

STRATEGIC PLAN TO IMPROVE STATISTICS IN BHUTAN

National Statistics Bureau

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I. INTRODUCTION

Background: A statistical cell was established within the Ministry of Development in 1971 to support formulation of policies and plans. It was later expanded and upgraded as the Central Statistical Organization (CSO) in 1979 under the Planning Commission. With major changes in the governance structure in 2003, the CSO was granted autonomy and it was re-named as the National Statistics Bureau (NSB).

The NSB operates under an Executive Order issued in 2006. The executive order designates NSB as the central authority for the collection, compilation and release of any official data and its custodian thereof. NSB is designated as the parent agency for all the statistical officers posted in agencies/Ministries and Dzongkhags in 2017.

NSB provides key statistics on economics, environmental, population and social statistics. It also works to promote greater use of statistical information, contributing to informed decision making by the government agencies, businesses, households and individuals, while protecting the confidentiality of the sensitive information collected from respondents. NSB plays an important role in relation to statistical activities both at the national and international level, as provider of data and related services.

Rationale: Over the years, with rapid socio-economic development, there is an increased demand for quality statistics that are timely and responsive for planning and decision making. The effectiveness of development planning and policies depend not only on the availability of data but also the quality of basic data collected. Good data is also necessary for transparency, accountability and effective public service delivery in the country. The data produced by the Bhutan Statistical System¹ (BSS) has been the main source of input for planning and decision making. Given the importance, it is essential to revisit and reflect on the institutions and mechanisms to collect, compile and disseminate statistics so that we are able to meet the ever-increasing demand for quality statistics through improved governance, innovations and technology.

Objective of the Strategic Plan: The main objective of this strategic plan is to improve and strengthen the BSS so that it becomes responsive, robust and better coordinated to produce timely and reliable statistics. Further, it aims to improve the conduct of statistical operations and deliver quality statistics to the data users and to the general public in support of evidence-based decision making.

¹ The NSB together with agencies/ministries and data producers form the Bhutan Statistical System.

II. VISION, MISSION AND VALUES

The following are the vision, mission and the core values:

Vision: To provide high quality statistical products and services to support social and economic development of the country.

Mission

- 1) To provide relevant, reliable and timely statistics to facilitate planning and evidence-based decision making.
- 2) To ensure that the compilation and dissemination of statistics are in accordance with scientific principles, professional ethics and international standards.

Core Values

The following values shall guide the officials at all time in discharging their roles and responsibilities.

- 1) *Integrity* - Perform task with highest moral and ethical standards (*Thadamtse*);
- 2) *Professionalism* - Discharge duties competently, diligently, efficiently and effectively with humility and sensibility;
- 3) *Accountability* - Be accountable in all operations at all levels to build trust and confidence in the statistics produced;
- 4) *Teamwork* - Work as a team and in a coordinated way with entities within and outside of the statistical system; and
- 5) *Adaptability* - Respond to change with positive attitude and willingness to learn and adopt innovations and emerging technologies to deliver the mandate.

III. SITUATIONAL ANALYSIS

The situational analysis was conducted (in the form of a SWOT analysis) to understand the strengths, weaknesses, opportunities and threats to guide the formulation of strategies.

STRENGTHS

- 1) Experience in organizing and managing national level surveys and censuses;
- 2) Presence of statistical officers in the Dzongkhags and agencies;
- 3) Commitment to apply international standards and best practices; and
- 4) Strict adherence to the principle of confidentiality of individual information.

WEAKNESSES

- 1) Lack of skills in adapting to emerging technologies and limited use of ICT in data collection, processing and dissemination;
- 2) Lack of national standards, concepts, definitions and methods (impacting data comparability and consistency);
- 3) Weak collaboration and coordination in implementing statistical activities (resulting in waste of resources, duplication of efforts and respondent fatigue);
- 4) Poor management and limited use of administrative data;
- 5) Data gaps and inconsistencies (impacting reliability, comparability and timeliness);
- 6) Inefficiency and redundancy due to lack of clarity in the roles of Statistical Officers in the Dzongkhags and agencies; and
- 7) Inadequate number and mix of skills.

OPPORTUNITIES

- 1) Leverage on ICT to improve data collection, analysis and dissemination (to provide easy and equal access to data for all users);
- 2) Adopt new opportunities, innovations (like Big data) and emerging technologies;
- 3) Harmonize standards, protocols, concepts, definitions, classifications and good statistical methods/practices based on international standards and best practices;
- 4) Improve collaboration and partnership with relevant agencies in the government, media, private sector, academia, civil society organizations, private data providers and development partners to coordinate statistical activities throughout the larger data ecosystem;
- 5) Improve quality of data in terms of reliability, relevance and timeliness;
- 6) Strengthen and improve the use of administrative data for official statistics; and
- 7) Promote the culture of using data in decision making.

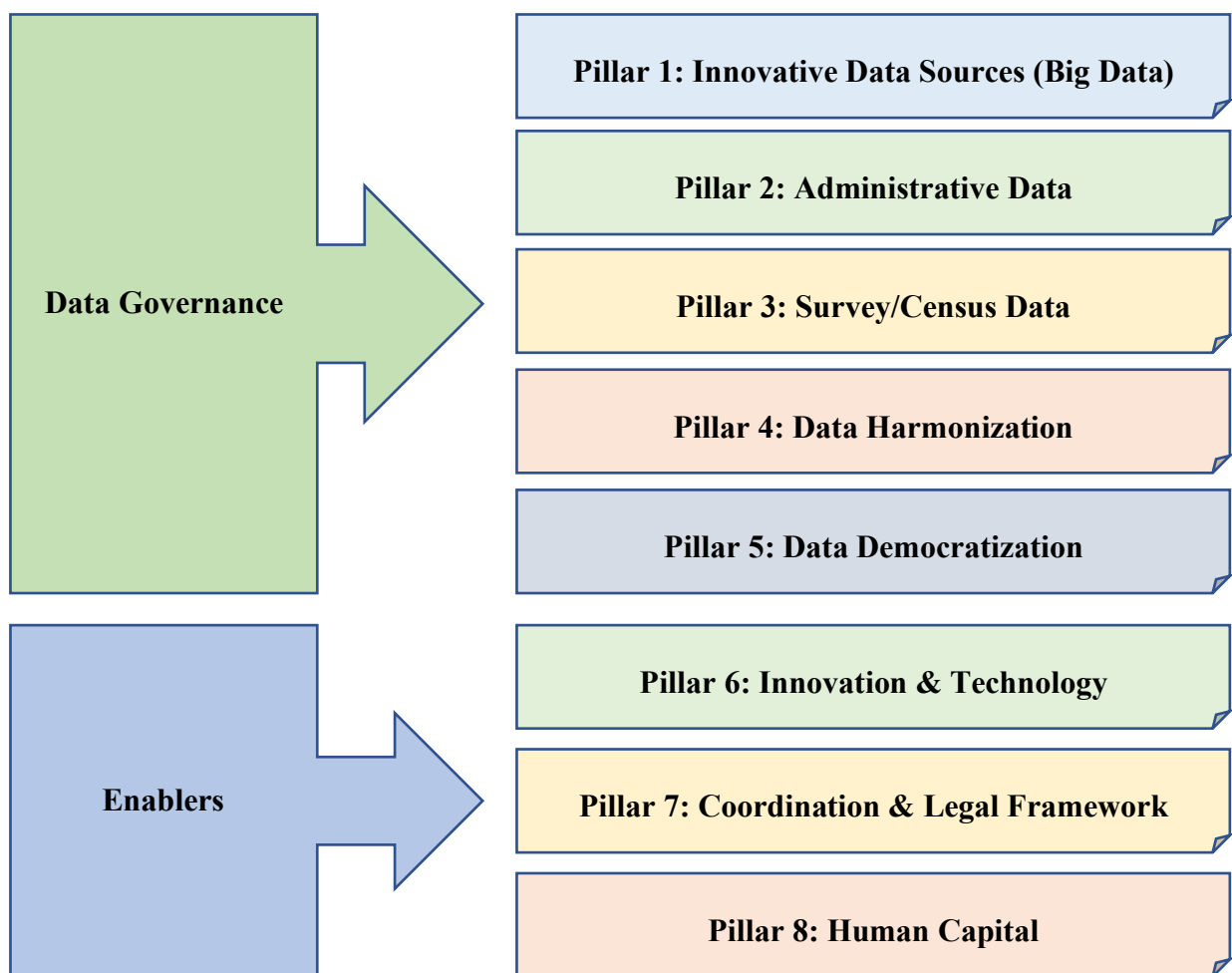
THREATS

- 1) Limited use of data and statistics in decision making;
- 2) High probability of interference from interest groups in official statistics;
- 3) Absence of a robust and comprehensive legal framework to support statistical activities;
- 4) Limited cooperation to share administrative data by the agencies/data producers;
- 5) Low profile of statistics within the agencies/ministries and Dzongkhags;
- 6) Limited public awareness about statistics and their value; and
- 7) Declining responses to household surveys.

IV. STRATEGIES

Effective governance of statistical activities are pre-requisites for the sustainability and efficiency of the statistical system. The BSS has to embrace change by exploring new data sources, building new partnerships and adopting technologies and new business model to stay useful and relevant.

The strategy attempts to capitalize on the its strengths and opportunities, and address the weaknesses and threats of the statistical system. The strategy is presented under two broad headings of **Data Governance** (Pillars 1-4) and **Enablers** (Pillars 5-8). Each pillar is supported by strategic objective(s) and its corresponding strategies and actions.



The strategies and the actions proposed do not include the regular monthly, quarterly and annual publications and surveys conducted by NSB. However, the regular activities and its related budget are presented and added to the total budget required for the implementation of the proposed strategies.

DOMAIN A: DATA GOVERNANCE

PILLAR 1: INNOVATIVE DATA SOURCES (BIG DATA)

Recent advances in information technology provide an unprecedented opportunity to collect, organize, analyze, disseminate, and visualize large volume of data. As a result of these advances, innovative data sources and tools which can provide real-time information are evolving for use in official statistics.

Strategic Objective: Capitalize on the emerging innovative data sources (Big data)

Data innovation often combines non-conventional with conventional sources of data, such as surveys, to reframe issues and shed new light on seemingly intractable problems. Big data is an option for computing official statistics. Big data is available in greater volume, veracity, and variety and occurs with high velocity. Big data sources include mobile phone data, social media, websites, transaction data, geospatial information, electricity data etc. The major benefits of incorporating big data in official statistics rest in its timeliness and low cost of production.

Strategy 1: Explore the use of Big Data to complement conventional data source.		Time Frame	Remarks
Actions	i. Use of GIS and remote sensing for agriculture statistics.	2020-21	Work in progress
	ii. Explore use of telecom data for tourism and population statistics.	2020-21	New
	iii. Explore use of electricity data for estimating socio-economic indicators.	2020-21	New
	iv. Explore the use of retail scanner data for economic statistics.	2020-21	New
	v. Compile an inventory of big data sources, infrastructure and its requirements in terms of storage, processing, analytic software, networking and visualization tools.	2020-21	New

PILLAR 2: ADMINISTRATIVE DATA

Administrative data are those that are collected for administrative purposes. It is desired that the administrative data will slowly replace the surveys and census in the long run. The quality of administrative data needs to be improved to serve this purpose. Administrative data rarely use statistical concepts and standards. It is more technical and operational that is tailored for public service delivery. It is important to ensure that administrative data are built on sound statistical methods to be used for official statistics. As such, close collaboration and co-operation between national statistics office and agencies dealing with administrative data is key to guarantee that the data is fit for official statistics.

Strategic Objective: Improve and enhance the use of administrative data and establish a local level data architecture

Administrative data compliment surveys and census in informing policies and planning. Different agencies maintain huge volumes of administrative data. However, at the present most sectors lack sufficiently comprehensive and reliable data and hence it is weak to be used in official statistics. Therefore, there is a need to strengthen administrative data in terms of standards and methods, so that it can be used for policy and planning purposes.

The gewog level data plays a very important role in the local level planning process. However, gewog level data collection seldom follows standard definition, format and uniform survey questionnaire due to lack of proper standard operating protocols. This has led to data discrepancies and inconsistencies as well as waste of resources and respondent burden over time. Therefore, there is a need to have a proper data architecture established at the local level to govern and define the type of data collected and how it is used, stored, managed, integrated and shared. It is desired that the gewog/thromde data would build up to Dzongkhag data and then Dzongkhag data to the national data.

Strategy 1: Strengthen administrative data to maximize its use for statistical purposes.		Time Frame	Remarks
Actions	i. Assessment of administrative data (by sector) in terms of its coverage and completeness, quality and reporting system. (refer Annexure 1)	2020-21	New
	ii. Review of all national and global indicators and identify data gaps which can be compiled from administrative data.	2020-21	New

	iii. Prepare appropriate template to collect data which conform to standards of national and global definitions of the indicators.	2020-21	New
	iv. Develop a system of quality control to verify and validate the data.	2020-21	New
	v. Develop proper linking methods to link administrative data from different sources.	2020-21	New
	vi. Integrate different data repositories maintained by agencies with the central data repository.	2021-22	New

Strategy 2: Develop and manage Gewog/Thromde Level Database (GLDB).		Time Frame	Remarks
Actions	i. Review and standardize the existing data collection format.	2020-21	New
	ii. Build a dynamic local level database and data visualization tool.	2020-21	New
	iii. Develop and implement data management Standard Operating Procedure (SoP) and ToR.	2020-21	New
	iv. Develop a system of quality control to verify and validate the data.	2020-21	New
	v. Improve and enhance the capacity of local data managers and data collectors.	2020-21	New

PILLAR 3: SURVEY/CENSUS DATA

The surveys/censuses are conducted to generate information for plan formulation and policy making. Since survey/census are resource intensive, it can be conducted only on a periodic basis. Although administrative data is the preferred data source due to less requirement of resources, we still depend on household surveys/censuses because the administrative data at present is not comprehensive in terms of its coverage, quality and

completeness. Therefore, the surveys/censuses still need to be continued and improved by increasing its frequency/introducing new surveys/censuses to meet the needs.

Strategic Objective: Improve and enhance the conduct of survey/census

Surveys/censuses are conducted only on a periodic basis and there are opportunities for the BSS to increase its frequency and to introduce new surveys/censuses based on the emerging needs.

Strategy 1: Increase frequency of current surveys/censuses and introduce new surveys/censuses based on demand.		Time Frame	Remarks
Actions	i. Increase the frequency of PHCB to every five years.	2022-23	New
	ii. Increase the frequency of RNR census to every five years.	2022-23	New
	iii. Increase the frequency of Economic Census to every five years.	2023+	New
	iv. Conduct Bhutan Multiple Indicator Survey (every five years).	2021-22	New
	v. Introduce Annual Household Income and Expenditure Survey.	2020-21	New
	vi. Conduct data users satisfaction survey (every three years).	2020-21	New

PILLAR 4: DATA HARMONIZATION

There is an increased demand for quality statistics to meet the need of planning and decision making. Currently, statistics produced by various agencies in the BSS are not always comparable due to use of different concepts, methods, classification and definitions. Data harmonization is therefore essential for having a uniform and standard structure for data production. This will ensure the production of high-quality data for cross-sector comparisons.

Strategic Objective: Improve quality of statistical products and services

To improve the quality of statistical products and services, a quality assurance framework is required as it provides a mechanism for the management of the multi-dimensional nature and characteristics of data quality. Some of the typical dimensions of data quality are timeliness, reliability and relevance. The data quality framework shall consist of standards, and data protocols with specific purposes, processes and flows, supported by detailed documentation at each level of the statistical business process to ensure the production of high-quality statistics from censuses, surveys, and administrative based statistical activities.

To produce reliable, comparable and methodologically sound statistics, standard classifications must be established and existing classification systems and codes must be harmonized. The BSS must develop and adopt classifications and standards to produce reliable and comparable data.

Meta data will be developed for easy interpretability of data by users. Meta data will help explain the basic structure of the data and the description of the variables, which are needed to understand and effectively use the data.

Strategy 1: Develop and adopt National Statistical Quality Assurance Framework.		Time Frame	Remarks
Actions	i. Formulate, advocate and implement National Statistical Quality Assurance Framework (NSQAF).	2020-21	Work in progress
	ii. Review and approve survey questionnaires, methodologies and monitor its implementation in the field.	2020-21	Work in progress

Strategy 2: Develop, strengthen and implement statistical standards in line with international standards.		Time Frame	Remarks
Actions	i. Develop and adopt Bhutan Standard Industrial Classification (BSIC).	2020-21	Work in progress

	ii. Develop and adopt Bhutan Standard Classification of Occupation.	2020-21	Work in progress
	iii. Develop and adopt statistical codes of practice (geocodes, demography, education, health, housing etc).	2020-21	Work in progress
	iv. Develop validation guidelines and mechanisms for sector specific administrative data based on priority.	2020-21	New
	v. Develop and maintain meta-data for all surveys/censuses and administrative data sets.	2020-21	New

PILLAR 5: DATA DEMOCRATIZATION

Data accessibility and effective dissemination is important to ensure seamless exchange and use of data across all levels of an agency/organization. We aspire and aim to promote and equip the users with support and resources they need to get the benefit of statistics in decision making through enhanced data accessibility, dissemination and literacy programs. The goal is to have anybody use data at any time to make decisions with no barriers to access and understanding.

Strategic Objective: Create a conducive environment for data accessibility, dissemination and use for a better-informed society

Effective dissemination and easy access to quality and timely data is essential to meet the needs of the data users. Advocacy and timely delivery of relevant data to the users would contribute to increasing use of statistics in decision making. Further, it is essential to provide learning sessions on basic statistics analysis and data interpretation through data literacy programs at different levels based on the needs to improve their understanding and confidence in statistics.

Strategy 1: Establish data sharing mechanism and enhance data dissemination through diverse platforms.		Time Frame	Remarks
Actions	i. Formulate and operationalize an open data protocol for administrative and survey/census data.	2021-22	New

	ii. Publish policy briefs and press releases on major surveys and research findings.	2020-21	On-going
	iii. Publish and distribute key indicator information through print and electronic media, flyers, pamphlets and posters.	2020-21	New
	iv. Present survey/census findings at national conferences and meetings of heads of agencies/Departments, professional associations and local community groups.	2020-21	New

Strategy 2: Promote the importance of data-driven decision making.		Time Frame	Remarks
Actions	i. Conduct workshops/seminars on the use of data for planning and monitoring.	2020-21	Work in progress
	ii. Conduct need-based trainings on basic statistics analysis and data interpretation for decision makers, planners, and media personnel.	2020-21	On-going
	iii. Create statistical awareness in schools through quiz, essays, poster competitions etc.	2021-22	New

DOMAIN B: ENABLERS

PILLAR 6: INNOVATION AND TECHNOLOGY

The value of statistics depends on the way in which we are able to collect, process, safeguard, and disseminate information. Innovation and technology shall be encouraged, managed and optimized to help improve methods, approaches, processes, products and services for statistical data production and dissemination. It is important that we explore the use of ICT solutions for data collection and adopt advance statistical packages for analysis to improve the quality of statistical products. Adoption of modern technologies gives added advantage in terms of frequency, efficiency and agility.

Strategic Objective: Leverage on emerging technologies and innovations

The conventional method of data collection and analysis has proven to be expensive, tedious and inefficient. In recent years, BSS started using Computer Assisted Personal Interview (CAPI), a mobile-based technology for conducting surveys. This has resulted in real time monitoring of the surveys and reducing the challenges associated with paper-based data collection. Web-based survey is another option for small scale survey in areas with high digital literacy to collect self-monitored respondent information. As regards data analysis, it is vital for BSS to keep itself abreast with the emerging technologies and statistical packages for data analysis. The use of advance statistical packages would not only improve the data quality, but also enhance the ability to handle large sets of data efficiently.

The current practice of agencies storing data independently in different databases (in silo), without proper validation; have contributed to data duplication, inconsistency and inconvenience. To overcome these inefficiencies and to enhance quality and access, a central data repository is required. This will reduce administrative burden, data duplication and inconsistencies. Similarly, various agencies conduct or organize number of surveys. However, these surveys are not properly documented as per existing norms and practices. Therefore, it is important to develop a National Data Archiving System to ensure proper documentation for future reference and use.

The present method of disseminating information is ancient, disintegrated and inconvenient for the users. Developing a single data portal for the whole of BSS would act as a one-stop-shop and would provide easy access, better coverage and timely delivery of information to the users. Further, social media and mobile applications will be useful in creating awareness and disseminating information.

Strategy 1: Enhance use of ICT for data collection and analysis.		Time Frame	Remarks
Actions	i. Assess and promote the use of appropriate Computer Assisted Personal Interview (CAPI) applications (CS-Pro and Survey solutions) for surveys/censuses.	2020-21	Work in progress
	ii. Promote the conduct of web-based surveys.	2020-21	New
	iii. Procure and enhance the use of advance software (R, STATA, Python, QGIS, Hadoop, MAXQDA, EViews, SAS) for data analysis.	2020-21	New

Strategy 2: Enhance use of ICT for data dissemination and storage.		Time Frame	Remarks
Actions	i. Develop a Central Data Repository system for storage of administrative data.	2021-22	New
	ii. Develop Data Archiving System for storage of surveys/censuses data.	2022-23	New
	iii. Develop an effective data dissemination platform by creating a single data portal enabling data visualization (Tableau).	2020-21	Work in progress
	iv. Procure Tableau Creator to support the data portal.	2020-21	New
	v. Use social media applications for data dissemination.	2020-21	Work in progress
	vi. Develop mobile applications for data dissemination.	2020-21	Work in progress

PILLAR 7: COORDINATION AND LEGAL FRAMEWORK

A strong statistical institution and legal framework is critical for effective and efficient functioning of the BSS. It would facilitate collaboration and coordination in the production and dissemination of statistics. Coordination mechanisms and sound legal framework are necessary to guarantee statistical independence, integrity and accountability.

Strategic Objective: Improve coordination and collaboration mechanism and institute legal framework

One of the weakest link in the BSS is the limited coordination and collaboration among key stakeholders. There is plenty of scope to improve coordination and collaboration. Therefore, coordination and collaboration mechanisms among the data producers and users' need to be instituted considering the emerging and changing requirements.

Statistical legislation is required for an effective and coherent statistical system. Statistical activities are generally backed by sound and robust legal framework to ensure production of quality statistics without prejudice. As per the revised fundamental principles of the Official Statistics adopted by the United Nations General Assembly in 2014, a Statistics Act is recommended to ensure and guarantee the independence, integrity and accountability of national statistical systems to produce high quality statistics. Within the SAARC region, Bhutan is the only country without a Statistics Act.

In the long run, a Statistics Act may be required to govern the statistical activities in the country. Until we have the act in place, the existing Executive Order needs to be reinforced to address the current bottlenecks and challenges.

Strategy 1: Strengthen coordination among data producers and users		Time Frame	Remarks
Actions	i. Conduct regular coordination workshops.	2020-21	On-going
	ii. Develop and implement annual Statistical Calendar/Advanced Release Calendar for the BSS.	2020-21	On-going
	iii. Form and operationalize Statistical Technical Review Committee.	2020-21	New
	iv. Observe theme-based World Statistics Day amongst the BSS including users.	2020-21	New

	v. Conduct regular meetings with the users to assess their data needs.	2021-22	New
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Strategy 2: Enact Statistics Bill and formulate rules and regulations		Time Frame	Remarks
Actions	i. Reinforce Executive Order.	2020-21	New
	ii. Finalize the draft statistic bill and submit to Cabinet for endorsement.	2023+	Work in progress
	iii. Draft and finalize the rules and regulations in consultation with OAG and other relevant agencies.	2023+	New

PILLAR 8: HUMAN CAPITAL

Human Resources is a key element in the success of an organization. In view of the critical role of statistics in national development, there is a growing need to produce timely and reliable statistical products and services. As such, it is important to ensure that we have qualified, efficient and highly motivated employees in the BSS. Further, it is important to ensure placements of statisticians as per their skills in appropriate position.

Strategic Objective: Strengthen BSS Human Resource and Statistical Competency

The BSS shall ensure the effective utilization of human resources within the system by placing qualified statisticians in Agencies, Dzongkhags and Thromdes based on need. With the decentralization of development activities to local government; planning, monitoring and evaluation of development activities have increased significantly. There is a need for timely and reliable statistics at all administrative levels. Therefore, the BSS human resource needs to be rationalized and strengthened.

Competencies and skills of the statisticians need to be enhanced and upgraded not only to take advantage of the emerging technologies, but also to build capacities to ensure quality statistical products and services.

Strategy 1: Review and rationalize HR needs in Agencies, Thromdes and Dzongkhags		Time Frame	Remarks
Actions	i. Review the existing and future statistical activities in agencies, Thromdes (Thimphu & Phuntsholing) and Dzongkhags for recruitment/re-deployment.	2020-21	New
	ii. Review and develop ToR for statistical officers in Agencies, Thromdes and Dzongkhags.	2020-21	New

Strategy 2: Ensure Succession Planning for specialized areas		Time Frame	Remarks
Actions	i. Identify subject specialized areas and accordingly develop and implement succession plan.	2020-21	New

Strategy 3: Strengthen the ICT professionals to support statistical activities		Time Frame	Remarks
Actions	i. Recruit computer programmers (two nos.).	2020-21	New
	ii. Train existing ICT personnel in using emerging technologies.	2021-22	New

Strategy 4: Enhance knowledge and skills of the statisticians in emerging fields and relevant subject matters		Time Frame	Remarks
Actions	i. Provide periodic short-term trainings to statistical personnel in data science, sample design, survey design, vital statistics, economics statistics and social statistics.	2020-21	New

	ii. Provide higher education in Data Science (1), Demography/Population studies (1), Statistics (2), Economics (2) and GIS (Spatial data/Geospatial science (1).	2020-21	New
	iii. Propose undergraduate in Data Science (2)	2020-21	New
	iv. Provide periodic short-term trainings (in-country) to statistical personnel in the following fields: -Training on statistical tools and software -upscale capacity of the Dzongkhag Statistical Officers	2021-22	New

V. IMPLEMENTATION AND BUDGET

The strategy will be implemented over the next three years (July 2020 – June 2023). The total budget required to execute the proposed strategy is estimated at Nu. 638.97² million. Out of that Nu. 443.00 million is assigned for Population and Housing Census of Bhutan and the RNR Census. Table 1 presents the estimated budget scenario with and without the increase in the frequency of censuses (i.e. Population and Housing Census and Agriculture Census).

		without Census	with Censuses
Sl.	Pillars	In Nu. Million	In Nu. Million
1	Innovative Data Sources	2.0	2.0
2	Administrative Data Sources	11.9	11.9
3	Survey/Census Data Sources	87.8	530.8
4	Data Harmonization	3.8	3.8
5	Data Democratization	8.9	8.9
6	Innovation & Technology	6.6	6.6
7	Coordination & Legal Framework	7.9	7.9
8	Human Capital	11.4	8.8
	Total	137.73	580.73
	<i>Regular Activities</i>	<i>58.24</i>	<i>58.24</i>
	Total (with regular activities)	195.97	638.97

The details of the pillars and its corresponding strategic objectives, strategies and actions with budget are presented in Annexure 2. The budget estimate for regular monthly, quarterly and annual activities of the NSB is estimated at Nu. 58.24 million (Annexure 3). Details of the implementation plan is presented in Annexure 4.

² Including Nu. 58.24 to implement regular NSB activities.

ANNEXURE 1: PRIORITY AREA LIST FOR ADMINISTRATIVE DATA ASSESSMENT

1. Electricity statistics
2. Telecom statistics
3. Banking statistics
4. Civil Registration and Vital Statistics
5. Trade statistics
6. Tourism statistics
7. Tax statistics
8. Traffic statistics
9. Health statistics
10. Education statistics
11. Agriculture statistics
12. Labor and employment statistics

ANNEXURE 2: PILLARS, STRATEGIC OBJECTIVES, STRATEGIES AND ACTIONS WITH BUDGET

Pillars/Strategic Objective	Strategies	Actions	Time Frame	Risk Factor	2020-21	2021-22	2022-23	Total Cost (In mill. Nu.)	Remarks
Pillar 1: Innovative Data Sources									
<i>Strategic Objective Capitalize on the emerging innovative data sources (Big data)</i>	Strategy 1: Explore the use of Big Data to complement conventional data source	i. Use of satellite imageries for agriculture statistics	1	Lack of technical capacity	0.0	0.0	0.0	0.0	Work in progress
		ii. Explore use of telecom data for tourism and population statistics	1		0.0	0.0	0.0	0.0	New
		iii. Explore use of electricity data for estimating socio-economic indicator	1		0.0	0.0	0.0	0.0	New
		iv. Explore the use of retail scanner data for economic statistics	1	Contingent on cooperation by the retailers	0.0	0.0	0.0	0.0	New
		v. Compile an inventory of big data sources, infrastructure and its requirements interms of storage, processing, analytic software, networking and visualization tools	1		2.0	0.0	0.0	2.0	New
Total					2.0	0.0	0.0	2.0	
Pillar 2: Administrative Data									
<i>Strategic Objective: Improve and enhance the use of administrative data and establish a local level data architecture</i>	Strategy 1: Strengthen administrative data to maximize its use for statistical purposes.	i. Assessment of administrative data (by sector) in terms of its coverage and completeness, quality and reporting system (refer Annexure 1)	1		0.5	0.5	0.5	1.5	New
		ii. Review of all national and global indicators and identify data gaps which can be compiled from administrative data	1		0.0	0.0	0.0	0.0	New
		iii. Prepare appropriate template to collect data which conform to standards of national and global definitions of the indicators	1		0.0	0.0	0.0	0.0	New
		iv. Develop a system of quality control to verify and validate the data	1		0.0	0.0	0.0	0.0	New
		v. Develop proper linking methods to link administrative data from different sources	1		0.0	0.0	0.0	0.0	New
		vi. Integrate different data repositories maintained by agencies with the central data repository	2		0.0	0.0	0.0	0.0	New
	Strategy 2: Develop and manage Gewog/Thromde Level Database (GLDB)	i. Review and standardize the existing data collection format	1		0.0	0.0	0.0	0.0	New
		ii. Build a dynamic local level database and data visualization tool	1		1.5	0.0	0.0	1.5	New
		iii. Develop and implement data management Standard Operating Procedure (SoP) and ToR	1		0.0	0.0	0.0	0.0	New
		iv. Develop a system of quality control to verify and validate the data	1		0.0	0.0	0.0	0.0	New
		v. Improve and enhance the capacity of local data managers and data collectors	1		1.4	3.8	3.8	8.9	New
Total					3.4	4.25	4.25	11.9	

Note: (1 = 2020-21; 2 = 2021-22; 3 = 2022-23; 3+ = beyond 2023)

Pillars/Strategic Objective	Strategies	Actions	Time Frame	Risk Factor	2020-21	2021-22	2022-23	Total Cost (In mill. Nu.)	Remarks
Pillar 3: Survey/Census Data									
<i>Strategic Objective: Improve and enhance the use of conventional data source</i>	Strategy 1: Increase frequency of current surveys/censuses and introduce new surveys/censuses based on demand	i. Increase the frequency of PHCB to every five years	3	Contingent on resource availability	0.0	0.0	260.0	260.0	New
		ii. Increase the frequency of RNR census to every five years	3		0.0	0.0	183.0	183.0	New
		iii. Increase the frequency of Economic Census to every five years	3+		0.0	0.0	0.0	0.0	New
		iv. Introduce Household Income and Expenditure Survey	1		6.2	6.2	0.0	12.4	New
		v. Conduct Bhutan Multiple Indicator Survey (every five years)	2		0.0	75.0	0.0	75.0	New
		vi. Conduct data users satisfaction survey (every three years)	1		0.4	0.0	0.0	0.4	New
Total					6.6	81.2	443.0	530.8	
Pillar 4: Data Harmonization									
<i>Strategic Objective : Improve quality of statistical products and services</i>	Strategy 1: Develop and adopt National Statistical Quality Assurance Framework	i. Formulate, advocate and implement National Statistical Quality Assurance Framework (NSQAF)	1	Non-compliance	1.1	0.0	0.0	1.1	Work in progress
		ii. Review and approve survey questionnaires, methodologies and monitor its implementation in the field	1		0.0	0.0	0.0	0.0	Work in progress
	Strategy 2: Develop, strengthen and implement statistical standards in line with international standards	i. Develop and adopt Bhutan Standard Industrial Classification (BSIC)	1		1.1	0.0	0.0	1.1	Work in progress
		ii. Develop and adopt Bhutan Standard Classification of Occupation (BSCO)	1	Non-compliance	0.7	0.0	0.0	0.7	Work in progress
		iii. Develop and adopt other statistical codes of practice (geocodes, demography, education, health, housing etc)	1						Work in progress
		iv. Develop validation guidelines and mechanisms for sector specific administrative data based on priority	1						New
v. Develop and maintain meta-data for all surveys/censuses and administrative data sets	1	New							
Total					3.2	0.3	0.3	3.8	

Note: (1 = 2020-21; 2 = 2021-22; 3 = 2022-23; 3+ = beyond 2023)

Pillars/Strategic Objective	Strategies	Actions	Time Frame	Risk Factor	2020-21	2021-22	2022-23	Total Cost (In mill. Nu.)	Remarks
Pillar 5: Data Democratization									
<i>Strategic Objective: Creative a conducive environment for data accessibility, dissemination and use for a better-informed society</i>	Strategy 1: Establish data sharing mechanism and enhance data dissemination through diverse platforms	i. Formulate and operationalize an open data protocol for administrative and survey/census data	2	Non-compliance	0.0	0.4	0.2	0.6	New
		ii. Publish policy briefs and press releases on major survey and research findings	1		0.0	0.0	0.0	0.0	On-going
		iii. Publish and distribute key indicator information through print and electronic media, flyers, pamphlets and posters	1		0.2	0.2	0.2	0.6	New
		iv. Present survey/census findings at national conferences and meetings of heads of agencies, professional associations and local community groups	1		0.0	0.0	0.0	0.0	New
	Strategy 2: Promote the importance of data-driven decision making	i. Conduct workshop/seminars on the use of data for planning and monitoring	1		0.5	0.5	0.5	1.5	Work in progress
		ii. Conduct need-based trainings on basic statistics analysis and data interpretation for decision makers, planners, and media personnel	1		2.0	2.0	2.0	6.0	On-going
		iii. Create statistical awareness in schools through quiz, essays, poster competitions etc	2		0.0	0.1	0.1	0.2	New
Total					2.7	3.2	3.0	8.9	
Pillar 6: Innovation & Technology									
<i>Strategic Objective: Leverage on emerging technologies and innovations</i>	Strategy 1: Enhance use of ICT for data collection and analysis	i. Assess and promote the use of appropriate Computer Assisted Personal Interview (CAPI) applications (CS-Pro and Survey solutions) for surveys/censuses	1		0.0	0.0	0.0	0.0	Work in progress
		ii. Promote the conduct of web-based surveys	1		0.0	0.0	0.0	0.0	New
		iii. Procure and enhance the use of advance software (R, STATA, Python, QGIS, Hadoop, MAXQDA, SAS) for data analysis	1		1.0	0.0	1.0	2.0	New
	Strategy 2: Enhance use of ICT for data dissemination and storage	i. Develop a Central Data Repository system for storage of administrative data	2	Contingent on access to services of qualified IT programmers	0.0	2.0	0.0	2.0	New
		ii. Develop Data Archiving System for storage of surveys/censuses data	3		0.0	0.0	2.0	2.0	New
		iii. Develop an effective data dissemination platform by creating a single data portal enabling visualization (Tableau)	1		0.0	0.0	0.0	0.0	Work in progress
		iv. Procure Tableau Creator to support the data portal	1		0.1	0.1	0.1	0.3	New
		v. Use social media applications for data dissemination	1		0.0	0.0	0.0	0.0	Work in progress
		vi. Develop mobile application for data dissemination	1		0.3	0.01	0.01	0.32	Work in progress
Total					1.4	2.1	3.1	6.6	

Note: (1 = 2020-21; 2 = 2021-22; 3 = 2022-23; 3+ = beyond 2023)

Pillars/Strategic Objective	Strategies	Actions	Time Frame	Risk Factor	2020-21	2021-22	2022-23	Total Cost (In mill. Nu.)	Remarks	
Pillar 7: Coordination & Legal Framework										
<i>Strategic Objective: Improve coordination and collaboration mechanism and institute legal framework</i>	Strategy 1: Strengthen coordination among data producers and users	i. Conduct regular coordination workshops	1						On-going	
		ii. Develop and implement annual Statistical Calendar/Advanced Release Calendar for the BSS	1		2.5	2.5	2.5	7.5	On-going	
		iii. Form and operationalize Statistical Technical Review Committee	1		0.03	0.00	0.00	0.03	New	
		iv. Observe theme-based World Statistics Day amongst the BSS including users	1		0.1	0.1	0.1	0.3	New	
		v. Conduct regular meetings with the users to assess their data needs	2		0.00	0.05	0.05	0.10	New	
	Strategy 2: Enact Statistics Bill and formulate rules and regulations	i. Reinforce Executive Order	1		0.0	0.0	0.0	0.0	New	
		ii. Finalize the draft statistic bill and submit to Cabinet for endorsement	3+	Contingent to Cabinet approval	0.0	0.0	0.0	0.0	Work in progress	
		iii. Draft and finalize the rules and regulations in consultation with OAG and other relevant agencies	3+						New	
Total					2.63	2.65	2.65	7.93		
Pillar 8: Human Capital										
<i>Strategic Objective: Strengthen BSS Human Resource and Statistical Competency</i>	Strategy 1: Review and rationalize HR needs in Agencies, Thromdes and Dzongkhags	i. Review the existing and future statistical activities in agencies, Thromdes (Thimphu & Phuntsholing) and Dzongkhags for recruitment/re-deployment	1		0.5	0.0	0.0	0.5	New	
		ii. Review and develop ToRs for statistical officers in Agencies, Thromdes and Dzongkhags	1		0.1	0.0	0.0	0.1	New	
	Strategy 2: Ensure Succession Planning for specialized areas	i. Identify subject specialized areas and accordingly develop and implement succession plan	1		0.0	0.0	0.0	0.0	New	
	Strategy 3: Strengthen the ICT professionals to support statistical activities	i. Recruit computer programmers (two nos.)	1		0.0	0.0	0.0	0.0	New	
		ii. Train existing ICT personnel in using emerging technologies	2		0.0	1.0	1.0	2.0	New	
	Strategy 4: Enhance knowledge and skills of the statisticians in emerging fields and relevant subject matters	i. Provide periodic short-term trainings (ex-country) to statistical personnel in sample design, survey design, vital statistics, economic statistics, social statistics, data science and statistical software (CSPro)	2		0.0	2.0	2.0	4.0	New	
		ii. Provide higher education in the following areas:	1	Contingent on RCSC's LTT plan					0.0	New
		a. Demography/Population studies (1)								
		b. Statistics (2)								
		c. Economics (2)								
		d. GIS (Spatial Data/Geospatial science) (1)								
		e. Data Science (1)								
	iii. Propose undergraduate in Data Science (2)	1		0.0	0.0	0.0	0.0	New		
	iv. Provide periodic short-term trainings (in-country) to statistical personnel in following fields:							New		
a. Training on statistical tools and software	2		0	0.6	0.6	1.2				
b. Upscale capacity of District Statistical Officers	2		0.0	1.0	0.0	1.0				
Total					0.6	4.6	3.6	8.8		
Overall Total					22.51	98.31	459.91	580.73		

Note: The action plan and budget excludes the regular publications, surveys and census of NSB which are presented in Annexure 3

Note:

(1 = 2020-21; 2 = 2021-22; 3 = 2022-23; 3+ = beyond 2023)

ANNEXURE 3: DETAILS AND COST ESTIMATE FOR REGULAR PUBLICATIONS, SURVEYS AND CENSUSES

Sl.	Publications	2020-21	2021-22	2022-23	Total Cost (In mill. Nu.)	Frequency
1	National Accounts Statistics	0.1	0.1	0.1	0.5	Annual
2	Environmental Accounts Statistics	0.1	0.1	0.1	0.5	Annual
3	Consumer Price Index	0.0	0.0	0.0	0.0	Monthly
4	Producer Price Index	0.0	0.0	0.0	0.0	Quarterly
5	Export Import Index	0.0	0.0	0.0	0.0	Quarterly
6	Statistical Yearbook	0.35	0.35	0.35	1.75	Annual
7	Bhutan at A Glance	0.08	0.08	0.08	0.38	Annual
8	Dzongkhag At A Glance	0.0	0.0	0.0	0.0	Annual
9	Annual Dzongkhag Statistics	0.0	0.0	0.0	0.0	Annual
10	Thematic Research Reports	0.32	0.32	0.32	1.61	Annual
11	Labour Force Survey report	0.30	0.30	0.30	0.90	Annual
12	Economic Census Report	0.00	0.00	0.00	0.00	5 Years
13	Population and Housing Census Report	0.00	0.00	0.00	0.00	10 Years
14	Bhutan Living Standard Survey Report	0.00	0.50	0.00	0.50	5 Years
15	Poverty Analysis Report	0.00	0.50	0.00	0.50	5 Years
16	Multidimensional Poverty Index Report	0.00	0.50	0.00	0.50	10 Years
17	Waste Inventory Survey Report	0.00	0.00	0.00	0.00	5 years
18	Population Projection Report	0.00	0.00	0.00	0.00	5 Years
	Total	1.25	2.75	1.25	7.14	
Sl.	Surveys/Censuses					
1	Labour Force Survey	6.2	6.2	6.2	18.6	Annual
2	Bhutan Living Standard Survey	0.0	32.5	0.0	32.5	
3	Population & Housing Census	0.0	0.0	0.0	0.0	10 Years
4	Economic Census	0.0	0.0	0.0	0.0	10 Years
5	Waste Inventory Survey	0.0	0.0	0.0	0.0	5 years
	Total	6.20	38.70	6.20	51.10	
	Overall Total	7.45	41.45	7.45	58.24	

Note*: Includes only NSB publications, surveys and censuses

ANNEXURE 4: IMPLEMENTATION PLAN 2020-23

Pillars/Strategic Objective	Actions	2020-21	2021-22	2022-23
Pillar 1: Innovative Data Sources				
<i>Strategic Objective: Capitalize on the emerging innovative data sources (Big data)</i>	i. Explore use of telecom data for tourism and population statistics			
	ii. Explore use of electricity data for estimating socio-economic indicator			
	iii. Explore the use of retail scanner data for economic statistics			
	iv. Compile an inventory of big data sources, infrastructure and its requirements in terms of storage, processing, analytic software, networking and visualization tools			
Pillar 2: Administrative Data				
<i>Strategic Objective: Improve and enhance the use of administrative data and establish a local level data architecture</i>	i. Assessment of administrative data (by sector) in terms of its coverage and completeness, quality and reporting system. (refer Annexure 1)			
	ii. Review of all national and global indicators and identify data gaps which can be compiled from administrative data.			
	iii. Prepare appropriate template to collect data which conform to standards of national and global definitions of the indicators.			
	iv. Develop a system of quality control to verify and validate the data.			
	v. Develop proper linking methods to link administrative data from different sources.			
	vi. Integrate different data repositories maintained by agencies with the central data repository.			
	vii. Review and standardize the existing data collection format.			
	viii. Build a dynamic local level database and data visualization tool.			
	ix. Develop and implement data management Standard Operating Procedure (SoP) and ToR.			
	x. Develop a system of quality control to verify and validate the data.			
	xi. Improve and enhance the capacity of local data managers and data collectors.			
Pillar 3: Survey/Census Data				
<i>Strategic Objective: Improve and enhance the use of conventional data source</i>	i. Increase the frequency of PHCB to every five years.			
	ii. Increase the frequency of RNR census to every five years.			
	iii. Increase the frequency of Economic Census to every five years.			
	iv. Introduce Household Income and Expenditure Survey			
	v. Conduct Bhutan Multiple Indicator Survey (every five years)			
	vi. Conduct data users satisfaction survey (every three years)			
Pillar 4: Data Harmonization				
<i>Strategic Objective: Improve quality of statistical products and services</i>	i. Develop validation guidelines and mechanisms for sector specific administrative data based on priority			
	ii. Develop and maintain meta-data for all surveys/censuses and administrative data sets			
Pillar 5: Data Democratization				
<i>Strategic Objective: Creative a conducive environment for data accessibility, dissemination and use for a better-informed society</i>	i. Formulate and operationalize an open data protocol for administrative and survey/census data			
	ii. Publish and distribute key indicator information through print and electronic media, flyers, pamphlets and posters			
	iii. Present survey/census findings at national conferences and meetings of heads of agencies, professional associations and local community groups			
	iv. Create statistical awareness in schools through quiz, essays, poster competitions etc			

Pillars/Strategic Objective	Actions	2020-21	2021-22	2022-23
Pillar 6: Innovation & Technology				
<i>Strategic Objective: Leverage on emerging technologies and innovations</i>	i. Promote the conduct of web-based surveys			
	ii. Procure and enhance the use of advance software (R, STATA, Python, QGIS, Hadoop, MAXQDA, SAS) for data analysis			
	iii. Develop a Central Data Repository system for storage of administrative data			
	iv. Develop Data Archiving System for storage of surveys/censuses data			
	v. Procure Tableau Creator to support the data portal			
Pillar 7: Coordination & Legal Framework				
<i>Strategic Objective: Improve coordination and collaboration mechanism and institute legal framework</i>	i. Form and operationalize Statistical Technical Review Committee			
	ii. Observe theme-based World Statistics Day amongst the BSS including users			
	iii. Conduct regular meetings with the users to assess their data needs			
	iv. Reinforce Executive Order			
	v. Draft and finalize the rules and regulations in consultation with OAG and other relevant agencies			
Pillar 8: Human Capital				
<i>Strategic Objective: Strengthen BSS Human Resource and Statistical Competency</i>	i. Review the existing and future statistical activities in agencies, Thromdes (Thimphu & Phuntsholing) and Dzongkhags for recruitment/re-deployment			
	ii. Review and develop ToRs for statistical officers in Agencies, Thromdes and Dzongkhags			
	iii. Identify subject specialized areas and accordingly develop and implement succession plan			
	iv. Recruit computer programmers (two nos.)			
	v. Train existing ICT personnel in using emerging technologies			
	vi. Provide periodic short-term trainings (ex-country) to statistical personnel in sample design, survey design, vital statistics, economic statistics, social statistics, data science and statistical software (CSPro)			
	vii. Provide higher education in the following areas:			
	a. Demography/Population studies (1)			
	b. Statistics (2)			
	c. Economics (2)			
	d. GIS (Spatial Data/Geospatial science) (1)			
	e. Data Science (1)			
	viii. Propose undergraduate in Data Science (2)			
	ix. Provide periodic short-term trainings (in-country) to statistical personnel in following fields:			
a. Training on statistical tools and software				
b. Upscale capacity of District Statistical Officers				
<i>Note: The action plan excludes the regular publications, surveys and census of NSB which are presented in the Annexure 3</i>				