



# **Competency Based Framework (CBF)**

**For**

**Statistical Officers**

**National Statistics Bureau**

**Edition I**

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## 1. COMPETENCY FRAMEWORK FOR THE STATISTICAL OFFICERS

### 1.1 Objectives

The concept paper aims at seeking approval of the Royal Civil Service Commission and the management to:

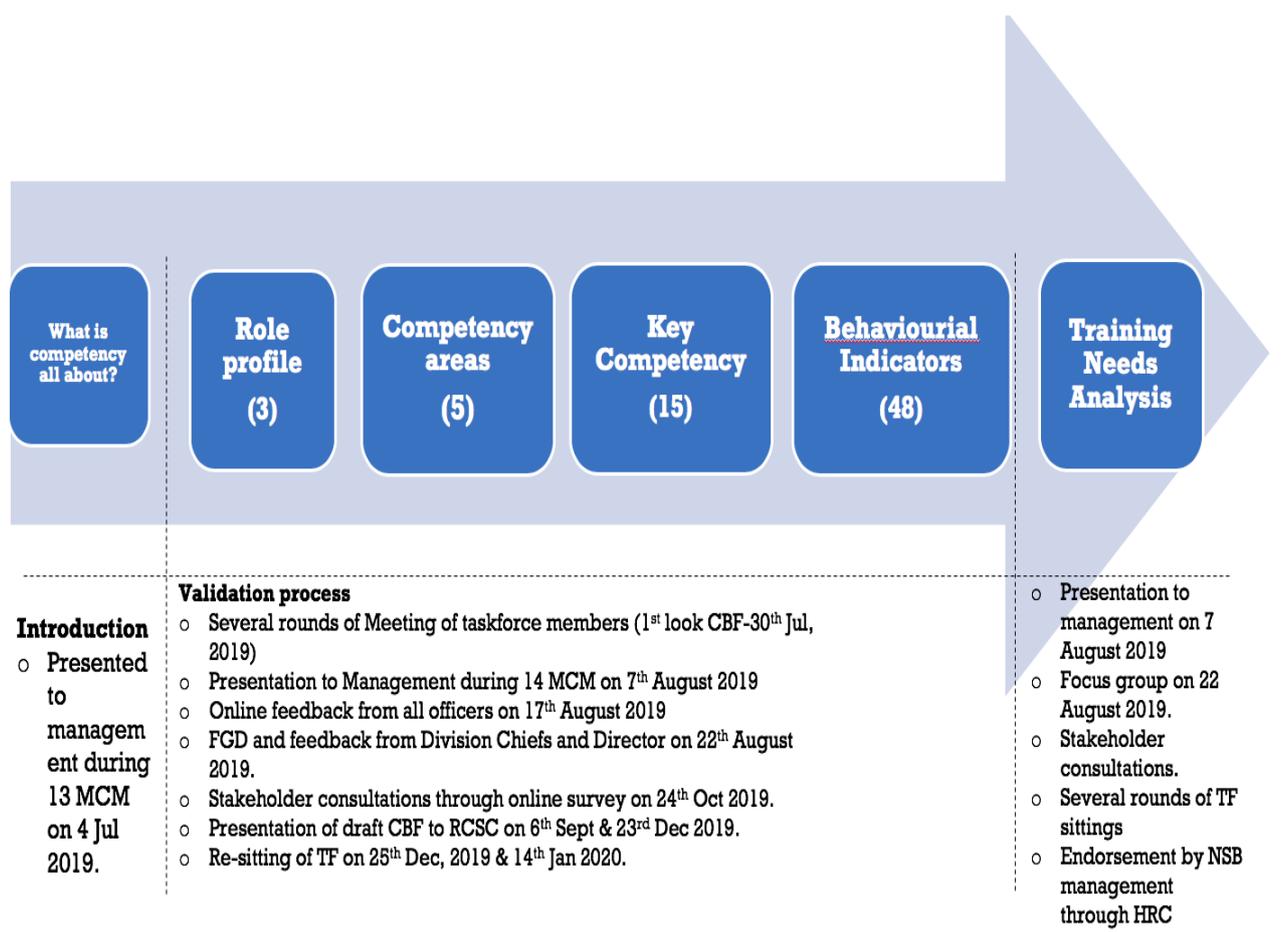
- Implement the competency framework for Statistical Officers;
- Prioritize training in data management, data analysis and data dissemination to enhance professionalism, growth and development of Statistical Officers;
- Strengthen capabilities of Statistical Officers based on the role-specific competency; and
- Prioritize trainings for entry and advance level officers which are critical for Statistical Officers to have the necessary competencies for superior performance to support the Bhutan Statistical System's vision- to provide quality and timely statistics for evidence-based decision making.

### 1.2 Background-CBF Development processes

Preparation of a comprehensive and inclusive Competency Framework (CF) for Statistical Officers is critical. Upon the launch of Competency-based Framework for civil service, the following Statistical Officers were formed as Task Force (TF) for the development of CBF for Statistical Officers:

1. Tobden Tobden, Chief Statistical Officer, Ministry of Agriculture & Forests;
2. GarulDhojBhujal, Dy. Chief Statistical Officer, Ministry of Works & Human Settlements;
3. TandinDorji, Dy. Chief Statistical Officer, National Statistics Bureau;
4. Sonam Tobgay, Senior Statistical Officer, Royal Civil Service Commission; and
5. Pema Chezom, Dy. Chief HR Officer, National Statistics Bureau.

For the development of Competency Framework (CF) for Statistical Officers, the TF involved extensive engagement with all Statistical Officers within the Bhutan Statistical System and identified required elements of CF. Such an exercise by nature demanded extensive collaboration and integrating views from all the relevant stakeholders. Therefore, for these reasons, the Task Force (TF) identified by the management pursued distinct roles and responsibilities. In summary, the following were the development processes undertaken by the TF:



### 1.2.1 Consultation and validation of Key Roles, Competency Areas, Key Competencies and Behavioral Indicators

Immediately upon the completion of CF workshop organized by RCSC, the TF presented on the CF aspects to the management during its 13<sup>th</sup> Monthly Coordination Meeting (MCM) on 4<sup>th</sup> July, 2019. The main objective of the presentation was to brief the management on the core aspects of CF and rationale behind for such initiative.

The zero-draft of CF for Statistical Officers was completed by 30<sup>th</sup> July 2019 with several rounds of TF sittings. It was then presented to the management during its 14<sup>th</sup> MCM held on 7<sup>th</sup> August, 2019. After incorporating comments and suggestions of the management, further online feedbacks and views were sought through FGDs from Division Chiefs and Director on 22<sup>nd</sup> August, 2019.

To incorporate feedbacks and suggestions from Statistical Officers outside the National Statistics Bureau, the TF developed online survey form chiefly to identify major issues and challenges with respect to competencies of statistical personnel. Their comments received on 24<sup>th</sup> October, 2019 were major inputs for the revised CF. The framework saw several rounds

of TF sittings, stakeholder consultations and endorsement by the management through HR Committee.

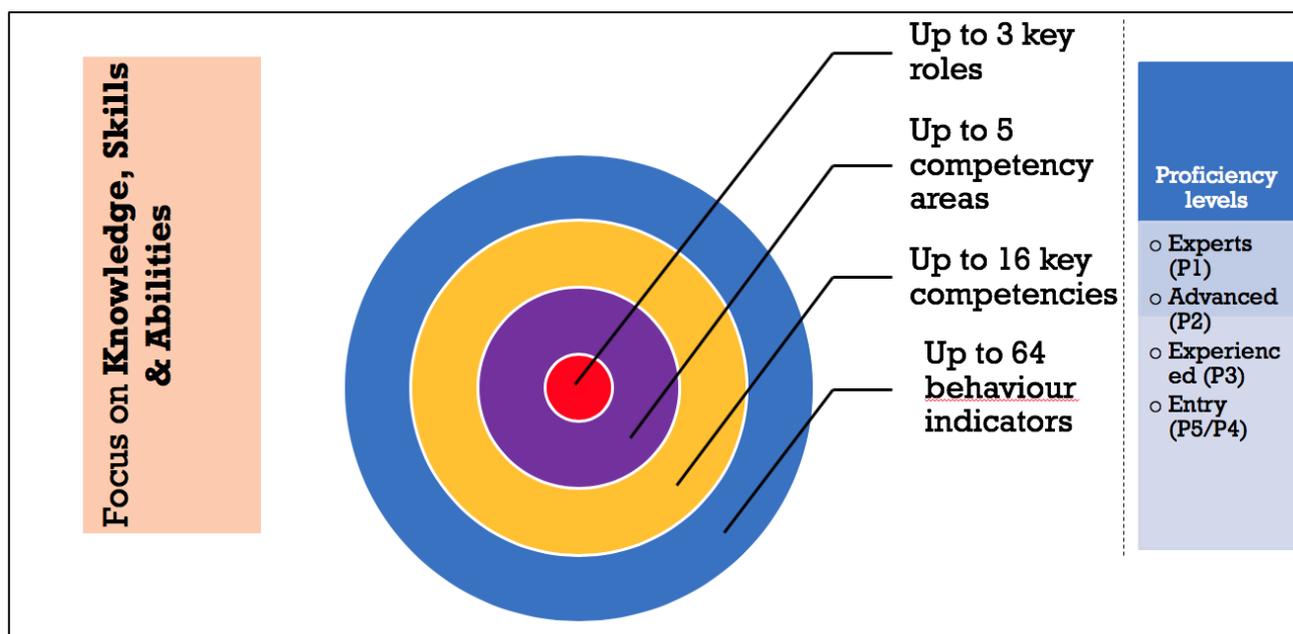
The revisited CF after going through several stages of consultations and validation with the management, was finally presented to Royal Civil Service Commission on 6<sup>th</sup> September, 2019. The Commission's comments and directives were further incorporated into the document and it was again presented to the commission on 23<sup>rd</sup> December, 2019.

### 1.2.2 Consultation and validation of Training Need Analysis

The drawing of Training Need Analysis document went through similar consultations and validation seeking feedback and comments from the same target group. A total of 27 statistical personnel in Professional and Management category were thoroughly consulted.

### 1.3 Outputs

In summary, focussing the Knowledge, Skills and Abilities (KSA) concepts, the CF identified 3 Key Roles, 5 Competency Areas, 16 Key Competencies and 64 Behaviour Indicators for four different proficiency levels.



#### 1.3.1 Key Roles, Competency Areas, Key Competencies

The summary of the proposed CBF for Statistical Officer is shown below. The inner circle (circle#2) depicts the 3 Key Roles Identified-Data Manager, Data Analyst and Data Advocate.

The 5 Competency areas-4 specific technical competencies and 1 leadership competency for all 3 Key Roles are shown in circle#3. The 16 key competencies for each competency area are shown in circle#4. **Annexure I-II** show the the detailed CF for Statistical Officers.

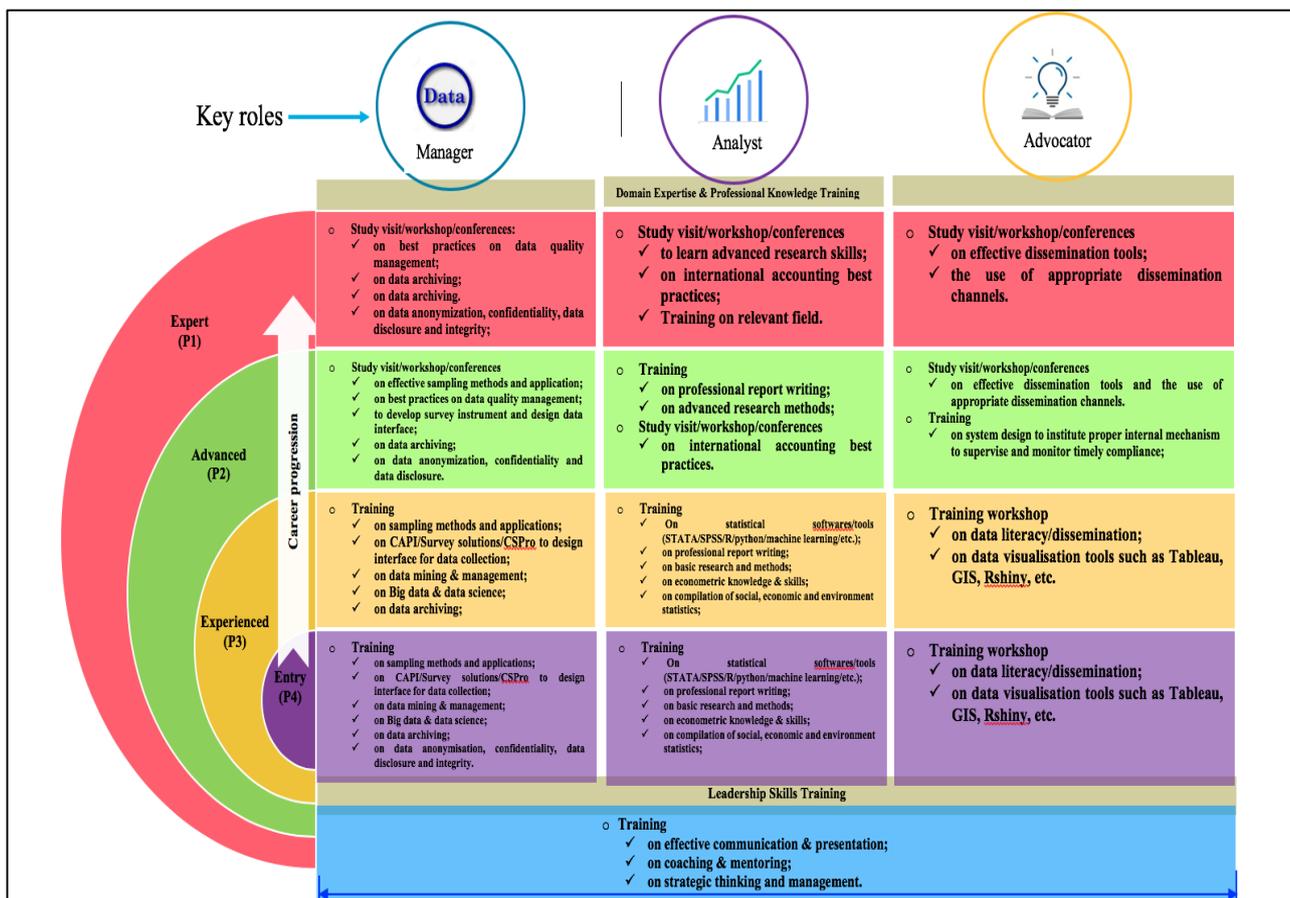


### 1.3.2 Evaluation of the Current Situation

The evaluation of current situation is important to identify required competency gaps. The part of the evaluation was also incorporated during the online survey form sent to relevant target groups (statistical officers). Furthermore, it was then analyzed based on the proficiency levels. The summary of the performance gaps by proficiency level are provided in **Annexure-III**.

### 1.3.3 Training Need Analysis

The Task Force followed structured approach to identify TNA based on the performance gaps identified. A separate TNAs- short and long-term aspects were developed in consultation with the management and Statistical Officers. In summary, the following were identified as key short-term related trainings. The detailed TNA are provided in **Annexure-IVa to IVb**.



### 1.4 Conclusion

The National Statistics Bureau envisions the goal to provide quality and timely statistics for evidence-based decision making in the country. To achieve its vision and fulfil the mandates of the Bureau, the clarity on the roles and competencies of the all Statistical Officers engaged in the production of statistics need to be strengthened and such can be realized through implementation of CF identified by Task Force Group in consultation with relevant stakeholders in Bhutan Statistical System (BSS).

## 2. ANNEXURE

### Annexure-I: Competency Area, Key Competency and Behaviour Indicators

SI/N	Key Role Description	Competency Area	Key Competency	Behaviour Indicators
<b>Key Role 1- Data Manager</b>				
<b>1</b>	1. Plan and design survey methods, sample design and questionnaires to ensure efficient pre-survey activities.	Domain Expertise & Professional Knowledge	Sampling design skills	<ul style="list-style-type: none"> <li>- Demonstrates sound knowledge and understanding of sampling concepts, principles and methods to carry out effective pre-survey activities.</li> <li>- Applies sampling concepts, principles and methods at work.</li> <li>- Always communicates, clarifies and guides on sampling concepts, principles and methods at work.</li> </ul>
	2. Supervise field data collection, cleaning & validation to ensure data quality.		Data quality & management skills	<ul style="list-style-type: none"> <li>- Demonstrates knowledge on survey designs/instruments to capture information.</li> <li>- Demonstrates abilities to develop survey instrument and design data interface to capture information (e.g. Computer Assisted Personal Interviewing) including data inconsistency checks (e.g. encoding, cleaning, validation, etc) at work.</li> <li>- Always recommends and provides directives to improve the quality of data.</li> </ul>
	3. Plan, coordinate, compile and validate secondary data for official statistics.		Data archiving skills	<ul style="list-style-type: none"> <li>- Demonstrates the understanding and knowledge for data archiving.</li> </ul>
	4. Plan, coordinate and facilitate statistical activities (e.g. data gaps, data duplication, inconsistencies, etc) to ensure data quality.			
	5. Archives data for indepth analysis and for sharing			

	with clients.			<ul style="list-style-type: none"> <li>- Provides effective data archiving services for data back-up and sharing with clients.</li> <li>- Directs and recommends innovative ideas for the improvement of data archival system.</li> </ul>
			Data anonymization skills	<ul style="list-style-type: none"> <li>- Demonstrates clear understanding of the ethical aspects of data.</li> <li>- Effectively shares meta-data and facilitates the data accessibility to users by maintaining confidentiality and data disclosure in accordance with statistical codes and conduct.</li> <li>- Directs and provides innovative ideas and recommendations for data confidentiality and protection.</li> </ul>

**Key Role 2- Data Analyst**

2	<ol style="list-style-type: none"> <li>1. Data processing, analysis and report writing for official statistics.</li> <li>2. Proactively identify and provide relevant statistics for evidence-based decision making.</li> <li>3. Conduct thematic research on important national issues for necessary government interventions.</li> <li>4. Publish economic, social and environment statistics.</li> </ol>	Domain Expertise & Professional Knowledge	General Statistical Knowledge and Skills	<ul style="list-style-type: none"> <li>- General awareness and knowledge on statistics.</li> <li>- Comprehends, interprets and produce appropriate analysis to meet data demand for policy and planning.</li> <li>- Demonstrates the abilities to manage, supervise, monitor and direct proper and relevant statistical reports.</li> </ul>
			Analytical Skills and Software Knowledge	<ul style="list-style-type: none"> <li>- Understands and Demonstrates good knowledge of statistical techniques and tools for analytical purposes.</li> <li>- Effectively applies statistical techniques and shows proficient use of statistical tools to analyse data for evidence-based decision making.</li> </ul>

				<ul style="list-style-type: none"> <li>- Guides and mentors on advanced statistical techniques and tools.</li> </ul>
			Report writing skills	<ul style="list-style-type: none"> <li>- Demonstrates basic understanding of statistical report writing skills.</li> <li>- Formulates and prepares comprehensive and appropriate statistical reports.</li> <li>- Demonstrates professional level of report writing skills and be able to guide, mentor junior level officials.</li> </ul>
			Research Skills	<ul style="list-style-type: none"> <li>- Demonstrates sound knowledge on applied research.</li> <li>- Effectively applies research skills and knowledge for policy and planning.</li> <li>- Be able to advise on advance research techniques.</li> </ul>
			Specialist skills for economic statistics	<ul style="list-style-type: none"> <li>- Demonstrates understanding of economic statistics and its application.</li> <li>- Effectively compiles and publishes economic statistics.</li> <li>- Guides and advises on the subject matter.</li> </ul>
			Specialist skills for social statistics	<ul style="list-style-type: none"> <li>- Demonstrates understanding of social statistics and its application.</li> <li>- Effectively compiles and publishes social statistics.</li> <li>- Guides and advises on the subject matter.</li> </ul>

			Specialist skills for environmental statistics	<ul style="list-style-type: none"> <li>- Demonstrates understanding of environmental statistics and its application.</li> <li>- Effectively compiles and publishes environmental statistics.</li> <li>- Guides and advises on the subject matter.</li> </ul>
<b>Key Role 3- Data Advocate</b>				
<b>3</b>	<ol style="list-style-type: none"> <li>1. Disseminate statistical findings for improved decision making</li> <li>2. Advocate statistical concepts, findings and its importance for evidence-based decision making</li> </ol>	Domain Expertise & Professional Knowledge	Data Dissemination Skills	<ul style="list-style-type: none"> <li>- Demonstrates sound knowledge on the subject area.</li> <li>- Applies subject knowledge and effectively train relevant stakeholders (data producers and data users).</li> <li>- Effectively disseminates statistical findings through effective communication and appropriate presentation.</li> </ul>
	<ol style="list-style-type: none"> <li>3. Provide technical backstopping to ensure quality statistical publications.</li> <li>4. Regulate and monitor survey compliance to ensure quality of data collected and produced.</li> </ol>	Survey Regulatory & Compliance	Specialists skills for Survey & Sampling	<ul style="list-style-type: none"> <li>- Demonstrates knowledge on survey processes including questionnaire designs and its adequacy.</li> <li>- Provides technical support to line ministries/agencies where necessary to ensure that information collected are of high quality.</li> <li>- Proactively provides recommendations on the survey clearance proposal.</li> </ul>
<b>For all three key roles</b>				
		Leadership skills	Communication skills	<ul style="list-style-type: none"> <li>- Expresses the objectives of data collection and statistical findings / results in a very clear, concise, and effective manner.</li> </ul>

				<ul style="list-style-type: none"> <li>- Effectively communicates to the data providers and data users on the importance of statistics for evidence-based decision making.</li> <li>- Able to train key stakeholders (data providers, data users, enumerators/supervisors, etc.) on statistical concepts, definitions and methods.</li> </ul>
			Coaching and mentoring skills	<ul style="list-style-type: none"> <li>- Demonstrates abilities to guide and support junior level officials.</li> <li>- Ensures succession plan for continuity and effective service delivery.</li> <li>- Ensures continued professional development of the staff.</li> </ul>
			Teamwork and collaboration skills	<ul style="list-style-type: none"> <li>- Demonstrates team work and collaboration with relevant stakeholders.</li> <li>- Promotes stakeholder engagement and ensures sustained collaboration.</li> <li>- Promotes dynamism and establishes network of peer outside the NSB to enable exchange of required information.</li> </ul>

## Annexure-II: Proficiency Levels

S/N	Key Role Description	Competency Area	Key Competency	Behaviour Indicators	Proficiency Levels	Behaviour Indicators
<b>Key Role 1- Data Manager</b>						
1	<p>1. Plan and design survey methods, sample design and questionnaires to ensure efficient pre-survey activities.</p> <p>2. Supervise field data collection, cleaning &amp; validation to ensure data quality.</p>	Domain Expertise & Professional Knowledge	Sampling design skills	<ul style="list-style-type: none"> <li>- Demonstrates sound knowledge and understanding of sampling concepts, principles and methods to carry out effective pre-survey activities.</li> <li>- Applies sampling concepts, principles and methods at work.</li> <li>- Always communicates, clarifies and guides on sampling concepts, principles and methods at work.</li> </ul>	Expert (P1)	Directs, supervises, trains and guides on the sampling concepts, principles and methods. Identifies and adapts best practices of the sampling methods.

<p>3. Plan, coordinate, compile and validate secondary data for official statistics.</p> <p>4. Plan, coordinate and facilitate statistical activities (e.g. data gaps, data duplication, inconsistencies, etc) to ensure data quality.</p> <p>5. Archives data for indepth analysis and for sharing with clients.</p>				<p>Advanced (P2)</p>	<p>Implements, communicates and clarifies on sampling concepts, principles and methods and provide guidance to subordinates to achieve goals and targets.</p>
				<p>Experienced (P3)</p>	<p>Demonstrates understanding of sampling concepts, principles and methods and implement it at work.</p>

				Entry (P4)	Demonstrates understanding of concepts, principles and sampling methods.
		Data quality & management skills	<ul style="list-style-type: none"> <li>- Demonstrates knowledge on survey designs/instruments to capture information.</li> <li>- Demonstrates abilities to develop survey instrument and design data interface to capture information (e.g. Computer Assisted Personal Interviewing) including data inconsistency checks (e.g. encoding, cleaning, validation, etc) at work.</li> <li>- Always recommends and provides directives to improve the quality of data.</li> </ul>	Expert (P1)	Recommends best practices and provides directives to improve the quality of data.
				Advanced (P2)	Researches and proposes ways to improve the quality of data and train sub-ordinates/enumerators on the survey designs/instrument.
				Experienced (P3)	Identifies and conducts the data inconsistency checks and seeks ways to improve the quality of data.
				Entry (P4)	Understands and implements the data management skills including design of survey instrument.

			Data archiving skills	<ul style="list-style-type: none"> <li>- Demonstrates the understanding and knowledge for data archiving.</li> <li>- Provides effective data archiving services for data back-up and sharing with clients.</li> <li>- Directs and recommends innovative ideas for the improvement of data archival system.</li> </ul>	Expert (P1)	Guides, leads and recommends innovative ideas for the development of data archiving.
					Advanced (P2)	Recommends the best practices of data archival and provide in-depth knowledge of digital data preservation.
					Experienced (P3)	Understands a thorough knowledge of the data archiving, implements and manages the system at work.
					Entry (P4)	Understands the data archiving system and demonstrates knowledge of software for digital data record keeping.
			Data anonymization skills	<ul style="list-style-type: none"> <li>- Demonstrates clear understanding of the ethical aspects of data.</li> <li>- Effectively shares meta-data and facilitates the data accessibility to users by maintaining confidentiality and data disclosure in accordance with statistical codes and conduct.</li> <li>- Directs and provides innovative ideas and recommendations for data confidentiality and protection.</li> </ul>	Expert (P1)	Produces innovative solutions to satisfy data confidentiality and protection requirements.
					Advanced (P2)	Offers a convincing rationale and makes a strong case to data users on data disclosure and confidentiality.
					Experienced (P3)	Understands and upholds the ethical aspects of data including effective communication to data users.
					Entry (P4)	Understands and upholds the ethical aspects of data.

**Key Role 2- Data Analyst**

2	1. Data processing, analysis and report writing for official statistics. 2. Proactively identify and provide relevant statistics for evidence-based decision making.	Domain Expertise & Professional Knowledge	General Statistical Knowledge and Skills	- General awareness and knowledge on statistics.	Expert (P1)	Manages, supervises, monitors and directs statistical activities.
				- Comprehends, interprets and produce appropriate analysis to meet data demand for policy and planning.	Advanced (P2)	Conduct in-depth data analysis, adequately interprets the statistical results and validate to meet emerging data demands.
				- Demonstrates the abilities to manage, supervise, monitor and direct proper and relevant statistical reports.	Experienced (P3)	Reviews the accuracy and legitimacy to conduct in-depth data analysis and adequately interpret statistical results.
					Entry (P4)	Demonstrates awareness and general knowledge on statistics and how to conduct and interpret basic statistics.
	3. Conduct thematic research on important national issues for necessary government interventions 4. Publish economic, social and environment	Domain Expertise & Professional Knowledge	Analytical Skills and Software Knowledge	- Understands and Demonstrates good knowledge of statistical techniques and tools for analytical purposes.	Expert (P1)	Leads, provides and recommends innovative ideas and best statistical practices to improve analytical skills.
				- Effectively applies statistical techniques and shows proficient use of statistical tools to analyse data for evidence-based decision making.	Advanced (P2)	Guides, mentors and trains subordinates on advance statistical techniques and tools
				- Guides and mentors on advanced statistical techniques and tools.	Experienced (P3)	Applies advance statistical techniques (statistical theories) to generate statistical tables using statistical tools
					Entry (P4)	Domenestrates awareness on statistical tools (SPSS/STATA/R...) for generating statistical tables, graphs, etc.
			Report writing skills	- Demonstrates basic understanding of	Expert (P1)	Identifies data requirements, survey or census activities and prepares annual statistical work

statistics.			<p>statistical report writing skills.</p> <ul style="list-style-type: none"> <li>- Formulates and prepares comprehensive and appropriate statistical reports.</li> <li>- Demonstrates professional level of report writing skills and be able to guide, mentor junior level officials.</li> </ul>		plans, time frame and set objectives.	
				Advanced (P2)	Assess, reviews and verifies statistical reports for publication.	
				Experienced (P3)	Demonstrates professional report writing skills and prepares statistical report	
				Entry (P4)	Demonstrates basic understanding of statistical report writing skills	
			Research Skills	<ul style="list-style-type: none"> <li>- Demonstrates sound knowledge on applied research.</li> <li>- Effectively applies research skills and knowledge for policy and planning.</li> <li>- Be able to advise on advance research techniques.</li> </ul>	Expert (P1)	Interprets and advises on the advanced research, statistical modelling concepts and methods.
					Advanced (P2)	Ensures integrity, accuracy and completeness of research findings in compliance with best international practices.
					Experienced (P3)	Identifies potential research issues and conducts thematic study.
					Entry (P4)	Applies basic research skills to draw meaningful findings.
			Specialist skills for economic statistics	<ul style="list-style-type: none"> <li>- Demonstrates understanding of economic statistics and its application.</li> <li>- Effectively compiles and publishes economic statistics.</li> </ul>	Expert (P1)	Advises, leads and provides innovative ideas on the development of economic related statistics. Should have the skills to be recognized as a resource person in this area.
					Advanced (P2)	Appreciates economic statistics and identifies data gap for

				- Guides and advises on the subject matter.		improvement.
					Experienced (P3)	Understands how to compile economic statistics and produces the related statistics.
					Entry (P4)	Understands basic application of economic statistics (e.g. price indexes, national accounts statistics, etc.)
		Specialist skills for social statistics	- Demonstrates understanding of social statistics and its application.  - Effectively compiles and publishes social statistics.  - Guides and advises on the subject matter.		Expert (P1)	Leads, directs and advises on the development of social related statistics and have skills to be a resource person in this area.
					Advanced (P2)	Evaluates the weaknesses of the current social related statistics and recommends for improvement.
					Experienced (P3)	Compiles, produces and presents social statistics.
					Entry (P4)	Understands how social statistics (Education, health & demography, unemployment, etc.) are compiled and its application.
		Specialist skills for environmental statistics	- Demonstrates understanding of environmental statistics and its application.  - Effectively compiles and publishes environmental statistics.  - Guides and advises on the		Expert (P1)	Leads, directs and advises on the development of environmental related statistics and have skills to be a resource person in this area.
					Advanced (P2)	Evaluates the weaknesses of the current environmental related statistics and recommends for improvement.
					Experienced (P3)	Compiles, produces and presents environmental statistics.

				subject matter.	Entry (P4)	Understands how environmental statistics are compiled and its application.
<b>Key Role 3- Data Advocate</b>						
<b>3</b>	1. Disseminate statistical findings for improved decision making.	Domain Expertise & Professional Knowledge	Data Dissemination Skills	<ul style="list-style-type: none"> <li>- Demonstrates sound knowledge on the subject area.</li> <li>- Applies subject knowledge and effectively train relevant stakeholders (data producers and data users).</li> <li>- Effectively disseminates statistical findings through effective communication and appropriate presentation.</li> </ul>	Expert (P1)	Analyses, explores and recommends application of subject knowledge to effectively disseminate statistical findings. Advises and guides the management on the use of appropriate disseminate channels.
	2. Advocate statistical concepts, findings and its importance for evidence-based decision making.				Advanced (P2)	Verifies, checks and recommends dissemination channels for statistical findings for better informed society.
	3. Provide technical backstopping to ensure quality statistical publications				Experienced (P3)	Demonstrates a thorough knowledge on the statistical processes, findings and disseminates to relevant stakeholders.
					Entry (P4)	Disseminates statistical findings to relevant stakeholders.
	4. Regulate and monitor survey compliance	Survey Regulatory & Compliance	Specialists skills for Survey & Sampling	<ul style="list-style-type: none"> <li>- Demonstrates knowledge on survey processes including questionnaire designs and its adequacy.</li> <li>- Provides technical support to line ministries/agencies where necessary to ensure that information collected are of high quality.</li> </ul>	Expert (P1)	Advises the management on the survey compliance mechanism, ensures and institutes strong internal mechanism to monitor survey compliance.
					Advanced (P2)	Verifies and ensures survey compliance. Proposes a strong internal mechanism to monitor survey compliance.
					Experienced (P3)	Reviews survey proposals and recommends for improvement to

	to ensure quality of data collected and produced.			<ul style="list-style-type: none"> <li>- Proactively provides recommendations on the survey clearance proposal.</li> </ul>		the Agencies/Ministries.
					Entry (P4)	Demonstrates understanding of concepts, principles, sampling methods and compiles the survey clearance proposals.

## Annexure-III: Summary of current performance gap by Position Levels

Competency Area	Key Competency	Grand Total No. of BIs	No. of Competent BIs					No. of not Competent BIs				
			Entry( P4)	Experienced (P3)	Advance (P2)	Expert( P1)	Total	Entry( P4)	Experienced (P3)	Advance (P2)	Expert( P1)	Total
<b>Key Role 1- Data Manager</b>												
Domain Expertise & Professional Knowledge	Sampling design skills	4	0	0	0	1	1	1	1	1	0	3
	Data quality & management skills	4	0	0	0	0	0	1	1	1	1	4
	Data archiving skills	4	0	0	0	0	0	1	1	1	1	4
	Data anonymization skills	4	0	0	0	0	0	1	1	1	1	4
<b>Key Role 2- Data Analyst</b>												
Domain Expertise & Professional Knowledge	General Statistical Knowledge and Skills	4	1	1	1	1	4	0	0	0	0	0
	Analytical Skills and Software Knowledge	4	0	0	1	1	2	1	1	0	0	2
	Report writing skills	4	0	0	0	1	1	1	1	1	0	3
	Research Skills	4	0	0	0	0	0	1	1	1	1	4
	Specialist skills for economic statistics	4	0	0	0	0	0	1	1	1	1	4
	Specialist skills for social statistics	4	0	0	1	1	2	1	1	0	0	2

	Specialist skills for environmental statistics	4	0	0	1	1	2	1	1	0	0	2
<b>Key Role 3- Data Educator</b>												
Domain Expertise & Professional Knowledge	Data Dissemination Skills	4	0	0	0	0	0	1	1	1	1	4
	Specialists skills for Survey & Sampling	4	0	0	0	1	1	1	1	1	0	3
<b>For all 3-Key Roles</b>												
Leadership Skills	Communication skills	4	0	0	1	1	2	1	1	0	0	2
	Coaching and Mentoring skills	4	0	0	0	0	0	1	1	1	1	4
	Teamwork and collaboration skills	4	0	0	1	1	2	1	1	0	0	2
<b>Total</b>	<b>16</b>	<b>64</b>	<b>1</b>	<b>0</b>	<b>6</b>	<b>9</b>	<b>16</b>	<b>15</b>	<b>15</b>	<b>10</b>	<b>7</b>	<b>47</b>
<b>%</b>			<b>1.56</b>	<b>-</b>	<b>9.38</b>	<b>14.06</b>	<b>25.00</b>	<b>23.44</b>	<b>23.44</b>	<b>15.63</b>	<b>10.94</b>	<b>73.44</b>

## Annexure-IVa: Training Need Analysis (Short-term related)

Key Competency	Proficiency Levels	Likely reason for performance gap	Method of Intervention	Learning Objective	Priority			Training Institute	No of Participants	Tentative Cost Estimate (in Million BTN.)	Remarks
					Immediate (2020-21)	Medium (2022-23)	Long-term (2024+)				
<b>Key Role 1-Data Manager</b>											
Sampling design skills	Advanced (P2)	lack required knowledge and skills on sampling.	Study Visits /Workshops/Conferences on effective sampling methods and application	Prepare and equip them with the concepts, principles and methods of sampling	5	5	5	Ex-country	15	11.27	If held in India
	Experienced (P3)	lack required knowledge and skills on sampling.	Training on sampling methods & application	Prepare and equip them with the concepts, principles and methods of sampling	5	-	-	In-country	5	0.22	If held in Phuentsholing
	Entry (P4)	No prior application of knowledge and experience related to concepts, principles and methods of sampling	Training on sampling methods & application	Prepare and equip them with the concepts, principles and methods of sampling	10	-	-	In-country	10	0.44	If held in Phuentsholing
Data quality and management skills	Expert (P1)	Lack of required skills and knowledge on data quality & management	Study Visits /Workshops/Conferences on best practices on data quality management.	Provide exposure and introduce to best practices related to best statistical practices and processes		5		Ex-country	5	3.76	If held in India
	Advanced (P2)	Lack of required skills and knowledge on data quality & management	Study Visits /Workshops/Conferences on best practices on data quality	Provide exposure and introduce to best practices related to	5	5	5	Ex-country	15	11.27	If held in India

			management.	best statistical practices and processes							
	Experienced (P3)	Lack of required skills and knowledge on data quality & management	<ul style="list-style-type: none"> <li>- Training on CAPI/Survey Solution/CSPro to design data interface for data collection.</li> <li>- Training on data mining &amp; management.</li> <li>- Training on Big data &amp; data science.</li> </ul>	Discuss and debate on existing data related issues, gaps and how to improve upon	5	-	-	Ex-country	5	3.76	If held in India
	Entry (P4)	Lack of required skills and knowledge on survey instrument (e.g. CAPI/Survey solution/CSPro/etc.)	<ul style="list-style-type: none"> <li>- Training on CAPI/Survey Solution/CSPro to design interface for data collection.</li> <li>- Training on data mining &amp; management.</li> <li>- Training on Big data &amp; data science.</li> </ul>	Building capacity on how to design survey instrument like CAPI/Survey solution/CSPro.	10	-	-	Ex-country	10	7.52	If held in India
Data archiving skills	Expert (P1)	lack of domain expertise on data archiving	Study visit/workshops/conferences on data archiving or digital archival system including incorporation of innovative ideas.	To guide, lead and recommend better ideas for the development of data archiving system.	5	-	-	Ex-country	5	3.76	If held in India

	Advanced (P2)	lack of domain expertise on data archiving	Study visit/workshops/conferences on data archiving or digital archival system including incorporation of innovative ideas.	To enhance the capacity to build robust and comprehensive data repository system.	5	5	5	Ex-country	15	11.27	If held in India
	Experienced (P3)	lack of capacity/expertise on how to design data archiving system.	Training on designing data archiving system.	To learn how to design data archiving system by incorporating latest softwares.	-	5	-	Ex-country	5		
	Entry (P4)	lack of adequate knowledge and skills on data archiving.	Training on data archiving or digital archival system including incorporation of innovative ideas.	To learn the importance of data archiving and how to apply at work.	-	10	-	Ex-country	10	7.52	If held in India
Data anonymization skills	Expert (P1)	lacks adequate knowledge on data confidentiality and data disclosure methods.	Study visit/workshop/conferences on data anonymization, confidentiality and data disclosure.	To enhance the capacity to lead, guide and mentor junior officials on the data disclosure and confidentiality.	5	-	-	Ex-country	5	3.76	If held in India
	Advanced (P2)	lacks adequate knowledge on data confidentiality and data disclosure methods.	Study visit/workshop/conferences on data anonymization, confidentiality and data disclosure.	To enhance the capacity to lead, guide and mentor junior officials on the data disclosure and confidentiality.	5	5	5	Ex-country	15	11.27	If held in India

	Experienced (P3)	lacks adequate knowledge on data confidentiality and data disclosure methods.	Training on data anonymization, confidentiality, data disclosure and integrity.	To enhance the capacity to uphold the ethical aspects of data such as confidentiality and data disclosure.	-	5	-	Ex-country	5	3.76	If held in India
	Entry (P4)	lacks adequate knowledge on data confidentiality and data disclosure methods.	Training on data anonymization, confidentiality, data disclosure and integrity.	To enhance the capacity to uphold the ethical aspects of data such as confidentiality and data disclosure.	-	10	-	Ex-country	10	7.52	If held in India
<b>Key Role 2- Data Analyst</b>											
Analytical skills and software knowledge	Experienced (P3)	Lack of knowledge on advance statistical techniques	<ul style="list-style-type: none"> <li>- Training on Statistical softwares/tools such as STATA, SPSS, R-studio, Python, machine learning, etc.</li> <li>- Training on advanced statistical techniques</li> </ul>	Enhance capacity to apply statistical techniques at work.	5	-	-	In-country	5	0.22	If held in Phuentsholing
	Entry (P4)	<ul style="list-style-type: none"> <li>- Officials in the entry level have no hands-on or practical experience on the use of statistical softwares.</li> <li>- Lack of</li> </ul>	Training on Statistical softwares/tools such as STATA, SPSS, R-studio, Python, machine learning, etc.	Enhance capacity to analyze data and bring in diverse views into the national statistical system.	10	-	-	In-country	10	0.44	If held in Phuentsholing

		practical use of statistical tools in the undergraduate courses.									
Report writing skills	Advanced (P2)	Lack of adequate report writing skills	Training on professional report writing	Enhance capacity to write report professionally	5	5	5	Ex-country	15	11.27	If held in India
	Experienced (P3)	Lack of adequate report writing skills	Training on professional report writing	Enhance capacity to write report professionally	5	-	-	Ex-country	5	3.76	If held in India
	Entry (P4)	Lack of adequate report writing skills	Training on professional report writing	Enhance capacity to write report professionally	-	10	-	Ex-country	10	7.52	If held in India
Research skills	Expert (P1)	Lack of refresher courses to keep abreast with the advanced research techniques.	Training/Study visits to learn advanced research methods.	Update the participants with new approaches to research methods, and upon return guides, mentors and advises subordinates at work.	-	-	5	Ex-country	5	3.76	If held in India
	Advanced (P2)	Lack of refresher courses to keep abreast with the advanced research techniques.	Training on advanced research methods.	Update the participants with new approaches to research methods and apply at work.	-	15	-	Ex-country	15	11.27	If held in India
	Experienced (P3)	lack of research skills.	- Training on basic research methods - Training on	Understand different research methods and Learn to	-	5	-	Ex-country	5	3.76	If held in India



			etc.). - Trainings on relevant field (national accounts/price statistics) for new recruit.								
	Experienced (P3)	Lack of knowledge on economic statistics, concept, definitions and how these statistics are compiled.	Training on compilation and application of economic statistics (e.g. price statistics, national accounts statistics, agriculture statistics, etc.).	Understand different approaches and methods to compile economic statistics.	5	-	-	In-country	5	0.22	If held in Phuentsholing
	Entry (P4)	Lack of knowledge on the application of economic statistics.	Training on compilation and application of economic statistics (e.g. price statistics, national accounts statistics, agriculture statistics, etc.).	Understand different approaches and methods to compile economic statistics.	3	3	4	In-country	10	0.44	If held in Phuentsholing
Specialist skills for social statistics	Experienced (P3)	Lack of refresher courses to keep abreast to compile the relevant environmental statistics.	Training on compilation and application of social statistics (e.g. labour, health, education, demography, population studies, poverty, inequality, gender, etc.)	Understand different approaches and methods to compile social statistics.	5	-	-	In-country	5	0.22	If held in Phuentsholing
	Entry (P4)	Lack of knowledge on the application of environmental statistics.	Training on compilation and application of social statistics (e.g. labour, health, education,	Understand different approaches and methods to compile social	3	3	-	In-country	10	0.44	If held in Phuentsholing

			demography, population studies, poverty, inequality, gender, etc.)	statistics.							
Specialist skills for environment statistics	Experienced (P3)	Lack of refresher courses to keep abreast to compile the relevant environmental statistics.	Training on compilation and application of environmental statistics (e.g. environmental accounts statistics, resource economics statistics, climate change statistics, etc.).	Understand different approaches and methods to compile environmental statistics.	5	-	-	In-country	5	0.22	If held in Phuentsholing
	Entry (P4)	Lack of knowledge on the application of environmental statistics.	Training on compilation and application of environmental statistics (e.g. environmental accounts statistics, resource economics statistics, climate change statistics, etc.).	Understand different approaches and methods to compile environmental statistics.	3	3	4	In-country	10	0.44	If held in Phuentsholing
<b>Key Role 3- Data Advocate</b>											
Data dissemination skills	Expert (P1)	Lack required dissemination skills.	Study visit/workshop/conferences on effective dissemination tools and the use of appropriate channels.	w	-	5	-	Ex-country	5	3.76	If held in India
	Advanced (P2)	Lack required dissemination skills.	Study visit/workshop/conferences on effective dissemination	To build capacity to effectively communicate with relevant	5	5	5	Ex-country	15	11.27	If held in India

			tools and the use of appropriate channels.	stakeholders to disseminate statistical findings							
	Experienced (P3)	Lack required dissemination skills.	<ul style="list-style-type: none"> <li>- Training/workshop on data literacy/dissemination.</li> <li>- Training on data visualisation tools such as Tableau, GIS, Rshiny.</li> </ul>	To build capacity to effectively communicate with relevant stakeholders to disseminate statistical findings	-	5	-	In-country	5	0.22	If held in Phuentsholing
	Entry (P4)	Entry officials lack dissemination skills.	<ul style="list-style-type: none"> <li>- Training/workshop on data literacy/dissemination.</li> <li>- Training on data visualisation tools such as Tableau, GIS, Rshiny.</li> </ul>	To build capacity to effectively communicate with relevant stakeholders to disseminate statistical findings	3	3	4	In-country	10	0.44	If held in Phuentsholing
Specialists skills for Survey & Sampling	Advanced (P2)	lack of monitoring mechanism on the survey compliance.	Training on system design to institute proper internal mechanism to supervise and monitor timely compliance.	To ensure survey/censuses compliance for quality statistics.	5	5	5	Ex-country	15	11.27	If held in India
	Experienced (P3)	lack required knowledge and skills on sampling.	Training on sampling methods & application	Prepare and equip them with the concepts, principles and methods of sampling	5	-	-	In-country	5	0.22	If held in Phuentsholing
	Entry (P4)	No prior application of knowledge and	Training on sampling methods & application	Prepare and equip them with the	10	-	-	In-country	10	0.44	If held in Phuentsholing

		experience related to concepts, principles and methods of sampling		concepts, principles and methods of sampling							
<b>For all three key roles</b>											
Communication Skills	Experienced (P3)	Lack of effective communication skills	Training on effective communication & presentation	Learn effective communication to impart statistical knowledge and its significance	5	-	-	In-country	5	3.76	If held in India
	Entry (P4)	Lack of effective communication skills	Training on effective communication & presentation	Learn effective communication to impart statistical knowledge and its significance	-	-	10	Ex-country	10	7.52	If held in India
Coaching and mentoring skills	Expert (P1)	Lack of implementation of coaching and mentoring support system.	<ul style="list-style-type: none"> <li>- Training on coaching and mentoring.</li> <li>- Training on strategic thinking and management.</li> </ul>	To educate and learn on effective coaching and mentoring methods to guide junior level officials.	5	-	-	In-country	5	0.22	If held in Phuentsholing
	Advanced (P2)	Lack of implementation of coaching and mentoring support system.	Training on coaching and mentoring.	To educate and learn on effective coaching and mentoring methods to guide junior level officials.	5	5	5	In-country	15	0.66	If held in Phuentsholing
	Experienced (P3)	Lack of implementation of coaching and mentoring support system.	Training on coaching and mentoring.	Assigning senior level officials as mentors will help the	5	-	-	In-country	5	0.22	If held in Phuentsholing

				junior officials will ensure their professional development.							
	Entry (P4)	Lack of implementation of coaching and mentoring support system.	Assign mentors to entry level officials.	Assigning senior level officials as mentors will help the junior officials will ensure their professional development.	3	3	4	In-country	10	0.44	If held in Phuentsholing
Teamwork and collaboration skills	Experienced (P3)	Lack of financial resources to organize regular coordination meetings/workshops to address data issues.	Training on effective project proposal writing.	Regular financial supports are critical to sustain regular coordination meetings/workshops to address data issues with relevant stakeholders. Officials will have ideas on how to write effective project proposal.	5	-	-	In-country	5	0.22	If held in Phuentsholing
	Entry (P4)	Entry level officials are not aware of the existing statistical system and therefore not able to maintain network outside NSB.	Provide induction to new entrants on the Bhutan Statistical System.	To orient new entrants on the national statistical system and eventually builds network outside NSB.	3	3	4	In-country	10	0.44	If held in Phuentsholing

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		<b>TOTAL</b>		<b>173</b>	<b>153</b>	<b>80</b>		<b>410</b>	<b>194.65</b>	
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## Annexure-IVb: Training Need Analysis (Long-term related)

Methods of intervention	Level of Training	Priority			Total Slots
		Immediate (2020-2021)	Medium (2022-2023)	Long Term (2024+)	
Statistics/Applied Statistics/Statistical Science	Masters Degree/PhD	1	1	2	4
Statistics (Statistical Modelling)	Masters Degree	-	1	-	1
Statistics (Bio-statistics/Public-health statistics)	Masters Degree	-	1	-	1
Statistics (Machine Learning)	Masters Degree	-	-	1	1
Statistics (Data mining)	Masters Degree	-	1	-	1
Statistics (Sampling)	Masters	1	-	-	1
Statistics (Data Science)	Masters Degree	-	-	1	1
Economics	Masters Degree/PhD	-	-	1	1
Economics (Development economics)	Masters Degree	-	1	-	1
Economics (Labour economics)	Masters Degree	-	-	1	1
Economics (Environmental economics)	Masters Degree	-	-	1	1
Economics (Econometrics)	Masters Degree	1	-	1	2
Economics (Agriculture Economics)	Masters Degree	1	-	-	1
GIS (Spatial data/Geospatial Science)	Masters Degree	-	-	1	1
Demography/Population studies	Masters Degree/PhD	-	1	-	1
<b>TOTAL</b>		<b>4</b>	<b>6</b>	<b>9</b>	<b>19</b>