the questions that are important to the country, depending on national context and priorities. They provide insights into how to improve the level of wellbeing of its people. They are the statistics that provide a strong base for evidence-based policy making, for effective service delivery, and for monitoring government performance.

16. Identifying policy issues at the ESCAP regional level provides a contextual framework that allows each country to work through its own data priorities. It provides a checklist of possible areas of strong policy interest. For each domain, countries must ask 'What are the key issues of

government and community concern related to that domain? What information is needed to inform those issues?

17. Individual countries will have their own key areas of social concern that may or may not correspond to those listed in Figure 2, and that will determine what the priority statistics are for that country. To determine what is important to individual countries the following questions should be considered:

- What are the population and social issues that matter most to us?
- Are their issues for each area of concern that are particularly relevant to certain population groups? What do we need to know about these population groups?
- How quickly do we expect change and how frequently do we need information to monitor progress?

Each subsection below considers a single domain from the 11 described in Figure 2. In each case, there is a broad description of the importance of this domain to social policy, together with a number of key policy issues in the domain. While the domain-by-domain approach is a useful way of working systematically through policy issues in a country, there is an alternative view of social policy based on population groups of particular social concern. It is a useful cross-check to consider each of these population groups known to be experiencing socio-economic circumstances of concern (for example, women and girls, indigenous groups, the aged population, single parents, those with disabilities) and for each of these groups to work across the domains and ask if the issues that are key for the group have been included.

1. Population domain

Why are population statistics important?

18. Information on population trends is necessary to establish the size, distribution and composition of the current and future population. Data is also required to develop strategies to meet the country's changing needs in the medium and long-term. Changes in the size, distribution and composition of a population are also important because they underline a large number of issues concerned with meeting economic and social needs. In addition to informing policy development and planning, accurate population statistics are vital in assessing the various aspects of wellbeing of particular population groups.

Key policy issues for population statistics

19. Overall, policy issues relate to understanding the size and makeup of a countries population.

20. Illustrative examples:

- Population composition and distribution.
- Fertility.
- Migration.

Using population statistics to calculate rates

21. In addition to providing information about population trends, accurate demographic statistics are crucial to assess the wellbeing of the population by providing the denominators to compare different subgroups within the population (for example, different ethnic groups, different age groups or different regional groups). Such comparisons are typically made by comparing the incidence of the characteristic (or an event) for that group and comparing this with the incidence in the population as a whole, where:

$$\text{Incidence rate} = \frac{\text{Number of people with the characteristic (or new events)}}{\text{Population of group}} \text{ In a period of time}$$

22. This means that population numbers are needed for the population as a whole and for subgroups of particular interest.

23. Deciding which population groups need to be measured will be country dependent, but are likely to include populations living in particular geographical areas, ethnic groups, age groups, gender groups, and economically marginalised groups.

Population		
Statistics (Themes)	**Possible relevant characteristics**	**Illustrative example indicators**
Population numbers	Age, gender, geography, country of birth	Total population, average annual population growth
Births	Age of mother, geography, gender of child	Number of births, crude birth rate, adolescent fertility rate
Deaths	Age, gender, geography	Number of deaths, crude death rate, infant mortality rate
International migration	Age, gender	Number of permanent migrants in and out of the country, Migrants share of the total population
Population mobility (internal migration)	Age, gender, geography (origin, destination)	Number of people moving from rural to urban areas
Urbanisation	Age, gender, geography	Proportion living in urban and rural areas
Statistical frameworks, standards and classifications		
•UN Handbook on Civil Registrations •Principles and recommendations for a Vitals Statistics System, Revision 2 •UN Recommendations on Statistics of International Migration, Revision 1, (1998)	•Central Product Classification (CPC) (2008) •Conference of European Statisticians Recommendations for the 2010 Censuses of Population and Housing •Guidelines for Exchanging Data to Improve Emigration Statistics.	•Principles and Recommendations for Population and Housing Censuses, Revision 2 •Urban Indicators Programme Guidelines (UIP)

Figure 3 Population domain: eleven domains of population and social concern

2. Health domain

Why is health important?

24. Good health directly and indirectly improves the wellbeing of individuals and the broader community. For an individual, good health means a life free of the burdens of illness (such as pain, social isolation, financial costs, and restrictions to work and lifestyle choices). For the nation, a healthy population is more able to contribute to society in various ways, such as by working, learning or participating in social and community activities. A good level of health also brings about reduced costs to the community, both in terms of financial and human capital (such as lower health care costs and reduced death rates).

25. Some countries experience a 'double burden of disease'; that is, they experience increasing mortality and morbidity from diseases that are typical in both developed and developing countries. For many countries in the region, the leading causes of *morbidity* are communicable diseases such as tuberculosis, malaria, HIV/AIDS. However, there is an increasing proportion of morbidity

attributable to chronic disease such as diabetes, cardio-vascular disease, and arthritis. The leading causes of *mortality* are non-communicable diseases.

Key policy issues for health:

26. Overall, many policy issues in health relate to identifying priority areas for public health interventions to reduce preventable mortality, morbidity, disability and injury. Others relate to ensuring services and maintaining quality of life for those with health and disability concerns.

27. Illustrative examples:

- Distribution of health conditions across population groups and geographic areas.
- Ensuring the population is adequately nourished (with a focus on adequate nutrition, incidence of micronutrient deficiencies and its role in disease prevention, underweight children, poor maternal health).
- Monitoring trends in health risk factors among the population, such as smoking, obesity and alcohol use.
- Ensuring the health care system provides equal access and effectively distributes services, particularly for those in poverty.

Health		
Statistics (Themes)	**Possible relevant characteristics**	**Illustrative examples of indicators**
Mortality	Age, gender, geography	Number of deaths, age specific mortality rates, crude death rate, life expectancy
Causes of death	Age, gender, geography	Death rates by causes e.g. cancer, malaria, coronary heart disease etc.
Health risk factors	Age, gender, geography, income quintiles, level of education	Proportion of adults with risky health behaviours (alcohol, tobacco, overweight and obese, inactivity), Body Mass Index
Prevalence (and incidence) of disease	Age, gender, geography	HIV prevalence, incidence of malaria and tuberculosis
Reproductive and maternal health	Age, gender, geography, age of mother (birth statistics), birth-weight	Number of maternal deaths, prevalence of anaemia deficiency among pregnant and lactating women
Child health	Age, gender, geography, age of mother (birth statistics), birth-weight	Number of births by weight of child, infant mortality rate, proportion of under 5s who are underweight, proportion immunised against measles
Access to, affordability and provision of health services	Age, gender, geography, income quintiles, level of education	Number of physicians per capita, total public expenditure on health (% of GDP), and per capita
Statistical frameworks, standards and classifications		
•International Classification of Diseases and Related Health Problems (ICD-10) •WHO UN Handbook on Civil Registrations	•Principles and recommendations for a Vitals Statistics System, Revision 2, •UN International Classification of Functioning, Disability and Health (ICF), WHO	•A System of Health Accounts 2011

Figure 4 Health domain: eleven domains of population and social concern

3. Income, wealth and expenditure domain

Why are income, wealth and expenditure important?

28. The standard of living of individuals and families is greatly determined by their command over economic resources. People with limited economic resources, such as wealth and income, may experience hardship and become dependent on others or on governments to meet their basic needs. People who live in poverty are likely to experience poorer health, have limited access to basic services such as housing and health services, and have limited education opportunities. Children living in poverty may also be at risk of intergenerational disadvantage. People who live in poverty are also more likely to be less resilient to life shocks and natural disasters.

29. From a government perspective, having a large proportion of the population living in poverty is a cost to government wealth. It means greater spending on welfare and other forms of support, while gaining less revenue.

Key policy issues for income, wealth and expenditure:

30. Overall, policy issues in this domain, relate to identifying priority areas for government interventions to alleviate poverty and improve living conditions.

31. Illustrative examples:

- Ensuring that people have an adequate income or resources to have a basic standard of living (characterised by people being able to meet daily dietary requirements).
- Identifying various sources of income.
- Understanding the extent of poverty and income and wealth inequality across various population subgroups.

Income, Wealth and Expenditure		
Statistics (Themes)	**Possible relevant characteristics**	**Illustrative examples of indicators**
Household income (level and distribution) and main source of income	Household size and composition (age and gender), characteristics of individuals (e.g., education level, labour force status, employment status)	Gross household income, equivalised household income, Gini coefficient, proportion of household and population receiving social assistance/social protection
Household wealth (level and distribution)	Household size and composition (age and gender), characteristics of individuals (e.g., education level, labour force status, employment status)	Household net worth quintiles
Household expenditure (level and distribution)	Household size and composition (age and gender), characteristics of individuals (e.g., education level, labour force status, employment status)	Average weekly expenditure by broad expenditure group, share of poorest quintile in national consumption
Poverty and inequality	Household size and composition (age and gender), characteristics of individuals (e.g., education level, labour force status, employment status)	Gini coefficient, population in severe poverty
Financial stress	Household size and composition (age and gender), characteristics of individuals (e.g., education level, labour force status, employment status)	Number who went without meals, number who sought financial help from family/friends
Statistical frameworks, standards and classifications		
• Resolution concerning housing income and expenditure statistics, 17th ICLS, 2003 • ICLS resolution concerning the measurement of employment related income, 1998	• Canberra Group Handbook on Household Income Statistics, 2nd Edition, UNECE • ISIC rev 4	• Survey Data on Household Finance and Consumption

Figure 5 Income, wealth and expenditure domain: eleven domains of population and social concern

4. Employment domain

Why is employment important?

32. Employment allows individuals to contribute to their community, feel valued and to build networks. Paid work is a major source of economic resource security for individuals and households. People's involvement in paid work also contributes to a country's economic growth and development. For others, subsistence farming or fishing may be the key means of providing for themselves and their families. People working in the informal sector not monitored by any form of

government may be at risk of income and job insecurity, have limited or no access to benefits or the minimum wage, and be at risk of poverty. For governments, high levels of unemployment and underemployment may mean a greater demand on welfare and other government services, and also result in collecting fewer taxes from potential wage earners. Unemployment also impacts on the economic development of the nation as a whole.

Key policy issues for employment:

33. Overall, policy issues in this domain relate to identifying priority areas for government interventions, to achieving full and productive employment and decent work for all.

34. Illustrative examples:

- The availability of sufficient, good quality employment to allow people to achieve at least a minimum standard of living through paid work.
- The number of people working in difference sectors, including formal, informal, insecure, subsistence.
- The availability of skills/education in the population to take advantage of new labour market opportunities (for example in ICT industries and oil/gas industry developments.
- The level of unemployment and underemployment, and the groups who are affected.
- The barriers that prevent people from gaining employment.

Employment		
Statistics (Themes)	**Possible relevant characteristics**	**Illustrative examples of indicators**
Labour force status of the population	Age, gender, occupation or skill level, industry (economic activity), education level, status in employment, geography, formal/informal employment, full-time/part-time status, residency status	Proportion of working age population employed, employment to population ratio, labour force participation
Labour underutilisation	Age, gender, occupation or skill level, industry (economic activity), education level, status in employment, geography, formal/informal employment, full-time/part-time status, residency status	Unemployment rate, proportion in time related underemployment, long term unemployment rate, youth not in employment or education, barriers to employment
Earnings or wages	Age, gender, occupation or skill level, industry (economic activity), education level, status in employment, geography, formal/informal employment, full-time/part-time status, residency status	Mean and median earnings, mean and median daily wages, earnings by hours worked
Hours worked	Age, gender, occupation or skill level, industry (economic activity), education level, status in employment, geography, formal/informal employment, full-time/part-time status, residency status	Actual hours worked, usual hours worked
Unpaid work	Age, gender, family type and composition	Hours worked by men and women in unpaid work, proportion of unpaid workers in total employment.
Occupational safety	Age, gender, occupation or skill level, industry (economic activity)	Number of workers experiencing fatal or non-fatal (with lost workdays) occupational injuries and disease
Strikes and lockouts	Industry (economic activity)	Number of strikes and lockouts, number of workers involved in strikes and lockouts
Labour inspection	Industry (economic activity)	Number of labour inspectors, number of labour inspection visits to workplaces during the year
Trade union membership	Age, gender, industry (economic activity), occupation	Number of trade union members
Collective bargaining	Gender, industry (economic activity)	Number of workers covered by collective bargaining
Statistical frameworks, standards and classifications		
• ISCO-08 (Occupation) • ISIC Rev.4 • ISCED 97 (Education) • ICSE (Status of Employment) • ICLS Resolution re statistics of the economically active population, employment, unemployment and underemployment (ICLS 1982)	• Survey of economically active population, employment and underemployment: An ILO manual on concepts and methods, ILO 1990 • Resolution concerning statistics of employment in the formal sector (15th ICLS, 1993) • ILO guidelines concerning a statistical definition of measurement of working time (18th ICLS, 2008)	• ISIC-Rev 3 (Economic Activities) • Resolution re measurement of underemployment and inadequate employment situations (16th ICLS) • Decent Work Indicators, and ILO Manual, 2012 •Measuring Quality of Employment (2010)

Figure 6 Employment domain: eleven domains of population and social concern

5. Education and training domain

Why is education and training important?

35. Education and training are important means by which people can realise their full potential. They help people to develop knowledge and skills that may be used to enhance their own wellbeing

and that of the broader community. They are often essential for gaining paid employment, may provide a pathway to a rewarding career, and can support full participation in society and the economy. An educated and skilled workforce is vital in supporting on-going economic development and in improving living conditions.

Key policy issues for education and training:

36. Overall, policy issues relate to identifying priority areas for government interventions to achieving an appropriately educated and skilled workforce, boosting human capital.

37. Illustrative examples:

- Accessing and completing primary/secondary/vocational/tertiary education.
- Access to early childhood education and pre-school learning.
- Universal assess and barriers to participation, including discrimination, cost, distance travelled by students, and class size.
- Monitoring the quality of education (including adequate staff, infrastructure, resources), and learning outcomes.

Education and Training		
Statistics (Themes)	**Possible relevant characteristics**	**Illustrative examples of indicators**
Early childhood attendance	Age, gender, geography	Proportion of children attending early childhood preschools/nursery schools (by age groups)
Primary, secondary and tertiary enrolments	Age, gender, geography	Net enrolment ratio in primary education, vocational and tertiary enrolment rates
Primary, secondary and tertiary attendance	Age, gender, geography	Proportion of children attending secondary school (by age groups), proportion of young adults attending tertiary education
Primary, secondary and tertiary completion	Age, gender, geography	Proportion of pupils starting grade 1 who reach the last year of primary, mean years of schooling
Qualifications/attainment	Age, gender, geography	Proportion of population that has attained at least upper secondary education, proportion with a tertiary or vocational qualification
Literacy and numeracy for school children	Age, gender, geography	Performance in reading, mathematics and science
Adult literacy and numeracy	Age, gender, geography	Adult literacy rate
Lifelong learning	Age, gender, geography, labour force status	Number of workers receiving work-based training
Provision of education and training		Public expenditure per pupil (primary, secondary and tertiary, total public expenditure on education (% of GDP), and per capita, pupil teacher ratios
Statistical frameworks, standards and classifications		
• ISCED-11 (Education)	• UNESCO Institute for Statistics	• OECD Handbook for Internationally Comparative Education Statistics

Figure 7 Education and training domain: eleven domains of population and social concern

6. Housing and infrastructure domain

Why is housing and infrastructure important?

38. Having an adequate and appropriate place to live is fundamental to people's wellbeing. Housing provides people with shelter, security, and privacy. Dwellings and the neighborhoods they create make up an important part of the social environment. In some countries in the ESCAP region, large-scale rural-urban migration has led to rapid urbanisation and resulted in large unmet need for adequate housing in many large urban centers. As such, there has been a proliferation of informal settlements and slums, characterised by unsanitary conditions, and limited access to basic urban services.

Key policy issues for housing and infrastructure:

39. Overall:

- Policy issues relate to identifying priority areas for government interventions to achieve the goal of liveable housing for the population.

40. Illustrative examples:

- Level of unmet demand for housing.
- Level of access and distribution to safe drinking water, adequate sanitation and other services.
- Accessibility in terms of distance to education, health and other services.
- Adequacy of housing, extent and distribution of overcrowding, informal housing and slums.
- Cost of housing and affordability for different population groups.

Housing and Infrastructure		
Statistics (Themes)	**Possible relevant characteristics**	**Illustrative examples of indicators**
Housing stock and condition	Geography	Proportion of housing stock in good repair, Proportion of separate houses/apartments etc.
Housing affordability and tenure	Household type and composition, household income quintiles, age and gender and labour force status of household reference person	Proportion of household income spent on housing, proportion of dwellings owned outright/rented
Housing needs	Geography, type of dwellings	Unmet housing need - dwellings required
Access and proximity to services	Geography	Proportion of population using an improved sanitation facility, Proportion of households with children under % years that live more than x kms from a health centre or clinic, proportion of households with access to electricity
Overcrowding	Geography, age, gender	Proportion of population living in overcrowded dwellings, proportion of urban population living in overcrowded dwellings
Homelessness	Geography, age, gender	Number of people who are homeless
Government expenditure on public housing and housing assistance	Geography	Proportion of population receiving housing assistance, proportion living in public housing
Statistical frameworks, standards and classifications		

Figure 8 Housing and infrastructure domain: eleven domains of population and social concern

7. Information and communication domain

Why is information and communication important?

41. The communication of information, ideas and knowledge is playing an increasingly important role in the way in which people live, study, work, and do business. Worldwide, people are increasing their use of information and communication technology (ICT). ICT includes computer hardware and software, telecommunication assets, computer services and telecommunication services.

42. Phone services, whether fixed or mobile, enable communication to friends, family, businesses and services. People without access to a phone are likely to be disadvantaged in the way they interact with others outside of their immediate social sphere.

43. The internet has become a powerful tool. People and businesses that have access to the internet are able to participate in an increasingly diverse range of online activities, and they can communicate and do business with a broader range of people or markets. The internet enables people to work and study, and connect with family and friends through social media. The internet also allows people to access information about the world around them, such as news and weather sites and opinion pages and blogs. Through the internet, people can more than simply receive information, but can interact with it and generate their own content. Social media, such as Twitter, has become a power medium for people share news events as they unfold, and voicing their opinions on a range of issues that would not be covered through traditional forms of media.

44. Lacking access to computers and the internet can leave individuals, families and communities isolated and disadvantaged.

Key policy issues for information and communication:

45. Overall, policy issues relate to identifying priority areas for government interventions to achieve widespread and equitable access to ICT.

46. Illustrative examples:

- Equity of access to services and educational opportunities (such as, for disadvantaged populations, rural areas).
- Social isolation/disadvantage for those without access to ICT services.
- Level of skills in using ICT and population groups lacking these skills.
- Improving the efficiency and effectiveness of government and business and the way they interact with the broader population with the use of ICT.

Information and Communication		
Statistics (Themes)	**Possible relevant characteristics**	**Illustrative examples of indicators**
Households with TVs, radios, computers and internet access	Household type and composition, household income quintiles	Proportion of households with any telephone, proportion of households with a computer, proportion of households with Internet access
Use of Information and Communication Technologies (ICT) by individuals and location	Age, gender, labour force status, occupation, income quintiles, geography	Proportion of population who used the Internet within the last 12 months, proportion of individuals who used a mobile cellular phone within the last 12 months
Use of ICT in education	Geography	Proportion of schools with a TV used for educational purposes, proportion of schools with Internet access
Statistical frameworks, standards and classifications		
• ISCO – 08 (Occupations) • ISCED 97 (Education) • ICSE (Status of Employment) • Core ICT Indicators 2010	• Guide to Measuring Information and Communication Technologies (ICT) in Education • Handbook for the collection of administrative data on telecommunication/ICT	•Manual for Measuring ICT Access and Use by Households and Individuals

Figure 9 Information and communication domain: eleven domains of population and social concern

8. Crime and justice domain

Why are crime and justice important?

47. Crime in its many forms can impact the wellbeing of not only victims, but also their families, friends and the wider community. It has the potential to inflict physical, emotional, psychological and financial suffering upon those most directly affected. Levels of crime and perception of security can affect people by restricting community engagement and confidence, reducing levels of trust, impacting on social cohesion and hampering social and economic development. Crime is also costly on a wider scale in relation to the provision of law enforcement, legal and corrective services.

48. Justice is central to good interaction within society. The effectiveness of the criminal justice system is crucial to ensure social order, as well as people's safety and feelings of safety.

Key policy issues for crime and justice:

49. Overall, policy issues relate to identifying priority areas for government interventions to deliver social order and a safe and just society.

50. Illustrative examples:

- The nature, extent and type of crime. How and why this varies between geographic areas and population groups.
- Developing effective crime prevention strategies through understanding the causes of crime and factors influencing crime rates, including the characteristics of victims/offenders/prisoners.
- The level and distribution of domestic and family violence, and the gender dimension of crime.
- Timeliness, efficiency and equity in access to justice systems, including police, prosecutors courts and prisons.

Crime and Justice		
Statistics (Themes)	**Possible relevant characteristics**	**Illustrative examples of indicators**
Reported offences	Age, gender, geography	Homicide rate per 100,000
Victims of (reported and unreported) crimes	Age, gender, geography	Proportion of population who were victims of an assault, proportion of victims who knew the perpetrator, prevalence of domestic and family violence
Offenders	Age, gender, geography	Offender rate
Domestic/family violence	Age, gender, geography	Proportion of women who have experienced physical or sexual violence in the last 12 month by an intimate or other than intimate partner
Prisoners	Age, gender, geography	Size of prison population, proportion of prison population who are unsentenced, extent of prison overcrowding
Perception of crime and feelings of safety	Age, gender, geography	Proportion of population who feel safe at home alone/alone in public places
Functioning of the judicial system		Duration of cases adjudicated
Statistical frameworks, standards and classifications		
• Manual on victimisation surveys, UNODC-UNECE 2010	• Manual for the development of System of Criminal Justice Statistics, UN 2003	

Figure 10 Crime and justice domain: eleven domains of population and social concern

9. Family and community (including community/social cohesion) domain

Why are family, community and social cohesion important?

51. Families and communities are the core building blocks of society. For many people, the family is the most fundamental source of emotional, physical and financial care and support. On a larger scale, the family's role in providing guidance on social values is at the core of society. Families also take on a large part of caring for people in society, complimenting the services provided by community groups and voluntary organisations. While families are usually a key source of care and support, dysfunctional families can be a source of problems such as domestic or family violence or homelessness.

52. Many other areas of social concern affect families. As such, when analysing these other areas, the family perspective should be considered.

53. At the community level, trust and the feeling of reciprocity can be strengthened by day-to-day interactions between people. The strength of a community's bonds can help build resilience and cohesion. The community is thus also important to a nation's wellbeing.

Key policy issues for family and communities:

54. Overall, policy issues relate to identifying priority areas for government interventions to achieve the goal of strong, well-functioning and supported families and strong, resilient communities.

55. Illustrative examples:

- Family sources of support.
- Caring responsibilities: who provides the care, the impact on the carers, their functioning and finances.
- Social protection and social assistance schemes available to assist the poor and disadvantaged.
- Participation in society and level of social isolation, particularly of the elderly, frail aged, those will mental illness, and those in poverty.
- Family relationship issues, such as types of families, forced marriage and early marriage, relationship separation and impact of family breakdown on children.

Family and Community		
Statistics (Themes)	**Possible relevant characteristics**	**Illustrative examples of indicators**
Family type and composition, formation and dissolution	Age and gender of family household members, geography, labour force status of household reference person	Proportion of single person households, proportion of children living in a one parent family, number of divorces, number of marriages, age of bride, proportion of families with dependent children with a parent working overseas
Disability and carers	Family type and composition, employment status of household reference person, age (of person with disability), labour force status	Proportion of families containing a person with a disability, proportion of the population who are carers
Work/life balance		Whether has ratified ILO Convention no. 156 on workers with family responsibilities, proportion of workers with access to maternity/paternity leave
Social cohesion and social isolation	Age, gender, geography	Drug induced deaths, proportion of population who volunteer, proportion of population who feel that they can rely on their neighbours in a crisis, proportion of population who have daily contact with family and friends
Community participation and community diversity	Age, gender, geography	Proportion of population who participate in common social activities, population by country of birth
Life satisfaction	Age, gender, geography, labour force status	Proportion of population very satisfied/satisfied with life
Presence of family friendly policies	Age, gender, geography, occupation, industry of activity	Whether has ratified ILO Convention no. 156 on workers with family responsibilities, proportion of workers with access to maternity/paternity leave
Child marriage and forced marriage	Age, gender, geography, religious affiliation	Proportion of women aged 20-24 years who were married or in union before age 18
Statistical frameworks, standards and classifications		
	• Country examples e.g. Bhutan, Vanuatu, Australia	• Guidelines for Subjective Wellbeing (Under Development) – OECD

Figure 11 Family and community domain: eleven domains of population and social concern

10. Culture and leisure domain

Why are culture and leisure important?

56. Culture determines many aspects of society, and life within that society. Both culture and leisure activities assist in developing national identity and forming common networks and bonds that in turn assist in the development of social cohesion.

57. For individuals, culture and leisure can contribute to a person's wellbeing, by enriching their lives with new perspectives and enjoyable activities. They can also be an important part of a person's identity, as their interests and activities define how they understand themselves. Leisure time gives people an opportunity to recover from pressures of work and other commitments, to bond with family and community members, and to pursue their interests.

58. People participating in various forms of artistic expression, such as the arts, contribute to cultural identity and increasingly, the culture and leisure sector contributes to economic development through creativity and innovation.

Key policy issues for culture and leisure:

59. Overall, policy issues relate to identifying priority areas for government interventions, to achieving the goal of developing and strengthening national identity, protecting the nation's cultural heritage, and ensuring the population has leisure time and access to a range of culture and leisure activities.

60. Illustrative examples:

- Time for, and access to, culture and leisure activities.
- Maintaining cultural identity for smaller ethnic groups.
- The impact of globalisation on cultural participation and activities.
- The economic opportunities of culture and leisure, for example through tourism.

Culture and Leisure		
Statistics (Themes)	**Possible relevant characteristics**	**Illustrative examples of indicators**
Languages spoken	Age, gender, ethnicity, country of birth, income quintiles, educational attainment, labour force status	Languages most often spoken at home, proportion of the population able to speak more than one language
Participation in cultural activities and events	Age, gender, geography, income quintiles	Participation rate for going out to cultural venues, such as theatre, museums etc., participation rates for formal and informal events
Participation in leisure activities	Age, gender, geography, income quintiles	Participation in organised sport, attendance at sporting events
International tourism arrivals and departures	Age, gender, country of residence	Number of short term arrivals and departures
Statistical frameworks, standards and classifications		
• UNESCO Framework for Cultural Statistics, 2009, UNESCO Institute for Statistics		

Figure 12 Culture and leisure domain: eleven domains of population and social concern

11. Governance domain

What is governance and why is it important?

61. Governance is a broad concept that covers many facets of society. Interest in governance has grown in recent years. There are numerous definitions of governance. The United Nations Development Programme (UNDP) defines governance as:

> 'the system of values, policies and institutions by which a society manages its economic, political and social affairs through interactions within and among the state, civil society and private sector. It is the way a society organises itself to make and implement decisions – achieving mutual understanding, agreement and action' (UNDP, 2007).

The quality of civil life, how well public and private institutions work within a country, the fairness of society and the extent to which people actively participate in their communities all affect the wellbeing of a nation and its people.

62. Governance is a relatively newly defined domain of social statistics, and while indicators in the governance domain include objective measures, they are likely to rely more heavily on subjective measures, when compared with other areas of social statistics. These measures rely on

perceptions about a particular aspect of governance, such as trust in an institution (for example the banking sector, or the judicial system) or perception of corruption. This may be new territory for many NSOs.

Key policy issues for governance:

63. Overall, policy issues relate to how actively individuals participate in their communities and in the decisions that affect their lives.

64. Illustrative examples:

- How well key government institutions work, and how to make them more effective.
- Trust, such as in the police and judicial systems.
- The quality of information flow within the country, including trust in the media, and level of openness of the media.
- Representation of women and ethnic groups in elected posts in government, the bureaucracy and judiciary.
- Corruption in public and private institutions.

Governance		
Statistics (Themes)	**Possible relevant characteristics**	**Illustrative examples of indicators**
Participation in electoral processes	Age, gender, geography	Proportion of the population who were eligible to vote in the last election, proportion of the population who voted in the last election
Participation in decision making	Age, gender, geography	Women's share of government ministerial positions, proportion of seats held by women in national parliament, women's share of managerial positions, women's participation in local government
Perceptions of satisfaction with governance processes across public and private institutions	Age, gender, geography	Proportion of the population satisfied with the integrity of the electoral process, proportion of the population who are satisfied that the government is accountable/transparent in its operation
Satisfaction with delivery of specified services	Age, gender, geography	Proportion of population satisfied with public/private health services, proportion of population satisfied with educational services, population experiencing difficulty in accessing services
Feelings of trust in public institutions	Age, gender, geography	Proportion of population who trust the police, the judiciary, hospitals etc.
Effectiveness of the legal system and the rule of law	Age, gender, geography	Length of time taken to go to trial from being charged, number of unsentenced prisoners in prison
Extent of country commitment to human rights		Existence of laws on domestic violence, Whether or not reservation has been made to article 16 of the Convention on the Elimination of All Forms of Discrimination against Women
Statistical frameworks, standards and classifications		
• Country examples e.g. Bhutan, Korea, Australia		

Figure 13 Governance domain: eleven domains of population and social concern

Chapter III Managing statistical output

Determining information needs

65. Once there is a clear understanding of the key policy issues and information needs in the country, NSOs can assess whether the currently available statistics meet those needs. This will identify gaps, where statistics are missing altogether, or where the quality of the available statistics is insufficient to meet the key information needs identified. This in turn will allow statistical priorities to be decided on, and a strategic plan for developing quality information to be set out.

66. This process is summarised in Figure 14.

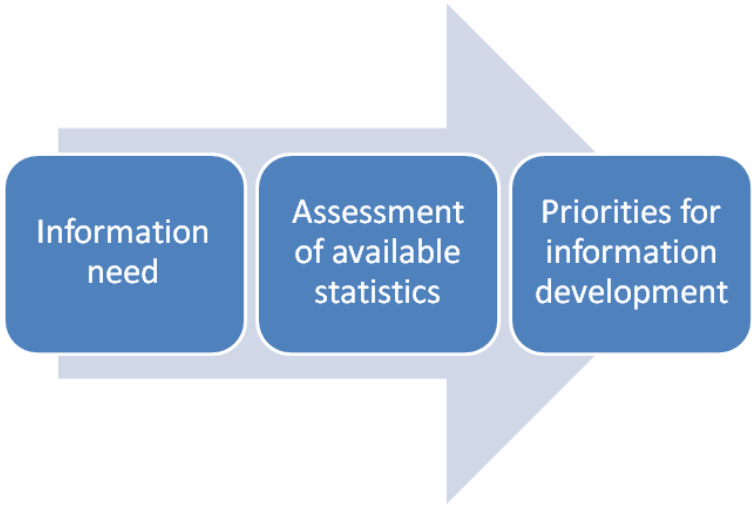

Figure 14 How a conceptual framework can be used to identify data priorities

67. This part of the capacity framework:

- Sets out the dimensions of quality statistics.
- Provides a basis for assessing whether currently available statistics are of an adequate quality.

What do we mean by quality?

68. Quality is the degree to which a set of information fulfils requirements of users. Quality is a multi-faceted concept. The most important aspects of quality will depend on the needs and priorities of users, which will vary across groups of users.

The Quality Framework

69. The approach set out below uses a framework developed in 2012, by an expert group, working to the UN Statistical Commission, in the document 'Guidelines for the template for A Generic National Quality Assurance Framework (NQAF)'.

What are the dimensions of quality?

This framework works through five dimensions of quality, shown in **Error! Reference source not found.**, indicating the processes and practices that help quality assure each aspect.

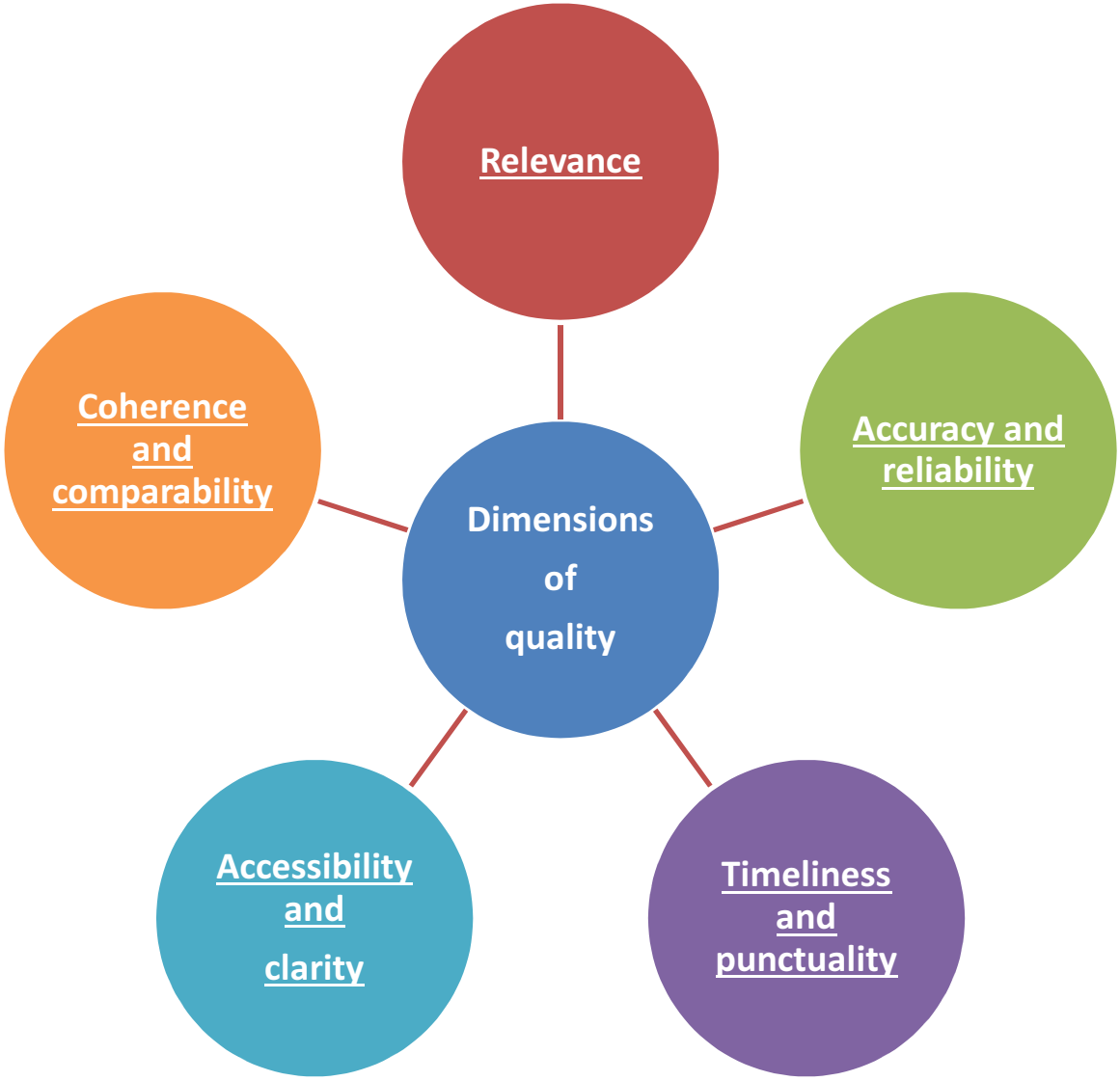

Figure 15 Dimensions of quality in statistics

70. The guidelines are very comprehensive, and the following information draws on them, and summarises the key issues in relation to population and social statistics. For further detail on processes and practices in relation to each dimension of quality, the reader is referred to the Guidelines.

A. Relevance

71. Relevance is the first dimension of quality. Relevance refers to the degree to which statistics meet the needs of the users. Statistical effort should be focussed on those statistics that are most needed. This section discusses:

- Identifying the issues that matter
- The usefulness of statistics over time
- Data linking
- Design of surveys

How do we ensure relevance?

72. Identifying the issues that matter:

- Key users and producers of statistics need to work together to develop an understanding of the most important things to measure, considering why and how these measures will be used.
- The first part of the capacity framework (detailed in Chapter II) provides an approach for working through the issues that matter. This involves asking the questions:
  'What are the key issues of government and community concern related to that domain?'
  'What information is needed to inform those issues?'
- These questions can only be fully answered with substantial consultation with users, such as through advisory groups, forums, workshops and bilateral discussions. Broad consultation is likely to give rise to a large body of user needs. Priority issues must be sifted from the vast array of issues of user interest likely to arise from such consultation. Prioritisation is generally based on the significance of the decisions, policy and research that the required measures will inform. Once the priority issues and associated information requirements have been identified, statisticians must then turn these requirements, as far as possible, into specifications for statistics that are fit for this use.

73. The usefulness of statistics over time:

- It is important to think about the timeframe over which the statistics will be used. Long term needs for information require comparable data over time to provide insights into processes of change and to measure the level of change. This may conflict with short term needs for specific answers to current questions.
- Many aspects of socio-economic circumstances are measured by household surveys (for example, health or income and poverty). One way that allows some balance between the ability to measure change over time and being able to answer the question of the day, is to

maintain continuity in core questions within a repeating survey, while allowing some flexibility for specific issues to be measured on a survey-by-survey basis.

74. Data linking:

- Population and social statistics tend to be sourced from a combination of administrative data (for example, vitals data, school enrolments, police records), surveys, and a periodic national population census. Administrative data can be a very cost effective way of providing statistics on small subgroups of the population and following outcomes for these subgroups over time.
- Sometimes a single administrative source does not include all the items needed to address the question of interest. One solution to this is to combine information across more than one data set. This integration of data across different administrative sets may be possible if an identifier is available as a link key. Where administrative data are a key source for a statistical system, it is important that appropriate access, including appropriate data protection protocols, supports this use. It is also important for the statistical producers to be able to work closely with those defining or maintaining the administrative data, to improve its relevance to meeting statistical information needs.

75. Design of surveys:

- Household surveys, unlike administrative systems, are purpose built to provide the information required. The right variables can be included, the breakdowns and coding can be at the right level, the reference periods can be those that are most appropriate and so on. However, direct collections for specific purposes are expensive and tend to have small sample sizes. Therefore they are unable to provide estimates for small area populations or smaller population groups where very large samples or full collections are required.
- Regular population censuses (ten yearly, or more frequently) offer the opportunity to collect specific data for the whole population and can provide this data for very small subgroups of the population. This ability to provide information at very low levels of geography or for very small population groups is a key aspect of a census. Censuses are extremely expensive and complex and cannot be run frequently. They may therefore suffer lower levels of relevance in terms of a time dimension when users need very current information.

B. Accuracy and reliability

76. Accuracy refers to the degree of difference between the measured value of a statistic and its true value.

77. Reliability refers to the ability of the statistics to consistently measure the concept of interest over time.

78. This section considers:

- How to ensure accuracy and reliability in the presence of different sources of error
- How error relates to this framework

How do we ensure accuracy and reliability?

79. In assessing the accuracy and reliability of statistics, there are a number of aspects that tend to affect population and social statistics, potentially causing error. These sources of error are set out in Figure 16. Statistics derived from different data sources (administrative, census or survey) tend to be more prone to some of these than others.

Major sources of error	Description	How can this be managed?
Measurement error	Refers to error caused by respondents intentionally or accidently giving wrong or incomplete answers. It can also be attributed to misinterpretation of complex concepts	• Measurement error in surveys can be minimised through appropriate testing of questions and measurement devices during survey development. This testing can also indicate areas where some measurement error remains, and the extent of it. • Survey approaches are more likely to achieve good accuracy, than a census or the use of self-enumeration through an administrative data collection. This is because a trained interviewer can spend more time with each respondent in an effort to ensure good measurement • Administrative approaches work well in measuring sensitive or complex concepts if the variable being measured is important to the administrative requirement and effort is spent in collecting it well. For example, an ethnicity question on an administrative form is likely to be poorly completed in many countries, both because of sensitivity around the question and a failure of both the individual involved, and the administrator checking the completed form, to see why the completion of the item is important to the service being provided.
Sampling error	Refers to the error that occurs when sampling is used in a survey, rather than the whole population. The smaller the sample, the larger the potential sampling error.	• The level of sampling error on estimates can be calculated and used to determine if statistics are fit for their intended use.
Non response error	Refers to the error that occurs when people fail to respond to questions and results in missing data. If the people who do not respond are similar in terms of those questions, to those who do respond, then the effect on accuracy is similar to having a smaller sample.	• Information on response rates by question, and an analysis of the characteristics of respondents compared to non- respondents, can indicate the extent to which non response levels render the statistics unfit for purpose. • It is also possible to reduce non-response bias in some instances by adjustment, such as post-stratification, which effectively uses imputation based on similar respondents.

Coverage error	Refers to the error that occurs when a unit in the sample is incorrectly excluded or included, or is duplicated in the sample.	• Administrative data sets – Error may occur when certain parts of the population (i.e. non-citizens) are not included in the data. Alternatively, people eligible to be included in the data, may chose not to be (i.e. victims of crime who don't report to the police) • Household surveys – Most common reason this error occurs is because certain parts of the population are not included in the survey sample (i.e. prisons, hotels may not be included in a survey that selects households living in private homes)
Processing error	Refers to the error that occurs during the processing of the data (i.e. after the data has been collected). Such errors can occur during the editing or coding of the data.	• Generally, the source of error is small, unless there is a systematic error in an automated process (i.e. an incorrect conversion rate applied to convert weekly income to monthly income). • The occurrence of processing error can be high in administrative data sets where the items collected are not of primary interest to the related administrative activity. • National Statistical Services may need to work with the custodians of the administrative data to understand its quality and reduce any errors introduced through processing.

Figure 16 Types and sources of error in statistics

How error relates to this Framework

80. When assessing currently available statistics or developing new statistics, it is important to consider whether any of the above sources of error are likely to render the statistics unfit for the key information needs.

81. For example, addressing the question of whether certain groups within the population (such as females or ethnic minorities) are disproportionately the victims of crimes, crime victim data from police records only may be an inadequate source of information. This may be because of measurement error and coverage error (for example, crime may be disproportionately under reported, or poorly reported by certain population groups or for certain types of crime.) Well designed interviewer based surveys may be needed to collect such sensitive and potentially difficult information. Similarly, survey based information on health trends may have an inadequate sample size if the key health questions of interest relate to very small population groups.

82. Given the number of sources of inaccuracy in statistics, it is generally difficult to get a simple single measure of the overall accuracy. However, there are indicators of accuracy that are likely to be available in relation to each of these sources. These need to be considered together to judge whether the statistics being produced are of sufficient accuracy to be fit for use for their key purposes.

C. Timeliness and punctuality

83. Timeliness refers to the delay between the reference period of the data and the date at which the data becomes available. This section considers:

- Why timeliness is important
- How quickly conditions change
- How the statistics are used
- How to ensure statistics are timely and punctual.

Why is it important for statistics to be timely?

84. Statistics that are to be used in forming judgements and making decisions must be available in a timeframe to be useful for these judgements and decisions. Statistics that are continually lagging changes in the real world by a considerable margin may hold little value to users. Similarly those produced a month after a key decision has been made, or related policy finalised, may be considered too late to be of value.

How quickly conditions change

85. Timeliness is particularly important where conditions change quickly, as they may do with economic data and with social data that are closely connected with the economy, such as unemployment. For most population and social statistics however, the rate of change tends to be slower than for economic statistics and statistics stay usable over a longer period. For example, the level of education of a particular group cannot change noticeably over a month or a quarter. It will also take time to see the impact of new education policies on labour force outcomes or income distribution. Social statistics collected on a three yearly, five yearly or even ten yearly basis can provide useful insights into social conditions and how they are changing. Therefore even while administrative data, such as, education enrolments may be available annually, and decisions on education funding may be being made annually, it may not be necessary for all education statistics to be available on an annual basis. Supplementary information collected in surveys may be very usable, even if collected on a far less frequent basis.

How the statistics are used

86. In examining whether available statistics are fit for use from a timeliness perspective, it is useful to understand not only the rate of change of the characteristics being measured but also how the statistics of interest are being used. For some domains, even the small changes that might occur from year to year may be very important to measure accurately. For example, population statistics

are often used in determining funding for programs at different geographic levels for different subgroups. In this case it can be very important to maintain timely data so that even small changes over time can be reflected, as the budgetary impact can be important for small jurisdictions.

How do we ensure that statistics are timely and punctual?

87. While social statistics tend to change slowly, and in most cases do not need to be measured very frequently, there is another aspect of timeliness that is important for social statistics. This relates to punctuality and the availability of the latest statistical information on a topic in time for incorporation in key policy and planning decisions. For example, there are frequently key points in the year when plans and objectives for a government are finalised and budgets are locked in. Statistics need to be available with sufficient timeliness to fit within the planning timeframe. Newly established needs for a new plan must be responded to quickly if the resulting statistics are to be relevant to the current planning cycle.

88. **Using already existing data sets** - Existing data, in collections such as the population census or in ongoing administrative data, will generally provide for the most responsive development of statistics if the appropriate data items have been collected. However, some administrative collections can suffer from very late registration or cleaning of information and substantial delays in availability.

89. **Adding additional topics to existing surveys** - Setting up a new household survey to collect new information can take a significant time resulting in long delays between knowing there is a need for information, and the ability to provide it. The fastest survey based solutions to new information needs are likely to be based on survey vehicles that are already up and running, such as a regular Labour Force Survey, where such surveys have the capacity to collect information on additional topics.

90. **Timetable and advertise releases** - An important aspect of punctual statistics is that they are produced and released to a promised and generally advertised timetable. Such a predictable release enables the statistics to be incorporated in the information planning undertaken by agencies delivering services and developing and evaluating policies. Those agencies can then build timetables around making judgements and taking decisions, knowing when the information to inform these will be available.

91. By providing the public with information on release dates, for example via an official release calendar, the predictability of release date provides some transparency of process for statistics, reducing the risk and perception of risk of political interference in their finalisation.

D. Accessibility and clarity

92. Accessibility is about the ease with which users can identify, locate, access and use information, preferably in their own environment.

93. Clarity is about providing users with a full understanding of the statistics being accessed, that is, giving them good access to the information that describes the statistics, including the concepts, reference period, methods, and any issues such as response rates relating to accuracy and reliability.

94. Put simply, accessibility is about statistics being easily available for use, and clarity is about the appropriate metadata being easily available to inform use, and encourage proper interpretation and meaningful comparisons. The metadata includes information on what has been measured, how it was measured, and how well it was measured.

How do we make statistics accessible and easy to understand?

95. When assessing whether relevant statistics are available to inform high priority areas of concern, the availability of both the data and metadata needs to be considered. Metadata can be used to determine if the statistics are fit for purpose. This section considers how metadata can assist in making data accessible and understandable when there are issues with:

- Comparability over time
- Changes to definitions and classifications
- Budgets and planning
- Availability of micro-data.

96. **Comparability over time** - For social statistics, how the detail of the data is managed over time is a significant issue for accessibility and clarity. Social data are often collected on an infrequent basis (for example, five or ten yearly) with past collections providing significant potential value in looking at change over time. However, if each survey is conducted independently of previous surveys (for example, due to new donor funding) this comparability to previous surveys and ability to measure change over time may be lost.

97. Because of the large time gaps between surveys in the social area, data needs to be specifically managed over time, to ensure its ongoing accessibility and interpretability at the micro data level. This will allow new aggregates and comparisons to be drawn from old survey data well after its time of collection. This data management over time is made difficult if the survey is not centralised in an expert agency, but rather undertaken on a devolved or outsourced basis.

98. **Consistent definitions and classifications** - Over a period of time, it is likely that a number of changes to standards for definitions, derivations and classifications, will occur. This may happen to fit changes in the real world or changing information priorities. For practical reasons small or larger changes may also be made between surveys, to the way data on a topic is collected. These changes make comparisons over time difficult, and access to detailed data, sometimes micro-data, and detailed metadata may be needed to adjust statistics and look at them on a comparable basis over time.

99. **Budgeting and planning** - The cost of and expertise for managing social survey data over time should be built into survey budgets and survey plans. Wherever possible, significant household surveys collecting social survey data should be managed as an information spine, available for access and analysis over time.

100. **Availability of micro-data** - Another important element of accessibility in relation to social data, is the availability of micro-data for statistical research purposes. Because of the complexity of social issues and resulting policy, it is valuable to have a considerable range of expertise and resources applied to its analysis. This can go well beyond simple tabulations. A central statistical agency, or even a key policy/administrative agency is unlikely to have the resources to cover all analyses of interest, and the inherent value of the data is more likely to be realised if it is available to researchers in the form of confidentialised micro data.

E. Coherence and comparability

101. Coherence refers to the internal consistency of a statistical collection.

Why is coherence important?

102. Coherence is an important dimension of quality as it provides an indication of whether the dataset can be usefully compared with other sources.

103. Statistics are generally used within a context of comparison. This may be over time, across geography within the country and internationally, across population groups and under different socio-economic conditions. To enable comparisons to be made:

- The two things being compared must be measuring the same thing.
- There must be consistency across collection points over time, to look at changes over time.
- There must be internal consistency or coherence within a source, to compare across groups.

Measuring the same thing – using common standards

104. If data from different sources at the same time point are to be compared, or if data from different sources are to be combined, there needs to be consistency between those sources.

105. This consistency over time and over sources is achieved by using common standards with respect to scope, definitions, classifications and units. For example, educational level within a country can be defined in the same way whether measured in a census, a health survey, or from school records, and whether measured this year or five years ago.

106. **International comparisons** can be very important for countries, as well as comparisons for population groups within the country. Countries adopting different policy strategies to achieve desired outcomes (for example in health or education), can look at how they are faring relative to other countries in achieving those outcomes. Where possible, using international standards for social statistics can enhance such comparisons. Examples of such standards are:

- International Classification of Functioning, Disability and Health;
- ISCO (Occupation);
- ISCED (Education);
- ICSE (Status of Employment)and,
- The UNESCO Framework for Cultural Statistics.

107. Consistency can be further enhanced in some cases by using **common tools to support the standards**, for example, automated or computer assisted coding tools, and common population frames. Another way of achieving consistency is to use a common approach to measuring concepts. This might include using standard, tested question modules, and edit and derivation models.

Consistency in collecting data over time

108. **The method of data collection** – The method of collection and the type of data collected is likely to have a non-trivial impact on the resulting statistics. For example, data can be collected by self-administering a form, by an interviewer visiting the household in person, or by telephone. The interviewer can ask for information from 'any responsible adult in the household', or separately from each individual in the household. The approach used may have an impact on the data collected. This means that sources based on different data collection mechanisms, even if they use the same definitions and classifications, may not be comparable.

109. For example, measuring whether people in a household have a disability can depend on who in the household is asked. Asking 'a responsible adult' about each member of the household, may produce different statistics than those derived from information directly collected from each individual in the household. Similarly, data on 'being a victim of crime' may depend on how it was collected, regardless of other standards used.

110. **New technologies** - New technologies to support cost effective collection for household surveys could potentially reduce comparability over time. Where new or different approaches are introduced or used in different sources, testing may indicate the direction and level of changes.

Issues affecting internal consistency or coherence within a source

111. **Cultural shifts** - Even where measurement does not change over time or across population groups, the same concept may not meaningfully apply in the same way at different times or for different groups. For example, the concepts of family and household may be very different in different ethnic groups and across different regions.

112. **Subjective measures** - Attitudinal or subjective data, which are more common in social domains than economic ones, are also particularly prone to different interpretation in different contexts and therefore face problems of comparability across groups. Asking one group in the population about their general state of health, and comparing it with another group may be misleading, if one of the groups has a lower expectation of what good health means. Similarly, people in one country or culture may report being a victim of violence more often than people in another country or culture, even when the actual level of violence is less, if the two population groups have different understandings of what constitutes violence.

Determining the level of comparability and coherence between sources

113. If the key use for a set of social statistics is to compare over time or across population groups, then it is important to have consistency across the statistics being compared. Some information on this consistency can be derived by knowing what is the same and what has changed between the two sets of statistics, in terms of the concepts being measured and the ways of measuring them. Some adjustment for change may be needed to meet the required use of the data.

114. Further information on issues of comparability and coherence may be available via testing. In addition, processes of confronting and reconciling data from different data sources may produce information on how much of a measured difference in a comparison is likely to be due to real difference and how much may be due to different concepts or measurement methods.

Chapter IV Characteristics which determine the sustained capability of a National Statistical System to produce the core set of population and social statistics

115. A country's ability to develop and maintain a core set of quality population and social statistics is determined by the strength of its statistical system.

116. A National Statistical System (NSS) consists of those organisations and entities that produce and disseminate official statistics on behalf of the national government. In general, an NSS needs to be strong in six areas, described in Figure 17.

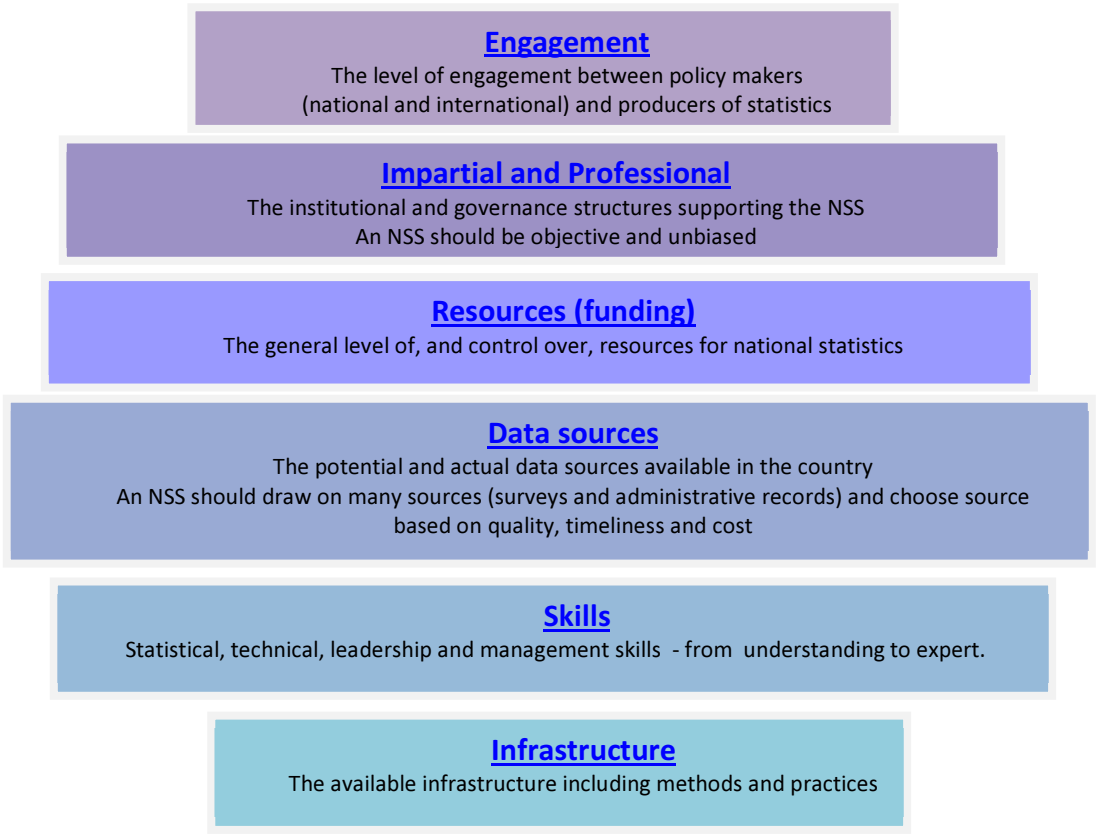

Figure 17 Six key requirements for a strong NSS

How to use this part of the framework

117. This part of the capacity framework provides a reference for countries to assess the strengths and weaknesses of their NSS for population and social statistics. This chapter is structured around the six key requirements of a strong NSS (as set out in Figure 17). In the case of population and social statistics, the nature of how official statistics are collected, compiled, analysed and disseminated may differ quite substantially from one domain to another. Even where the structure of the NSS is the same in two different domains, the strengths and weaknesses of how this operates

in a country may differ. For this reason, the NSS characteristics in each domain should be considered separately.

A. Engagement: The level of engagement between the NSS and policy makers

118. **Government valuing statistics** - A basic requirement of a strong statistical system in any country is that the government places a high value on objective statistics. It should value statistics both for their own use in developing, implementing and evaluating policy, and also for their use by the public more broadly, both nationally and internationally, in decision making and in building trust in the workings and directions of the government.

119. **Assisting with government accountability** - There is an external economic imperative for a country to have a trusted, objective set of economic statistics in terms of the impact on foreign investment and the ability of the country to borrow. There is no such imperative for an objective set of social statistics. However, given the significant levels of government expenditure on social services, a government which holds itself accountable for that expenditure will have a strong reason to value and use objective population and social statistics.

120. **Sustainable funding** - If a country does not value objective population and social statistics or know how to use them, then it is very unlikely to fund and support them to a level needed to sustain a good quality set of core statistics across the population and social statistics domains. Funding is likely to be limited, irregular and not conducive to investment in ongoing statistical capacity. The head of the NSO's ability to influence government thinking on information needs is also likely to be low.

121. **A basis for information needs** - On the other hand, a country which has a clear and generally agreed sense of the issues that matter to improve people's lives and the nation's progress, will also have a clear sense of the information it needs to build and evaluate policy. It is then more likely to listen to statisticians in the NSS and value and fund objective statistics as the base of its information needs.

122. **Setting agreed priorities** - International, national and sectorial policy frameworks provide the context, rationale and goals against which governments hold themselves accountable. When these exist, conversations about information plans are facilitated, and priorities for a national core set of population and social statistics can be discussed and agreed.

How can countries be 'policy ready'?

123. Being 'policy ready' for a good official statistics system involves the country having a strong sense of its policy priorities, and a good understanding of how statistics can help support policy development and evaluation (or evidence based policy making).

124. A country may be 'policy ready' in some domains (for example health) but not in others (for example crime and justice). This may reflect different structural arrangements in government in the different sectors. Alternatively the government may not have clearly identified policy in some domains, or a policy framework may exist but without the government having real ownership of that framework. The issue of ownership may be a particular possibility in relation to international frameworks that may have been signed up to for political purposes.

125. Building a strong core set of statistics is important for any domain, especially those that do not have a clear policy framework, including objectives and associated information needs. The first step towards this might be to make those who govern that domain aware of the place of objective official statistics in evaluating and developing policy. The stakeholders in the domain should also be made aware of currently available statistics and how they might be used, and to build their skills in using available statistics.

Benefits of the NSS engaging with policy makers

126. As the relationships between statistical leaders and policy makers in the domain grow, influence will increase as will the scope for working together to meet policy needs.

127. Even in 'policy ready' domains, strong relationships between a country's statistical system and government are important in building an understanding of the value and use of statistics. Such relationships can lead to strategic information planning, involving both policy makers and statisticians, resulting in relevant, prioritised and valued sets of official statistics.

128. Strong relationships can also lead more generally to training users of statistics to become more aware of what information is available and how to effectively use that information. This in turn will increase the value of statistics to the users and the country, and have a further strengthening effect on the quality of the relationships.

129. Effective relationships between the NSS and the media can also help build an understanding of the objective nature of official statistics and the value of high integrity statistics in keeping non-government organisations and the community well informed. This will encourage governments to hold themselves accountable for policy outcomes, and to embrace evidence based policy making.

Indicators of external readiness for an effective statistical system, and strong engagement between policy makers, other users and the NSS:

- Governments recognise and value the role of objective statistics in informing social policy development and in monitoring outcomes.

- Good high-level relationships exist between leaders in the NSS and leaders in key policy and planning agencies in each nationally important domain.
- Policy frameworks are available for each nationally important domain.
- When policy frameworks are being developed, the NSS pays attention to what information is available to inform the policy, and the need to develop further information sources as part of the policy planning. This ensures that a process of information development planning runs parallel to the development of the policy framework.
- Active user forums (including user advisory groups) drive statistics development and the accessibility of official statistics.
- Stakeholder groups with a common interest in information in a particular domain meet regularly to discuss and progress developing information in their field.
- Senior NSS officers are involved in discussions and work activities relating to information planning for policy/planning development and evaluation.
- The NSS is providing statistical support to users.
- Cross domain and within domain forums exist for sharing good practice in evidence based policy development and information planning. These involve both national and international stakeholders from both policy and statistical backgrounds.
- The NSS and policy makers and planners hold regular (formal or informal) dialogue at the senior level to ensure a common understanding on priority information areas.
- Communication strategies exist that are tailored to specific needs and concerns of different stakeholder groups.
- Well informed media make effective use of statistics.

B. Impartiality and professionalism

130. A significant determinant of the current and future capability of a National Statistical System, is how robustly it has been set up to collect, compile and disseminate a high quality set of objective official statistics.

National Statistical Service (NSS) models

There are two key models for an NSS: centralised and decentralised. The characteristics of each are shown in Figure 18.

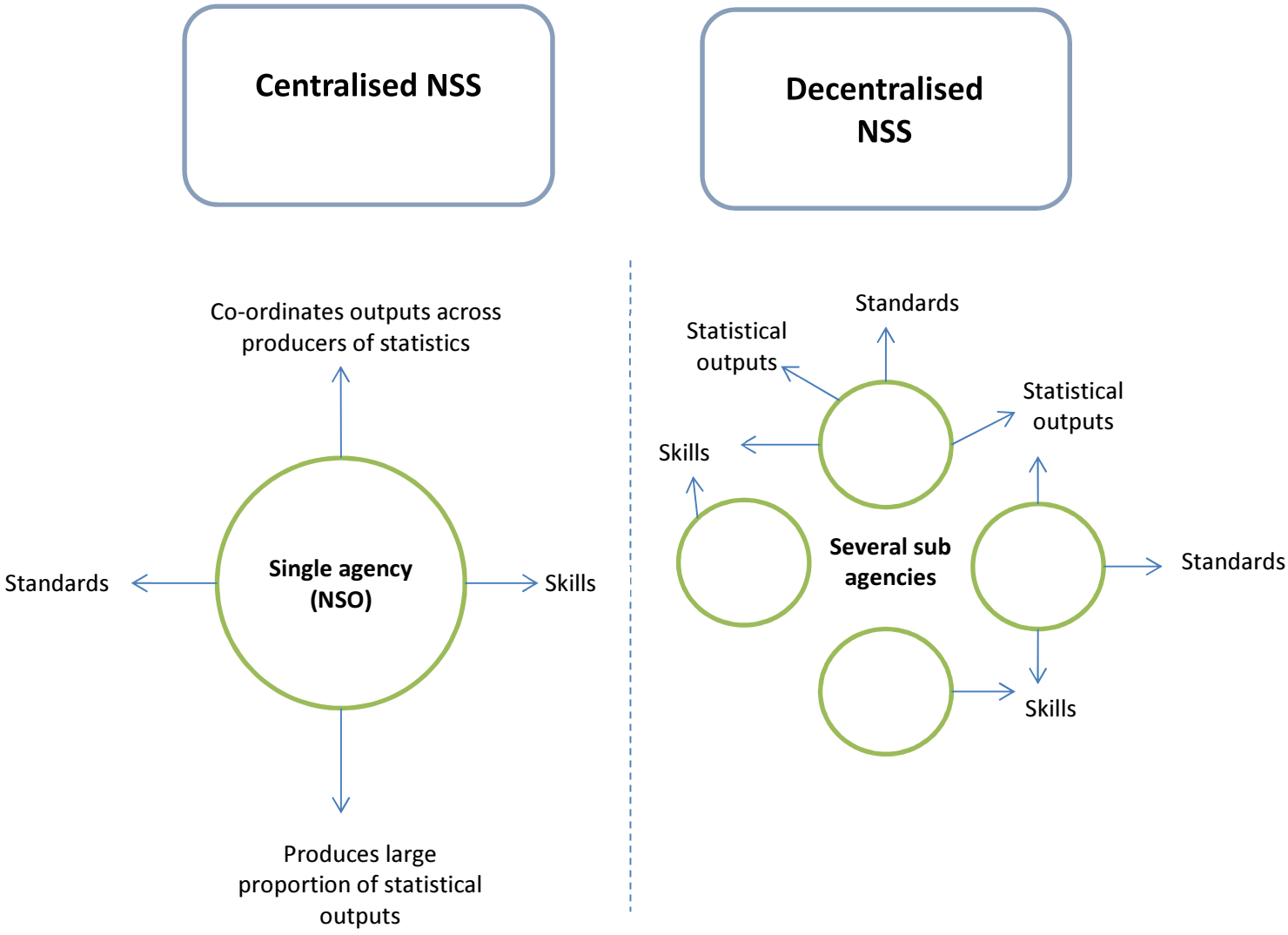

Figure 18 Comparing centralised and decentralised NSS

131. A centralised NSS has a single predominant agency, the National Statistical Office (NSO). The NSO sets standards, builds skills and co-ordinates outputs across producers of statistics. The NSO also produces a large proportion of statistics.

132. A decentralised NSS has a number of agencies and government structures responsible for statistics. This is particularly likely in the case of social statistics, where administering agencies may be responsible for some statistical outputs, and where government structures may operate at a number of geographic levels, such that sub-national agencies may be responsible for some statistics.

133. Generally, countries fall somewhere between the two extremes of fully centralised and fully decentralised. Often, sectorial government agencies, including statistical and research agencies, playing an important role in both developing and producing sectoral statistics, with the NSO

playing a key leadership and co-ordination role across statistics. The NSO is often also responsible for the producing general purpose statistics, such as those collected in a population census.

What are the advantages and disadvantages of each model?

Type of NSS model	Advantages	Disadvantages
Centralised	• More effective co-ordination of statistics • Development of infrastructure • Use of standards • Autonomy from political processes • Statistical skills may be easier to build in a centralised system	Countries with centralised systems need to work particularly hard on maintaining a good understanding of, and relationship with, key policy agencies.
Decentralised	• Stronger relationships with and more engagement with policy makers • Increased resourcing • Greater access to administrative data sources • Specific knowledge and skills may be easier to maintain in a more decentralised approach	Decentralised systems need to work particularly hard on developing co-ordinated plans across the NSS, making effective use of available infrastructure, possibly in other agencies, and implementing standards to ensure consistency and comparability of statistical outputs.

Figure 19 Comparing advantages and disadvantages for centralised versus decentralised NSS

134. The degree of how centralised the NSS is may vary from domain to domain, with official statistics being largely the responsibility of the NSO in one domain, and largely the responsibility of a key policy agency in another domain. Regardless of the degree of centralisation or decentralisation of an NSS in a given domain, there are some important features of the system that contribute to its capability as a trusted provider of official statistics, and are needed regardless of the structure of the NSS. These are professionalism and impartiality, described below.

1. Professionalism: institutional requirements for a high capacity NSS

The role of the National Statistical Organisation (NSO)

135. The NSO often plays a key role in the NSS, not only as a significant producer of statistics but also for co-ordinating the statistical activity of other producing agencies in the NSS. The roles and responsibility of the NSO needs to be clearly articulated along with its authority and how it is to be held to account. As set out in the UN Fundamental Principles of Official Statistics, this is ideally done on a legislated basis, and ideally the related legislation would also provide clarity over the roles of other producers of official statistics in the system.

136. The position of the NSO within the government structure is an important part of the legal environment in which it operates, and can be a very relevant determinant of its capacity to influence. Reporting options can include the president, chancellor or prime minister, the treasurer, or minister in charge of planning or development. The position within government can be particularly important for population and social statistics, as a reporting line to a predominantly economic portfolio may reduce the role and influence of the NSO in national social statistics.

How is the NSO of a country supported?

137. Statistical legislation or government decrees often set up a Statistics Advisory Council to support the NSO, and to hold it (and the NSS as a whole) to account. However, if the advisory council is focussed solely on the activities of the NSO, there is a danger that it will fail to connect with or influence large components of official statistics. This may be particularly true in the social domains, where sectoral agencies may be the main producer of those statistics, or where the potential for using administrative data is greatest.

Why is it important for the NSS to be efficient?

138. The NSS are responsible for being as cost effective as possible in producing official statistics. Funding for statistics is likely to be limited relative to the level of demand for data to inform policy requirements, so the NSS needs to be efficient with what recourses they have, such as using available data. Doing this can also minimise the reporting burden imposed on households, businesses and other reporting entities. Ongoing co-ordination and rationalisation of activities across the NSS is required to achieve cost effective, cohesive national statistics, with the associated reporting load minimised.

Governance mechanisms

139. Co-ordinating activities across the NSS will involve both formal and informal governance mechanisms.

140. Formal mechanisms would include:

- Legislated roles and arrangements, covering such things as forward programs and information development plans. This also includes steering committees and working groups set up to oversee how these programs are implemented.
- Organisational units or senior level groups set up to lead and coordinate how statistical frameworks and standards are developed, implemented, maintained and used.

- Agreements on participation in international working groups and committees tasked with developing frameworks and standards and progressing statistical development more generally.
- Ideally, a publically available strategic plan should exist (for each domain in population and social statistics), providing both a timeframe for information development, and the accountable agencies. The strategic plan should set out the context for information needs within a domain, the nature of the information needs, and the statistics to be developed to meet those needs. Such a strategic plan would enable users and other stakeholders, including those providing data, to provide input to directions being taken and identify any areas of concern.

141. Informal mechanisms that would support clear roles and responsibilities among NSS players and co-ordinated work programs would include:

- Activities undertaken to improve relationships, share information and reach common understandings between stakeholders in the NSS. These might include regular discussions of priorities and issues between producers, as well as exchanging information through forums such as conferences and seminars.

Indicators of clear and effective roles and responsibilities, authority and accountability within the NSS:

- The roles and responsibilities of key players in the NSS are legislated.
- The authority and accountability of stakeholders in the NSS are proportionate to their designated roles.
- The NSO is clearly mandated to collect data for statistical purposes and to use administrative data for statistical purposes. It is obliged to maintain the confidentiality and security of that data. Similar arrangements apply for other relevant agencies within the NSS.
- There are mechanisms to ensure accountability. These may include independent high level advisory councils reporting to parliament and explicit sanctions for any breaches of responsibilities by NSS agencies.
- There is a code of practice or similar guidelines signed up to across the NSS, setting out the responsibilities of the NSS.
- The NSO has a clear sense of the key stakeholders for each of the 11 domains of population and social statistics, and the role each plays in building the statistical capability.

- There are annual or multiyear planning processes for programs co-ordinating the activities and outputs across the NSS.
- There are publically available strategic plans that include timeframes to address priority information needs.
- There are frequent meetings, discussions and information sharing opportunities at all levels across the NSS.

2. Impartiality: freedom from political influence

Why is it important for the NSS to be impartial?

142. To be effective as a trusted collector and provider of official statistics, the NSS must be free from (and be seen to be free) political influence, or interference or pressure from other government agencies, departments and any other bodies that might have such an interest. Trust in official statistics is diminished when arrangements allow for political influence to occur. Statistics that have potentially been subjected to political influence have low credibility and thus low value. The value of statistics is in informing discussion and debate on issues of concern and on particular policy directions. If statistics cannot be trusted, then the discussion and debate is likely to be moved from the policy issues to arguments over the numbers. Thus, the trusted independence of the official statisticians carries a clear value to the policy agencies. Freedom from political influence is a key element of the institutional strength of the NSS, and a key contributor to the value of the statistics it produces.

What can statistical leaders do to ensure the credibility and reputation of the NSS?

143. As well as ensuring institutional arrangements are in place that safeguard the professional independence of statisticians in the NSS, statistical leaders need to:

- instil a culture amongst their staff that supports independence. Leaders must also maintain and promote their own autonomy as needed within government;
- be able to point to the long term costs of stakeholders inappropriately influencing published statistics, in terms of lost trust in these and other official statistics. Where appropriate; and
- guard the reputation of the statistical system. They need to be vigilant in identifying and rebutting any inferences that official statistics have been subjected to political influence where this is not the case, and in ensuring that any statements made by others in relation to their professional role are accurate.

What is role of the NSS and NSO in analysing and interpreting statistics?

144. There is some discussion amongst official statisticians around the world as to the role of NSO's and the NSS in the analysis and interpretation of statistics. On the one hand, most argue that professional independence would be lessened if official statisticians became involved in analysing and interpreting statistics. However, if analysis and interpretation stops short of commenting on policy implications, others argue that they are appropriate to making the information content of statistics more accessible to the public. For example, National Accounts provide a summary picture of the shape and movements of the economy, and constitute an analysis of the various statistical inputs. In a similar way, a time series of the distribution of equivalised household income is an analytic output, as is an age standardised table of imprisonment rates for different ethnic groups within the country.

145. Where country choses to produce analysis as a way of making data more relevant and accessible, it is important that all techniques and assumptions underpinning the analysis have been chosen on an objective basis as the most scientifically appropriate. The techniques and assumptions should be published, and where alternative choices would also have been valid and yielded different results, this information should also be publically available.

146. Publishing the concepts, sources and methods that describe, among other things, the design decisions and trade-offs made in the development of all official statistics, is good practice in documenting the objective basis for the production of statistics, whether they are the result of direct compilation or derived through analysis.

Indicators of an appropriate level of institutional autonomy:

- Clear, publically accessible rules exist for appointing and dismissing the head of the NSO.
- The head of the NSO reports to a person or persons familiar with, and respectful of, the UN Fundamental Principles of Official Statistics, with the head of the NSO maintaining autonomy on issues of professional statistics.
- Heads of all organisations in the NSS that produce official statistics are familiar with the UN Fundamental Principles of Official Statistics.
- A mechanism exists to safeguard the professional independence from political influence of statisticians working in a production, analysis or dissemination role in other agencies in the NSS.
- There are guidelines on professional ethics for staff in the NSS, supported by training and other awareness-raising mechanisms.
- The NSO is entitled to comment on erroneous interpretation and misuse of statistics.

- Arrangements around access to statistical information are available to all users at the same time, through published mechanisms.

C. Funding: level and control over resources available to support official statistics

147. The capability of an NSS largely depends on its level of funding, the nature of funding sources and the autonomy of relevant NSS players in allocating funding.

What are the effects of inadequate funding?

148. A poorly funded NSS will be unable to produce relevant official statistics to support policy development, and evaluation, and to inform governments, non-government organisations and the community on issues of social concern.

149. An inadequate level of funding may reduce the scope of statistics that can be compiled. Inadequate funding may also have a detrimental effect on the NSO's ability to build and retain a professional workforce. Limited, irregular funding means NSOs may be unable to employ permanent staff, or to offer attractive salaries and conditions to professions in a competitive market. If the availability of relevant statistics is low, and if the workforce skills in the NSS are seen as inadequate, it will be very difficult to promote the value of official statistics and gain access to a more sustained level of funding.

150. Poor funding may mean NSOs are unable to invest in statistical infrastructure (such as innovative collection tools, a user-friendly website etc.) that might improve the cost effectiveness of collection activities, as well as improve the ability to manage statistical data over time. Good data management over time, including appropriate use of standards, is necessary if the data is to become a national asset that can be used over time. Investing in infrastructure, particularly infrastructure that might be used across a number of domains, is only possible if funding is sustained, is not tied to a particular project (for example, a collection activity specified by a donor), and is able to be allocated to investment activities by the NSO or other producing agencies.

151. Another funding issue may be that levels of funding for official statistics in a country may also be inflexible in moving resources from areas of low priority to areas of high priority. This can be a problem in dispersed statistical systems, where there is no one with the authority to move resources from one agency to another.

Indicators of adequate funding

152. It is unlikely that any country will have a sufficient level of resources available for official statistics to meet all the known demands. However, for many countries the level of resources is

adequate to ensure a sustained level of high quality official statistics to support high priority needs. Indicators of adequate funding for population and social statistics include:

- There is an ability to recruit and retain professionally trained statisticians at competitive salaries and conditions.
- There is an ongoing program for producing the country's highest priority population and social statistics.
- The variability in funding of NSS agencies from year to year is manageable, so NSOs have the scope to build and retain skills and statistical infrastructure.
- The NSS, with leadership from the NSO, has an articulated and funded investment strategy to build and maintain statistical infrastructure to support population and social statistics across those domains that are of highest priority to the country.
- Key producers, particularly the head of the NSO, have autonomy on how they spend a significant portion of the budget.
- Mechanisms exist to allow resources to be moved within the NSS from areas of low priority statistics to areas with a higher priority as part of a multi-year planning process.
- There is a strong relationship between the head of NSS producing agencies (particularly the NSO) and national and international funding agencies.
- Statistical data are able to be managed over time as a national asset, building its value as it enables a picture of changing behaviours and conditions over time, and accessible on a general basis.

D. Data sources: the potential and actual data sources available in the country

153. Some countries are rich in source material for statistics, while others are less well off. Richness in source material may come from a variety of statistical data collections. These will themselves provide statistical information, but they may also provide vehicles which support the cost effective collection of further information.

154. The level of national information resources is therefore relevant to a country's statistical capacity, both in terms of the statistics these resources currently provide, and also in terms of their potential to support further statistical development and compilation.

Census of Population and Housing

155. A census is the complete counting of all units or individuals in a target population.

156. A population and housing census provides a substantial source of statistical information in its own right. It also supports the design of subsequent clustered household surveys and may provide an address based frame for household surveys targeting particular population sub groups.

Administrative data sets

157. Administrative data is information primarily collected for the purpose of record-keeping, which is subsequently used to produce statistics.

158. The richness of source material in a country may also come from its administrative system where this system is supported by comprehensive administrative datasets. If access for statistical purposes is allowed to the NSS, then these datasets can be used as a direct source of statistics. They might also be used to provide information to support cost effective statistical collections. They might, for example, provide timely population frames for subgroups in the country, or the population as a whole. If there is a high quality individual identification number or key used across administrative datasets, administrative datasets can be integrated to provide detailed population and social information across the country and over time.

Household surveys

159. A household survey involves collecting information from a subset of units (a sample) from the population.

160. Household surveys include quarterly or annual labour force survey, periodic demography and health surveys, and multiple indicator surveys. They are important sources for population and social statistics in many countries. The NSO generally runs these types of surveys, though in a decentralised system, some may be run by other agencies, or by the private sector with agency funding.

Other surveys

161. Additionally, surveys may be run by international sponsoring agencies. Examples include the Gallup World Poll, and World Population Prospects (WPP), World Development Indicators (WDI), and UNESCO Institute of Statistics surveys.

Big data

162. Big data refers to data sets of such size and complexity that their value cannot be fully realised through traditional data analysis methods and tools. Examples of big data sources include supermarket scanner data, satellite imagery and mobile phone records.

163. Recently there has been discussion of the potential benefits of ‘big data’ in producing statistical information. Patterns in big data can indicate social and economic phenomena in a very timely way. For example, satellite technology coupled with personal devices such as mobile phones

are starting to demonstrate potential to identify patterns in demographic movements on very small time scales. There is still a lot to be done to work through many issues associated with big data for official statistics. These issues include privacy aspects, reliance on private sector sourced data, and determining the quality of derived information, as well as the implications of this quality for its potential uses.

Indicators of a country with good potential and actual data sources:

- A regular population and housing census with a high response rate.
- High quality administrative data sets exist in key areas. For example: vitals, income tax and benefits, school enrolments, hospital admissions.
- Mechanisms exist for integrating administrative datasets.
- The NSS has authorised access to administrative data for statistical purposes, and has strong relationships with custodians of those datasets, enabling them to influence the content and to work together to improve quality for statistical purposes.
- Published data protection policies exist and are supported by appropriate legislation, both for administrative and survey/census data, to ensure continued public trust in the way their data is used. The NSS has a strong culture and capability supporting its application of these data protection policies and a sound reputation in this regard.
- Household collection activities are designed in a co-ordinated way to minimise costs, reuse available infrastructure and provide mechanisms to collect high priority data for new information requirements relatively quickly and cost effectively. In particular, regular survey vehicles are designed to provide some capacity for new and changing content.
- Infrastructure exists to support co-ordinated collection and developing new collections. This may include survey development tools, a trained interviewer work force, an address register.

E. Skills

What are the essential skills required by people working in an NSS?

164. Developing, managing and disseminating high quality official statistics requires access to a strong pool of professionally skilled people. These skills cover different aspects of statistical, technical, leadership and management ability, and are needed at varying levels from ‘some understanding’ through to ‘expert’.

Priority skill areas for developing NSOs

165. The Statistical Institute for Asia and the Pacific (SIAP) has developed a Core Skills framework for Statisticians of NSOs in developing countries. This framework is also applicable for statisticians working in agencies other than NSOs who develop official statistics, as well as the NSS of developed countries.

166. The framework sets out areas of skill development in 14 areas, demonstrated in Figure 20.

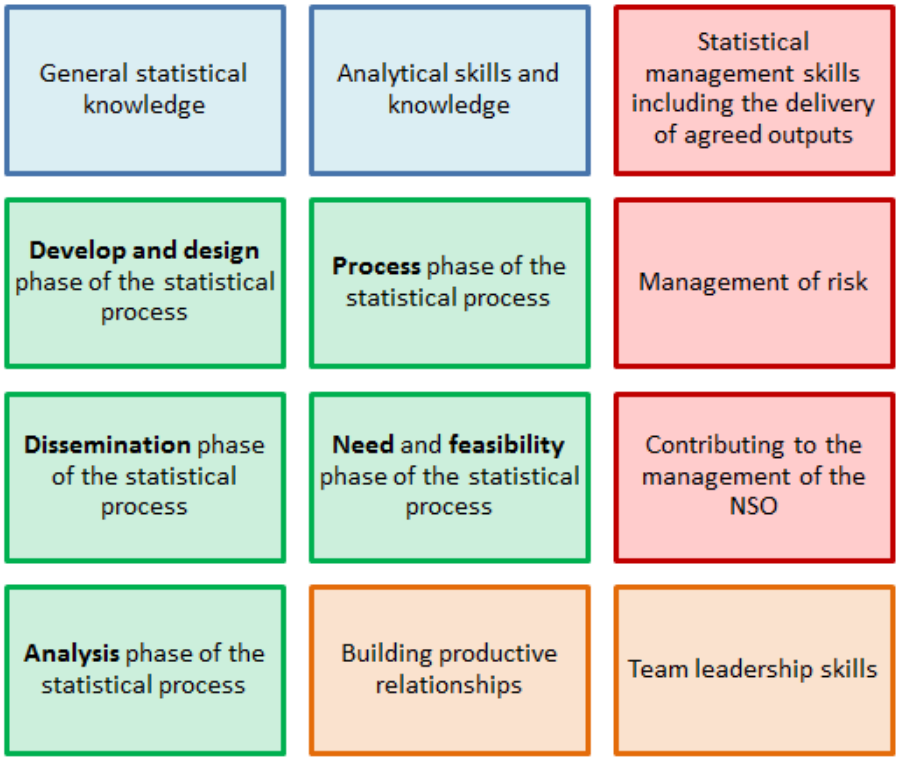

Figure 20 Core skills for statisticians

For each of the above areas of skill development, the framework lists the capabilities to be achieved at four different levels. From what might be termed basic (Level 2) to very experienced/expert (Level 5). Figure 21 gives an example from the framework of the capabilities for the 'Develop and design phase of the statistical process'.

1.4 Develop and Design phase of the statistical process			
Level 2 (basic)	**Level 3**	**Level 4**	**Level 5**
Can explain the key features of the systems used to produce the statistics they work on.	Can explain how the systems used to produce statistics they work on were designed and developed. Has a working knowledge of population definition, sample methodologies, collection instruments and statistical processing methodology. Has a working knowledge of testing collection instruments, and application components. Has a working knowledge of workflows and transformations.	Has a working knowledge of questionnaire design (e.g. question structure, wording, sequencing of questions etc.) Has a working knowledge of complex survey designs. Is able to design testing programmes. Can identify the skills required to meet project outputs. Understands the implications of build decisions on the data which will be produced from the system.	Nothing additional to level 4.

Figure 21 An example from 'Core Skills framework for Statisticians of NSOs in developing countries' (SIAP) for the 'Develop and design phase of the statistical process'

Further skill areas

167. In addition to the skill set covered in the priority areas for SIAP training and the associated framework, further areas that should be included in a training strategy for the NSS in a country. These are detailed in Figure 22.

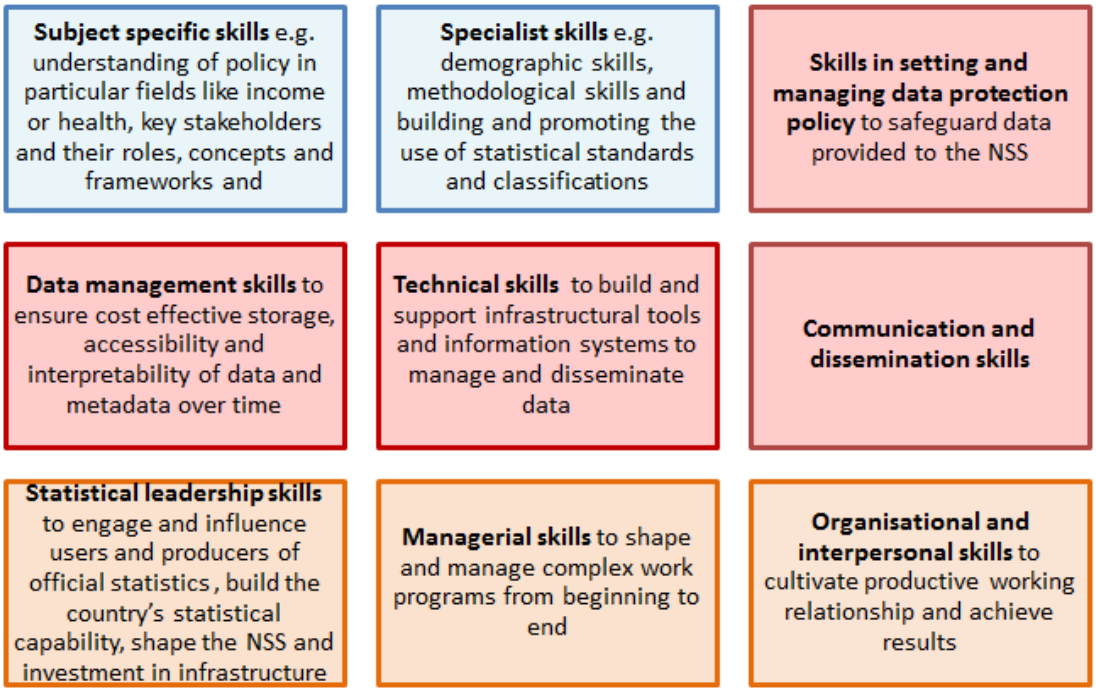

Figure 22 Further skills for statisticians

How can we build and maintain skills in the NSS?

168. There are two key requirements to building and maintaining a strong set of statistical, technical and managerial and leadership skills throughout the NSS. (1) There must be a strategy for developing skills, and a skills base and budget to implement this strategy. (2) it requires the ability to retain skilled staff:

1. Skills development strategy

169. A strategy aimed at developing skill will generally include both classroom training, and on the job experience in an environment, with more experienced staff that can share their knowledge and act as mentors and/or supervisors. Classroom training is relatively straightforward (if the budget is available). Work experience, however, can be problematic, such as in a decentralised system, with small, dispersed groups of statisticians. It is difficult to build skills without a critical mass of skills as a base. In these cases, the NSO may need to play a key role in coordinating training and providing work experience and mentoring through mechanisms, such as outposted skilled staff and rotating NSS staff through constituent agencies. In addition, the NSS may develop supporting infrastructure to support staff learning on the job with limited supervisory support. Such infrastructure may include statistical policy guidelines, codes of practice and training course notes and manuals.

2. Retaining skilled staff

170. Retaining skilled staff is another issue for building skills. On one hand, statistical positions tend to be relatively poorly remunerated, and career paths for statisticians in smaller or non-statistical agencies may be limited. This can mean NSOs experience difficulty holding on to high performing experienced statisticians, especially given the demand for quantitatively-skilled, analytic people.

171. In some cases, staff in statistical roles may not be clearly distinguished as professional statisticians in the making and may be moved between different types of jobs within their agency. In cases like this, planned statistical development of individuals can be difficult and costly. This can be alleviated if there is a clearly articulated sense of what an appropriate development pathway for a statistician within the agency looks like.

172. Some loss of experience to other parts of NSS agencies, or elsewhere is inevitable and even desirable to some extent, as it improves the user community's understanding of statistics. Skills planning thus needs to factor in this continual turnover. Where relative remuneration rates are driving a very high loss rate of experience and skills from the NSS, the level of remuneration needs to be addressed, possibly in conjunction with other benefits such as flexible and attractive working conditions (for example, family friendly work hour arrangements).

173. Statistical development in some domains of population and social statistics may be better supported through skills development than others, and any assessment would need to look at this across the priority domains for statistics for the country.

In summary, indicators of a strong skills base in an NSS include:

- A strong team of experienced and skilled people that support developing and producing the core social and population statistics for that country.
- An adequately funded and coordinated approach to assessing, building and maintaining skills across the NSS, including both course work and on the job training opportunities.
- Informal training and development and information sharing opportunities.
- Personal development planning for staff in the NSS, identifying their statistical and non-statistical development needs. Staff are encouraged to take responsibility for planning their development pathways.
- Effective use of training materials, manuals and so on to support staff gaining skills through work experience as well as specific training.

F. Statistical infrastructure

What is statistical infrastructure?

174. Statistical infrastructure refers to the tools which support the operation of a statistical system. These tools can help to organise the statistical system, improve efficiency, create new outputs or simply perform tasks within the system.

175. Examples of statistical infrastructure include:

- Definitions.
- Classifications.
- A coding system to support the coding of descriptive text to a classification.
- A statistical website that:
  - enables easy access to data from recent and past surveys;
  - provides tools to analyse that data;
  - enables access to concepts sources and methods manuals, and policy documents on data protection.

176. Therefore statistical infrastructure consists of tools (including manuals and methods) that support statistics across a range of activities and domains.

177. Statistical infrastructure is important for three main reasons:

- It facilitates statistical activities, making them cheaper and faster.
- It helps to quality assure statistics, making it easier to undertake statistical activities according to best practice that can be built into tools.
- Statistical infrastructure can be used to do things consistently across collections and activities. For example, using standard definitions and classifications improves the comparability and consistency of statistics.

178. Statistical infrastructure can be considered in three groups: conceptual, technical and country-specific. These are elaborated in Figure 23.

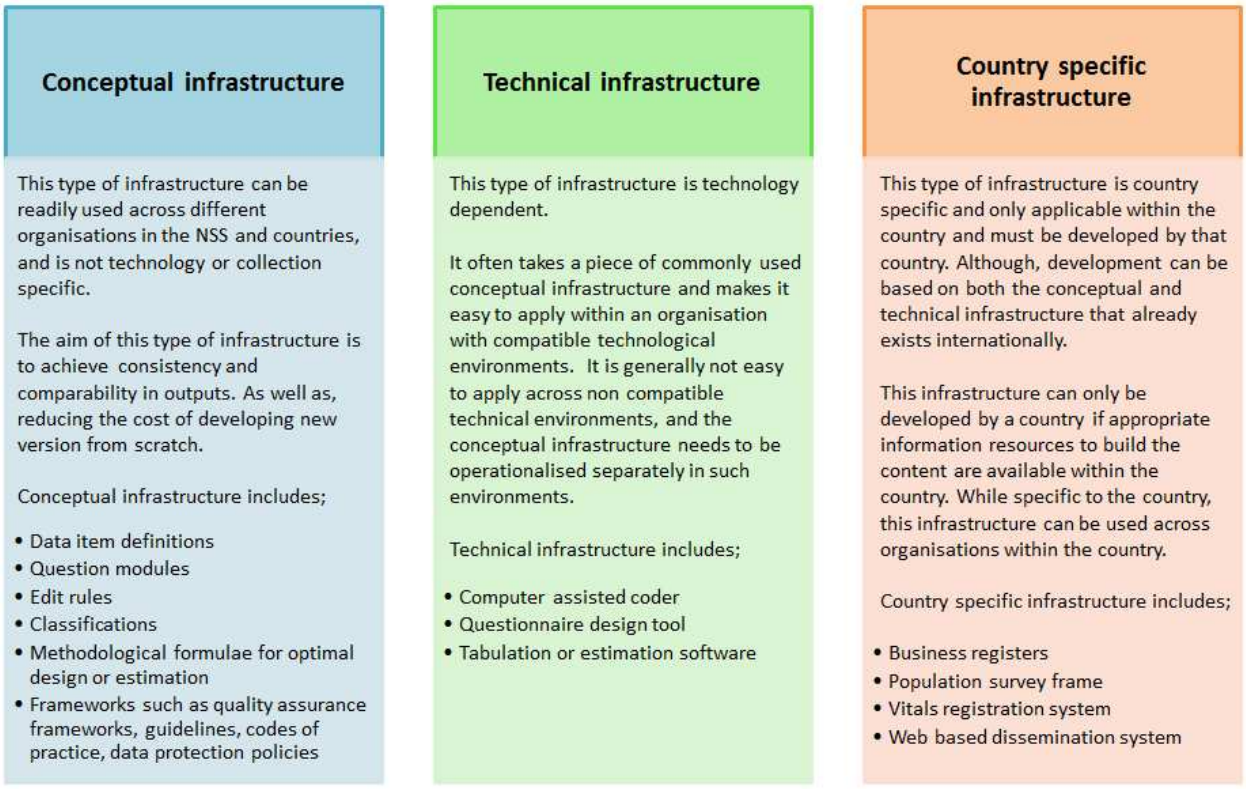

Figure 23 Types of statistical infrastructure

Developing statistical infrastructure

179. An NSS will typically use statistical infrastructure from all three of the above groups. Developing countries may draw heavily on infrastructure from other countries, or international infrastructure from the first two groups, as long as they have an adequate skills and technological base required to support them.

180. Infrastructure in the third group needs to be developed by each country, possibly with donor support. Such development requires investment, and in a decentralised system, a coordinated approach would be needed to ensure the resulting infrastructure meets all needs in a cost effective way.

What are the benefits of strong statistical infrastructure?

181. There are many benefits in having a strong base of statistical infrastructure underpinning the NSS. Benefits include:

- Reduces costs: Having a common way of doing common things when producing and disseminating statistics, allows the NSS to have more cost effective model of production.
- Improves timeliness: Good statistical infrastructure reduces the time taken to produce a new set of statistics, as many of the required tools are already developed and available. If the

NSS are already using available infrastructure in another application, statistical staff already have the skills required to use this effectively in the new application.

- Improves quality: Tools have had time to be tested and improved across a number of applications support consistency and comparability in data.

What is the role of statistical infrastructure in official statistics?

Statistical infrastructure is important across the statistical cycle, from initially identifying user requirements to disseminating results on a NSO website. The NSO's website demonstrates the benefits of such infrastructure. The release of new data is enabled at a very low marginal cost, to a broad range of users. These users are already familiar with the approach to release, and the tools to facilitate interpretation and access to levels of detail. Co-ordinated and standardised dissemination of official statistics across the NSS will improve the visibility and accessibility of population and social statistics.

182. Statistical infrastructure can be expensive to develop. In a decentralised NSS, the cost/benefit ratio may appear excessive when considered by a single agency, even where there is a strong business case when considered across agencies. In this case, the NSO may need to lead a coordinated approach to initially developing and maintaining the infrastructure. The co-ordination role will be particularly important if the statistical infrastructure has potential use across a range of domains, and therefore involve a large number of stakeholders.

Indicators of a high infrastructural capability in an NSS:

- National standards and frameworks are based on international guidelines, and are available for each domain for the core set.
- National standards and frameworks are understood and followed for producing statistics in each domain of the core set.
- National standards, policies and codes of practice are developed in consultation with key users and producers across relevant domains, and updates to standards, policies and codes of practice are taken on in a co-ordinated and timely way.
- Data producing agencies both within and between domains of the core set work together to set standards and agree policy for how those standards are used.
- There is active participation internationally in developing statistical infrastructure that is relevant to each domain of the core set.

- Data producers in the domains of the core set have a forward looking technology plan for using the most relevant statistical tools in compiling and disseminating statistics and managing data over time.
- The domains of the core set have a development and maintenance plan in place for statistical infrastructure, ensuring an ongoing investment in maintaining its relevance.
- Developing and maintaining infrastructure is shared across the domains of the core set and is not reinvented in slightly different forms across different agencies The infrastructure is cost effective, efficient and embeds sound methods and practices.

Chapter V Conclusion

183. This document provides the rationale and details of a core set of population and social statistics for Asia and the Pacific. This document aims to support research, policy development, implementation and evaluation, and to inform community discussion and debate on issues of social concern within the region. It does so by identifying the general policy issues regarding social development and social concern. In describing the core set, the document also highlights the important population characteristics, which are important when considering data disaggregation. Statistics would not be of much use if they are of poor quality. Therefore, this document outlines the main concerns of quality, including the fitness for purpose of those statistics that are already available within the domain, and for considering the required characteristics for any statistics that may be planned for development.

184. The ongoing production and dissemination of quality statistics depends on a strong, professional statistical system within each country. The final part of this document provides a framework for assessing the current strengths and weaknesses of the national statistical system within the country.

185. The production and dissemination of population and social statistics presents a number of challenges for a country. The responsibilities of collecting and disseminating population and social statistics in a country reside in a wide range of governmental and non-governmental agencies, perhaps much more so than other sectors of official statistics. In other words, the social statistics system is often dispersed amongst many players. The costs of data collection are high and the economic imperatives that drive funding for economic statistics are less visible for social statistics. However, while the challenge is large, the benefits are also large. Government expenditure on social policy is very substantial and the ability to drive effective policy through a strong evidence base is likely to have a very significant effect both on the economic prosperity of a country, and on the wellbeing of its citizens. The framework presented in this document attempts to structure how the NSS discuss options to overcome these challenges and reap the benefits for people's wellbeing and the nation's progress.