

# DIGITALES ARCHIV

ZBW – Leibniz-Informationszentrum Wirtschaft  
*ZBW – Leibniz Information Centre for Economics*

## Periodical Part

### Integrated business enterprise survey ; 2016

#### Provided in Cooperation with:

National Institute of Statistics of Rwanda (NISR) , Kigali City

*Reference:* Integrated business enterprise survey ; 2016 (2018).

This Version is available at:

<http://hdl.handle.net/11159/2469>

#### Kontakt/Contact

ZBW – Leibniz-Informationszentrum Wirtschaft/Leibniz Information Centre for Economics  
Düsternbrooker Weg 120  
24105 Kiel (Germany)  
E-Mail: [rights\[at\]zbw.eu](mailto:rights[at]zbw.eu)  
<https://www.zbw.eu/econis-archiv/>

#### Standard-Nutzungsbedingungen:

Dieses Dokument darf zu eigenen wissenschaftlichen Zwecken und zum Privatgebrauch gespeichert und kopiert werden. Sie dürfen dieses Dokument nicht für öffentliche oder kommerzielle Zwecke vervielfältigen, öffentlich ausstellen, aufführen, vertreiben oder anderweitig nutzen. Sofern für das Dokument eine Open-Content-Lizenz verwendet wurde, so gelten abweichend von diesen Nutzungsbedingungen die in der Lizenz gewährten Nutzungsrechte.

<https://zbw.eu/econis-archiv/termsfuse>

#### Terms of use:

*This document may be saved and copied for your personal and scholarly purposes. You are not to copy it for public or commercial purposes, to exhibit the document in public, to perform, distribute or otherwise use the document in public. If the document is made available under a Creative Commons Licence you may exercise further usage rights as specified in the licence.*



The Republic of Rwanda



IBES

Integrated Business  
Enterprise Survey

- 2016 -



The Republic of Rwanda



# Integrated Business Enterprise Survey

## IBES 2016

### June 2018



The Integrated Business Enterprise Survey 2016 (IBES 2016) report is produced by the National Institute of Statistics of Rwanda (NISR).

Additional information about The Integrated Business Enterprise Survey in Rwanda 2016 (IBES 2016) report may be obtained from NISR:

P.O. Box 6139, Kigali, Rwanda; Telephone: (250) 252 571 035

E-mail: [info@statistics.gov.rw](mailto:info@statistics.gov.rw); Website: <http://www.statistics.gov.rw>

Recommended citation:

National Institute of Statistics of Rwanda (NISR), The Integrated Business Enterprise Survey in Rwanda 2016 (IBES 2016) report, June 2018

## Foreword

The *Integrated Business Enterprise Survey in Rwanda 2016* (IBES 2016) is a comprehensive enterprise survey undertaken to collect, compile, and analyze data on the level and structure of non-agricultural economic activity in the country for both informal and formal sectors with the formal sector defined as those businesses registered with the Rwanda Revenue Authority (RRA). Also included in formal sector are those companies which keep business accounts and or have 30 or more employees. Data collection has been carried out by the National Institute of Statistics of Rwanda (NISR) from 24<sup>th</sup> August 2017 to 23<sup>rd</sup> February 2018 with the year 2016 as the reference period.

IBES addresses lack of business data and provide inputs vital to the formulation of government economic policy and the monitoring of performance against development goals, as well as providing information for the expansion of the business sector and market research. IBES 2016 has drawn crucial lessons from the previous survey rounds: IBES 2015, IBES 2014 and the pilot IBES 2013. These lessons have already been used to introduce improvements to the IBES 2016.

The survey targets all enterprises classified under Sections B to S of the International Standard Industrial Classification of All Economic Activities, Revision 4 (ISIC-4). It gathers detailed enterprise level data through questions on employment, compensation to workers, fixed assets, and background information such as location, ownership status, and business environment to mention but a few.

Conducting an enterprise survey constitutes a challenging and enriching experience, significantly improving NISR capacity to accomplish its mandate. NISR staff was involved in every aspect— the design, formulation of the questionnaire, implementation, data processing, and report writing. At least three levels of training were conducted, and instruction manual was written. NISR has conducted field visits to monitor data collection. Data editing was carried out simultaneously with data collection to ensure timely correction of any mistakes in data collection.

This report presents main results of the survey. It introduces the survey in Chapter 1, sample design in Chapter 2, and survey results in Chapter 3. Key concepts and data collection methodology are presented in Chapter 4.

  
Yusuf MURANGWA  
Director General, NISR





## **Acknowledgments**

The IBES 2016 report is the outcome of many months of cooperative effort of NISR staff. The project recognizes the leadership of NISR management at various stages of the survey, spearheading the monitoring of the progress of data collection during the actual survey period. Their suggestions and comments on the report are also acknowledged with thanks.

The Department of Economic Statistics coordinated the field operations and supplied clarifications on technical matters related to the survey. Special thanks are due to the technical committee members, who at all stages of the fieldwork visited enumerators to assess whether data collection guidelines were being followed and suggested remedial measures.

Recognition goes to all primary fieldworkers, all team leaders, data editors, and regional supervisors posted in different parts of the country. Commendations go to them for doing codification and data entry after fieldwork.

Dr. Mohamed Abulata has provided technical expertise to the project from the start of this project. Youll Plan Ltd has been instrumental in the development of survey methodology, including the construction of the survey instruments, instruction manual, tabulation plan, data analysis, and preparation of the report.

Grateful acknowledgments are also given to all formal and informal enterprises which have cooperated and therefore to whom we guarantee maximum confidentiality.





## Contents

FOREWORD .....	I
ACKNOWLEDGMENTS .....	III
LIST OF TABLES.....	VII
LIST OF FIGURES .....	X
LIST OF ABBREVIATIONS.....	XI
CHAPTER 1: INTRODUCTION .....	1
1.1 BUSINESS SURVEY .....	1
1.2 COVERAGE .....	1
1.3 SAMPLE SIZE .....	1
1.4 SCHEDULES, SURVEY PERIOD, FIELDWORK.....	1
1.5 INTERPRETING THE RESULTS .....	2
1.6 COMPARISON WITH THE NATIONAL ACCOUNTS .....	2
CHAPTER 2: SAMPLE DESIGN.....	5
2.1 SAMPLING FRAME.....	5
2.2 FORMAL SECTOR SAMPLE .....	5
2.3 FORMAL SECTOR ESTIMATION .....	6
2.4 INFORMAL SECTOR SAMPLE .....	9
2.5 INFORMAL SECTOR ESTIMATION .....	10
CHAPTER 3: BUSINESS ACTIVITY IN RWANDA - SURVEY FINDINGS.....	11
3.1 FORMAL SECTOR .....	11
3.1.1 FORMAL SECTOR OVERVIEW .....	11
3.1.2 FORMAL SECTOR RESULTS BY MAIN ECONOMIC ACTIVITY .....	19
3.1.3 BUSINESS ENVIRONMENT.....	61
3.2 INFORMAL SECTOR .....	78
CHAPTER 4: KEY CONCEPTS AND DATA COLLECTION METHODOLOGY.....	85
4.1 DISTINCTION BETWEEN ENTERPRISE AND ESTABLISHMENT .....	85
4.2 ACTIVITY COVERAGE AND LISTING OF ENTERPRISES.....	85
4.3 ITEMS OF INFORMATION AND RELATED CONCEPTS.....	85
APPENDIX 1: RWANDA CLASSIFICATION OF PRODUCTS BY ACTIVITY, LEVEL 2.....	88



## List of tables

Table 0.1: IBES key survey findings, 2014-2016.....	xiii
Table 0.2: Total Income and Expenditure, 2014-2016, Frw Billion.....	xiv
Table 2. 1: sampled NPISH from PAYE register.....	6
Table 2. 2: Calculation of final weights for sampled strata (IBES panel) .....	7
Table 2.3: Calculation of final weights for sampled NPISH.....	8
Table 2.4: Weights of business data .....	9
Table 3.1.1.1: Estimated total number of enterprises by province, formal sector .....	11
Table 3.1.1.2: Estimated number of enterprises by economic activity, formal sector.....	12
Table 3.1.1.3: Distribution of enterprises by ownership, formal sector.....	12
Table 3.1.1.4: Percentage of formal enterprises by size band within each activity, formal sector ..	14
Table 3.1.1.5: Percentage of formal enterprises by activity within each size band, formal sector.....	15
Table 3.1.1.6: Distribution of enterprises by economic activity and ownership, formal sector .....	16
Table 3.1 .7: Distribution of enterprises by age and main economic activity, formal sector .....	17
Table 3.1.1.8: Distribution of enterprises by age and size, formal sector .....	18
Table 3.1.1.9: Numbers of employees by gender and activity, formal sector.....	18
Table 3.1.2.1.1: Income statement for industry sector, Frw billion .....	22
Table 3.1.2.1.2: Expenditure statement for industry sector, Frw billion.....	23
Table 3.1.2.1.3: Summary assets of the industry sector, Frw billion.....	24
Table 3.1.2.1.4: Summary equity and liabilities, Frw billion .....	24
Table 3.1.2.1.5: Details of manufactured food, beverages and tobacco, Frw billion.....	25
Table 3.1.2.1.6: Details of goods produced or processed, Frw billion.....	26
Table 3.1.2.1.7: Purchases of raw materials, Frw billion .....	27
Table 3.1.2.1.8: Purchases of fuel for manufacturing, mining and quarrying, Frw billion .....	28
Table 3.2.2.1: Income statement for service sector, Frw billion .....	35
Table 3.1.2.2.2: Expenditure statement for services sector, Frw billion .....	37
Table 3.1.2.2.3: Summary statement by enterprise size for the services sector, Frw billion.....	38
Table 3.1.2.2.4: Summary assets of the services sector, Frw billion .....	38
Table 3.1.2.2.5: Details of goods sold in the same condition as purchased, Frw billion .....	40
Table 3.1.2.2.6: Details of transport, storage, travel and related services revenue, Frw billion.....	41
Table 3.1.2.2.7: Details of telecommunication services and internet connection, Frw billion .....	42
Table 3.1.2.2.8: Detailed revenue of legal, accounting, consulting and similar services, Frw billion...	42
Table 3.1.2.3.1: Income statement for financial sector, Frw billion .....	46
Table 3.1.2.3.2: Expenditure statement for financial sector, Frw billion .....	47
Table 3.1.2.3.3: Summary statement by enterprise size for the financial sector, Frw billion .....	47
Table 3.1.2.3.4: Summary assets of the financial sector, Frw billion.....	48
Table 3.1.2.3.5: Summary equity and liabilities of the financial sector, Frw billion .....	48
Table 3.2.4.1: Income statement for Education sector .....	50
Table 3.1.2.4.2: Expenditure statement for Education sector.....	51
Table 3.1.2.4.3: Summary statement by enterprise size for education sector, Frw billion.....	51
Table 3.1.2.5.1: Income statement for the health sector.....	54
Table 3.1.2.5.2: Expenditure statement for Health sector .....	54
Table 3.1.2.5.3: Summary statement by enterprise size for the health sector, Frw billion .....	55
Table 3.2.6.1: Income statement for NPISH sector, Frw billion.....	58
Table 3.1.2.6.2: Expenditure statement for NPISH sector, Frw billion .....	59

Table 3.1.2.7.1: Acquisition and disposal of fixed assets in 2016, Frw billion .....	61
Table 3.1.3.1: Ranking of factors by the level of their impact on business .....	62
Table 3.1.3.2: Average number of employees using a computer by economic activity .....	62
Table 3.1.3.3: Distribution of enterprises with internet connection by size .....	63
Table 3.1.3.4: Distribution of enterprises with internet connection by economic activity .....	63
Table 3.1.3.5: Distribution of enterprises by type of internet used .....	64
Table 3.1.3.6: Per cent distribution of enterprises by communication means used and enterprise size .....	64
Table 3.1.3.7: Distribution of enterprises by what internet is used for .....	65
Table 3.1.3.8: Percent distribution of enterprises by internet use enterprise size .....	65
Table 3.1.3.9: Distribution of enterprises economic activity and scraps or waste possession .....	66
Table 3.1.3.10: Percentage distribution of enterprises by type of scraps and waste and enterprise size .....	66
Table 3.1.3.11: Per cent distribution of enterprises by mode of disposal of scraps and waste .....	67
Table 3.1.3.12: Percentage distribution of enterprises by water source .....	67
Table 3.1.3.13: Distribution of enterprises by economic activity and whether they store water or not .....	68
Table 3.1.3.14: Per cent distribution of enterprises storing water by type of water storing device ...	68
Table 3.1.3.15: Distribution of enterprises by economic activity and firewood as a main source of energy .....	69
Table 3.1.3.16: Volume of firewood used by economic activity.....	69
Table 3.1.3.17: Volume of firewood used by enterprise size .....	70
Table 3.1.3.18: Capacity utilization mean in production units by economic activity in 2015 .....	70
Table 3.1.3.19: Capacity utilization mean of production units by enterprise size in 2015.....	70
Table 3.1.3.20: Distribution of enterprises that are underutilizing their capacity by economic activity .....	71
Table 3.1.3.21: Reasons of capacity underutilization .....	71
Table 3.1.3.22: Production units by whether they use Rwandan raw materials and by economic activity.....	72
Table 3.1.3.23: Production units using Rwandan raw materials by importance and economic activity .....	72
Table 3.1.3.24: Quality rating of Rwandan raw materials by economic activity .....	73
Table 3.1.3.25: Distribution of production units by whether they are connected to the national power grid or not .....	73
Table 3.1.3.26: National power grid units needing additional power in future by economic activity .	74
Table 3.1.3.27: Distribution of production units by number of power outages and economic activity .....	74
Table 3.1.3.28: Distribution of production units by length of power outages and by economic activity.....	75
Table 3.1.3.29: Distribution of enterprises by whether they exported in 2016 and by economic activity.....	75
Table 3.1.3.30: Distribution of enterprises by whether they exported in 2016 and by enterprise size .....	76
Table 3.1.3.31: Distribution of enterprises by reasons of not exporting.....	76
Table 3.1.3.32: Distribution of enterprises by financial services type used and by enterprise size .....	76

Table 3.1.3.33: Distribution of enterprises by the type of insurance use .....	77
Table 3.1.3.34: Distribution of enterprises by the ranking of their source of finance, 1 is the most important .....	77
Table 3.1.3.35: Distribution of enterprises by the type of start-up finance used .....	77
Table 3.1.3.36: Distribution of enterprises by used source of financing from 2011 to 2016 .....	78
Table 3.1.3.37: Distribution of enterprises that received 100 per cent of finance by negotiated source of finance, 2012-2016 .....	78
Table 3.2.1: Percentage distribution of informal enterprises by province and ownership1 .....	79
Table 3.2.2: Percentage distribution of informal enterprises by activity and ownership .....	80
Table 3.2.3: Percentage of total informal sector employees by gender and activity .....	81
Table 3.2.4: Percentage distribution of informal enterprises by size .....	82
Table 3.2.5: Percentage of employees by gender and size of informal enterprises .....	82
Table 3.2.6: Percentage distribution of informal enterprises by economic activity and TIN ownership .....	83
Table 3.2.7: Distribution of informal enterprises by economic activity and years in operations .....	84
Table 3.2.8: Percentage distribution of informal enterprises by enterprise size and years in operation .....	84

## List of figures

Chart 3.1.1.1: Distribution of enterprises by size (number of employees), formal sector .....	13
Chart 3.1.2.1.1: Distribution of industries shares .....	21
Chart 3.1.2.1.2: Distribution of employees by economic sectors.....	21
Chart 3.1.2.1.3: Value of the produced quarrying and mining products, Frw Billion.....	25
Chart 3.1.2.1.4: Value of construction work done, Frw Billion.....	28
Chart 3.1.2.1.5: Values of construction expenses, Frw Billion .....	29
Chart 3.1.2.1.6: Distribution of industries by employment size band.....	30
Chart 3.1.2.1.7: Distribution of employees by enterprise size (000s).....	30
Chart 3.1.2.2.1: Distribution of enterprises by services type.....	34
Chart 3.1.2.2.2: Distribution of employees by enterprise size (000s).....	35
Chart 3.1.2.2.3: Summary output indicators by employment size for services sector .....	39
Chart 3.1.2.2.4: Details for hotel and catering services, Frw billion.....	41
Chart 3.1.2.2.5: Distribution of employees by enterprise size.....	44
Chart 3.1.2.3.1: Distribution of enterprises by services type.....	45
Chart 3.1.2.3.2: Distribution of employees by enterprise size (000s).....	45
Chart 3.1.2.3.3 Distribution of enterprises by employment size band .....	48
Chart 3.1.2.3.4: Distribution of employees by enterprise size.....	49
Chart 3.1.2.4.1 Distribution of enterprises by employment size band .....	52
Chart 3.1.2.4.2 Distribution of employees by enterprise size .....	53
Chart 3.1.2.5.1 Distribution of enterprises by employment size band .....	55
Chart 3.1.2.5.2: Distribution of employees by enterprise size.....	56
Chart 3.1.2.6.1: Distribution of enterprises by type .....	57
Chart 3.1.2.6.2: Distribution of employees by enterprise size.....	57
Chart 3.1.2.6.3: Distribution of enterprises by employment size band .....	60
Chart 3.1.2.6.4: Distribution of employees by enterprise size.....	60

## **List of abbreviations**

EC	: Establishment Census
IBES	: Integrated Business Enterprise Survey
ISIC	: International Standard Industrial Classification
NISR	: National Institute of Statistics of Rwanda
NPISH	: Non Profit Institutions Serving Households
PAYE	: Pay As You Earn
RCPA	: Rwanda Classification of Products by Activity
TIN	: Tax identification number
VAT	: Value Added Tax
WASAC	: Water and Sanitation Corporation

## **IBES 2016 sectoral coverage and report highlights**

### **Sectoral coverage**

IBES 2016 covered all non-agricultural enterprises classified under Sections B to S of the International Standard Industrial Classification of All Economic Activities, Revision 4 (ISIC-4). The 16 activities include:

- Mining and quarrying;
- Manufacturing;
- Electricity, gas , steam and air conditioning supply;
- Water supply, sewage, waste management and remediation activity;
- Construction;
- Wholesale and retail trade ; repair of motor vehicles and motorcycles;
- Transportation and storage;
- Accommodation and food service activities;
- Information and communication;
- Financial and insurance activities;
- Real estate activities;
- Professional, scientific and technical activities;
- Administrative and support service activities;
- Human health and social work activities;
- Arts, entertainment and recreation; and
- Other service activities

In addition to background information about each enterprise, this survey has collected data on the number of people employed, their compensation, operating expenses and receipts, value of fixed assets, and outstanding loans. In this report, we have presented total assets, total equity and total liabilities for each sectors.

### **Key statistics from the survey**

- The estimated total number of workers in formal sector enterprises in 2016 was 216,524 working in estimated 12,172 enterprises;
- 53.7% of employees in the formal business sector were based in Kigali;
- The largest business activity in the formal sector is manufacturing, employing around 15.0% of all employees ;
- 40.3% of formal businesses were owned by a single individual, while around 22.3% were limited companies and 9.2% are cooperatives;
- 1.9% of enterprises employed at least 100 staff, while 33.5% had 3 employees or fewer;
- 83.8% of enterprises were owned by Rwandan resident, while 3.0% were owned by non-residents;
- 43.9% of businesses had been operating for less than 5 years, while 12.7% had been established for at least 20 years;
- Amongst the largest businesses (100 or more employees) 22.6% had been operating for less than 5 years, while 31.7% had been operating for 20 or more years;
- 68.2 % of formal sector employees were men, and 31.8% women.
- In the informal sector, 95.0% of all businesses had at most 3 employees.
- 59.8% of informal workers were men, and 40.2% women.



Tables 0.1 and 0.2 below summarize IBES survey findings for the collected IBES data for 2014, 2015 and 2016.

**Table 0.1: IBES key survey findings, 2014-2016**

Indicator/Reference year	2014	2015	2016
1.Estimated total number of enterprises in formal sector	9,251	10,172	12,172
2.Estimated total number of workers in formal sector enterprises	175,244	183,667	216,524
3.Percentage of employees in the formal businesses working in Kigali	48.0	51.7	53.7
4.Percentage of formal businesses owned by single individuals	54.0	49.4	40.3
5.Percentage of limited companies in formal sector	18.0	22.2	22.3
6.Percentage of cooperatives in formal sector	10.0	9.9	9.2
7.Percentage of formal enterprises employing at least 100 persons (Large companies)	2.4	2.3	1.9
8.Percentage of formal enterprises employing 3 persons or fewer (Small businesses)	41.0	38.3	33.5
9.Percentage of formal enterprises owned by Rwandan residents	69.0	90.5	83.8
10.Percentage of formal enterprises owned by non-residents	2.4	3.1	3.0
11.Percentage of formal businesses of less than 5 years of operations	58.0	47.9	43.9
12.Percentage of formal businesses of at least 20 years of operations	9.0	8.4	12.7
13.Percentage of the largest businesses (with 100 or more employees) of less than 5 years of operations	31.0	34.2	22.6
14.Percentage of the largest businesses (with 100 or more employees) of 20 or more years of operations	18.0	18.9	31.7
15.Percentage of employed men in the formal sector	67.0	70.1	68.2
16.Percentage of employed women in the formal sector	33.0	29.9	31.8
17.Percentage of informal businesses with at most 3 employees (Small businesses)	91.7	94.9	95.0
18.Percentage of employed men in the informal sector	64.0	61.1	59.8
19.Percentage of employed women in the informal sector	36.0	38.9	40.2

Source: NISR, IBES Surveys

**Table 0.2: Total Income and Expenditure, 2014-2016, Frw Billion**

	<b>Income</b>			<b>Expenditure</b>		
<b>Description</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>
Mining and quarrying	157.3	106.4	87.5	163.1	108.2	84.6
Manufacturing	461.6	515.9	621.2	466.7	507.0	615.3
Electricity, gas and steam	72.2	114.6	146.5	101.1	111.5	139.6
Water supply; sewerage, waste management	2.0	17.2	40.0	1.6	16.0	43.6
Construction	343.6	416.9	465.4	298.7	393.7	475.2
Wholesale and retail trade; repair of motor vehicles	1,645.4	1,868.1	2,408.3	1,628.2	1,817.3	2,360.4
Transportation and storage	178.3	230.2	220.7	164.7	221.7	208.3
Accommodation and food service activities	78.9	96.3	160.6	78.7	107.4	189.4
Information and communication	207.1	201.8	429.7	242.4	293.9	523.2
Financial and insurance activities	480.6	375.8	455.5	365.5	305.2	393.9
Real estate activities	14.5	21.0	23.6	26.2	17.4	109.2
Professional, scientific and technical	43.4	53.6	47.2	40.3	44.6	43.2
Administrative and support service activities	40.7	52.1	71.2	30.0	44.0	63.1
Arts, entertainment and recreation	25.7	19.2	34.9	13.0	19.8	23.0
<b>Total</b>	<b>3,751.2</b>	<b>4,089.1</b>	<b>5,212.3</b>	<b>3,620.1</b>	<b>4,007.8</b>	<b>5,272.0</b>

Source: NISR, IBES Surveys

## **Chapter 1: Introduction**

### **1.1 Business Survey**

The importance of a sound statistical database to development planning cannot be overemphasized. In particular, IBES has been planned to collect invaluable information about the state of business in the country, the number and nature of enterprises, their location, and who they are employing. It also collects information on business income and expenditure that are required for national accounting purposes, including the calculation of input-output ratios by industry. This information is useful for the private sector, the government and the development community alike.

In addition, the IBES project helps build and strengthen the capacity of the NISR - especially in the area of conducting enterprise surveys - including design, implementation, and data processing.

### **1.2 Coverage**

IBES 2016 covered all non-agricultural enterprises classified under Sections B to S of the International Standard Industrial Classification of All Economic Activities, Revision 4 (ISIC-4). Meanwhile, the term “**enterprise**” referred to a commercial organization that operates on a for-profit basis and participates in selling goods or services to consumers. The term enterprise includes micro, small, medium and big businesses depending on the set criteria. The management of an enterprise typically develops a set of organizational objectives and a strategy for meeting those goals to help employees understand where the company is headed and how it intends to get there.

### **1.3 Sample Size**

In any economy, the size or scale of operations of enterprises varies enormously, such as in the number of people employed, capital investment, output, and so on. Accordingly, the survey used a dual frame approach to data collection to improve the precision of estimates. A list frame of 2,708 formal enterprises and 2,474 informal enterprises was developed and targeted.

### **1.4 Schedules, Survey Period, Fieldwork**

The survey employed simultaneously two schedules of enquiry, one to collect information for the formal sector and the other to collect information for the informal sector. These schedules were pre-tested in the field to ascertain the feasibility of data collection, and certain modifications were incorporated based on experience. Inquiries were almost completed in four months (from end August 2017 to December 2017) with few late responses in January and February 2018.

A team of 100 primary fieldworkers, 17 team leaders, 17 data editors, and 5 regional supervisors did the fieldwork. Before the commencement of fieldwork a two-tier training program was conducted, that is, the training of master trainers/ supervisors and a training of the primary fieldworkers. The training of trainers took 2 days while the training of fieldworkers took 6 days. Data collectors have been trained on concepts and definitions involved in filling up the questionnaire during data collection. Practical sessions have been organized in which fieldworkers exercised on how to fill in the questionnaire modules and solve problems encountered therein.

In addition, at the preliminary stage of the fieldwork, field visits were conducted at selected samples to assess whether the guidelines of data collection were being properly followed in canvassing the schedules of enquiry and to suggest remedial measures. NISR monitored the progress of data collection during the survey period and provided necessary clarifications on technical survey matters. A technical committee comprising of NISR staff reviewed and commented on the new fieldwork revelations, and discussed them to come up with a practical solutions that were later shared to all IBES staff. A team of 40 did the data entry and helped in data cleaning while another team of 19 were helping in questionnaire coding.

## **1.5 Interpreting the Results**

The IBES 2016 is based on a sample of 2,708 formal and 2,474 informal sector enterprises, selected from an estimated 12,320 formal and 40,343 informal enterprises in 50 selected administrative sectors. Chapter II in this report describes the sampling procedure in more details. The survey has been designed so that it provides good quality estimates of shares or averages for the country as a whole.

All the estimates have been produced by ‘grossing-up’ the sample data. The sample was arranged so that all of the larger businesses in the country were completely enumerated, as in a census. But among the smaller formal businesses, only one in up to 16 was sampled. So the data from these sampled businesses are assumed to be representative of those not sampled.

However, errors arising from sampling are not the only kind of error that can occur in this type of exercise. These can include errors of reporting or recording the data and errors when capturing the data. Some businesses have been completely missed and for some no response was obtained. While every effort has been made to minimize these errors, some are likely to have escaped detection. When interpreting these tables, therefore, users should be aware that estimates of the overall levels may differ from the true (unknown) levels.

## **1.6 Comparison with the National Accounts**

The published national accounts statistics also includes estimates of economic activity for the whole of Rwanda. These may differ from the survey estimates if one compiles indicators such as gross value added. A key reason for the difference is that, when producing the national accounts, many other sources of data are used, in addition to information from the business sector. For example data on consumption patterns from the Rwandan household budget survey (Integrated Households Living Conditions Survey EICV), data on international trade, and from other surveys, notably the Seasonal Agricultural Survey.

A further difference between the estimates from this survey and the national accounts arises because of coverage. The IBES covers the formal and informal activities in observable business premises. The national accounts estimates additionally include goods and services produced by household businesses without identifiable premises, often numerous but on a small scale. They also implicitly include estimates for the ‘hidden’ economy (transactions that are not recorded in business accounts) for example, goods that retailers may withdraw from their stocks for their own consumption.

For this reason, the national accounts estimates should be considered as providing the measure of the level of gross value added and output. However, the IBES can be used to enrich understanding of the underlying activity of the business sector by providing

more detailed information relating to investment, employment, credit, and the general business environment.



## **Chapter 2: Sample Design**

### **2.1 Sampling frame**

A sampling frame comprises a list of all units from which a sample survey is selected. An up-to-date, good quality sampling frame is an essential pre-requisite for organizing a sample survey. An Economic Census (EC) of all establishments can provide such a sampling frame, giving a listing of enterprises and a count of workers by broad industry groups at the primary level of geographical units such as villages.

The Establishment Census carried out in 2014 (EC2014) served as the sampling frame for both formal IBES 2016 and informal IBES 2017. For informal IBES 2017, EC2014 served as the sampling frame for the first stage sample and thereafter for the second stage sample a listing exercise was carried out in the sampled administrative sectors. In addition, for the formal IBES 2016 the EC2014 frame was supplemented using Rwanda Revenue Authority records to ensure that all the largest businesses were covered in the formal sector survey.

### **2.2 Formal sector sample**

The formal sector was defined in both Establishment Census and IBES as those businesses both registered with the Rwanda Revenue Authority (RRA) and keeping business accounts. The formal IBES 2016 sample was produced from four separate components: a partial panel based on the IBES 2015 sample; a top-up based on large firms from the VAT and BIT registers; a fully enumerated stratum taken from the PAYE register (for large NPISH firms); and a sample of smaller (NPISH) firms from the PAYE register. Informal IBES sample has been drawn after a full enumeration in the sampled administrative sectors.

#### **2.2.1 IBES panel**

This includes all firms which responded to the IBES 2015 survey. In total there were 2,276 such enterprises. The purpose of this panel component of the IBES 2016 sample is to preserve a time series element in the overall sample. This is designed to reduce the variance of the estimates of changes in the characteristics of the population over time. In addition, the panel should improve the overall response rate to the survey because all of the enterprises in this component were willing and able to respond in 2015.

#### **2.2.2 Top-up based on large firms from the VAT and BIT registers**

There were 138 enterprises which are registered with RRA for VAT or income tax and which are not in the IBES panel sample. This component of the sample includes all firms registered with RRA with turnover greater than 1 billion RWF in 2016.

#### **2.2.3 Large NPISH from PAYE register**

The PAYE register includes 2,361 firms in the NPISH sector. All of those with employment greater than 30 and which were not the IBES panel were included in the IBES 2016 sample (31 in total).

#### **2.2.4. Sampled NPISH from PAYE register**

In addition to the inclusion of the largest NPISH firms from the PAYE register, a random sample of 263 small NPISH firms were selected from the PAYE register for those which were not in the IBES panel (2,330 in total). This part of the sample was stratified by size

of firm and by RCPA. A minimum stratum sample size of 10 was applied (or full enumeration for strata with fewer than 10 firms). See table below.

**Table 2. 1: sampled NPISH from PAYE register**

RCPA\Employees	0-3	4-30	Total
Education	14	27	41
Human health activities	13	15	28
Social work activities	9	14	23
Other arts, entertainment and recreation	7	5	12
Other service activities	64	95	159
Total	<b>107</b>	<b>156</b>	<b>263</b>

Source: NISR

## 2.3 Formal sector estimation

Most of the estimates included in this report have been obtained by multiplying the data for each sampled enterprise by its weight. The weight assigned to completely enumerated businesses was 1, as these businesses represent only themselves. The larger businesses from whom no response was obtained have been excluded from this report.

The initial weights assigned to businesses in the sampled strata were the inverse of the probabilities of selection. For example, if half of the businesses in a stratum were selected, the initial weight was 2. These initial sample weights ranged between 2 and 16. It was also necessary to take account of the businesses for which no response could be obtained within each stratum (around 4% of the updated sampled enterprises in the IBES panel list and 17% for the sampled NPISH) and to take out all non-eligible sampled businesses. The estimated actual, or valid, population of businesses in each stratum was taken as the original population less all non-eligible businesses. Similarly, the valid sample in each stratum was calculated as the original less all non-eligible businesses in the stratum.

As a result, the weights of the responding units were adjusted so as to maintain the original grossed up number of units in each stratum by dividing the valid population by the valid sample for all strata and these final weights were distributed to each sampled enterprise within the stratum. More precisely, if in each sampled stratum  $i$ ,  $n_i$  is the number of valid businesses enumerated out of a valid population of  $N_i$  enterprises in the census, then the weight for each business is  $N_i/n_i$ . The assumption behind this method is that each business from which a valid response was received is representative of the eligible businesses in the wider population.

Overall, the total valid population,  $N$ , was 9,850 and the total valid sample,  $n$ , was 869 for IBES panel while for sampled NPISH  $N$  was 2,301 and  $n$  was 234. The following two tables illustrate how the final weights were derived.



**Table 2. 2: Calculation of final weights for sampled strata (IBES panel)**

Activity	Original sampled population	Sample in IBES	Achieved sample weights	Completed	Closed	Refused	Missing	Not eligible	Valid population	Valid sample	Adjusted design	Final weights
<b>Total</b>	<b>9,910</b>	<b>929</b>		<b>837</b>	<b>59</b>	<b>23</b>	<b>9</b>	<b>1</b>	<b>9,850</b>	<b>869</b>		
Mining and quarrying	40	6	6.7	5	1	0	0	0	39	5	7.8	7.8
Manufacturing	503	48	10.5	36	10	2	0	0	493	38	13.0	13.7
Electricity, gas, steam and air conditioning supply	13	1	13.0	1	0	0	0	0	13	1	13.0	13.0
Water supply; sewerage, waste management and remediation activities	9	1	9.2	1	0	0	0	0	9	1	9.2	9.2
Construction	94	8	11.8	6	1	1	0	0	93	7	13.3	15.6
Wholesale and retail trade; repair of motor vehicles and motorcycles	3,473	253	13.7	220	23	8	2	0	3,450	230	15.0	15.7
Transportation and storage	67	7	9.6	7	0	0	0	0	67	7	9.6	9.6
Accommodation and food service activities	793	71	11.2	61	6	3	1	0	787	65	12.1	12.9
Information and communication	97	12	8.1	8	1	3	0	0	96	11	8.7	12.0
Financial and insurance activities	686	59	11.6	55	0	2	2	0	686	59	11.6	12.5
Real estate activities	48	4	12.1	4	0	0	0	0	48	4	12.1	12.1
Professional, scientific and technical activities	375	44	8.5	36	3	4	1	0	372	41	9.1	10.3
Administrative and support service activities	138	15	9.2	13	2	0	0	0	136	13	10.5	10.5
Education	1,501	203	7.4	201	2	0	0	0	1,499	201	7.5	7.5
Human health and social work activities	470	42	11.2	40	2	0	0	0	468	40	11.7	11.7
Arts, entertainment and recreation	23	3	7.8	2	0	0	1	0	23	3	7.8	11.7
Other service activities	1,579	152	10.4	141	8	0	2	1	1,570	143	11.0	11.1

Source: NISR

**Table 2.3: Calculation of final weights for sampled NPISH**

Activity	Original sampled population	Sample in IBES	Achieved sample weights	Completed	Closed	Refused	Missing	Not eligible	Valid population	Valid sample	Adjusted design weights	Final weights
<b>Total</b>	2,330	263		195	26	23	16	3	2,301	234		
Education	302	41	7.4	38	3	0	0	0	299	38	7.9	7.9
Human health and social work activities	415	51	8.1	39	5	4	2	1	409	45	9.1	10.5
Arts, entertainment and recreation	12	12	1.0	6	3	3	0	0	9	9	1.0	1.5
Other service activities	1,601	159	10.1	112	15	16	14	2	1,584	142	11.2	14.1

Source: NISR

After the above calculated weights have been applied to the collected data the results have been compared to RRA declared figures. Furthermore, business survey data methodology has been introduced which resulted in the new weights presented in Table II.2 in order to take into account non responses of some enterprises which have declared their turnovers in 2016 by using turnovers for all non NPISH companies and the number of employees for all NPISH companies, see Table II.3.

We have assumed to have a VAT and BIT frame, and identified all IBES 2016 respondents which are in the new frame in order to take into account big non responses. Then, all NPISHs which have complied and responded in IBES 2016 have been excluded and left with their already calculated weights in Table II.3 above.

Two main issues have aroused. The first issue was that of 138 companies with turnover of more than 1 billion Frw have not provided their turnover in IBES 2016 but which had declared it in the new RRA frame. The second issue was for companies with turnover in IBES 2016 but without it in the new RRA frame. The first ones were treated as non-responses and the second category was considered as self-representing with the weight of 1.

Finally, other final cleanings have been done. These consisted of wrong classification, used currency, and nonmatching reported IBES 2016 and RRA figures.

**Table 2.4: Weights of business data**

<b>RCPA</b>	<b>RRA Turnover in Frw million</b>	<b>IBES Turnover in Frw million</b>	<b>New weight</b>
Mining and quarrying	150,680	131,372	1.1
Manufacturing	644,714	530,017	1.2
Electricity, gas, steam and air conditioning supply	129,899	115,644	1.1
Water supply; sewerage, waste management and remediation activities	20,561	17,044	1.2
Construction	454,654	351,495	1.3
Wholesale and retail trade; repair of motor vehicles and motorcycles	2,166,514	1,437,872	1.5
Transportation and storage	211,724	149,988	1.4
Accommodation and food service activities	118,167	54,673	2.2
Information and communication	241,663	130,159	1.9
Financial and insurance activities	595,122	482,625	1.2
Real estate activities	25,990	12,705	2.0
Professional, scientific and technical activities	85,986	43,027	2.0
Administrative and support service activities	63,510	42,137	1.5
Education	38,344	19,538	2.0
Human health and social work activities	26,096	11,627	2.2
Arts, entertainment and recreation	32,259	30,574	1.1
Other service activities	144,961	101,455	1.4
<b>RCPA</b>	<b>PAYEE 2016 employees in thousands</b>	<b>IBES 2016 employees in thousands</b>	<b>New weight</b>
Education	11,847	7,841	1.5
Human health and social work activities	25,129	10,202	2.5
Other service activities	16,506	3,611	4.6

Source: NISR

## 2.4 Informal sector sample

The selection of enterprises in informal sector was based on a two stage sample. The first stage was the selection of administrative sectors, which form the enumeration areas (EAs); where a sample of 50 administrative sectors were selected using the 'probability proportional to size' (PPS) method based on the data from the 2014 Establishment Census.

The measure of size (MoS) used was the number of enterprises in each administrative sector, i.e.

$$MoS_{hi} = \sum_{j=1}^t P(h, i, j),$$

Where,  $S_{hi}$  is the size of the administrative sector  $i$ , in geographic stratum  $h$ ; and  $P(h,i,j)$  is the number of enterprises in the economic activity  $j$ , within the sector  $i$ , in geographic stratum  $h$ .

The fieldwork was carried out in the first stage (in 50 selected administrative sectors) where information was collected about the economic activity, number of workers, registration status, maintaining of regular business accounts and time of starting operations. Based on this, a new listing of all the enterprises in the sample EAs was established. At the second stage, the listed enterprises in each sample EA were then stratified by major economic activity (ISIC Rev.4 2 digit), and a sample of enterprises was then selected within each stratum. For some strata all of the listed enterprises were included in the survey with certainty at the second sampling stage in case there were 3 or less enterprises for one ISIC 2 digit code within the sampled administrative sector. The procedure led to a total sample of 2,474 informal enterprises being selected.

## 2.5 Informal sector estimation

The selection probabilities for enterprises in an area sample depend on the sample design. As noted, the IBES informal sector area frame sample was based on a two-stage selection. As such, the probability of selection can be expressed as follows:

$$p_{hij} = \frac{m_h \times MoS_{hi}}{\sum_{i \in h} S_{hi}} \times \frac{n_{hij}}{N_{hij}},$$

where:

$p_{hij}$  = probability of selection for the sample enterprises in the  $j$ -th economic activity group within the  $i$ -th sample segment (that is administrative sector) in geographic stratum  $h$

$m_h$  = number of sample segments selected in geographic stratum  $h$

$MoS_{hi}$  = measure of size (based on the indicator established for the PPS selection) for the  $i$ -th sample area in geographic stratum  $h$

$n_{hij}$  = number of sample enterprises selected in the  $j$ -th economic activity group within the  $i$ -th sample area in geographic stratum  $h$

$N_{hij}$  = total number of enterprises in the  $j$ -th economic activity group within the  $i$ -th sample area in geographic stratum  $h$

In sample strata where all the enterprises for an economic activity are included in the sample at the second sampling stage, the second term of this probability was 1. The weight (or 'raising factor') applied to the data from the informal enterprises is calculated as the inverse of this probability of selection, as follows:

$$W_{hij} = \frac{\sum_{i \in h} S_{hi}}{m_h \times MoS_{hi}} \times \frac{N_{hij}}{n_{hij}}$$

Finally, a non-response adjustment factor similar to that used for the formal IBES 2016 was applied to this weight, within the economic activity group in the EA. This factor is equal to the valid sample divided by the completed interviews for each stratum.

## Chapter 3: Business Activity In Rwanda - Survey Findings

This chapter presents findings from IBES 2016 for economic activities of enterprises both in the formal sector and in the informal sector. The formal sector was defined in both the Establishment Census and the IBES as those businesses both registered with the Rwanda Revenue Authority (RRA) and keeping accounts. Section III.1 gives an overview of the economic environment in which formal sector activity takes place, and section III.2 analyses the activities of these formal enterprises by industrial sector. The tables in this chapter are all based on the IBES 2016 results, unless otherwise stated.

### 3.1 Formal sector

#### 3.1.1 Formal sector overview

As stated in the previous chapter, the total estimated 12,172 enterprises in all formal non-agricultural activities were reached in formal IBES 2016 (Table 1). The above estimate is based on a total sample of 2,660 enterprises drawn from the 2014 EC and RRA tax registers.

**Table 3.1.1.1: Estimated total number of enterprises by province, formal sector**

Province	Frequency	Percent
Kigali	5,693	46.8
South	1,851	15.2
West	1,830	15.0
North	947	7.8
East	1,850	15.2
<b>Total</b>	<b>12,172</b>	<b>100</b>

Source: NISR, IBES 2016 Survey

Kigali City ranks number one with more formal enterprises, with 46.8 percent, followed by Eastern and South Province, with 15.2 percent each. The Northern Province counts the least number of formal enterprises, 7.8 per cent.

**Table 3.1.1.2: Estimated number of enterprises by economic activity, formal sector**

Main Economic Activity	Frequency	Percent
Mining and quarrying	87	0.7
Manufacturing	619	5.1
Electricity, gas, steam and air conditioning supply	8	0.1
Water supply; sewerage, waste management and remediation activities	37	0.3
Construction	119	1.0
Wholesale and retail trade; repair of motor vehicles and motorcycles	3,963	32.6
Transportation and storage	136	1.1
Accommodation and food service activities	985	8.1
Information and communication	131	1.1
Financial and insurance activities	792	6.5
Real estate activities	126	1.0
Professional, scientific and technical activities	396	3.3
Administrative and support service activities	337	2.8
Education	1,206	9.9
Human health and social work activities	1,296	10.7
Arts, entertainment and recreation	50	0.4
Other service activities	1,884	15.5
<b>Total</b>	<b>12,172</b>	<b>100</b>

Source: NISR, IBES 2016 Survey

Table 3.1.1.2 above illustrates that in 2016 IBES Wholesale and retail trade; repair of motor vehicles and motorcycles, Other service activities and Human health and social work activities were the dominating economic sectors occupying 32.6, 15.5, and 10.7 per cent of the total formal business enterprises respectively.

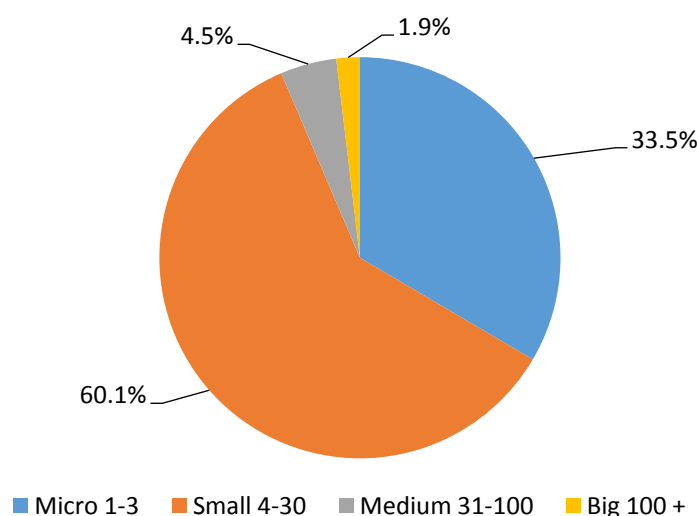
When all formal business enterprises are classified by their legal status, the outcome shows that more of them, 40.3 per cent are individually owned followed by company limited by shares, 21.9 per cent, as shown in Table 3.1.1. 3.

**Table 3.1.1.3: Distribution of enterprises by ownership, formal sector**

Legal status of the enterprise	Frequency	Percent
Individual owner	4,904	40.3
Company limited by shares	2,665	21.9
Company limited by guarantee	17	0.1
Company limited by both shares and guarantee	27	0.2
Unlimited company	7	0.1
Cooperative	1,114	9.2
Government	1,057	8.7
NGO	1,722	14.1
Other	660	5.4
<b>Total</b>	<b>12,172</b>	<b>100</b>

Source: NISR, IBES 2016 Survey

**Chart 3.1.1.1: Distribution of enterprises by size (number of employees), formal sector**



Source: NISR, IBES 2016 Survey

Chart 3.1.1.1 above highlights the distribution of businesses by size. It illustrates that slightly more than a half is made of small enterprises employing between 4 and 30 persons. The big enterprises, those employing more than 100 persons, represent 1.9 per cent.

Table 3.1.1.3 shows the distribution of formal enterprises by economic activity and the enterprise size. This shows for example that most manufacturing enterprises are small, 52.5 per cent, while more of Electricity, gas, Steam and Air condition supply and Mining and quarrying companies are medium (employing between 30 and 101 employees), 50.0, and 20.8 per cent respectively.

**Table 3.1.1.4: Percentage of formal enterprises by size band within each activity, formal sector**

Main Economic Activity	Micro 1-3	Small 4-30	Medium 31-100	Big 100+	Total	Freq.
Mining and quarrying	17.5	52.5	20.8	9.2	100	87
Manufacturing	20.4	65.1	7.3	7.3	100	619
Electricity, gas, steam and air conditioning supply	0.0	25.0	50.0	25.0	100	8
Water supply; sewerage, waste management and remediation activities	25.0	58.7	8.2	8.2	100	37
Construction	8.3	59.0	13.4	19.3	100	119
Wholesale and retail trade; repair of motor vehicles and motorcycles	68.4	29.7	1.6	0.3	100	3,963
Transportation and storage	17.4	67.2	8.1	7.3	100	136
Accommodation and food service activities	11.1	84.0	3.8	1.1	100	985
Information and communication	50.6	40.3	6.1	3.1	100	131
Financial and insurance activities	8.7	86.5	2.2	2.7	100	792
Real estate activities	49.6	47.2	2.4	0.8	100	126
Professional, scientific and technical activities	40.6	57.9	1.5	0.0	100	396
Administrative and support service activities	65.5	25.9	2.7	5.9	100	337
Education	4.5	78.7	15.0	1.8	100	1,206
Human health and social work activities	8.1	81.9	7.3	2.7	100	1,296
Arts, entertainment and recreation	27.5	60.5	8.0	4.0	100	50
Other service activities	16.7	81.1	1.7	0.5	100	1,884
<b>Total</b>	<b>33.5</b>	<b>60.1</b>	<b>4.5</b>	<b>1.9</b>	<b>100</b>	<b>12,172</b>

Source: NISR, IBES 2016 Survey

Furthermore, as shown in Table 3.1.1.4, more than two third (66.6 per cent) of all micro enterprises are concentrated in trade; while more than a third (32.9 per cent) of all medium enterprises are in education sector. Manufacturing is mainly located under big enterprises (19.6 per cent of all big ones).



**Table 3.1.1.5: Percentage of formal enterprises by activity within each size band, formal sector**

Main Economic Activity	Micro 1-3	Small 4- 30	Medium 31-100	Big 100+	Total
Mining and quarrying	0.4	0.6	3.3	3.5	0.7
Manufacturing	3.1	5.5	8.2	19.6	5.1
Electricity, gas, steam and air conditioning supply	0.0	0.0	0.7	0.9	0.1
Water supply; sewerage, waste management and remediation activities	0.2	0.3	0.5	1.3	0.3
Construction	0.2	1.0	2.9	10.0	1.0
Wholesale and retail trade; repair of motor vehicles and motorcycles	66.6	16.1	11.3	5.7	32.6
Transportation and storage	0.6	1.3	2.0	4.4	1.1
Accommodation and food service activities	2.7	11.3	6.7	4.8	8.1
Information and communication	1.6	0.7	1.5	1.7	1.1
Financial and insurance activities	1.7	9.4	3.1	9.1	6.5
Real estate activities	1.5	0.8	0.5	0.4	1.0
Professional, scientific and technical activities	4.0	3.1	1.1	0.0	3.3
Administrative and support service activities	5.4	1.2	1.6	8.7	2.8
Education	1.3	13.0	32.9	9.6	9.9
Human health and social work activities	2.6	14.5	17.2	15.2	10.7
Arts, entertainment and recreation	0.3	0.4	0.7	0.9	0.4
Other service activities	7.7	20.9	5.8	4.4	15.5
<b>Total</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>
<b>Freq.</b>	<b>4,073</b>	<b>7,319</b>	<b>551</b>	<b>230</b>	<b>12,172</b>

Source: NISR, IBES 2016 Survey

Table 3.1.1.5 shows the percentage by type of ownership of formal enterprises (grossed to the population of estimated total numbers of enterprises). For example, there were an estimated 10,162 formal enterprises owned by Rwandan residents against 366 owned by non-residents.

**Table 3.1.1.6: Distribution of enterprises by economic activity and ownership, formal sector**

Main Economic Activity	Government	Rwandan Resident	Foreign Resident	Non-Resident	Total
Mining and quarrying	0.3	86.6	4.2	8.9	100
Manufacturing	2.9	84.5	7.6	5.1	100
Electricity, gas, steam and air conditioning supply	37.5	25.0	0.0	37.5	100
Water supply; sewerage, waste management and remediation activities	5.5	87.7	1.4	5.5	100
Construction	0.3	79.1	11.9	8.7	100
Wholesale and retail trade; repair of motor vehicles and motorcycles	1.9	90.8	5.4	1.9	100
Transportation and storage	1.5	81.2	7.6	9.8	100
Accommodation and food service activities	1.3	96.8	1.7	0.2	100
Information and communication	1.9	81.4	12.7	4.0	100
Financial and insurance activities	1.8	95.5	0.8	1.8	100
Real estate activities	0.0	78.1	21.1	0.8	100
Professional, scientific and technical activities	0.3	86.3	5.6	7.8	100
Administrative and support service activities	0.9	90.8	6.9	1.4	100
Education	42.4	53.8	1.6	2.2	100
Human health and social work activities	27.7	59.5	4.7	8.1	100
Arts, entertainment and recreation	2.9	58.9	34.3	4.0	100
Other service activities	0.0	93.0	5.2	1.9	100
<b>Total</b>	<b>8.3</b>	<b>83.8</b>	<b>4.9</b>	<b>3.0</b>	<b>100</b>

Source: NISR, IBES 2016 Survey

Table 3.1.1.6 shows that the sectors that have the most old enterprises are: education sector, 55.4 per cent; Other Services activities, 49.4 per cent; Human Health and Social Work, 45.3 per cent; whereas, sectors with more young enterprises are: Electricity, gas, steam and air conditioning supply, 62.5 per cent; Arts, entertainment and recreation, 56.5 per cent, and Transportation and storage, 28.5per cent.

**Table 3.1 .7: Distribution of enterprises by age and main economic activity, formal sector**

Main Economic Activity	Year of business commencement					Total	Freq.
	<= 5 Years	>5-10 Years	>10-15 Years	>15-20 Years	20+ Years		
Mining and quarrying	16.0	48.1	26.7	5.8	3.5	100	87
Manufacturing	18.5	33.7	21.7	17.4	8.7	100	619
Electricity, gas, steam and air conditioning supply	62.5	25.0	0.0	12.5	0.0	100	8
Water supply; sewerage, waste management and remediation activities	5.5	24.6	64.5	2.7	2.7	100	37
Construction	17.5	20.3	13.4	35.4	13.4	100	119
Wholesale and retail trade; repair of motor vehicles and motorcycles	21.4	38.7	23.7	8.4	7.8	100	3,963
Transportation and storage	28.5	28.9	32.4	5.1	5.1	100	136
Accommodation and food service activities	26.8	39.1	23.5	4.9	5.8	100	985
Information and communication	1.5	33.2	31.8	31.2	2.3	100	131
Financial and insurance activities	7.0	6.1	76.2	6.2	4.5	100	792
Real estate activities	11.0	46.4	30.6	2.4	9.6	100	126
Professional, scientific and technical activities	16.4	37.8	24.7	16.9	4.1	100	396
Administrative and support service activities	19.9	41.0	14.4	20.2	4.6	100	337
Education	6.4	12.9	12.6	12.8	55.4	100	1,206
Human health and social work activities	14.8	9.8	16.7	13.4	45.3	100	1,296
Arts, entertainment and recreation	56.5	31.5	4.0	6.0	2.0	100	50
Other service activities	9.2	20.0	14.5	7.0	49.4	100	1,884
<b>Total</b>	<b>16.3</b>	<b>27.6</b>	<b>23.7</b>	<b>10.1</b>	<b>22.3</b>	<b>100</b>	<b>12,172</b>

Source: NISR, IBES 2016 Survey

The distribution of formal sector enterprises by size and age, see Table 3.1 .8, demonstrates that they are dominated by young ones (less than 5 years old), at 43.9 per cent, while those whose operations started 20 or more years ago was just 12.7 per cent. Table 3.1.1.8 also shows the distribution of formal sector enterprises by size and age. For example, 61.3 per cent of all formal micro enterprises (with 3 or fewer employees) have been established in the last 5 years, whereas 31.7 per cent of large enterprises (with 100 or more employees) have been established at least 20 years ago.

**Table 3.1.1.8: Distribution of enterprises by age and size, formal sector**

Size (employees)	Year of business commencement						Freq.
	<= 5 Years	>5-10 Years	>10-15 Years	>15-20 Years	20+ Years	Total	
Micro 1-3	61.3	26.1	5.2	4.4	3.0	100	4,073
Small 4-30	36.5	27.3	10.5	10.0	15.8	100	7,319
Medium 31-100	22.1	19.4	11.6	10.7	36.1	100	551
Big 100 +	22.6	24.8	10.9	10.0	31.7	100	230
<b>Total</b>	<b>43.9</b>	<b>26.5</b>	<b>8.8</b>	<b>8.1</b>	<b>12.7</b>	<b>100</b>	<b>12,172</b>

Source: NISR, IBES 2016 Survey

Table 3.1.1.9 shows the numbers of male and female employees in the formal sector by main economic activity.

**Table 3.1.1.9: Numbers of employees by gender and activity, formal sector**

Main Economic Activity	Number of Workers		
	Males	Females	Total
Mining and quarrying	4,482	432	4,914
Manufacturing	22,394	9,989	32,382
Electricity, gas, steam and air conditioning supply	1,177	256	1,433
Water supply; sewerage, waste management and remediation activities	1,040	361	1,402
Construction	10,606	2,351	12,957
Wholesale and retail trade; repair of motor vehicles and motorcycles	15,129	5,428	20,556
Transportation and storage	4,344	1,405	5,750
Accommodation and food service activities	8,183	4,893	13,076
Information and communication	1,575	589	2,164
Financial and insurance activities	6,736	6,268	13,003
Real estate activities	1,013	411	1,424
Professional, scientific and technical activities	1,828	779	2,607
Administrative and support service activities	18,735	3,768	22,503
Education	19,718	11,757	31,474
Human health and social work activities	13,808	14,039	27,847
Arts, entertainment and recreation	820	568	1,387
Other service activities	16,131	5,512	21,643
<b>Total</b>	<b>147,719</b>	<b>68,806</b>	<b>216,524</b>

Source: NISR, IBES 2016 Survey

### **3.1.2 Formal sector results by main economic activity**

This part is split into seven sections in which the results are analysed for formal sector enterprises in the IBES survey, and considers their activity by main industry. The details on acquisition and disposal of fixed assets are presented in the last section, specifically:

- 3.1.2.1: Industry sector
- 3.1.2.2: Services sector
- 3.1.2.3: Financial sector
- 3.1.2.4: Education sector
- 3.1.2.5: Health sector
- 3.1.2.6: NPISH sector
- 3.1.2.7: Acquisition and disposal of fixed assets

The activities of the sectors dominated by non-market activity (public administration and defence, Health and Social Work and Education) are not considered here.

Note that the results in this section are based on a weighted set of the data, using the methodology described in Chapter II. Importantly, each business in the IBES sample is regarded as representing a similar set of enterprises in the population of businesses as a whole. The largest enterprises are treated as representing only themselves, while the data for smaller enterprises have been multiplied by a factor (between 5 and 15, depending on their economic activity and number of employees). The results also include a small number of imputations for enterprises with more than 30 employees for which a survey response was not received. The counts of number of enterprises in the tables in this chapter therefore differ slightly from those in chapter II, which was limited to the actual number of responses received by NISR.

#### **3.1.2.1 Industry sector**

##### **A. Introduction**

In this report, the industry sector is made of the following five economic sectors: Mining and quarrying, Manufacturing, Electricity, gas, steam and air conditioning supply, Water supply; sewerage, waste management and remediation activities, and Construction.

Mining and quarrying sector includes the extraction of minerals occurring naturally as solids (coal and ores), liquids (petroleum) or gases (natural gas). Extraction can be achieved by different methods such as underground or surface mining, well operation, seabed mining etc. This also includes supplementary activities aimed at preparing the crude materials for marketing, for example, crushing, grinding, cleaning, drying, sorting, concentrating ores, liquefaction of natural gas and agglomeration of solid fuels. These operations are often carried out by the units that extracted the resource and/or others located nearby.

Manufacturing includes the physical or chemical transformation of materials, substances, or components into new products. The materials, substances, or components transformed are raw materials that are products of agriculture, forestry, fishing, mining or quarrying as well as products of other manufacturing activities. Substantial alteration, renovation or reconstruction of goods is generally considered to be manufacturing.

Electricity, gas, steam and air conditioning supply includes the activity of providing electric power, natural gas, steam, hot water and the like through a permanent infrastructure (network) of lines, mains and pipes. The dimension of the network is not decisive; also included are the distribution of electricity, gas, steam, hot water and the like in industrial parks or residential buildings. This, therefore, includes the operation of electric and gas utilities, which generate, control and distribute electric power or gas. Also included is the provision of steam and air-conditioning supply. This excludes the operation of water and sewerage utilities and also the (typically long-distance) transport of gas through pipelines.

Water supply; sewerage, waste management and remediation activities includes activities related to the management (including collection, treatment and disposal) of various forms of waste, such as solid or non-solid industrial or household waste, as well as contaminated sites. The output of the waste or sewage treatment process can either be disposed of or become an input into other production processes. Activities of water supply are also included, since they are often carried out in connection with, or by units also engaged in, the treatment of sewage.

Construction includes general construction and specialized construction activities for buildings and civil engineering works. It includes new work, repair, additions and alterations, the erection of prefabricated buildings or structures on the site and also construction of a temporary nature.

General construction is the construction of entire dwellings, office buildings, stores and other public and utility buildings, farm buildings etc., or the construction of civil engineering works such as motorways, streets, bridges, tunnels, railways, airfields, harbours and other water projects, irrigation systems, sewerage systems, industrial facilities, pipelines and electric lines, sports facilities etc.

This work can be carried out on own account or on a fee or contract basis. Portions of the work and sometimes even the whole practical work can be subcontracted out. A unit that carries the overall responsibility for a construction project is classified here. Also included is the repair of buildings and engineering works, the complete construction of buildings, the complete construction of civil engineering works, as well as specialized construction activities, if carried out only as a part of the construction process.

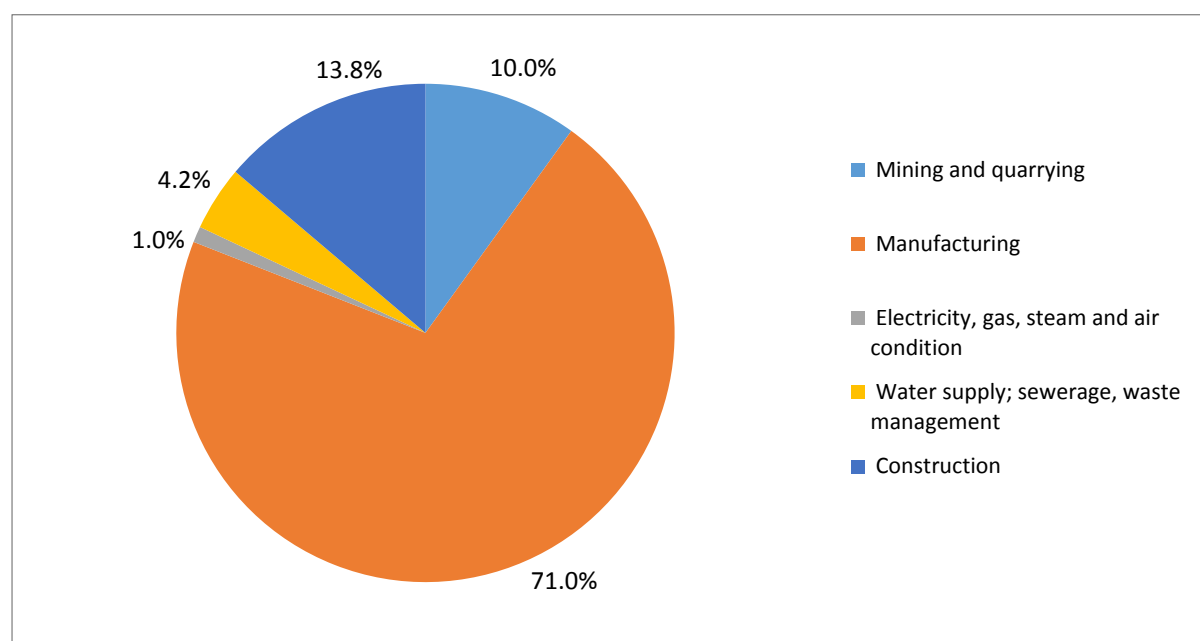
The renting of construction equipment with operator is classified with the specific construction activity carried out with this equipment. This also includes the development of building projects for buildings or civil engineering works by bringing together financial, technical and physical means to realize the construction projects for later sale. If these activities are carried out not for later sale of the construction projects, but for their operation (e.g. renting of space in these buildings, manufacturing activities in these plants), the unit would not be classified here, but according to its operational activity, i.e. real estate, manufacturing etc.

## **B. Analysis of industry sector**

The results of IBES 2016 show that 71 percent of all enterprises in industry sector are in manufacturing. Construction sector occupies the second position with 14 percent. The

smallest sector in the industry sector with fewer enterprises is Electricity, gas, steam and air condition sub sector, see chart 3.1.2.1. 1

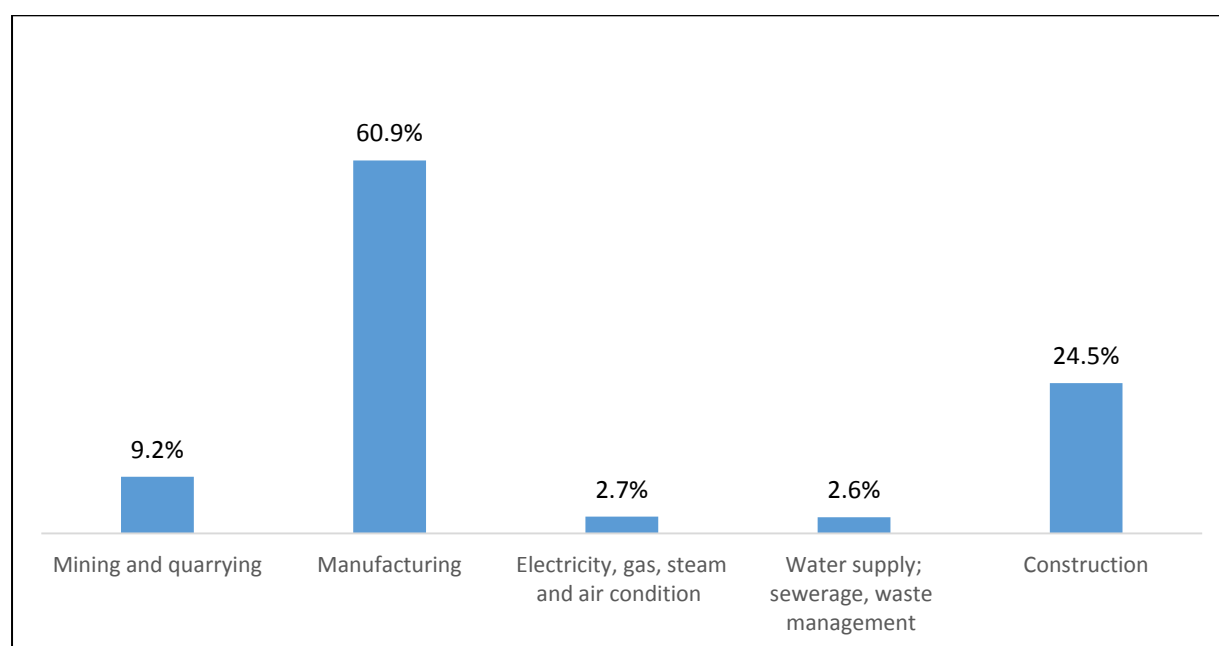
**Chart 3.1.2.1.1: Distribution of industries shares**



Source: NISR, IBES 2016 Survey

The survey estimates show that in total more than 71.0 percent are employed in the manufacturing sub-sector. The more the number of companies in a specific sector the more persons are employed, see chart 3.1.2.1. 2.

**Chart 3.1.2.1.2: Distribution of employees by economic sectors**



Source: NISR, IBES 2016 Survey

Table 3.1.2.1.1 below highlights the distribution of income components by industrial activities. The results show that manufactured goods have yielded more income, Frw 621.2 billion. On the second position is the construction work done which produced Frw 465.4 billion of revenue.

**Table 3.1.2.1.1: Income statement for industry sector, Frw billion**

Income components	Mining and quarrying	Manufacturing	Electricity, gas, steam and air condition	Water supply; sewerage, waste management	Construction	Total
Sales of goods in the same condition as purchased	1.3	8.5	0.0	1.8	0.6	12.1
Sales of manufactured, mined or quarried products	85.0	567.0	0.0	18.2	2.5	672.8
Sales of electricity	0.0	4.6	115.6	0.0	0.0	120.2
Sales of water by pipe or bouser	0.0	0.0	0.0	1.9	0.3	2.2
Construction work done	0.0	0.0	0.0	0.0	383.5	383.5
Delivery charges if invoiced separately	0.0	0.0	0.0	0.0	9.5	9.5
Transport, storage and travel services rendered	0.0	0.2	0.0	0.0	0.0	0.2
Hotel & catering services	0.0	6.7	0.0	0.0	0.0	6.7
Telecommunication & internet connections	0.0	3.1	0.0	0.0	0.0	3.1
Sales of professional & scientific services	0.0	0.0	0.0	0.0	0.0	0.0
Rent of land receivable	0.0	1.7	0.0	0.0	0.0	1.7
Rent of buildings received / receivable	0.0	0.0	0.0	0.0	0.0	0.0
Dividends or other profits realized	0.3	1.7	0.0	0.1	2.1	4.1
All other income	0.9	26.8	30.9	18.0	66.6	143.2
<b>Total</b>	<b>87.5</b>	<b>621.2</b>	<b>146.5</b>	<b>40.0</b>	<b>465.4</b>	<b>1,360.6</b>

Source: NISR, IBES 2016 Survey

Table 3.1.2.1.2 below highlights the distribution of expenditure components by industrial activities. The purchase of raw materials used in manufacturing and other goods & services purchased (not interest, etc see below) have been bought more.



**Table 3.1.2.1.2: Expenditure statement for industry sector, Frw billion**

Expenditure components	Mining and quarrying	Manufacturing	Electricity, gas, steam and air condition	Water supply; sewerage, waste management	Construction	Total
Purchases of goods for resale	1.2	8.0	0.0	1.2	0.5	10.9
Purchases of raw materials, etc., used in manufacturing	57.3	347.1	0.0	15.3	0.9	420.6
Fuel used for mining & quarrying	6.7	13.1	0.0	0.0	0.0	19.8
Construction sub-contracts, equipment hire, fuel, materials	0.0	0.0	0.0	5.5	248.2	253.7
Purchases of food and drinks for catering & bar services	0.0	2.1	0.0	0.0	0.0	2.1
Rent of land paid / payable	0.1	0.2	0.0	0.0	11.8	12.1
Rent of buildings paid / payable	0.4	2.7	0.7	0.2	2.2	6.2
Other goods & services purchased (not interest, etc see below)	6.0	90.2	104.7	9.2	77.9	288.0
Wages & salaries paid (Social security & other benefits included)	5.2	63.6	14.0	8.5	43.7	134.9
Interests paid (excluding other bank charges)	0.5	19.8	5.8	0.1	24.1	50.2
Business licenses, rates and fees payable to government	1.8	2.5	0.7	0.5	4.7	10.2
Depreciation charges for the year on fixed assets	1.7	52.5	12.1	4.4	32.2	102.9
All other costs, losses, provisions, etc.	4.9	21.6	1.6	0.0	29.4	57.6
<b>Total</b>	<b>85.8</b>	<b>623.2</b>	<b>139.6</b>	<b>44.8</b>	<b>475.7</b>	<b>1,369.2</b>

Source: NISR, IBES 2016 Survey

Table 3.1.2.1.3 summarizes assets of the industry sector. Construction and Manufacturing sectors have more assets in 2016 Frw 920.6 billion and Frw 909.3 billion respectively.

**Table 3.1.2.1.3: Summary assets of the industry sector, Frw billion**

Assets	Mining and quarrying	Manufacturing	Electricity, gas, steam and air condition	Water supply; sewerage, waste management	Construction	Total
<b>Non-current assets</b>	<b>13</b>	<b>617</b>	<b>471.5</b>	<b>88.8</b>	<b>447.8</b>	<b>1,638.0</b>
Fixed assets	12.7	534.9	231	61.6	366.9	1,207.30
Land	1.2	50.7	4.4	0	144	200.4
Buildings	2.2	108.4	18.4	8.4	18.9	156.3
Vehicles and Machines	8.5	325.9	205.2	51.9	151.3	742.8
Others	0.9	49.9	3	1.3	52.8	107.9
Work in progress	0	17	1.9	1.5	44.3	64.7
Other investments	0.3	65.1	238.6	25.6	36.5	366.1
<b>Current assets</b>	<b>23.1</b>	<b>292.3</b>	<b>201.2</b>	<b>26.4</b>	<b>472.8</b>	<b>1,015.9</b>
Inventories	6.1	135.1	8.3	9.3	78.6	237.4
Debtors & other receivables	15.3	99.4	52.1	11.4	316.2	494.4
Cash and cash equivalents	1.7	57.8	140.8	5.7	78.1	284.1
<b>Total assets</b>	<b>36.1</b>	<b>909.3</b>	<b>672.7</b>	<b>115.2</b>	<b>920.6</b>	<b>2,653.9</b>

Source: NISR, IBES 2016 Survey

The following table summarizes the owners' equity and liabilities of the industry sector.

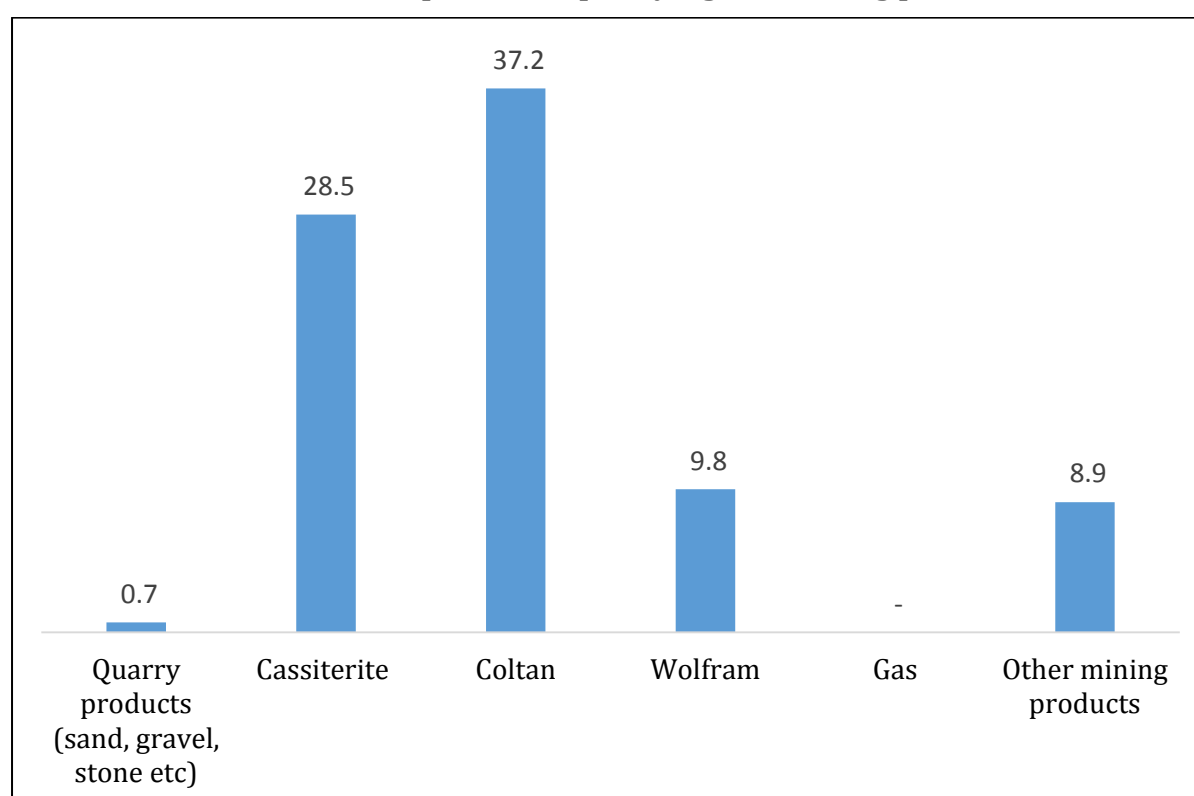
**Table 3.1.2.1.4: Summary equity and liabilities, Frw billion**

Liabilities	Mining and quarrying	Manufacturing	Electricity, gas, steam and air condition	Water supply; sewerage, waste management	Construction	Total
<b>Equity</b>	<b>-18.9</b>	<b>351.5</b>	<b>224.7</b>	<b>72.6</b>	<b>201.3</b>	<b>831.1</b>
Share capital	3.1	208.2	85.1	60.5	89.0	445.9
Reserves	-8.7	74.4	106.1	11.3	33.0	216.1
Other equity	-13.3	68.9	33.5	0.8	79.3	169.1
<b>Non-current liabilities</b>	<b>19.1</b>	<b>309.1</b>	<b>375.7</b>	<b>32.7</b>	<b>354.9</b>	<b>1,091.5</b>
Loans and borrowings	12.2	256.3	113.8	0.4	202.2	584.9
Other non-current liabilities	6.9	52.7	261.9	32.3	152.7	506.6
<b>Current liabilities</b>	<b>35.9</b>	<b>248.8</b>	<b>72.3</b>	<b>9.9</b>	<b>364.4</b>	<b>731.3</b>
<b>Total liability</b>	<b>36.1</b>	<b>909.3</b>	<b>672.7</b>	<b>115.2</b>	<b>920.6</b>	<b>2,653.9</b>

Source: NISR, IBES 2016 Survey

The value of produced quarrying and mining products has amounted to Frw 85.0 billion in 2016 with more of mined coltan worth Frw 37.2 billion (Chart 3.1.2.1.3).

**Chart 3.1.2.1.3: Value of the produced quarrying and mining products, Frw Billion**



Source: NISR, IBES 2016 Survey

Table 3.1.2.1.5 below depicts the distribution of details on goods produced or processed made of all manufactured food, beverages and tobacco. More food items have been produced, that is Frw 225.6 billion against Frw 131.0 billion of manufactured beverage and tobacco products.

**Table 3.1.2.1.5: Details of manufactured food, beverages and tobacco, Frw billion**

Type of products	Manufacturing of food	Manufacturing of beverages & tobacco	Manufacturing of textiles, clothing & leather goods	Manufacturing of wood & paper; printing	Manufacturing of chemicals, rubber & plastic products	Manufacturing of non-metallic mineral products	Manufacturing of metal products, machinery & equipment	Furniture & other manufacturing	Total
Meat & fish products	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2
Vegetable & fruit juices	7.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.2
Other vegetables, fruit & nut products	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2
Animal & vegetable oils & fats	16.9	0.0	0.0	0.0	0.3	0.0	0.0	0.0	17.2
Dairy products	14.4	0.0	0.0	0.0	0.0	0.0	0.1	0.0	14.5
Maize flour	2.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.5
Wheat flour	55.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	55.0
Cassava flour	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rice, semi- or wholly milled	10.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.6
Bakery products	7.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.1
Animal feed	2.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.6

Type of products	Manufacturing of food	Manufacturing of beverages & tobacco	Manufacturing of textiles, clothing & leather goods	Manufacturing of wood & paper; printing	Manufacturing of chemicals, rubber & plastic products	Manufacturing of non-metallic mineral products	Manufacturing of metal products, machinery & equipment	Furniture & other manufacturing	Total
Coffee, decaffeinated or roasted	38.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	38.9
Tea dried	52.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	52.8
Sugar refined	7.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.0
Other processed food products	3.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.6
Modern beer	0.1	100.9	0.0	0.0	0.0	0.0	0.0	0.0	101.0
Traditional beer	0.9	0.7	0.0	0.0	0.0	0.0	0.0	0.0	1.6
Other alcohol	0.0	28.6	0.0	0.0	0.0	0.0	0.0	0.0	28.6
Soft drinks	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.5
Drinking water	5.5	0.4	0.0	0.0	3.9	0.0	0.0	0.0	9.8
Tobacco products	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<b>Total</b>	<b>225.6</b>	<b>131.0</b>	<b>0.0</b>	<b>0.0</b>	<b>4.2</b>	<b>0.0</b>	<b>0.1</b>	<b>0.0</b>	<b>361.0</b>

Source: NISR, IBES 2016 Survey

Table 3.1.2.1.6 presents the details of goods produced or processed. Manufacturing of metal products, machinery and equipment has the biggest share at Frw 67.2 billion followed by Manufacturing of non-metallic mineral products worth Frw 53.1 billion.

**Table 3.1.2.1.6: Details of goods produced or processed, Frw billion**

Type of products	Manufacturing of textiles, clothing & leather goods	Manufacturing of wood & paper; printing	Manufacturing of chemicals, rubber & plastic products	Manufacturing of non-metallic mineral products	Manufacturing of metal products, machinery & equipment	Furniture & other manufacturing	Total
Textiles, clothing, footwear and leather goods	4.5	0.0	0.0	0.0	0.0	0.0	4.5
Wood paper and printing products; furniture	0.0	20.3	0.0	0.0	0.0	1.1	21.4
Chemicals, rubber and plastic products	0.0	1.9	27.4	0.0	0.8	9.8	40.0
Manufactured non-metallic mineral products	0.0	0.0	0.0	47.5	0.9	0.1	51.1
Manufacturing of metal products, machinery and equipment	0.0	0.0	0.0	5.6	61.2	2.4	69.1
Other manufactured products, please specify	0.0	6.2	6.4	0.0	4.3	2.6	20.0
<b>Total</b>	<b>4.5</b>	<b>28.4</b>	<b>33.8</b>	<b>53.1</b>	<b>67.2</b>	<b>16.1</b>	<b>206.1</b>

Source: NISR, IBES 2016 Survey

The manufactured textiles, clothing, footwear and leather goods are the least produced items with the value of Frw 4.5 billion. In total, the value of all produced or processed products was Frw 203.8 billion in 2016.

**Table 3.1.2.1.7: Purchases of raw materials, Frw billion**

Type of products	Mining & quarrying	Manufacturing of food	Manufacturing of beverages & tobacco	Manufacturing of textiles, clothing & leather goods	Manufacturing of wood & paper; printing	Manufacturing of chemicals, rubber & plastic products	Manufacturing of non-metallic mineral products	Manufacturing of metal products, machinery & equipment	Furniture & other manufacturing	Total
Cereals	0.0	50.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	50.2
Other agricultural crops; trees	0.0	51.8	2.0	0.0	3.3	1.6	0.0	0.0	0.1	58.8
Livestock and fresh or frozen fish	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2
Raw milk, skins and other raw livestock products	0.0	9.0	0.1	0.0	0.0	0.0	0.0	0.4	0.0	9.4
Flour and other processed edible products	0.0	19.5	2.8	0.0	0.0	0.0	0.0	0.0	0.0	22.3
Textile materials, leather	0.0	0.0	0.0	2.2	0.0	0.0	0.0	0.0	1.4	3.6
Sawn wood and other wood products	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.6	0.7
Paper used in printing	0.0	0.0	0.0	0.0	6.9	0.0	0.0	0.0	0.0	6.9
Chemicals, rubber and plastic products	0.0	2.5	0.2	0.0	3.8	10.2	0.9	3.3	5.7	26.6
Non-metallic minerals	0.0	0.1	0.0	0.0	0.0	0.0	7.1	0.0	0.0	7.2
Metals and metal ores	57.3	0.0	0.0	0.0	0.0	0.0	3.4	36.0	0.1	96.9
Other raw materials	1.9	4.8	72.7	0.0	1.7	14.2	6.1	18.3	1.3	120.9
<b>Total</b>	<b>60.4</b>	<b>137.9</b>	<b>78.0</b>	<b>2.2</b>	<b>15.7</b>	<b>25.9</b>	<b>17.5</b>	<b>58.0</b>	<b>9.3</b>	<b>405.0</b>

Source: NISR, IBES 2016 Survey

The total value of all purchased raw materials in 2016 was frw 405 billion made of mainly: Other raw materials, Metals and metal ores, other agricultural crops and Cereals. Table 3.1.2.1.7 gives more details.

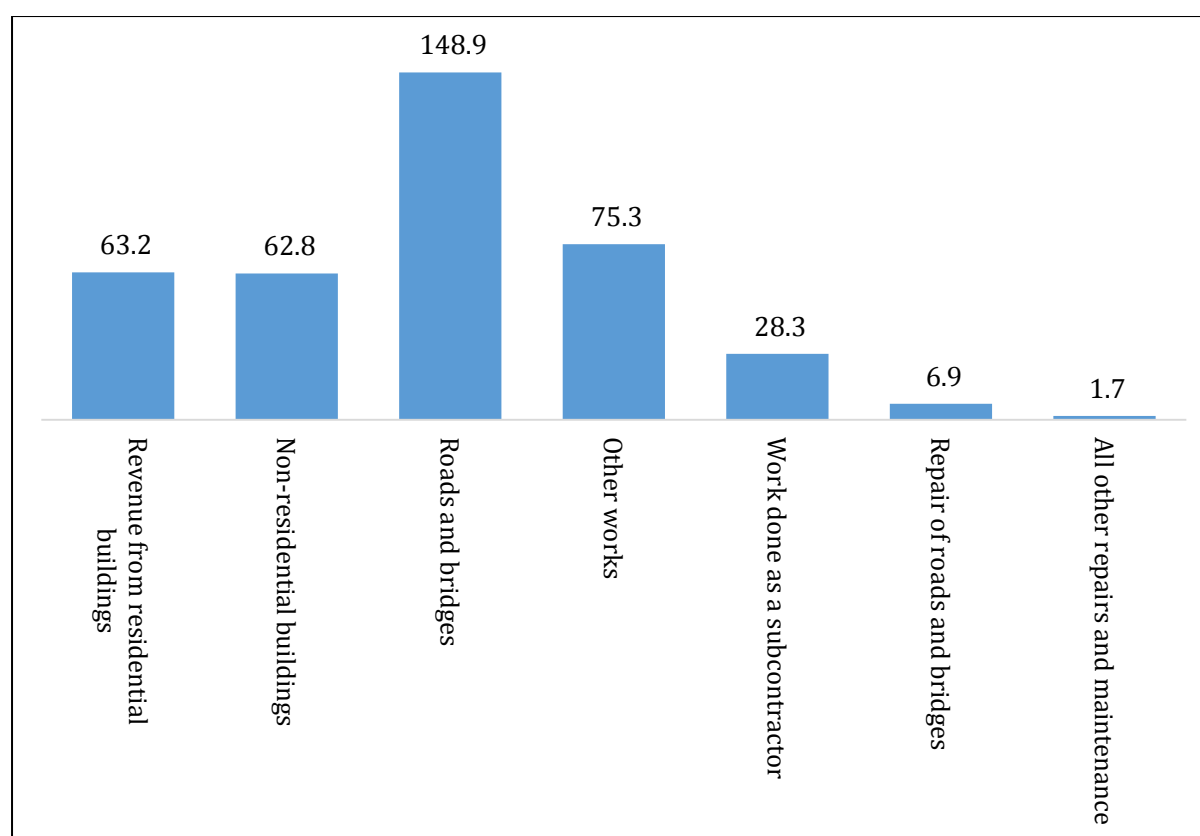
Purchases of fuel for manufacturing, mining and quarrying were valued at Frw 19.8 billion. The following sectors were the most buyers, Manufacturing of non-metallic mineral products, Mining and quarrying and the Manufacturing of food. The most purchased product category was made of Coal. Table 3.1.2.1.8 gives more details.

**Table 3.1.2.1.8: Purchases of fuel for manufacturing, mining and quarrying, Frw billion**

Type of products	Firewood, charcoal	Coal	Petroleum products	Electricity	Natural gas	Total
Mining and quarrying	0.4	1.0	4.8	0.6	0.0	6.8
Manufacturing of food	0.4	0.0	1.5	1.6	0.0	3.5
Manufacturing of beverages and tobacco	0.0	0.0	0.0	0.1	0.0	0.1
Manufacturing of textiles, clothing and leather goods	0.0	0.0	0.0	0.0	0.0	0.0
Manufacturing of wood and paper; printing	0.0	0.0	0.0	0.1	0.0	0.2
Manufacturing of chemicals, rubber and plastic products	0.0	0.0	0.0	0.0	0.0	0.0
Manufacturing of non-metallic mineral products	0.0	7.8	0.4	0.3	0.0	8.5
Manufacturing of metal products, machinery and equipment	0.0	0.0	0.0	0.5	0.0	0.5
Furniture and other manufacturing	0.0	0.0	0.2	0.0	0.0	0.2
<b>Total</b>	<b>0.8</b>	<b>8.8</b>	<b>6.9</b>	<b>3.3</b>	<b>0.0</b>	<b>19.8</b>

Source: NISR, IBES 2016 Survey

**Chart 3.1.2.1.4: Value of construction work done, Frw Billion**



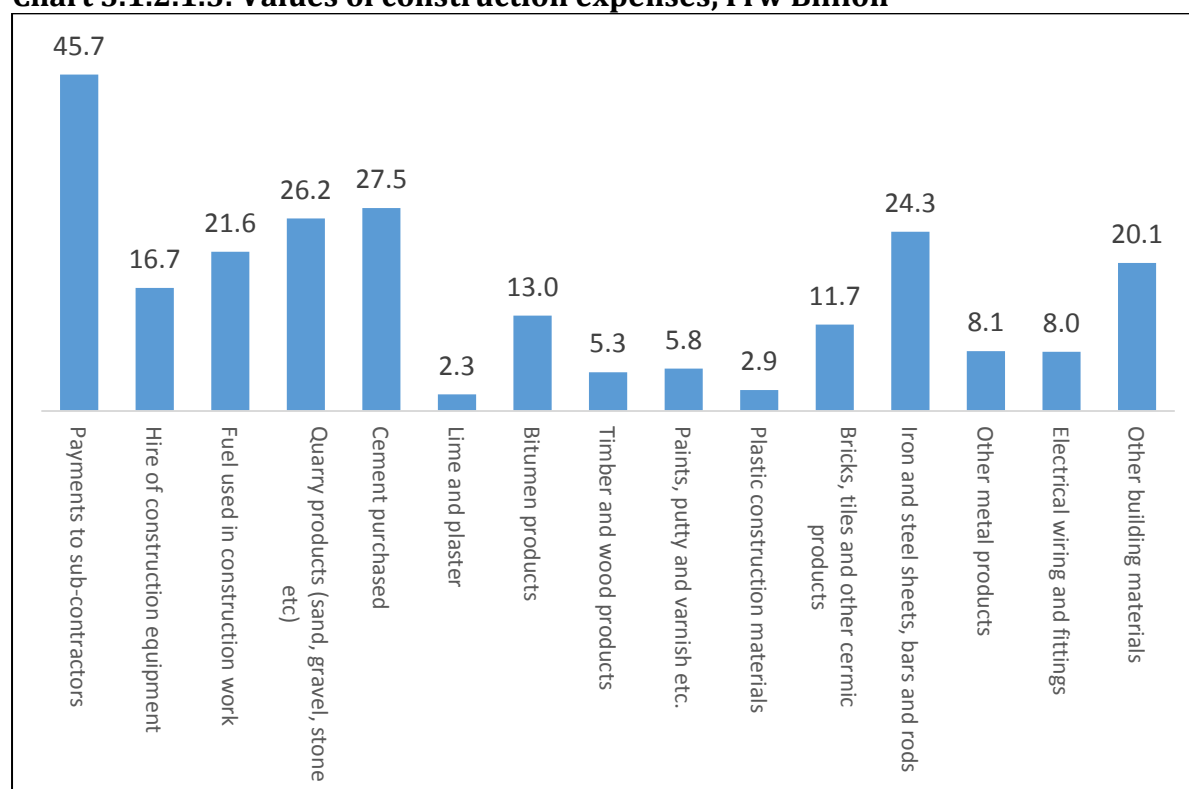
Source: NISR, IBES 2016 Survey

Chart 3.1.2.1.4 summarizes the distribution of the value of the construction work done. The total value of the constructed structures is Frw 350.1 billion. Roads and bridges and

other works were the most constructed structures with Frw 148.9 billion and Frw 75.3 billion respectively.

The construction expenses were Frw 248.2 billion. More money was spent on Payments to sub-contractors, Cement purchased, Quarry products (sand, gravel, stone etc), Iron and steel sheets, bars and rods, Fuel used in construction work and Hire of construction equipment. Chart 3.1.2.1.5 summarizes the distribution of the value of the construction expenses.

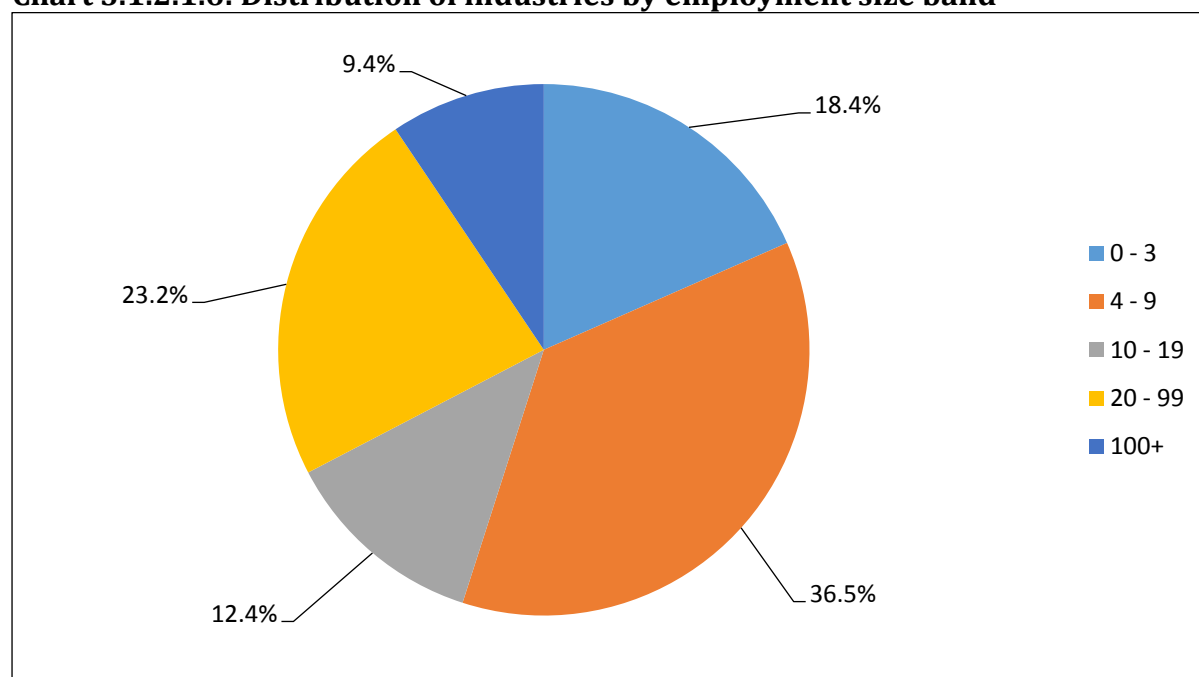
**Chart 3.1.2.1.5: Values of construction expenses, Frw Billion**



Source: NISR, IBES 2016 Survey

The distribution of industrial enterprises by employment size illustrates that more of them are in the category of enterprises which employ between 4 and 9 employees, 36.5 per cent, while the category with fewer enterprises are in the category that employ between 10 and 19 employees, see Chart 3.1.2.1.6.

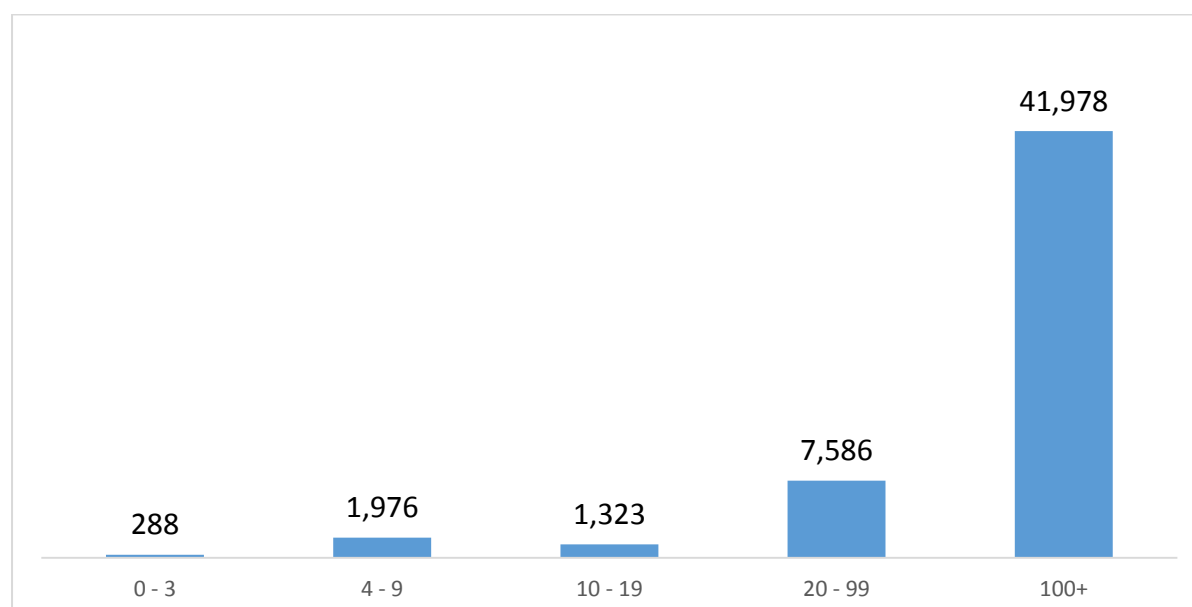
**Chart 3.1.2.1.6: Distribution of industries by employment size band**



Source: NISR, IBES 2016 Survey

The observation of Chart 3.1.2.1.7 below demonstrates that out of 53.1 thousand employees in the industrial sector 47.3 thousands work in the very large enterprises with 100 and more employees. Therefore, very large enterprises with 100 and more employees each employ more persons even though they represent 12.8 per of all industrial enterprises, see Chart 3.2.1.6.

**Chart 3.1.2.1.7: Distribution of employees by enterprise size (000s)**



Source: NISR, IBES 2016 Survey



### **3.1.2.2: Services sector**

#### **A. Introduction**

The services sector is made of trade, transportation, accommodation, information and communication, real estate activities, professional, scientific and technical services, administrative and support services, arts, other services except financial, education, and health.

##### **i. Wholesale and retail trade; repair of motor vehicles and motorcycles**

Wholesale and retail trade; repair of motor vehicles and motorcycles includes wholesale and retail sale (i.e. sale without transformation) of any type of goods and the rendering of services incidental to the sale of these goods. Wholesaling and retailing are the final steps in the distribution of goods. Goods bought and sold are also referred to as merchandise.

Also included are the repair of motor vehicles and motorcycles. Sale without transformation is considered to include the usual operations (or manipulations) associated with trade, for example sorting, grading and assembling of goods, mixing (blending) of goods (for example sand), bottling (with or without preceding bottle cleaning), packing, breaking bulk and repacking for distribution in smaller lots, storage (whether or not frozen or chilled), cleaning and drying of agricultural products, cutting out of wood fiberboards or metal sheets as secondary activities.

Wholesale and retail trade; repair of motor vehicles and motorcycles includes all activities related to the sale and repair of motor vehicles and motorcycles, include all other sale activities. The distinction between wholesale and retail sale is based on the predominant type of customer. Wholesale is the resale (sale without transformation) of new and used goods to retailers, to industrial, commercial, institutional or professional users, or to other wholesalers, or involves acting as an agent or broker in buying goods for, or selling goods to, such persons or companies. The principal types of businesses included are merchant wholesalers, i.e. wholesalers who take title to the goods they sell, such as wholesale merchants or jobbers, industrial distributors, exporters, importers, and cooperative buying associations, sales branches and sales offices (but not retail stores) that are maintained by manufacturing or mining units apart from their plants or mines for the purpose of marketing their products and that do not merely take orders to be filled by direct shipments from the plants or mines. Also included are merchandise brokers, commission merchants and agents and assemblers, buyers and cooperative associations engaged in the marketing of farm products. Wholesalers frequently physically assemble, sort and grade goods in large lots, break bulk, repack and redistribute in smaller lots, for example pharmaceuticals; store, refrigerate, deliver and install goods, engage in sales promotion for their customers and label design.

Retailing is the resale (sale without transformation) of new and used goods mainly to the general public for personal or household consumption or utilization, by shops, department stores, stalls, mail-order houses, door-to-door sales persons, hawkers and peddlers, consumer cooperatives, auction houses etc. Most retailers take title to the goods they sell, but some act as agents for a principal and sell either on consignment or on a commission basis.

## **ii. Transportation and storage**

Transportation and storage includes the provision of passenger or freight transport, whether scheduled or not, by rail, pipeline, road, water or air and associated activities such as terminal and parking facilities, cargo handling, storage etc. Included in this category is the renting of transport equipment with driver or operator. Also included are postal and courier activities.

This category excludes maintenance and repair of motor vehicles which is classified in the Wholesale and retail trade; repair of motor vehicles and motorcycles, and other transportation equipment which is classified in manufacturing. Also excluded in this class is the construction, maintenance and repair of roads, railroads, harbours, airfields, which is included in Construction, as well as the renting of transport equipment without driver or operator which is found in Administrative and support service activities.

## **iii. Accommodation and food service activities**

This section includes the provision of short-stay accommodation for visitors and other travellers and the provision of complete meals and drinks fit for immediate consumption. The amount and type of supplementary services provided within this section can vary widely.

This section excludes the provision of long-term accommodation as primary residences, which is classified in Real estate activities. Also excluded is the preparation of food or drinks that are either not fit for immediate consumption or that are sold through independent distribution channels, i.e. through wholesale or retail trade activities. The preparation of these foods is classified in Manufacturing.

## **iv. Information and communication**

Information and communication includes the production and distribution of information and cultural products, the provision of the means to transmit or distribute these products, as well as data or communications, information technology activities and the processing of data and other information service activities.

The main components are publishing activities, including software publishing, motion picture and sound recording activities, radio and programming activities, telecommunications activities and information technology activities and other information service activities.

Publishing includes the acquisition of copyrights to content (information products) and making this content available to the general public by engaging in (or arranging for) the reproduction and distribution of this content in various forms. All the feasible forms of publishing (in print, electronic or audio form, on the internet, as multimedia products such as CD-ROM reference books etc.) are included.

## **v. Real estate activities**

This section includes acting as lessors, agents and/or brokers in one or more of the following: selling or buying real estate, renting real estate, providing other real estate services such as appraising real estate or acting as real estate escrow agents. Activities in this section may be carried out on own or leased property and may be done on a fee

or contract basis. Also included is the building of structures, combined with maintaining ownership or leasing of such structures. This section includes real estate property managers.

**vi. Professional, scientific and technical activities**

This section includes specialized professional, scientific and technical activities. These activities require a high degree of training, and make specialized knowledge and skills available to users like legal, accounting, and photographic activities.

**vii. Administrative and support service activities**

This section includes a variety of activities that support general business operations. These activities differ from those in Professional, scientific and technical activities, since their primary purpose is not the transfer of specialized knowledge.

**viii. Arts, entertainment and recreation**

This section includes a wide range of activities to meet varied cultural, entertainment and recreational interests of the general public, including live performances, operation of museum sites, gambling, sports and recreation activities.

**ix. Other service activities**

This section (as a residual category) includes the activities of membership organizations, the repair of computers and personal and household goods and a variety of personal service activities not covered elsewhere.

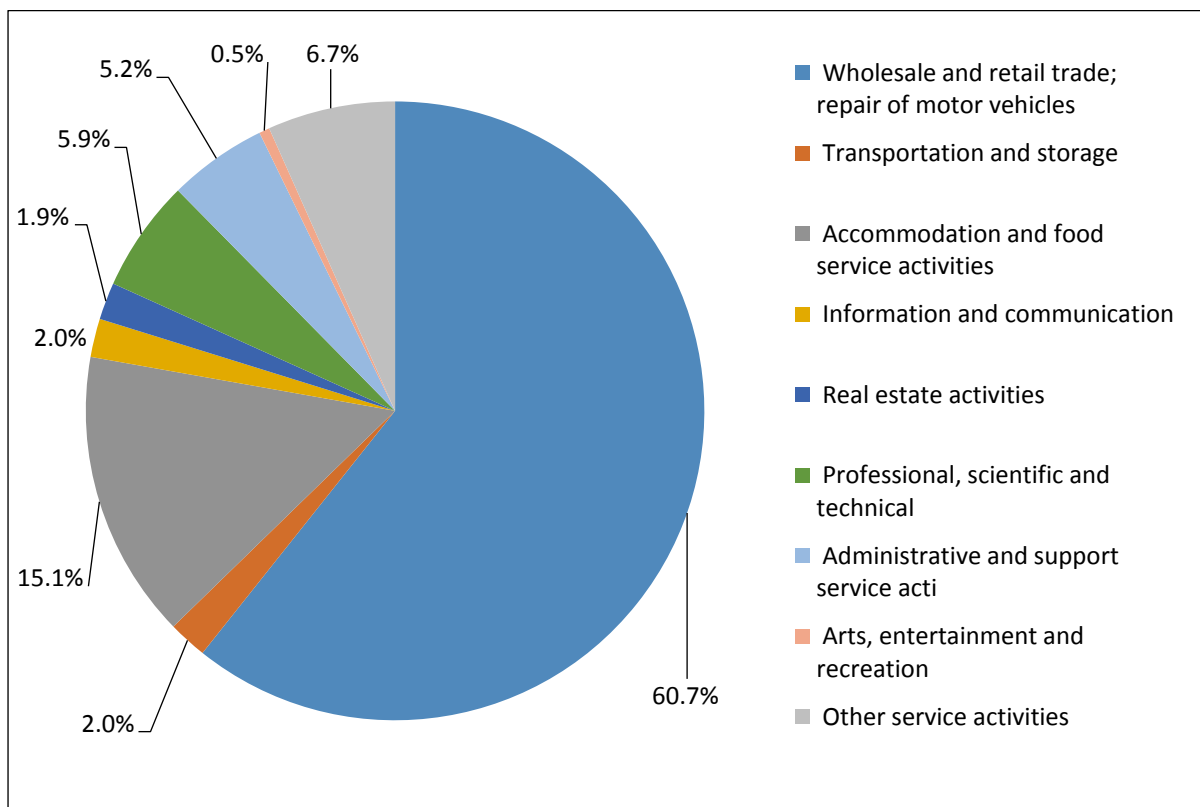
**B. Analysis of the services sector**

In this report the services sector consists of the following sectors:

- Wholesale and retail trade; repair of motor vehicles and motorcycles
- Transportation and storage
- Accommodation and food service activities
- Information and communication
- Real estate activities
- Professional, scientific and technical activities

Chart 3.1.2.2.1 suggests that the Wholesale and retail trade; repair of motor vehicles and motorcycles sector holds 60.7 per cent of enterprises whereas the Arts, entertainment and recreation activities sector has 0.5 per cent enterprises.

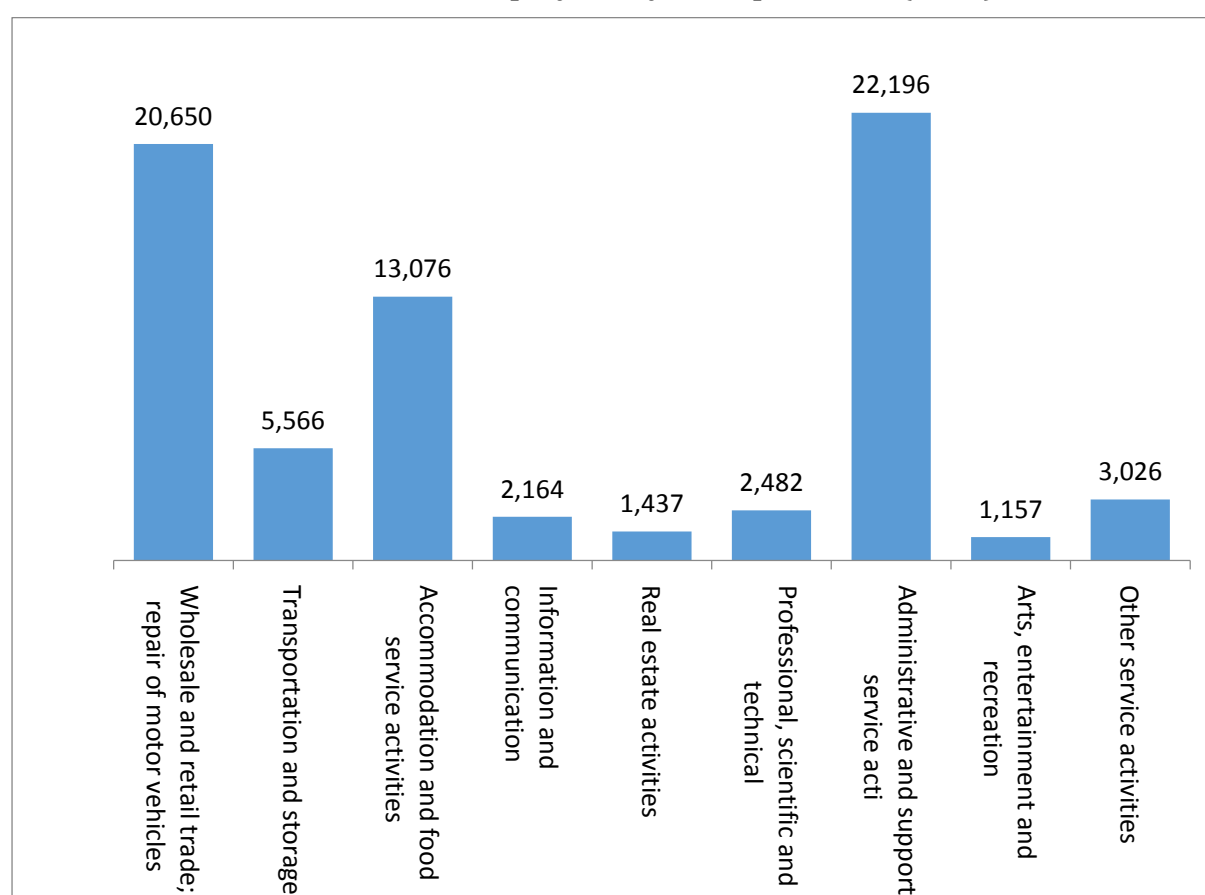
**Chart 3.1.2.2.1: Distribution of enterprises by services type**



Source: NISR, IBES 2016 Survey

Chart 3.1.2.2.2 illustrates that Wholesale and retail trade; repair of motor vehicles and motorcycles sector employs around 22.2 thousand people while Art, entertainment recreation sector employs only 1.2 thousand. This goes in line with the previous Chart 3.1.2.2.1 that shows that large sectors are comprised of more enterprises.

**Chart 3.1.2.2.2: Distribution of employees by enterprise size (000s)**



Source: NISR IBES 2016 Survey

The income statement for service sector clearly indicates that the sale of goods in the same condition as purchased yielded more income (RWF 2,310.1 billion) than other components across all service sectors as shown by the below Table 3.2.2.1.

**Table 3.2.2.1: Income statement for service sector, Frw billion**

Income components	Wholesale and retail trade; repair of motor vehicles	Transportation and storage	Accommodation and food service activities	Information and communication	Real estate activities	Professional, scientific and technical	Administrative and support service activities	Arts, entertainment and recreation	Other service activities	Total
Sales of goods in the same condition as purchased	2,310.1	4.5	1.8	2.8	0.6	0.0	0.0	0.0	0.0	2,319.9
Sales of manufactured, mined or quarried products	14.7	0.0	0.0	0.0	0.0	0.0	2.2	0.3	0.0	17.2
Sales of electricity	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sales of water by pipe or bouser	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Construction work done	3.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.3

Income components	Wholesale and retail trade; repair of motor vehicles	Transportation and storage	Accommodation and food service activities	Information and communication	Real estate activities	Professional, scientific and technical activities	Administrative and support service activities	Arts, entertainment and recreation	Other service activities	Total
Delivery charges if invoiced separately	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Transport, storage and travel services rendered	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Hotel & catering services	8.4	150.1	0.4	0.0	0.4	0.0	8.6	0.0	0.0	167.8
Telecommunication & internet connections	0.4	0.3	154.0	0.0	0.7	0.0	0.0	0.0	0.0	155.4
Sales of professional & scientific services	0.0	0.0	0.0	246.9	0.0	0.0	0.0	0.0	0.0	246.9
Rent of land receivable	0.1	3.1	0.0	2.2	0.6	34.4	6.3	0.0	0.1	46.7
Rent of buildings received / receivable	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4
Dividends or other profits realised	7.1	0.4	0.1	13.3	0.0	1.2	0.5	0.0	0.1	22.8
All other income	61.4	61.5	3.9	161.3	20.7	11.6	49.4	33.9	1.9	405.5
<b>Total income for the year 2015</b>	<b>2,408.3</b>	<b>220.7</b>	<b>160.6</b>	<b>429.7</b>	<b>23.6</b>	<b>47.2</b>	<b>67.1</b>	<b>34.2</b>	<b>2.0</b>	<b>3,393.4</b>

Source: NISR, IBES 2016 Survey

Table 3.1.2.2.2 highlights the distribution of expenditure components by industrial activities. The purchase of goods for resale and other goods & services purchased have been bought more.

**Table 3.1.2.2.2: Expenditure statement for services sector, Frw billion**

Expenditure components	Wholesale and retail trade; repair of motor vehicles	Transportation and storage	Accommodation and food service activities	Information and communication	Real estate activities	Professional, scientific and technical	Administrative and support service acti	Arts, entertainment and recreation	Other service activities	Total
Purchases of goods for resale	2,047.0	3.1	1.5	4.0	0.4	0.0	0.0	0.0	0.0	2,056.1
Purchases of raw materials, etc., used in manufacturing	12.5	0.0	0.0	0.0	0.0	0.0	2.1	0.1	0.0	14.7
Fuel used for mining & quarrying	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2
Construction sub-contracts, equipment hire, fuel, materials	4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.0
Purchases of food and drinks for catering & bar services	0.2	0.1	45.6	0.0	0.5	0.0	0.0	0.0	0.0	46.3
Rent of land paid / payable	12.1	0.0	0.3	3.1	0.0	0.0	0.0	0.0	0.0	15.5
Rent of buildings paid / payable	14.4	1.7	4.0	12.1	0.2	1.3	0.7	0.6	0.1	35.1
Other goods & services purchased (not interest, etc see below)	142.2	68.5	58.1	133.5	11.5	23.1	23.3	2.1	0.3	462.6
Wages & salaries paid (Social security & other benefits included)	44.5	22.3	31.8	52.9	2.9	15.7	26.9	0.7	0.4	198.1
Interests paid (excluding other bank charges)	22.6	11.9	17.8	55.3	6.6	0.5	1.7	0.0	0.0	116.4
Business licenses, rates and fees payable to government	15.4	1.5	1.2	7.1	2.2	0.9	0.3	0.0	0.0	28.7
Depreciation charges for the year on fixed assets	20.4	37.1	21.6	88.7	5.3	0.8	3.6	0.7	0.1	178.2
All other costs, losses, provisions, etc.	24.9	65.3	9.1	170.5	80.0	0.9	0.4	18.1	0.0	369.1
<b>Total expenditure</b>	<b>2,360.4</b>	<b>211.4</b>	<b>190.9</b>	<b>527.2</b>	<b>109.6</b>	<b>43.2</b>	<b>59.0</b>	<b>22.4</b>	<b>1.0</b>	<b>3,525.1</b>

Source: NISR, IBES 2016 Survey

Table 3.1.2.2.3 below displays the summary income and expenditure statement by enterprise size and the change in inventory.

**Table 3.1.2.2.3: Summary statement by enterprise size for the services sector, Frw billion**

Enterprise size	Total income 2015	Total expenditure 2015	Net profit (loss) before tax of the year	Value of the total change in inventories
<=3	401.0	404.0	10.8	13.7
>3, <=9	395.1	382.4	15.4	2.4
>9, <=19	394.0	477.4	0.7	84.1
>19, <=99	1,211.2	1,233.7	-26.8	-4.3
100+	995.3	1,031.7	-31.2	5.2
<b>Total</b>	<b>3,396.6</b>	<b>3,529.2</b>	<b>-31.1</b>	<b>101.1</b>

Source: NISR, IBES 2016 Survey

**Table 3.1.2.2.4: Summary assets of the services sector, Frw billion**

Assets	Wholesale and retail trade; repair of motor vehicles	Transportation and storage	Accommodation and food service activities	Information and communication	Real estate activities	Professional, scientific and technical	Administrative and support service activities	Arts, entertainment and recreation	Other service activities	Total
<b>Non-current assets</b>	<b>279.6</b>	<b>275.3</b>	<b>543.7</b>	<b>526.6</b>	<b>144.3</b>	<b>30.5</b>	<b>36.3</b>	<b>3.2</b>	<b>0.9</b>	<b>1,840.3</b>
Fixed assets	245.1	262.0	491.1	466.8	83.5	9.0	25.6	2.5	0.7	1,586.2
Land	29.0	4.5	18.8	1.5	10.3	5.2	3.5	0.0	0.2	73.1
Buildings	132.9	17.8	422.5	32.9	37.6	1.5	11.7	0.3	0.3	657.6
Vehicles and Machines	68.2	238.8	18.4	262.7	34.0	1.4	7.7	0.6	0.1	632.1
Others	15.0	0.9	31.4	169.6	1.6	0.8	2.6	1.6	0.1	223.5
Work in progress	7.3	0.2	45.8	8.7	6.8	0.3	3.4	0.0	0.0	72.6
Other investments	27.3	13.0	6.8	51.2	54.0	21.1	7.3	0.7	0.2	181.6
<b>Current assets</b>	<b>580.7</b>	<b>42.2</b>	<b>80.5</b>	<b>206.8</b>	<b>258.5</b>	<b>19.6</b>	<b>26.0</b>	<b>1.0</b>	<b>0.6</b>	<b>1,216.0</b>
Inventories	245.1	0.6	4.8	11.4	216.3	0.0	1.2	0.0	0.0	479.4
Debtors & other receivables	271.2	28.2	60.1	128.0	18.0	15.0	20.7	0.2	0.4	541.9
Cash and cash equivalents	64.5	13.4	15.6	67.4	24.2	4.6	4.1	0.8	0.2	194.8
<b>Total assets</b>	<b>860.4</b>	<b>317.5</b>	<b>624.2</b>	<b>733.4</b>	<b>402.8</b>	<b>50.1</b>	<b>62.3</b>	<b>4.2</b>	<b>1.5</b>	<b>3,056.4</b>

Source: NISR, IBES 2016 Survey

Table 3.1.2.1.4 above presents the distribution of assets of the services sector while Table 3.1.2.2.5 below summarizes the equity and liabilities of the services sector.



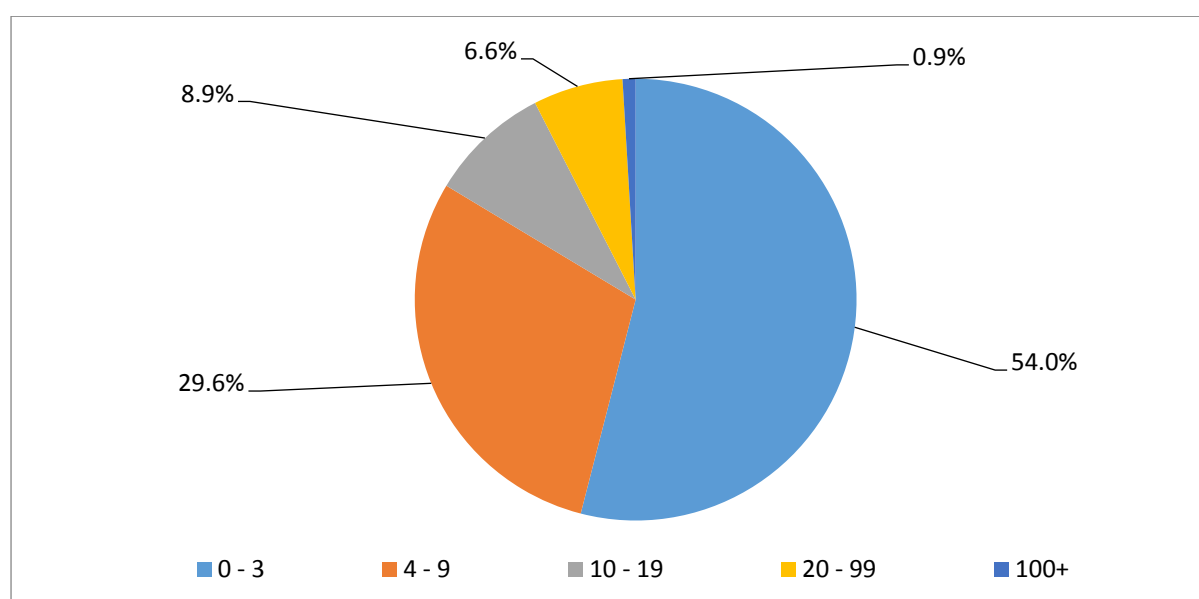
**Table 3.1.2.2.5: Summary equity and liabilities of the services sector, Frw billion**

Liabilities	Wholesale and retail trade; repair of motor vehicles	Transportation and storage	Accommodation and food service activities	Information and communication	Real estate activities	Professional, scientific and technical	Administrative and support service activities	Arts, entertainment and recreation	Other service activities	Total
<b>Equity</b>	<b>172.5</b>	<b>-3.2</b>	<b>153.4</b>	<b>-463.4</b>	<b>240.9</b>	<b>26.7</b>	<b>24.0</b>	<b>-1.4</b>	<b>1.1</b>	<b>150.6</b>
Share capital	114.8	57.9	97.5	106.1	205.1	16.7	18.6	0.5	0.8	618.0
Reserves	43.4	-85.3	29.7	-70.9	48.9	9.3	2.2	-0.7	0.1	-23.3
Other equity	14.2	24.2	26.2	-498.6	-13.0	0.8	3.2	-1.2	0.2	-444.0
<b>Non-current liabilities</b>	<b>171.6</b>	<b>133.1</b>	<b>368.1</b>	<b>976.4</b>	<b>104.6</b>	<b>2.1</b>	<b>14.2</b>	<b>3.6</b>	<b>0.3</b>	<b>1,774.0</b>
Loans and borrowings	113.5	99.8	332.9	432.4	72.2	0.5	8.6	3.3	0.1	1,063.2
Other non-current liabilities	58.1	33.2	35.3	544.1	32.4	1.5	5.6	0.4	0.2	710.8
<b>Current liabilities</b>	<b>516.2</b>	<b>187.6</b>	<b>102.6</b>	<b>220.4</b>	<b>57.3</b>	<b>21.3</b>	<b>24.1</b>	<b>2.0</b>	<b>0.1</b>	<b>1,131.7</b>
<b>Total liability</b>	<b>860.4</b>	<b>317.5</b>	<b>624.2</b>	<b>733.4</b>	<b>402.8</b>	<b>50.1</b>	<b>62.3</b>	<b>4.2</b>	<b>1.5</b>	<b>3,056.3</b>

Source: NISR, IBES 2016 Survey

The following chart suggests that 54.0 per cent of enterprises in the service sector have not more than three employees while only 0.9 per cent enterprises have hundred or more employees.

**Chart 3.1.2.2.3: Summary output indicators by employment size for services sector**



Source: NISR, IBES 2016 Survey

The analysis of details on sales and purchases of goods for resale shows that the following items have a big trading share: food, petroleum products, alcoholic drinks, soft drinks, drinking water, tobacco products, construction materials, personal and household goods and supplies, agricultural raw materials, livestock raw materials, and electronic equipment. See Table 3.1.2.2.5 for more details.

**Table 3.1.2.2.5: Details of goods sold in the same condition as purchased, Frw billion**

Type of products	Sold in bulk (Whole sale)	Values of sales		Purchases
		sold in Retail	Total	Total
Petroleum products	365.1	342.3	707.5	613.1
Motor vehicles, motorcycles and bicycles	40.0	35.2	75.2	60.5
Parts of motor vehicles, motorcycles and bicycles	18.8	11.3	30.1	25.8
Electronic equipment (including TVs, telephones, computers, etc)	66.6	59.4	126.0	109.0
Machinery of all kinds not elsewhere specified	0.1	1.1	1.3	0.9
Parts of machinery and equipment sold to customers	1.6	5.9	7.5	5.2
Agricultural raw materials and livestock	68.1	10.3	78.4	70.3
Agricultural and livestock products (not food)	164.5	4.4	168.9	167.2
Metals (unworked) and metal ores	6.4	0.4	6.8	1.3
Construction materials and supplies	123.0	36.6	159.7	141.1
Food (including dairy products, fruit juices, etc)	346.7	62.9	409.6	372.1
Alcoholic drinks, soft drinks, drinking water and tobacco products	252.6	5.4	258.0	240.8
Textiles, clothing, footwear and leather goods	21.8	16.4	38.2	32.7
Books, newspapers, stationery and office supplies	3.8	0.8	4.7	8.2
Pharmaceutical products and medical supplies (not cosmetics)	62.5	20.2	82.7	63.8
Personal and household goods and supplies not elsewhere specified	92.8	20.9	113.8	100.9
Other goods, please specify the main types	28.2	13.7	41.8	34.1
<b>Total</b>	<b>1,662.9</b>	<b>647.3</b>	<b>2,310.1</b>	<b>2,047.0</b>

Source: NISR, IBES 2016 Survey

**Table 3.1.2.2.6: Details of transport, storage, travel and related services revenue, Frw billion**

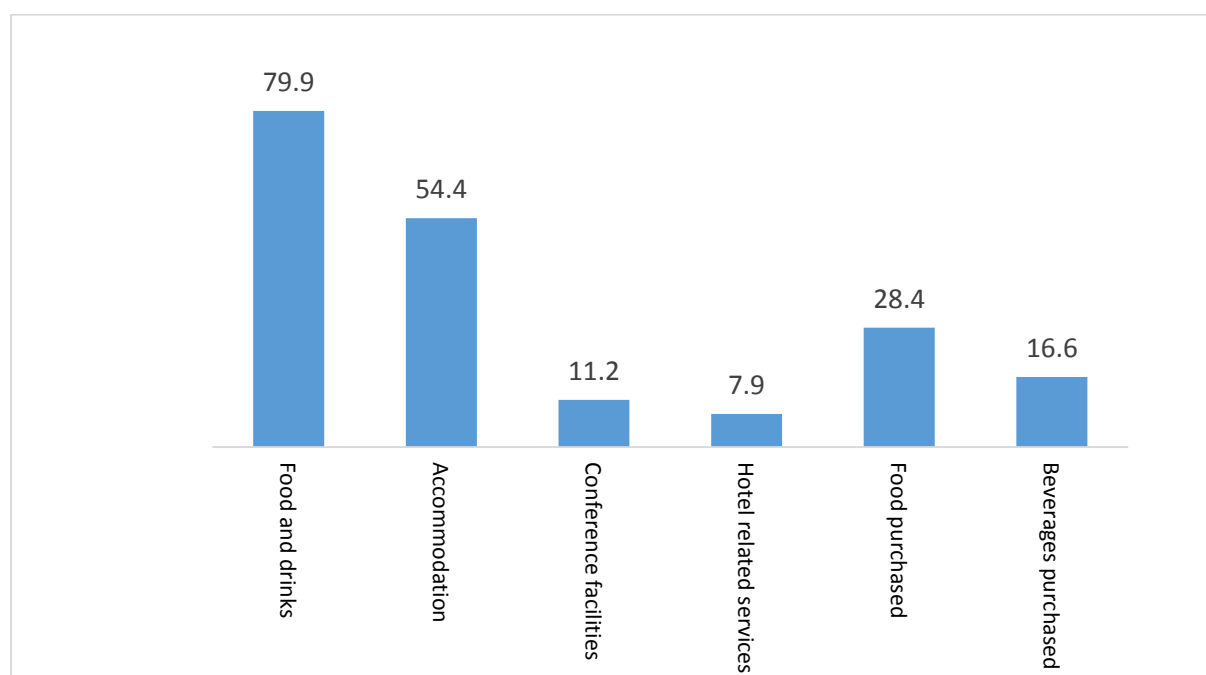
Type of products	Land transport & Air transport	Other transport & postal services	Total
<b>Good Transport</b>			
Transport of goods Within Rwanda	15.0	0.2	15.2
International transport of goods	21.2	0.2	21.4
<b>Passengers transport</b>			
Transport of passengers: within Rwanda	20.8	0.0	20.8
Transport of passengers: International	34.7	0.0	34.7
Revenue from storage and other transport related services	12.7	8.3	21.0
Net revenue from travel and tour operator services	36.6	0.4	37.0
<b>Revenue for transport services</b>	<b>141.0</b>	<b>9.1</b>	<b>150.1</b>

Source: NISR, IBES 2016 Survey

Table 3.1.2.2.6 contains the details of transport, storage, travel and related services revenue. In total, Frw 150.1 billion were collected as revenue from this sector. The transport of passengers has dominated the list.

Chart 3.1.2.2.4 summarizes the distribution of the revenue details for hotel and catering services. The total revenue is Frw 153.3 billion while the total purchases were valued at Frw 45.0 billion. The two categories of Food and drinks, and Accommodation accounted for the highest income with Frw 79.9 billion and Frw 54.4 billion respectively.

**Chart 3.1.2.2.4: Details for hotel and catering services, Frw billion**



Source: NISR, IBES 2016 Survey

**Table 3.1.2.2.7: Details of telecommunication services and internet connection, Frw billion**

Type of products	Publishing & broadcasting activities	Telecommunication	Information technology services	Total
Sales of telephone and internet services	0.0	237.7	11.2	248.9
Revenue/commissions due from other service providers	0.0	15.2	0.0	15.2
<i>Locals</i>	<i>0.0</i>	<i>3.9</i>	<i>0.0</i>	<i>3.9</i>
<i>Internationals</i>	<i>0.0</i>	<i>11.3</i>	<i>0.0</i>	<i>11.3</i>
Revenue from mobile money services	0.0	28.1	0.0	28.1
Sales of other telecommunication materials	0.0	6.2	0.0	6.2
Payment/commission due other telecom service provider				
<i>Local</i>	<i>0.0</i>	<i>19.9</i>	<i>8.0</i>	<i>27.9</i>
<i>International</i>	<i>0.0</i>	<i>23.7</i>	<i>0.0</i>	<i>23.7</i>
<b>Net telecommunication revenue</b>	<b>0.0</b>	<b>243.6</b>	<b>3.2</b>	<b>246.9</b>

Source: NISR, IBES 2016 Survey

Table 3.1.2.2.7 illustrates the distribution of different types of revenue and expenses of the telecommunication and information technology services. The sale of telephones, internet services and other telecommunication materials dominated the revenue of these two sectors with Frw 243.6 billion for the telecommunication sector and Frw 3.2 billion for information technology services sector.

**Table 3.1.2.2.8: Detailed revenue of legal, accounting, consulting and similar services, Frw billion**

Type of service	Real estate activities	Professional, scientific and technical activities	Administrative and support service activities	Arts, entertainment and recreation	Other service activities	Total
Management fees received from a subsidiary	0.0	3.2	4.1	0.0	0.0	7.3
Legal services	0.0	0.1	0.0	0.0	0.0	0.1
Auditing, accountants' fees, and other professional services	0.0	12.1	0.1	0.0	0.0	12.2
Management consulting services	0.0	8.1	2.2	0.0	0.0	10.3
Architectural and engineering services	0.0	8.5	0.0	0.0	0.0	8.5
IT consultancy services	0.2	0.0	0.0	0.0	0.0	0.2
Scientific research and development	0.0	2.2	0.0	0.0	0.0	2.2
Advertising and market research	0.1	0.5	0.0	0.0	0.0	0.6
Veterinary services	0.0	0.0	0.0	0.0	0.0	0.0
<b>Total</b>	<b>0.3</b>	<b>34.7</b>	<b>6.3</b>	<b>0.0</b>	<b>0.0</b>	<b>41.3</b>

Source: NISR, IBES 2016 Survey

Table 3.1.2.2.8 above summarizes the revenue of legal, accounting, consulting and similar services category. This category's total revenue is Frw 41.3 billion. The most generating services in this category are: Auditing, accountants' fees and other professional services Management consulting services and Architectural and engineering services.

Table 3.1.2.2.9 summarizes the revenue from miscellaneous services. This category's total revenue is Frw 111.8 billion. The most generating sub-sectors in this category are Administrative & support service activities and Arts, entertainment and recreation

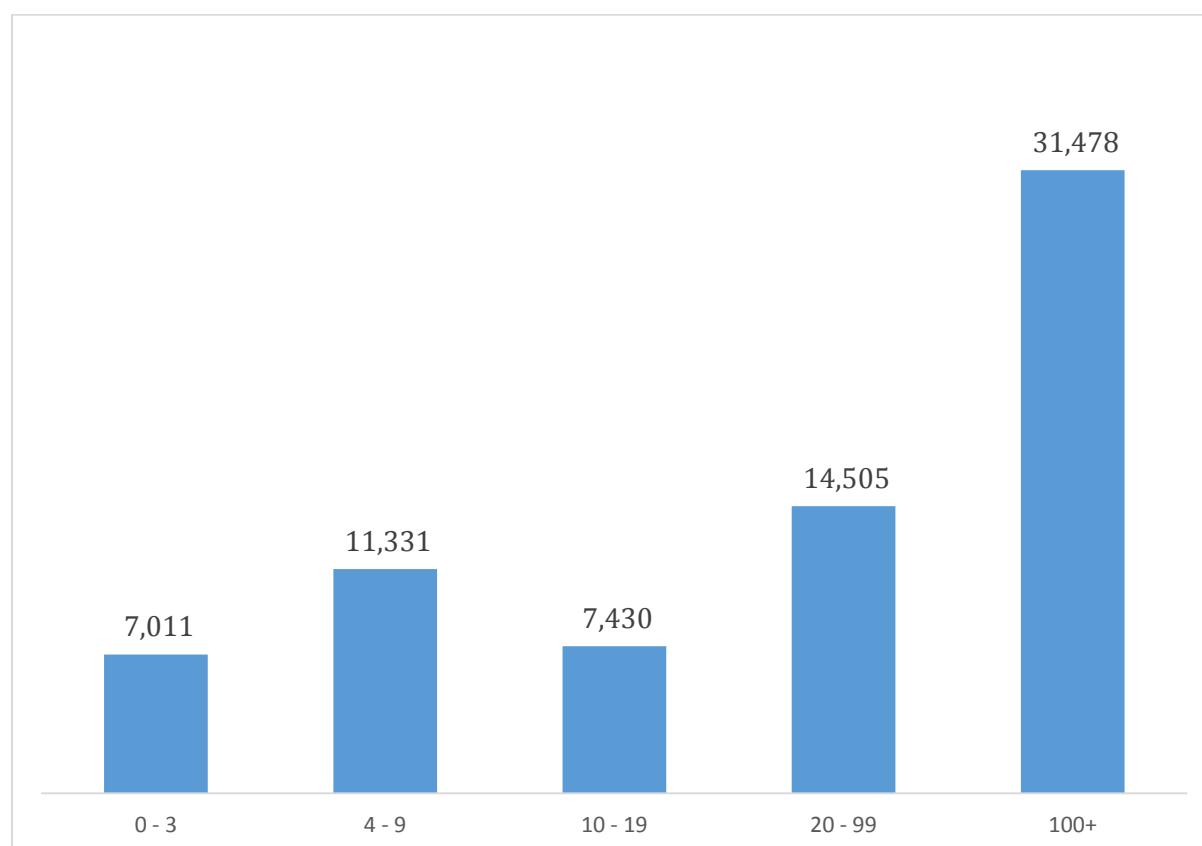
**Table 3.1.2.2.9 Revenue from miscellaneous services, Frw billion**

Type of products	Real estate activities	Professional, scientific and technical activities	Administrative and support service activities	Arts, entertainment and recreation	Other service activities	Total
Manufacturing work done for others on their raw materials	0.0	0.0	0.0	0.0	0.0	0.0
Waste water treatment	0.0	0.0	0.0	0.0	0.0	0.0
Waste disposal and recycling services	0.0	0.0	0.0	0.0	0.0	0.0
Publishing activity	0.0	0.0	0.0	0.0	0.0	0.0
Video, audio production, TV and broadcasting	0.3	0.0	0.0	0.0	0.0	0.3
Repair and maintenance of motor vehicles	0.0	0.0	0.0	0.0	0.0	0.0
Hire of motor vehicles	0.0	0.0	0.0	0.0	0.0	0.0
Hire of construction machinery and equipment	0.0	0.0	0.9	0.0	0.0	0.9
Hire of other machines or equipment	0.0	0.0	1.8	0.0	0.0	1.8
Repair services for computers and domestic equipment	0.0	0.0	0.0	0.0	0.1	0.1
Security services	0.0	0.0	33.1	0.0	0.0	33.1
Ancillary financial services	0.0	0.0	0.0	0.0	0.0	0.0
Real estate activities	18.8	0.0	0.0	0.0	0.0	18.9
Health-related technical services	0.0	0.0	0.0	0.0	0.0	0.0
Commercial education and training services	0.0	0.0	0.0	0.0	0.0	0.0
Hairdressing and personal care services	0.0	0.1	0.1	0.0	0.2	0.4
Cleaning services	1.1	0.1	4.9	0.0	0.1	6.1
Other services	0.1	11.2	4.0	33.7	1.2	50.2
<b>Total</b>	<b>20.3</b>	<b>11.4</b>	<b>44.8</b>	<b>33.7</b>	<b>1.6</b>	<b>111.8</b>

Source: NISR, IBES 2016 Survey

The following chart illustrates that big sized enterprises have employed 31,478 employees.

**Chart 3.1.2.2.5: Distribution of employees by enterprise size**



Source: NISR, IBES 2016 Survey

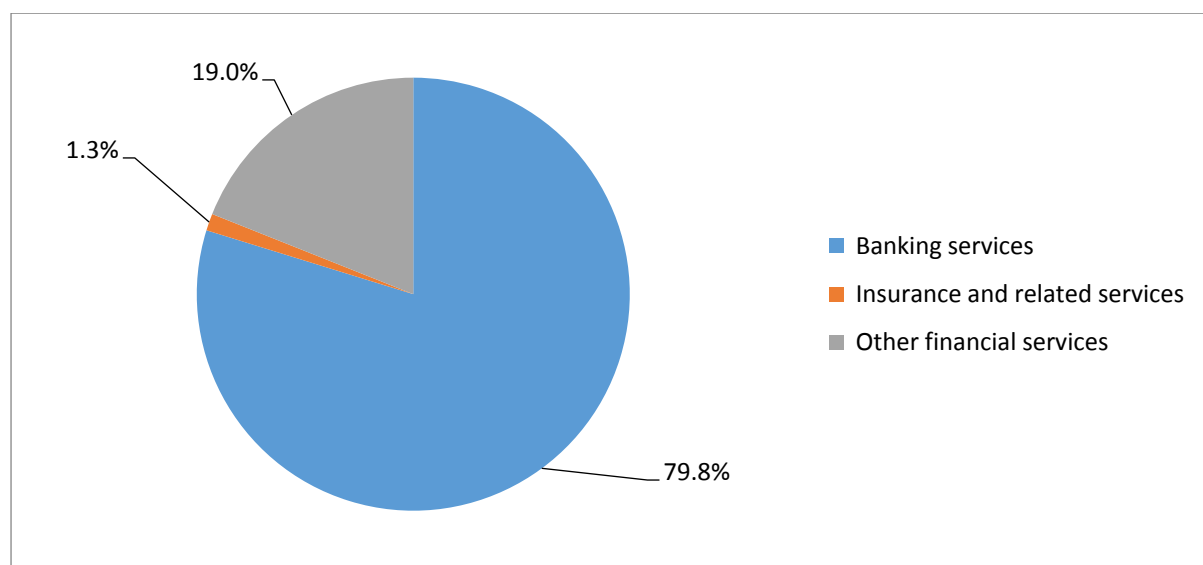
### **3.1.2.3: Financial and insurance activities**

#### **A. Introduction**

Financial and insurance activities include financial service activities, insurance, reinsurance and pension funding activities and activities to support financial services. It also includes the activities of holding assets, such as activities of holding companies and the activities of trusts, funds and similar financial entities.

## B. Analysis of financial and insurance activities

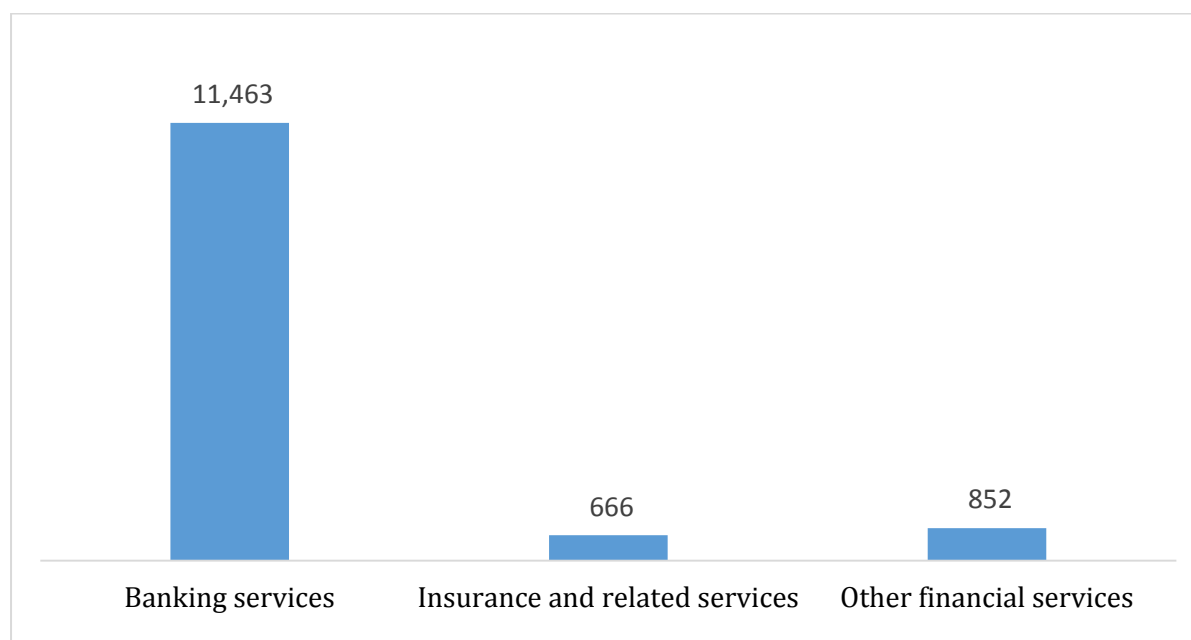
**Chart 3.1.2.3.1: Distribution of enterprises by services type**



Source: NISR, IBES 2016 Survey

The more enterprises in the sector, the more persons employed. This is shown in the chart below whereby 11.2 thousands persons are employed in the banking services while 0.6 thousand persons are employed in the insurance and related services.

**Chart 3.1.2.3.2: Distribution of employees by enterprise size (000s)**



Source: NISR, IBES 2016 Survey

The income statement of the Financial sector, hereafter in the table below reveals that interest received/premium earned constituted the top income generator for this sector for it realised Frw 322.5 billion in 2016 while the Gains on the sale of fixed assets made Rwf 0.2 billion.

**Table 3.1.2.3.1: Income statement for financial sector, Frw billion**

Income components	Monetary institutions	Insurance, reinsurance and pension funding, except compulsory social security	Other financial services	Total
Interest received/premiums earned	275.2	46.2	1.1	322.5
Fees & commissions/claim received	64.5	0.0	0.3	64.7
Commissions received for agents, brokerage services	0.3	2.0	0.6	2.9
Rent of land received/receivable	0.0	0.0	0.0	0.0
Rent of buildings received /receivable	0.0	1.9	0.0	1.9
Rent/lease of machinery and equipment	0.0	0.0	0.0	0.0
Interest received/receivable	0.0	3.0	0.0	3.0
Exchange dealings/Other investment	24.9	1.6	1.5	28.0
Insurance income	0.0	0.4	0.0	0.4
Dividend received/receivable	0.2	0.2	0.0	0.4
Grants received	1.3	0.0	0.1	1.5
Gains on the sale of fixed assets	0.2	0.0	0.0	0.2
Bad debts written back/ Revaluations on fixed assets	14.5	1.1	0.0	15.7
Other income	11.5	2.8	0.0	14.3
<b>Total</b>	<b>392.6</b>	<b>59.2</b>	<b>3.7</b>	<b>455.5</b>

Source: NISR, IBES 2016 Survey

On the side of expenditure in the financial sector, the table below reveals that interests/claims paid/payable consists of a big expenditure component as it registered Rwf 106.4 billion in 2016.



**Table 3.1.2.3.2: Expenditure statement for financial sector, Frw billion**

Expenditure component	Monetary institutions	Insurance, reinsurance and pension funding, except compulsory social security	Other financial services	Total
Interests /Claims paid/payable	71.1	35.2	0.1	106.4
Staff costs (Wages, salaries, social security & other benefits)	82.8	11.5	1.4	95.7
Commissions paid for financial services	7.5	3.7	0.0	11.2
Rent of land paid/payable	0.1	0.2	0.0	0.3
Rent of buildings paid/payable	7.3	1.2	0.4	8.9
Payments for rental or lease of machinery and equipment	1.1	0.0	0.0	1.1
Depreciation charges	21.6	2.2	0.4	24.2
Regulatory fees and licences paid to government	1.2	2.0	0.1	3.3
Interests paid/payable on loans contracted (excluding other bank charges)	3.1	0.7	0.0	3.8
Fines, penalties & donations	0.8	0.3	0.0	1.1
Payments made for telephone, internet, postage, courier	0.7	0.0	0.1	0.8
Net impairment charge on loans and advances/Provision for bad	48.2	0.6	0.0	48.8
Loss on the sale of fixed assets	0.1	1.4	0.0	1.5
Cost of all other consumable goods & services purchased(Specify)	78.9	0.1	1.2	80.2
<b>Total</b>	<b>324.5</b>	<b>59.2</b>	<b>3.7</b>	<b>387.3</b>

Source: NISR, IBES 2016 Survey

Table 3.1.2.2.3 below displays the summary income and expenditure statement by enterprise size.

**Table 3.1.2.3.3: Summary statement by enterprise size for the financial sector, Frw billion**

Enterprise size	Total income	Total expenditure
<=3	0.2	0.2
>3, <=9	2.7	1.9
>9, <=19	1.9	1.5
>19, <=99	59.6	65.4
100+	391.1	318.4
<b>Total</b>	<b>455.5</b>	<b>387.3</b>

Source: NISR, IBES 2016 Survey

Table 3.1.2.3.4 summarizes assets of the financial sector by financial institution type. Monetary institutions have more assets than any other, Frw 2,775.7 billion against Frw 141.4 billion for the insurance companies.

**Table 3.1.2.3.4: Summary assets of the financial sector, Frw billion**

Description	Monetary institutions	Insurance companies	Other financial services	Total
Cash and balances with other FIs	116.4	43.8	0.5	160.7
Overdrawn accounts & loans to clients	55.5	60.3	1.2	117.1
Financial instruments	650.5	-	1.9	652.4
Cash equivalents	1,659.9	-	3.6	1,663.6
Fixed assets	293.4	-	0.2	293.5
Other assets	-	37.3	-	37.3
<b>Total</b>	<b>2,775.7</b>	<b>141.4</b>	<b>7.4</b>	<b>2,924.5</b>

Source: NISR, IBES Survey 2016

The summary of equity and liabilities of the financial sector reveals deposits dominates all other types of liabilities in the monetary institutions, Frw 1,886.7 billion.

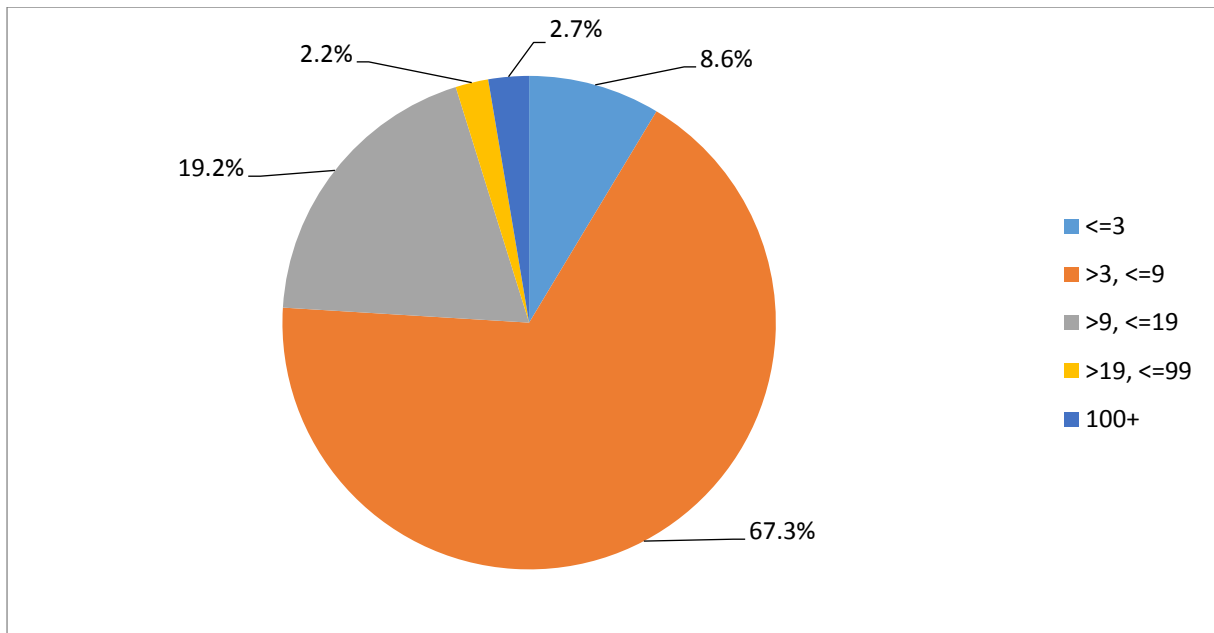
**Table 3.1.2.3.5: Summary equity and liabilities of the financial sector, Frw billion**

Description	Monetary institutions	Insurance companies	Other financial services	Total
Balances due from other FIs	191.9	0.0	1.0	193.0
Deposit liabilities	1,886.7	0.0	0.8	1,887.4
Financial instruments	28.9	0.0	1.0	29.9
Deferred income tax	0.0	6.4	0.0	6.4
Other liabilities	187.7	62.4	1.3	251.4
Provision	8.4	40.2	0.0	48.5
Equity	472.1	32.5	3.2	507.8
<b>Total</b>	<b>2,775.7</b>	<b>141.4</b>	<b>7.4</b>	<b>2,924.5</b>

Source: NISR, IBES 2016 Survey

As illustrated in the chart below, 67.3 per cent financial sector of enterprises employ not more than 3 (three) persons while a narrow 2.7 per cent of enterprises employ 100 and more persons.

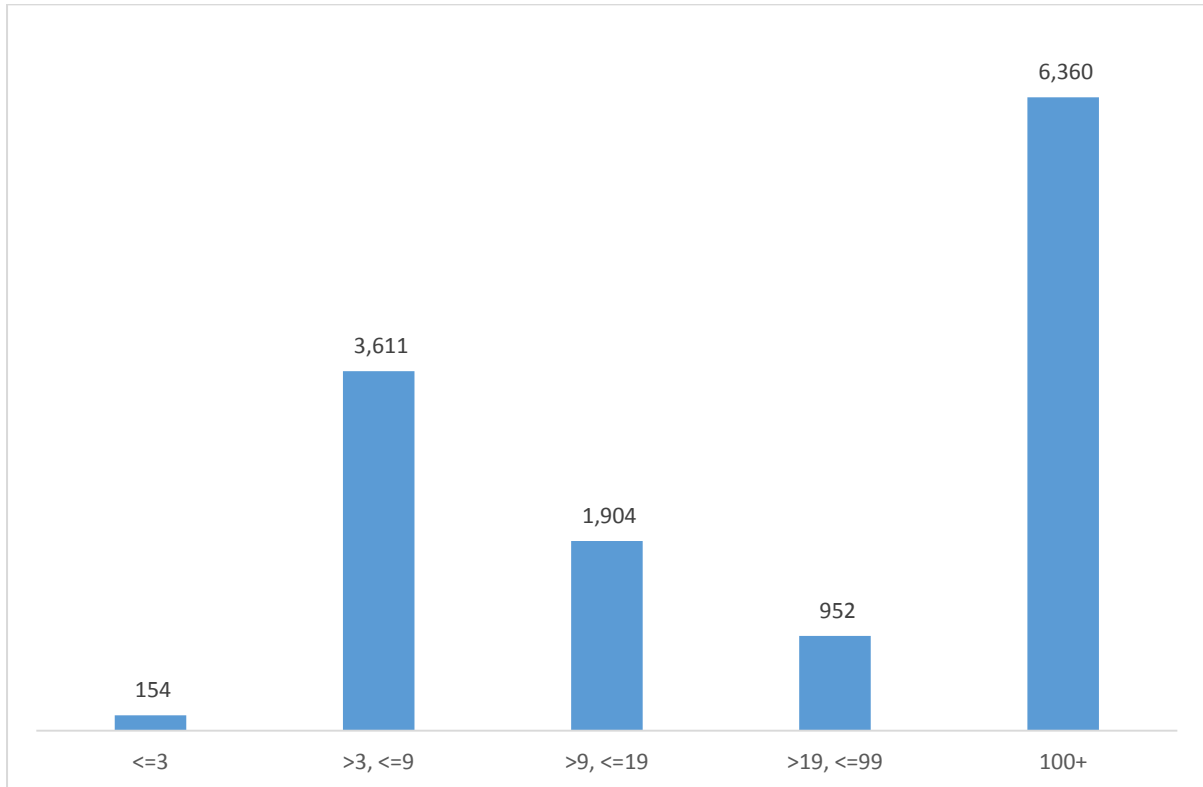
**Chart 3.1.2.3.3 Distribution of enterprises by employment size band**



Source: NISR, IBES 2016 Survey

The above chart presents enterprises by employment size, while the chart below shows that enterprises in the range of 100 and more employees had 13.0 thousands persons employed whereas the small ones employed 6.6 thousands persons in 2016.

**Chart 3.1.2.3.4: Distribution of employees by enterprise size**



Source: NISR, IBES 2016 Survey

### 3.1.2.4: Education sector

#### A. Introduction

This section includes education at any level or for any profession, oral or written as well as by radio and television or other means of communication. It includes education by the different institutions in the regular school system at its different levels as well as adult education, literacy programmes etc. Also included are military schools and academies, prison schools etc. at their respective levels.

For each level of initial education, the classes include special education for physically or mentally handicapped pupils. This section also includes instruction primarily concerned with sport and recreational activities such as bridge or golf and education support activities.

In IBES this section includes only private and semi-public pre-primary, primary, secondary, technical vocational education and training (TVET) educational institutions as well as all private, semi-public and public higher learning institutions.

#### B. Analysis of education sector

**Table 3.2.4.1: Income statement for Education sector**

Income components	Billion Frw
Tuition fees paid : By students	71.5
Tuition fees paid : By REB	22.1
Tuition fees paid : By FARG	9.2
Tuition fees paid : By other supporters	5.6
Registration fees	2.8
Boarding	2.3
Government subsidies or grant	4.5
Development partners	15.1
Meals	4.3
Uniforms	0.8
Rent of land received/ receivable	0.2
Rent of buildings received/ receivable	0.4
Rent/lease of machinery and equipment	0.1
Research income	1.1
All other income	3.7
<b>Total income</b>	<b>143.5</b>

Source: NISR, IBES 2016 Survey

The above table describes the income statement of the education sector with almost a half being constituted by tuition fees paid by students, Frw 71.5 billion out of Frw 143.5 billion. Table 3.1.2.4.2 shows that the Wages & salaries paid (Social security & other

benefits included) has been the most expenditure component for education sector in 2016, Frw 77.7 billion.

**Table 3.1.2.4.2: Expenditure statement for Education sector**

Expenditure component	Billion Frw
Text books	1.1
Cost of uniforms	1.0
Cost of meals	8.1
Examination costs	2.1
Rent of land paid/payable	0.0
Rent of buildings paid/payable	2.1
Payments for rental or lease of machinery and equipment	0.0
Research expenses	2.5
All other goods and services purchased	37.7
Wages & salaries paid (Social security & other benefits included)	77.7
Interests paid / payable (not other bank charges)	2.6
Business licenses, rates and fees payable to government	0.8
Depreciation charges for the year on fixed assets	12.0
All other costs, losses, provisions, etc.	3.3
<b>Total expenditure</b>	<b>151.0</b>

Source: NISR, IBES 2016 Survey

The following table illustrates that, in education sector, big establishments make more income and expenditure when compared to others.

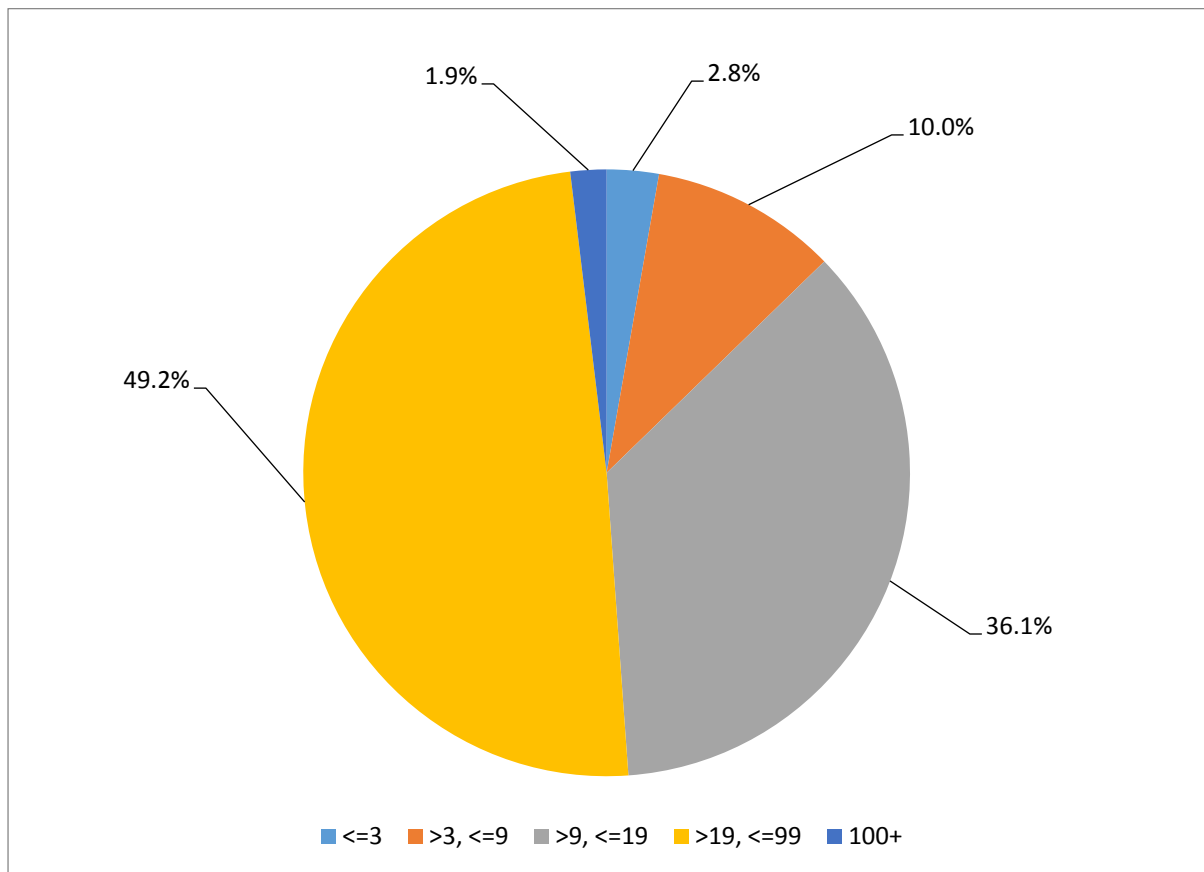
**Table 3.1.2.4.3: Summary statement by enterprise size for education sector, Frw billion**

Enterprise size	Total income	Total expenditure
<=3	0.0	0.0
>3, <=9	0.3	0.3
>9, <=19	1.3	1.5
>19, <=99	58.8	59.4
100+	83.2	89.9
<b>Total</b>	<b>143.5</b>	<b>151.0</b>

Source: NISR, IBES 2016 Survey

The chart below clearly indicates that 49.2 per cent of the education enterprises employ the number of persons in the range of >19, <=99 while only 1.9 per cent enterprises employs a 100 and more persons.

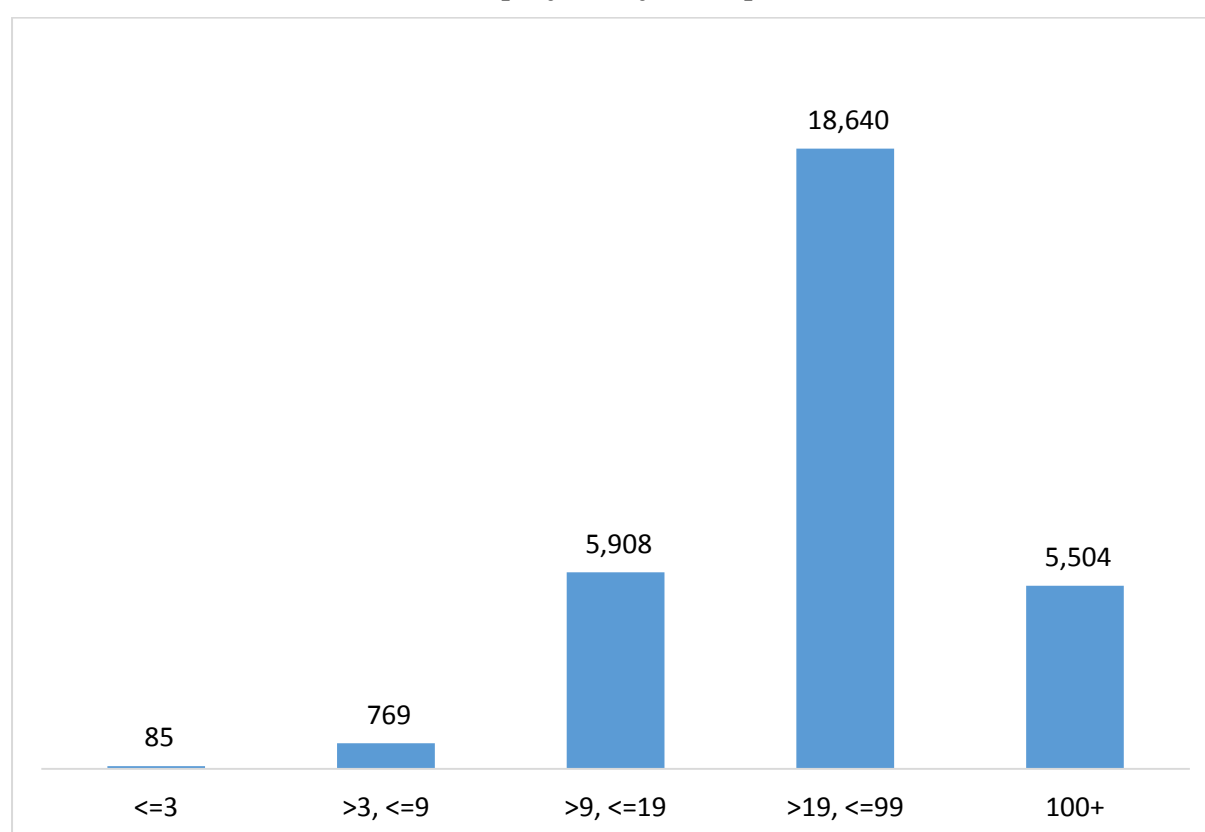
**Chart 3.1.2.4.1 Distribution of enterprises by employment size band**



Source: NISR, IBES 2016 Survey

The following chart stipulates that 18.6 thousands persons are employed in the >19, <=99 sized range education enterprises while it is rare to get a small sized (not more than 3 persons) education enterprise.

**Chart 3.1.2.4.2 Distribution of employees by enterprise size**



Source: NISR, IBES 2016 Survey

### **3.1.2.5: Human health and social work activities**

#### **A. Introduction**

This section includes the provision of health and social work activities. Activities include a wide range of activities, starting from health care provided by trained medical professionals in hospitals and other facilities, over residential care activities that still involve a degree of health care activities to social work activities without any involvement of health care professionals.

#### **B. Analysis of human health and social work activities**

The following table describes the income statement of the health sector and it indicates that Income fees paid by Mutuelle de Santé contributed Frw 36.2 Billion in 2016

**Table 3.1.2.5.1: Income statement for the health sector**

<b>Income component</b>	<b>Billion Frw</b>
Income fees paid by patients or their supporters	25.2
Income fees paid by mutuelle de Santé	36.2
Income fees paid by RAMA	13.0
Income fees paid by other insurance companies	16.2
Grants from international organisations & charities	10.2
Grants from local organisations & charities	9.7
Rent of land received/receivable	0.0
Rent of buildings received/receivable	0.0
Rent/lease of machinery and equipment	0.0
All other types of service rendered	2.0
Grants or subsidies received from government	33.1
Interest received/receivable	0.1
Dividends or other profits realised	1.8
All other income, revaluations, write-backs etc	6.8
<b>Total income</b>	<b>154.5</b>

Source: NISR, IBES 2016 Survey

The top expenditure component for the health sector is the cost of staff and labour (wages, salaries, social security and other benefits) which accounted for Frw 66.8 billion in 2016.

**Table 3.1.2.5.2: Expenditure statement for Health sector**

<b>Expenditure component</b>	<b>Billion Frw</b>
Purchases of pharmaceuticals and medical supplies	32.0
Cleaning materials	3.0
Laboratory services paid/payable	6.8
Rent of land paid/payable	0.0
Rent of buildings paid/payable	0.6
Payments for rental or lease of machinery and equipment	0.8
All other goods and services purchased	37.2
Wages & salaries paid (Social security & other benefits included)	66.8
Interests paid / payable (not other bank charges)	1.5
Business licenses, rates and fees payable to government	0.3
Depreciation charges for the year on fixed assets	1.6
All other costs, losses, provisions, etc.	0.0
<b>Total expenditures</b>	<b>150.6</b>

Source: NISR, IBES 2016 Survey

The following table illustrates that, in health sector, big health facilities make more income and expenditure when compared to others.



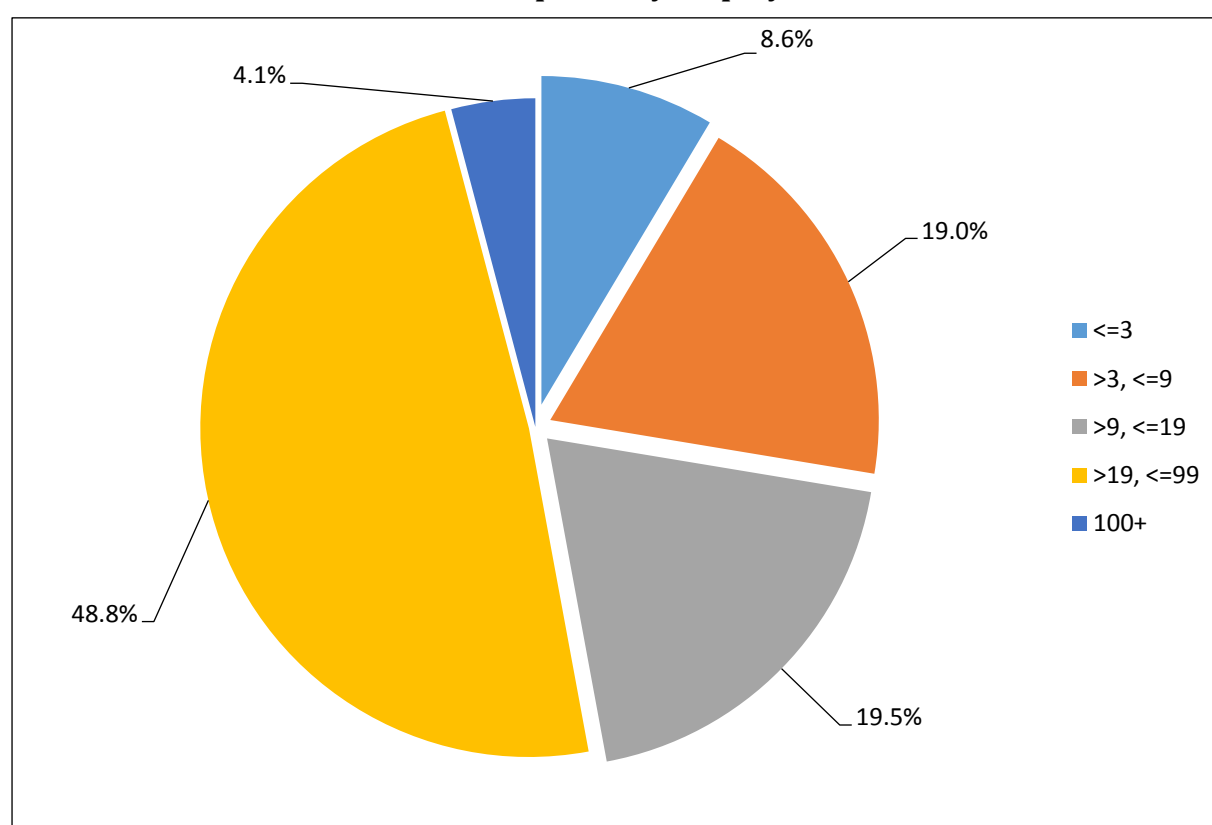
**Table 3.1.2.5.3: Summary statement by enterprise size for the health sector, Frw billion**

Enterprise size	Total income	Total expenditure
<=3	4.7	4.4
>3, <=9	0.4	0.3
>9, <=19	2.3	2.4
>19, <=99	36.3	35.2
100+	107.0	114.6
Total	150.6	157.0

Source: NISR, IBES 2016 Survey

The following chart indicates that 48.8 per cent of enterprises employ the persons in the range of >19, <=99 while 4.1 per cent of enterprises employ more than 100 employees.

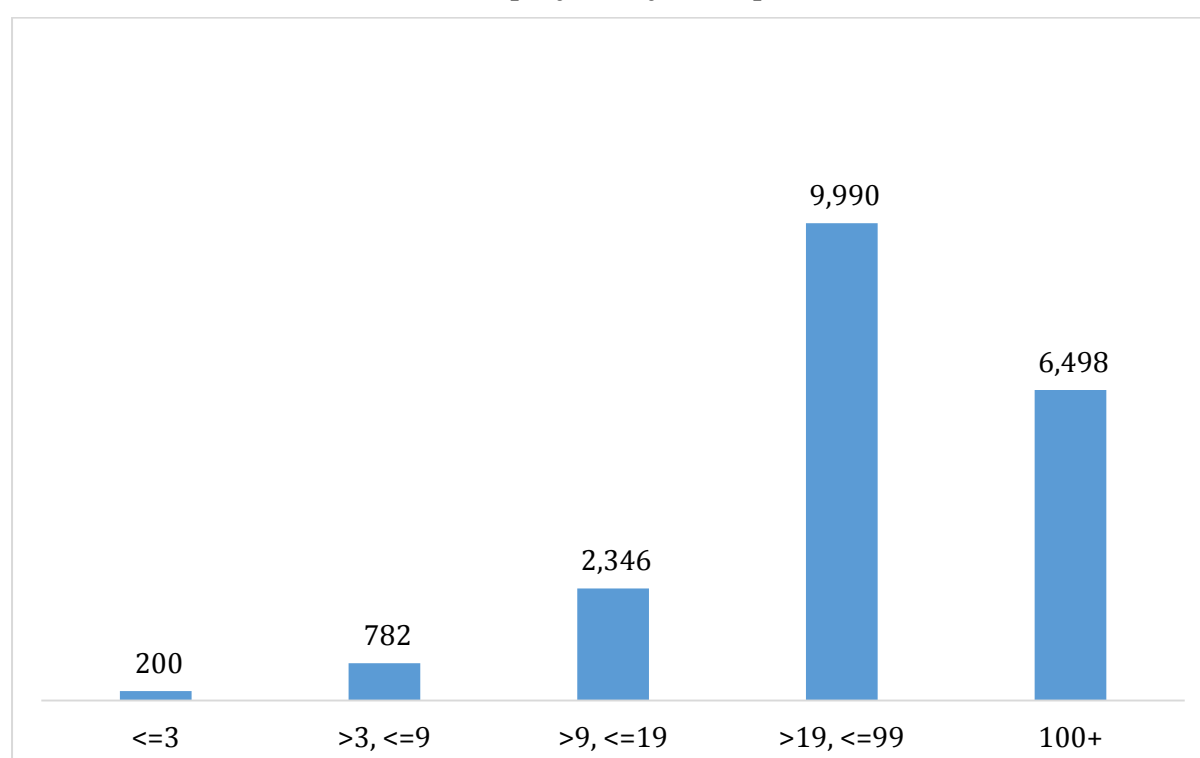
**Chart 3.1.2.5.1 Distribution of enterprises by employment size band**



Source: NISR, IBES 2016 Survey

The following chart is about the number of employees by enterprise size and it is shown hereafter that the big sized enterprises (100+ persons) employ 6.5 thousands persons.

**Chart 3.1.2.5.2: Distribution of employees by enterprise size**



Source: NISR, IBES 2016 Survey

### **3.1.2.6 Non-profit institutions serving households (NPISH)**

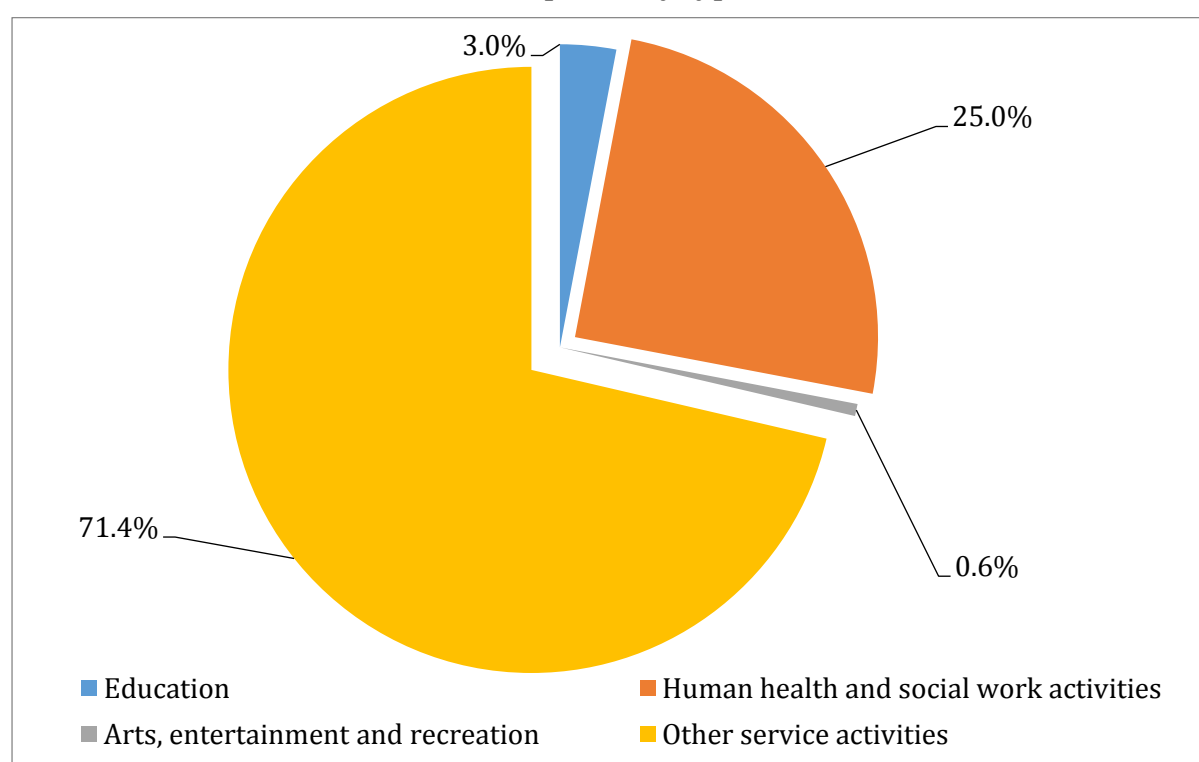
#### **A. Introduction**

Non-profit institutions are legal or social entities, created for the purpose of producing goods and services, whose status does not permit them to be a source of income, profit or other financial gain for the units that establish, control or finance them. In practice, their productive activities are bound to generate either surpluses or deficits but any surpluses they happen to make cannot be appropriated by other institutional units. The articles of association by which they are established are drawn up in such a way that the institutional units that control or manage them are not entitled to a share in any profits or other income they receive. For this reason, they are frequently exempted from various kinds of taxes. IBES excludes all NPISH created by the government.

#### **B. Analysis of NPISH activities**

As described below in the following chart, 71.4 per cent of NPISH enterprises are engaged in other services activities while a few as 0.6 per cent are engaged in the Arts, entertainment and recreation services.

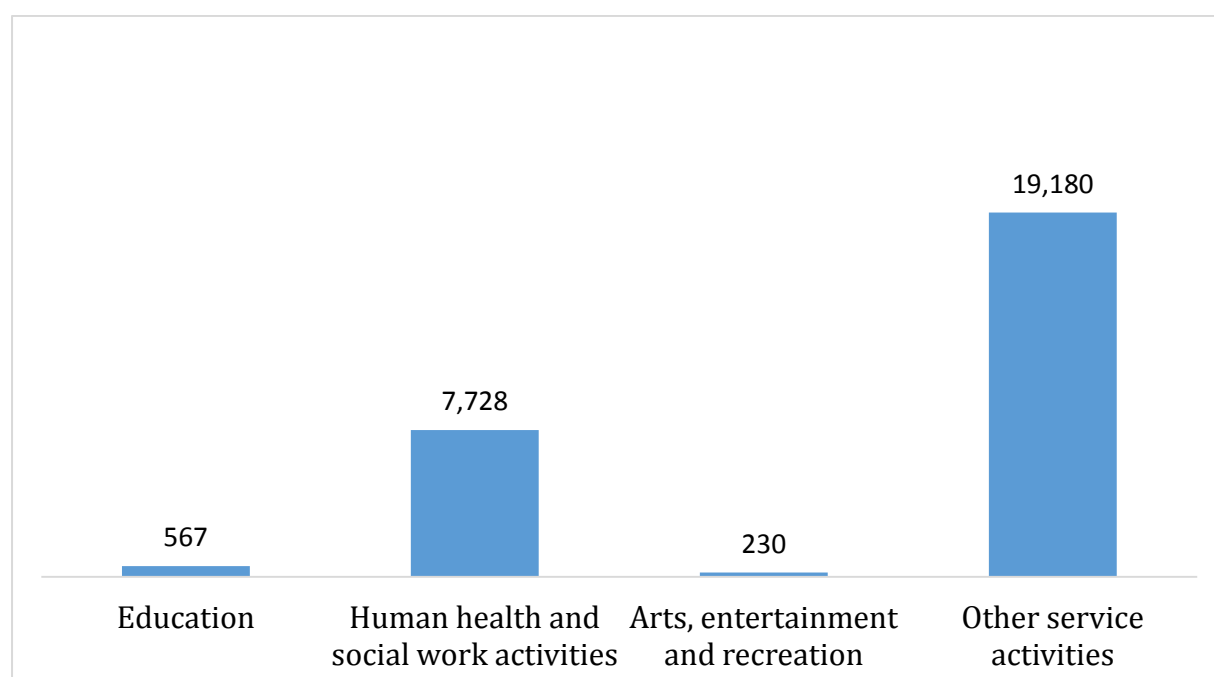
**Chart 3.1.2.6.1: Distribution of enterprises by type**



Source: NISR, IBES 2016 Survey

As most NPISH enterprises are in the other services, this implies that the same sector employs more persons than others. This is clearly shown by the below chart that shows that the other service sector employs 19.1 thousands persons.

**Chart 3.1.2.6.2: Distribution of employees by enterprise size**



Source: NISR, IBES 2016 Survey

Transfers from non-resident related or affiliated organisations have been the main source of the NPISHs income in 2016 as it contributed Frw 157.1 billion as shown by the table below.

**Table 3.2.6.1: Income statement for NPISH sector, Frw billion**

Income components	Education	Human health and social work activities	Arts, entertainment and recreation	Other service activities	Total
Membership fees	0.0	0.5	0.0	27.0	27.5
Transfers from government	0.6	11.8	0.5	3.0	15.9
Transfers from resident related or affiliated organization	0.1	32.9	0.0	34.0	67.1
Transfers from non-resident related or affiliated organisation	2.0	96.8	0.0	58.3	157.1
Donations, bequests and legacies	0.1	33.5	0.1	12.8	46.5
Rent of land received/ receivable	0.0	0.1	0.0	0.2	0.3
Rent of buildings received/ receivable	0.0	0.3	0.0	5.1	5.4
Rent/lease of machinery and equipment	0.0	0.0	0.0	0.0	0.0
All other types of service rendered	0.0	9.2	0.0	4.8	14.0
Grants or subsidies received from government	0.4	0.4	0.0	0.5	1.4
Interest received/receivable	0.0	0.4	0.0	0.3	0.7
Dividends or other profits realised	0.0	0.0	0.0	0.2	0.2
All other income, revaluations, write-backs etc	0.1	3.6	0.0	4.2	8.0
<b>Total income</b>	<b>3.4</b>	<b>189.5</b>	<b>0.7</b>	<b>150.4</b>	<b>344.0</b>

Source: NISR, IBES 2016 Survey

Wages & salaries paid (Social security & other benefits) was the most expenditure component for the NPISH sector in 2016, Frw 88.0 billion.

**Table 3.1.2.6.2: Expenditure statement for NPISH sector, Frw billion**

Expenditure components	Education	Human health and social work activities	Arts, entertainment and recreation	Other service activities	Total
Transfer to resident related or affiliated organizations	0.5	79.7	0.0	52.5	132.7
Transfers to non-residents or affiliated organizations	0.0	2.4	0.0	0.8	3.2
Rent of land paid/payable	0.0	0.0	0.0	0.0	0.0
Rent of buildings paid/payable	0.1	1.9	0.0	2.2	4.2
Payments for rental or lease of machinery and equipment	0.0	0.0	0.0	0.1	0.1
All other goods and services purchased	1.6	43.6	0.0	36.4	81.7
Wages & salaries paid (Social security & other benefits)	0.7	40.2	0.2	46.8	88.0
Interests paid / payable (not other bank charges)	0.0	0.2	0.0	0.7	1.0
Business licenses, rates and fees payable to government	0.0	0.5	0.0	0.5	1.0
Depreciation charges for the year on fixed assets	0.1	2.9	0.0	4.6	7.6
All other costs, losses, provisions, etc.	0.3	4.7	0.3	6.4	11.6
<b>Total expenditure</b>	<b>3.2</b>	<b>176.2</b>	<b>0.6</b>	<b>151.0</b>	<b>331.0</b>

Source: NISR, IBES 2016 Survey

The following table illustrates that, in NPISH sector, enterprises employing between 19 and 100 employees have made more income and expenditure when compared to others.

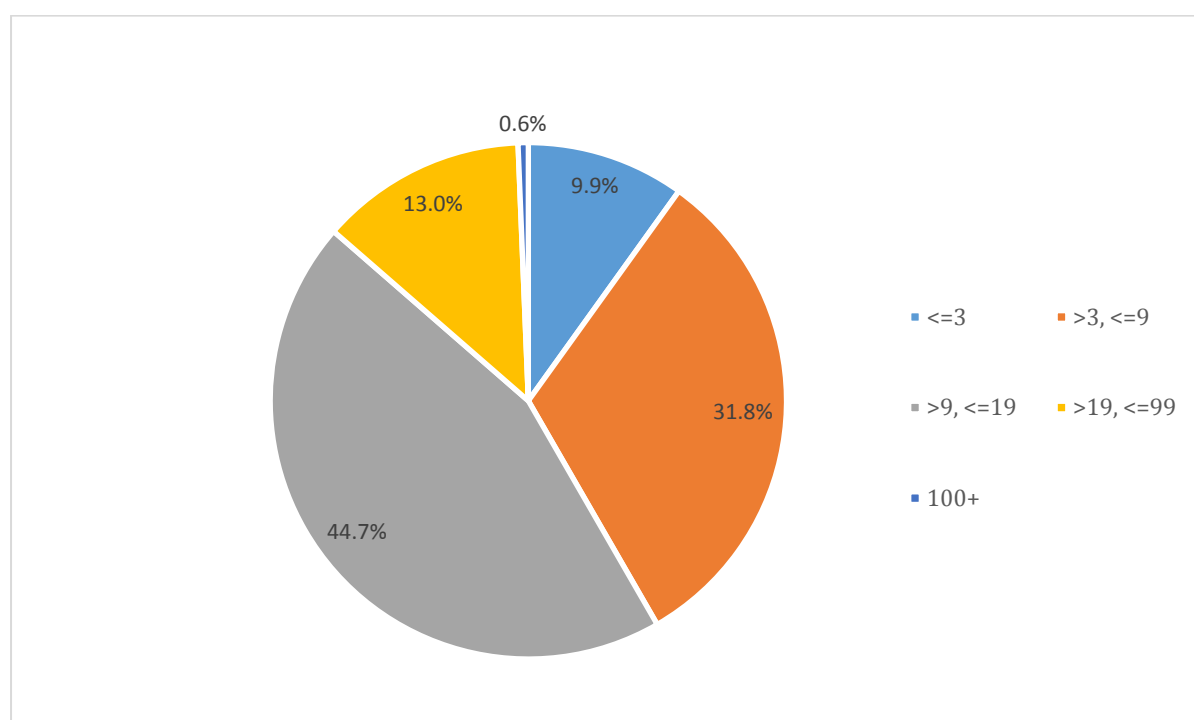
**Table 3.1.2.6.3: Summary statement by enterprise size for NPISH sector, Frw billion**

Enterprise size	Total income	Total expenditure
<=3	10.2	8.6
>3, <=9	13.1	11.1
>9, <=19	27.6	26.7
>19, <=99	208.9	192.9
100+	84.1	91.8
<b>Total</b>	<b>344.0</b>	<b>331.0</b>

Source: NISR, IBES 2016 Survey

Around 44.7 per cent NPISH enterprises employ a number of persons lying in the range of >9, <=19 persons.

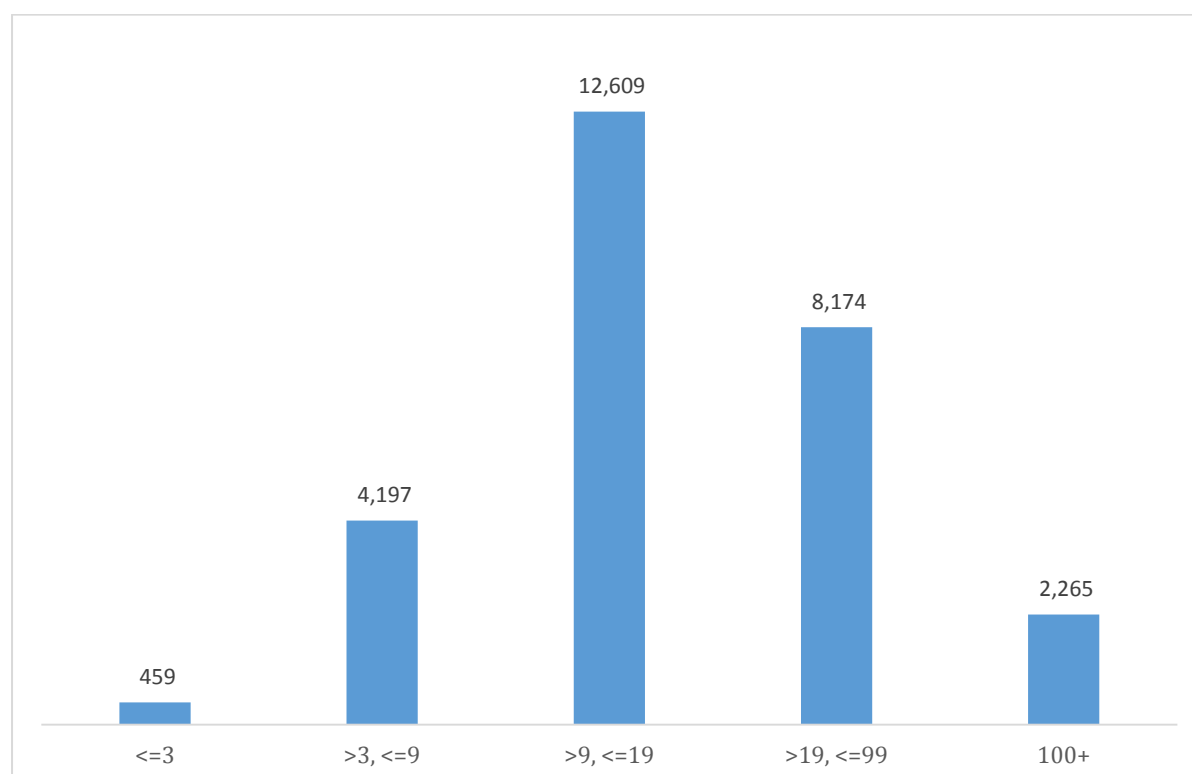
**Chart 3.1.2.6.3: Distribution of enterprises by employment size band**



Source: NISR, IBES 2016 Survey

The medium sized NPISH enterprises (>9, <=19) employ 12.6 thousands persons while the small ones only employ the 0.5 thousands persons, see Chart 3.1.2.6.4.

**Chart 3.1.2.6.4: Distribution of employees by enterprise size**



Source: NISR, IBES 2016 Survey

### 3.1.2.7 Acquisition and disposal of fixed assets

#### A. Introduction

All goods, except minor tools and equipment, expected to have a productive life of more than one year and intended for use by the establishment (land, mineral deposits, timber tracts, buildings, machinery, equipment and vehicles) are considered capital goods or fixed assets. Also included in this category are additions, modifications and improvements to existing fixed assets that extend their normal economic life or increase their productivity. Fixed assets may either be purchased or produced by the unit's own labour. In the latter case, the value of the asset is also given as an output. Also included are fixed assets purchased under financial lease, that is, where lease payments over the contract life will equal the asset's value.

#### B. Analysis of Acquisition and disposal of fixed assets

Table 3.2.7.1 below presents the acquisition and disposal of fixed assets in 2016. Opening values, net additions and closing values are distributed by different economic activities.

**Table 3.1.2.7.1: Acquisition and disposal of fixed assets in 2016, Frw billion**

Economic activity	Opening value	Net addition	Closing value
Mining and quarrying	13.1	-0.4	12.7
Manufacturing	491.9	38.2	530.1
Electricity, gas, steam and air conditioning supply	236.9	-5.9	231.0
Water supply; sewerage, waste management and remediation activities	65.3	-3.6	61.6
Construction	320.6	45.4	366.0
Wholesale and retail trade; repair of motor vehicles and motorcycles	174.4	66.1	240.5
Transportation and storage	179.5	82.5	262.0
Accommodation and food service activities	263.1	228.1	491.2
Information and communication	504.8	-38.0	466.8
Financial and insurance activities	156.6	5.3	160.7
Real estate activities	80.5	3.0	83.5
Professional, scientific and technical activities	7.8	1.2	9.0
Administrative and support service activities	18.7	6.9	25.6
Education	180.1	35.3	215.5
Human health and social work activities	56.9	1.4	58.5
Arts, entertainment and recreation	2.6	0.0	2.5
Other service activities	123.8	3.9	128.0
<b>Total</b>	<b>2,876.6</b>	<b>469.2</b>	<b>3,345.1</b>

Source: NISR, IBES 2016 Survey

### 3.1.3 Business environment

This section cover the information that has been collected on the business environment in general, information technology and internet use, environment protection, capacity

utilization, access to Rwandan produced raw materials, access to reliable power, exportation, and access to finance.

### 3.1.3.1 Business environment in general

**Table 3.1.3.1: Ranking of factors by the level of their impact on business**

Factor	No problem	Minor problem	Serious problem	Very serious problem	Not applicable	Total
Availability of affordable finance or bank loans	67.6	14.3	9.1	3.5	5.5	100
Availability of tools and machinery	65.0	19.1	6.3	1.9	7.8	100
Availability of working space	79.0	13.9	5.5	1.5	0.2	100
Availability of skilled or technical labour	84.7	10.4	2.2	0.5	2.1	100
Availability of electricity	73.9	15.4	5.7	3.9	1.1	100
Availability of water	66.1	13.7	8.3	6.6	5.3	100
Availability of land	48.4	7.8	5.6	2.5	35.6	100
Availability of input materials	10.2	2.4	2.0	0.4	85.2	100
Availability of transport facilities and infrastructures	70.2	16.6	7.3	3.5	2.4	100
Regulatory environment	85.8	8.8	2.8	1.8	0.7	100
Marketing problems	60.3	21.4	6.6	1.8	9.9	100
Telecommunications	83.6	10.5	2.4	1.7	1.7	100
Internet connection	52.1	15.2	8.3	8.6	15.9	100
<b>Total</b>	<b>65.1</b>	<b>13.0</b>	<b>5.5</b>	<b>3.0</b>	<b>13.3</b>	<b>100</b>

Source: NISR, IBES 2016 Survey

As described by the Table 3.1.3.1, 9.08 per cent of companies have reported that availability of affordable finance or bank loan is a serious problem on their business while 85.79 per cent of the companies declared not having any problem with regulatory environment.

### 3.1.3.2 Information technology and internet use

**Table 3.1.3.2: Average number of employees using a computer by economic activity**

Activity	Computer use mean	Staff mean	Companies
Mining and quarrying	2	57	87
Manufacturing	4	52	619
Electricity, gas, steam and air conditioning supply	82	179	8
Water supply; sewerage, waste management and remediation activities	14	38	37
Construction	13	109	119
Wholesale and retail trade; repair of motor vehicles and motorcycles	1	5	3,963
Transportation and storage	16	42	136



Activity	Computer use mean	Staff mean	Companies
Accommodation and food service activities	2	13	985
Information and communication	13	16	131
Financial and insurance activities	12	16	792
Real estate activities	3	11	126
Professional, scientific and technical activities	5	7	396
Administrative and support service activities	6	67	337
Education	9	26	1,206
Human health and social work activities	8	21	1296
Arts, entertainment and recreation	21	28	50
Other service activities	2	11	1,884
<b>Total</b>	<b>5</b>	<b>18</b>	<b>12,172</b>

Source: NISR, IBES 2016 Survey

Based on the above Table 3.1.3.2, on average 13.0 out of 16 employees in the Information and communication industry are using a computer in their job whereas wholesale and retail trade; repair of motor vehicles and motorcycles records the least with on average 1.4 out of 5.0 employees who use a computer in their job.

**Table 3.1.3.3: Distribution of enterprises with internet connection by size**

Enterprise size	Yes	No	Total	Companies
Micro 1-3	31.4	68.6	100	4,073
Small 4-30	64.8	35.2	100	7,319
Medium 31-100	91.5	8.5	100	551
Big 100 +	98.3	1.7	100	230
<b>Total</b>	<b>55.4</b>	<b>44.6</b>	<b>100</b>	<b>12,172</b>

Source: NISR, IBES 2016 Survey

From the above Table 3.1.3.3, 98.3 per cent of big enterprises have an internet connection in their premises. However only 31.4 per cent of micro enterprises have an internet connection.

**Table 3.1.3.4: Distribution of enterprises with internet connection by economic activity**

Activity	Yes	No	Total	Companies
Mining and quarrying	32.2	67.8	100.0	87
Manufacturing	47.2	52.7	100.0	619
Electricity, gas, steam and air conditioning supply	87.5	12.5	100.0	8
Water supply; sewerage, waste management and remediation activities	64.9	32.4	100.0	37
Construction	100.0	0.0	100.0	119
Wholesale and retail trade; repair of motor vehicles and motorcycles	33.0	67.0	100.0	3,963
Transportation and storage	73.5	26.5	100.0	136
Accommodation and food service activities	41.9	58.1	100.0	985

Activity	Yes	No	Total	Companies
Information and communication	100.0	0.0	100.0	131
Financial and insurance activities	91.7	8.3	100.0	792
Real estate activities	77.0	23.0	100.0	126
Professional, scientific and technical activities	99.7	0.3	100.0	396
Administrative and support service activities	78.0	22.0	99.6	337
Education	67.0	33.0	100.0	1,206
Human health and social work activities	84.9	15.1	100.1	1296
Arts, entertainment and recreation	70.0	30.0	100.0	50
Other service activities	47.8	52.2	100.0	1,884
<b>Total</b>	<b>55.4</b>	<b>44.6</b>	<b>100.0</b>	<b>12,172</b>

Source: NISR, IBES 2016 Survey

Companies in the construction sector have internet connection on their premises at the level of 100 per cent while the Mining and Quarrying companies record the least with 32.2 per cent.

**Table 3.1.3.5: Distribution of enterprises by type of internet used**

Internet type	Yes	No	Total	Frequency
Wireless(WiFi)	43.5	56.5	100.0	6,748
Broadband(fiber optic)	7.8	92.2	100.0	6,748
Modem	68.0	32.0	100.0	6,748
VPN	2.3	97.7	100.0	6,748
Telephone	33.9	66.1	100.0	6,748
<b>Total</b>	<b>31.1</b>	<b>68.9</b>	<b>100.0</b>	<b>6,748</b>

Source: NISR, IBES 2016 Survey

As shown in the above Table, modem is used by 68.0 per cent of enterprises while only 2.3 per cent of enterprises are using VPN.

**Table 3.1.3.6: Per cent distribution of enterprises by communication means used and enterprise size**

Means of Communication	Micro 1-3	Small 4-30	Medium 31-100	Big 100 +	Total
Email address to communicate with clients or suppliers	17.2	69.8	8.8	4.3	100
Email portal	14.2	70.4	9.9	5.5	100
Own website	15.3	61.2	13.6	9.9	100
<b>Total</b>	<b>15.9</b>	<b>68.5</b>	<b>9.9</b>	<b>5.6</b>	<b>100</b>

Source: NISR, IBES 2016 Survey

As indicated by the above Table 3.1.3. 6, the small companies lead others in possessing email address (69.8 per cent), email portal (70.4 per cent) and website (61.2 per cent).

**Table 3.1.3.7: Distribution of enterprises by what internet is used for**

Internet use	Yes	No	Total	Companies
Make purchases for this enterprise	24.5	75.5	100	6,748
Deliver services to this enterprise's clients	38.2	61.8	100	6,748
Receipts from customers payments	21.6	78.4	100	6,748
Do research and develop ideas on new products	60.1	39.9	100	6,748
Advertise job vacancies	18.7	81.3	100	6,748
Declaration of taxes	88.1	11.9	100	6,748
Payment of taxes	50.3	49.7	100	6,748
Internet banking	33.7	66.3	100	6,748
Video conference	11.0	89.1	100	6,748
Staff training	15.0	85.0	100	6,748
Advertise Company's products	16.6	83.4	100	6,748
<b>Total</b>	<b>34.3</b>	<b>65.7</b>	<b>100</b>	<b>6,748</b>

Source: NISR, IBES 2016 Survey

As described in the Table 3.1.3. 7 above, 88.1 per cent of companies use internet for taxes declaration while only 11.0 per cent are using it for video conferences

**Table 3.1.3.8: Percent distribution of enterprises by internet use enterprise size**

Internet use	Micro 1-3	Small 4-30	Medium 31-100	Big 100 +	Total
Make purchases for this enterprise	16.6	65.7	10.3	7.5	100
Deliver services to this enterprise's clients	16.4	68.4	9.5	5.7	100
Receipts from customers payments	12.0	70.6	9.6	7.8	100
Do research and develop ideas on new products	16.6	70.0	8.8	4.6	100
Advertise job vacancies	12.9	63.9	12.9	10.4	100
Declaration of taxes	19.0	69.5	7.8	3.8	100
Payment of taxes	20.7	65.7	8.9	4.8	100
Internet banking	15.7	66.1	11.7	6.6	100
Video conference	10.0	62.9	15.3	11.8	100
Staff training	11.7	63.7	14.9	9.8	100
Advertise company's products	11.5	62.6	14.5	11.4	100
<b>Total</b>	<b>16.5</b>	<b>67.5</b>	<b>9.9</b>	<b>6.1</b>	<b>100</b>

Source: NISR, IBES 2016 Survey

In harmony with the previous table, Table 3.1.3. 8 above indicates that small enterprises lead others in all internet usages.

### 3.1.3.3 Environment protection

The table below shows that in the total economy, 95.2 per cent of enterprises possess either scraps or waste while only 4.8 per cent do not. The activities of Electricity, gas, steam and air conditioning supply, Accommodation and food service activities and Manufacturing sectors seem to be above other sectors in terms of scraps and waste possession with 100, 99.9 and 99.7 per cent of their companies respectively.

Table 3.1.3.9: Distribution of enterprises economic activity and scraps or waste possession

Activity	Yes	No	Total	Companies
Mining and quarrying	82.8	17.2	100	87
Manufacturing	99.7	0.3	100	619
Electricity, gas, steam and air conditioning supply	100.0	0.0	100	8
Water supply; sewerage, waste management and remediation activities	70.3	27.0	100	37
Construction	89.9	10.1	100	119
Wholesale and retail trade; repair of motor vehicles and motorcycles	95.2	4.8	100	3,963
Transportation and storage	86.8	13.2	100	136
Accommodation and food service activities	99.9	0.1	100	985
Information and communication	99.2	0.8	100	131
Financial and insurance activities	93.7	6.3	100	792
Real estate activities	88.1	11.9	100	126
Professional, scientific and technical activities	81.1	19.2	100	396
Administrative and support service activities	89.9	10.1	100	337
Education	98.8	1.1	100	1,206
Human health and social work activities	97.1	2.9	100	1,296
Arts, entertainment and recreation	70.0	30.0	100	50
Other service activities	95.1	4.9	100	1,884
<b>Total</b>	<b>95.2</b>	<b>4.8</b>	<b>100</b>	<b>12,172</b>

Source: NISR, IBES 2016 Survey

Only the Arts, entertainment and recreation sector has a lowest percentage (70.0 of companies with scraps and waste possession).

Table 3.1.3.10: Percentage distribution of enterprises by type of scraps and waste and enterprise size

Type	Micro 1-3	Small 4-30	Medium 31-100	Big 100 +	Total
Solid	33.5	60.0	4.6	2.0	100
Liquid	9.9	75.7	9.5	4.9	100
Gas	27.6	27.7	26.5	18.2	100
<b>Total</b>	<b>30.1</b>	<b>62.1</b>	<b>5.4</b>	<b>2.5</b>	<b>100</b>

Source: NISR, IBES 2016 Survey

The table above illustrates that the majority of companies with scraps and waste possession are of small size (62.1 per cent) while big companies have a lower percentage of 2.5. The trend is the same for scraps and waste type as small companies dominate with 60.0, 75.7 for solid and liquid respectively, but for gas medium companies dominate with 26.5 per cent.

**Table 3.1.3.11: Per cent distribution of enterprises by mode of disposal of scraps and waste**

Mode of disposal	Yes	No	Total
Pay someone to remove the waste	59.7	40.4	100
Sells the waste	3.1	96.9	100
Dumping in free land	14.8	85.2	100
Discharging into river or streams	0.7	99.3	100
Burying in specified places or burning	28.7	71.3	100
Recycling	3.4	96.6	100
<b>Total</b>	<b>18.4</b>	<b>81.6</b>	<b>100</b>

Source: NISR, IBES 2016 Survey

From the above table, we can see that most companies pay someone to remove the waste as their mode of waste disposal (59.7), this method is followed by burying in specific places or burning them (28.7). The recycling is still at a lower level as only 3.4 per cent of companies use this mode of waste disposal. On the other hand discharging waste into rivers or streams is still low as only 0.7 per cent of companies are using this method. This may be considered as a good sign in terms of environmental protection.

**Table 3.1.3.12: Percentage distribution of enterprises by water source**

Source of water	Yes	No	Total
WASAC	60.3	39.7	100
Rainwater storage	15.9	84.1	100
Well	4.4	95.6	100
Lake or dam	1.5	98.5	100
Delivered by other in tank	2.5	97.5	100
Recycled water	0.5	99.6	100
Water from spring	7.0	93.0	100
<b>Total</b>	<b>13.1</b>	<b>86.9</b>	<b>100</b>

Source: NISR, IBES 2016 Survey

WASAC appears to be the main source of water for Rwandan enterprises with a percentage of 60.3, followed by rainwater storage (15.9 per cent) as shown in the table above the use of recycled water is still very low with only 0.5 per cent.

**Table 3.1.3.13: Distribution of enterprises by economic activity and whether they store water or not**

Activity	Yes	No	Total	Frequency
Mining and quarrying	28.9	71.1	100	12,172
Manufacturing	37.2	62.8	100	12,172
Electricity, gas, steam and air conditioning supply	75.0	25.0	100	12,172
Water supply; sewerage, waste management and remediation activities	10.9	89.1	100	12,172
Construction	53.5	46.5	100	12,172
Wholesale and retail trade; repair of motor vehicles and motorcycles	7.3	92.7	100	12,172
Transportation and storage	11.4	88.6	100	12,172
Accommodation and food service activities	51.7	48.4	100	12,172
Information and communication	22.8	77.2	100	12,172
Financial and insurance activities	48.7	51.4	100	12,172
Real estate activities	46.2	53.8	100	12,172
Professional, scientific and technical activities	9.3	90.7	100	12,172
Administrative and support service activities	14.0	86.0	100	12,172
Education	79.2	20.9	100	12,172
Human health and social work activities	70.9	29.2	100	12,172
Arts, entertainment and recreation	29.5	70.5	100	12,172
Other service activities	36.8	63.2	100	12,172
<b>Total</b>	<b>35.2</b>	<b>64.8</b>	<b>100</b>	<b>12,172</b>

Source: NISR, IBES 2016 Survey

Enterprises which store water represent 35.2 per cent of all enterprises, which rose up compared to previous year 2015 (30.5 per cent, see IBES 2015 Report). Some sectors are a step ahead of others in water storing. These include Education and Electricity, gas, steam and air conditioning supply for which 79.2 per cent and 75.0 per cent of their respective companies have water storing systems. The Wholesale and retail trade, repair of motor vehicles and motorcycles sector is below others with only 7.3 per cent of enterprises that store water.

**Table 3.1.3.14: Per cent distribution of enterprises storing water by type of water storing device**

Water storing Device	Yes	No	Total	Companies
Dam	0.6	99.4	100	12,172
Pond	3.3	96.7	100	12,172
Tanks	30.5	69.5	100	12,172
Others	0.2	99.9	100	12,172

Source: NISR, IBES 2016 Survey

The tank is the most possessed water storing device with a percentage of 30.5 while other storing devices are the least possessed devices with only 0.2 per cent of companies with water storing systems.

**Table 3.1.3.15: Distribution of enterprises by economic activity and firewood as a main source of energy**

Activity	Yes	No	Total	Companies
Mining and quarrying	21.7	78.3	100	87
Manufacturing	31.1	68.9	100	619
Electricity, gas, steam and air conditioning supply	0.0	100.0	100	8
Water supply; sewerage, waste management and remediation activities	0.0	100.0	100	37
Construction	0.0	100.0	100	119
Wholesale and retail trade; repair of motor vehicles and motorcycles	0.8	99.2	100	3,963
Transportation and storage	0.0	100.0	100	136
Accommodation and food service activities	22.1	77.9	100	985
Information and communication	0.0	100.0	100	131
Financial and insurance activities	0.0	100.0	100	792
Real estate activities	0.0	100.0	100	126
Professional, scientific and technical activities	0.0	100.0	100	396
Administrative and support service activities	0.0	100.0	100	337
Education	34.5	65.5	100	1,206
Human health and social work activities	13.1	86.9	100	1296
Arts, entertainment and recreation	28.3	71.7	100	50
Other service activities	14.9	85.1	100	1,884
<b>Total</b>	<b>11.0</b>	<b>89.0</b>	<b>100</b>	<b>12,172</b>

Source: NISR, IBES 2016 Survey

Education, Manufacturing and Arts, entertainment and recreation are the sectors in which firewood are mostly used with a percentage of 34.5, 31.1 and 28.3 of their companies respectively. In the total economy, the use of firewood as source of energy is at 11.0 per cent of surveyed enterprises.

**Table 3.1.3.16: Volume of firewood used by economic activity**

Activity	m <sup>3</sup>	Companies
Mining and quarrying	1,322	19
Manufacturing	100,540	193
Wholesale and retail trade; repair of motor vehicles and motorcycles	740	32
Accommodation and food service activities	181,413	218
Education	97,524	416
Human health and social work activities	16,504	170
Arts, entertainment and recreation	27,154	14
Other service activities	6,871	281
<b>Total</b>	<b>432,068</b>	<b>1,342</b>

Source: NISR, IBES 2016 Survey

The volume of firewood used in 1,342 Rwandan enterprises is 432,068 m<sup>3</sup>. Accommodation and food service activities and Manufacturing enterprises are the most users of firewood with 181,413 and 100,540 m<sup>3</sup> respectively while Wholesale and retail trade; repair of motor vehicles and motorcycles are the least users with 740 m<sup>3</sup>.

**Table 3.1.3.17: Volume of firewood used by enterprise size**

Enterprise size	m <sup>3</sup>	Companies
Micro 1-3	89,198	40
Small 4-30	230,417	1121
Medium 31-100	61,624	154
Big 100 +	50,829	27
<b>Total</b>	<b>432,068</b>	<b>1,342</b>

Source: NISR, IBES 2016 Survey

Small and Micro enterprises are the one that use a bigger volume of firewood as they have used 230,417 and 89,198 cubic meters respectively from the total volume of 432,068 cubic meters used in the total economy.

### 3.1.3.4 Capacity utilization

**Table 3.1.3.18: Capacity utilization mean in production units by economic activity in 2015**

Activity	Utilization mean	Companies
Mining and quarrying	63	30
Manufacturing	65	546
Electricity, gas, steam and air conditioning supply	78	2
Water supply; sewerage, waste management and remediation activities	75	2
Construction	78	2
Wholesale and retail trade; repair of motor vehicles and motorcycles	53	21
Administrative and support service activities	96	15
Human health and social work activities	100	1
Arts, entertainment and recreation	75	3
Other service activities	80	11
<b>Total</b>	<b>66</b>	<b>632</b>

Source: NISR, IBES 2016 Survey

Among all sectors, capacity utilisation in production units stands at 66 per cent. Only Human health and social work activities and Administrative and support service activities seem to utilise their capacities at maximum with percentages of 100 and 95.9 respectively. Wholesale and retail trade; repair of motor vehicles and motorcycles is the least sector in terms of capacity utilisation as it only uses 53 per cent.

**Table 3.1.3.19: Capacity utilization mean of production units by enterprise size in 2015**

Enterprise size	Capacity utilization	Companies
Micro 1-3	63.3	91
Small 4-30	65.2	431
Medium 31-100	67.4	60
Big 100 +	75.3	51
<b>Total</b>	<b>66.0</b>	<b>632</b>

Source: NISR, IBES 2016 Survey



Taking into account the size of enterprises, big companies are ranked the first in capacity utilisation with a percentage of 75.3 as can be seen in the table above. The Micro enterprises are the least with only 63.3 per cent of their capacity used.

**Table 3.1.3.20: Distribution of enterprises that are underutilizing their capacity by economic activity**

Activity	Yes	No	Total	Companies
Mining and quarrying	69.8	30.2	100	30
Manufacturing	72.9	27.1	100	546
Electricity, gas, steam and air conditioning supply	50.0	50.0	100	2
Water supply; sewerage, waste management and remediation activities	50.0	50.0	100	2
Construction	100.0	0.0	100	2
Wholesale and retail trade; repair of motor vehicles and motorcycles	90.3	9.7	100	21
Administrative and support service activities	6.8	93.2	100	15
Human health and social work activities	0.0	100.0	100	1
Arts, entertainment and recreation	100.0	0.0	100	3
Other service activities	100.0	0.0	100	11
<b>Total</b>	<b>72.2</b>	<b>27.8</b>	<b>100</b>	<b>632</b>

Source: NISR, IBES 2016 Survey

At national level, the enterprises declared underutilizing their capacity represent 72.2 per cent. The manufacturing sector seems to have influenced this level as it shows a percentage of 72.9 with 546 over 632 companies that have answered this question.

**Table 3.1.3.21: Reasons of capacity underutilization**

Reasons of underutilization	Yes	No	Total
Low Demand	75.9	24.1	100
Unreliable supply of power	15.4	84.6	100
Unreliable supply of inputs	44.4	55.6	100
Lack of skilled workers	21.0	79.0	100
Bottleneck in the production line	9.2	90.8	100
Lack of working capital	34.6	65.4	100
Labor market regulations	13.9	86.1	100
Lack of necessary specialized technology, machinery & spare parts	29.4	70.6	100
Old equipment	24.0	76.0	100
other	17.3	82.7	100
<b>Total</b>	<b>28.5</b>	<b>71.5</b>	<b>100</b>

Source: NISR, IBES 2016 Survey

The table above shows that the main reason of capacity underutilization is the low demand as reported by 75.9 per cent of all the respondents. It is followed by the unreliable supply of inputs by 44.4 per cent of enterprises. The least mentioned reason is the Bottleneck in the production line with 9.2 per cent.

### 3.1.3.5 Access to Rwandan produced raw materials

**Table 3.1.3.22: Production units by whether they use Rwandan raw materials and by economic activity**

Activity	Yes	No	Total	Companies
Mining and quarrying	86.6	13.4	100	30
Manufacturing	67.1	32.9	100	546
Electricity, gas, steam and air conditioning supply	100.0	0.0	100	2
Water supply; sewerage, waste management and remediation activities	50.0	50.0	100	2
Construction	100.0	0.0	100	2
Wholesale and retail trade; repair of motor vehicles and motorcycles	90.3	9.7	100	21
Administrative and support service activities	0.0	100.0	100	15
Human health and social work activities	100.0	0.0	100	1
Arts, entertainment and recreation	100.0	0.0	100	3
Other service activities	0.0	100.0	100	11
<b>Total</b>	<b>66.4</b>	<b>33.6</b>	<b>100</b>	<b>632</b>

Source: NISR, IBES 2016 Survey

The use of Rwandan raw materials is at the level of 66.4 per cent. The main driver of this percentage appears to be the manufacturing sector with a number of 546 companies out of 632 interviewed and a percentage of 67.1. The least user of local raw materials is the Administrative and support service activities and other service activities as they all have 0 percentage out of 15 and 11 concerned enterprises respectively.

**Table 3.1.3.23: Production units using Rwandan raw materials by importance and economic activity**

Activity	Not important	Somewhat important	Important	Very important	Total	Freq.
Mining and quarrying	3.9	7.7	38.7	49.7	100	26
Manufacturing	4.1	17.9	27.4	50.5	100	366
Electricity, gas, steam and air conditioning supply	0.0	0.0	0.0	100.0	100	2
Water supply; sewerage, waste management and remediation activities	0.0	0.0	0.0	100.0	100	1
Construction	0.0	0.0	0.0	100.0	100	2
Wholesale and retail trade; repair of motor vehicles and motorcycles	0.0	5.4	73.2	21.4	100	19
Human health and social work activities	100.0	0.0	0.0	0.0	100	1
Arts, entertainment and recreation	0.0	0.0	100.0	0.0	100	3
<b>Total</b>	<b>4.1</b>	<b>16.4</b>	<b>30.3</b>	<b>49.3</b>	<b>100</b>	<b>420</b>

Source: NISR, IBES 2016 Survey

The use of Rwandan raw materials is very important in 49.3 per cent of concerned enterprises. The construction sector, Electricity, gas, steam and air conditioning supply and Water supply; sewerage, waste management and remediation activities like local raw materials with 100 per cent.

**Table 3.1.3.24: Quality rating of Rwandan raw materials by economic activity**

Activity	Low	Somewhat low	Somewhat high	High	Total	Freq.
Mining and quarrying	3.9	11.6	34.8	49.7	100	26
Manufacturing	1.1	17.7	30.3	50.9	100	366
Electricity, gas, steam and air conditioning supply	0.0	0.0	0.0	100	100	2
Water supply; sewerage, waste management and remediation activities	0.0	100.0	0.0	0.0	100	1
Construction	0.0	0.0	0.0	100.0	100	2
Wholesale and retail trade; repair of motor vehicles and motorcycles	0.0	83.9	10.7	5.4	100	19
Human health and social work activities	100.0	0.0	0.0	0.0	100	1
Arts, entertainment and recreation	0.0	0.0	66.7	33.3	100	3
<b>Total</b>	<b>1.4</b>	<b>20.1</b>	<b>29.6</b>	<b>48.9</b>	<b>100</b>	<b>420</b>

Source: NISR, IBES 2016 Survey

Rwandan raw materials are rated as of high quality (at 100 percent) for electricity, gas, steam and air conditioning supply and Construction sectors.

### 3.1.3.6 Access to reliable power

The table below shows that 75.6 per cent of enterprises were connected to the national power grid.

**Table 3.1.3.25: Distribution of production units by whether they are connected to the national power grid or not**

Activity	Yes	No	Total	Freq.
Mining and quarrying	36.9	63.1	100	30
Manufacturing	77.9	22.1	100	546
Electricity, gas, steam and air conditioning supply	100.0	0.0	100	2
Water supply; sewerage, waste management and remediation activities	100.0	0.0	100	2
Construction	100.0	0.0	100	2
Wholesale and retail trade; repair of motor vehicles and motorcycles	95.2	4.8	100	21
Administrative and support service activities	100.0	0.0	100	15
Human health and social work activities	100.0	0.0	100	1
Arts, entertainment and recreation	0.0	100.0	100	3
Other service activities	0.0	100.0	100	11
<b>Total</b>	<b>75.6</b>	<b>24.4</b>	<b>100</b>	<b>632</b>

Source: NISR, IBES 2016 Survey

The following table shows that 18 per cent on the national power grid units need additional power in future whereas 82 per cent of the national power grid units do not need additional power in future

**Table 3.1.3.26: National power grid units needing additional power in future by economic activity**

Activity	Yes	No	Total	Freq.
Mining and quarrying	27.3	72.7	100	11
Manufacturing	18.6	81.4	100	425
Electricity, gas, steam and air conditioning supply	0.0	100.0	100	2
Water supply; sewerage, waste management and remediation activities	100.0	0.0	100	2
Construction	0.0	100.0	100	2
Wholesale and retail trade; repair of motor vehicles and motorcycles	10.2	89.8	100	20
Administrative and support service activities	0.0	100.0	100	15
Human health and social work activities	0.0	100.0	100	1
<b>Total</b>	<b>18.0</b>	<b>82.0</b>	<b>100</b>	<b>478</b>

Source: NISR, IBES 2016 Survey

Table 3.1.3.27 shows the distribution of production units by number of power outages and economic activity, 425 are estimated to be in manufacturing sector and 43.9 per cent of them have experienced less than three number of power outages in 2016.

**Table 3.1.3.27: Distribution of production units by number of power outages and economic activity**

Activity/Number of power outages	1 to 3	4 to 10	10 to 20	above 20	Total	Frequency
Mining and quarrying	45.5	18.2	18.2	18.2	100	11
Manufacturing	44.2	35.9	11.4	8.5	100	425
Electricity, gas, steam and air conditioning supply	50.0	50.0	0.0	0.0	100	2
Water supply; sewerage, waste management and remediation activities	0.0	50.0	50.0	0.0	100	2
Construction	0.0	50.0	50.0	0.0	100	2
Wholesale and retail trade; repair of motor vehicles and motorcycles	10.2	79.7	10.2	0.0	100	20
Administrative and support service activities	93.2	0.0	0.0	6.8	100	15
Human health and social work activities	0.0	100.0	0.0	0.0	100	1
<b>Total</b>	<b>43.9</b>	<b>36.5</b>	<b>11.4</b>	<b>8.2</b>	<b>100</b>	<b>478</b>

Source: NISR, IBES 2016 Survey

Table 3.1.3.28 illustrates the distribution of production units by length of power outages and economic activity, 0.9 per cent of manufacturing companies in 425 companies have had above 8 hours power outages.

**Table 3.1.3.28: Distribution of production units by length of power outages and by economic activity**

Activity/Hours	Less than 1 hour	1 to 2 hours	2 to 4 hours	4 to 8 hours	above 8 hours	Total	Freq
Mining and quarrying	45.5	36.4	9.1	0.0	9.1	100	11
Manufacturing	50.6	35.2	7.0	6.3	0.9	100	425
Electricity, gas, steam and air conditioning supply	100.0	0.0	0.0	0.0	0.0	100	2
Water supply; sewerage, waste management and remediation activities	50.0	50.0	0.0	0.0	0.0	100	2
Construction	50.0	50.0	0.0	0.0	0.0	100	2
Wholesale and retail trade; repair of motor vehicles and motorcycles	15.2	10.2	74.6	0.0	0.0	100	20
Administrative and support service activities	0.0	0.0	0.0	6.8	93.2	100	15
Human health and social work activities	0.0	100.0	0.0	0.0	0.0	100	1
<b>Total</b>	<b>47.6</b>	<b>33.2</b>	<b>9.5</b>	<b>5.8</b>	<b>3.9</b>	<b>100</b>	<b>478</b>

Source: NISR, IBES 2016 Survey

### 3.1.3.7 Exportation

The table below shows that 22.3 per cent of enterprises have exported their products abroad in 2016. 36.9 per cent of mining and quarrying enterprises were engaged in exportation.

**Table 3.1.3.29: Distribution of enterprises by whether they exported in 2016 and by economic activity**

Activity	Yes	No	Total	Freq.
Mining and quarrying	36.9	63.1	100	30
Manufacturing	20.7	79.3	100	546
Electricity, gas, steam and air conditioning supply	0.0	100.0	100	2
Water supply; sewerage, waste management and remediation activities	0.0	100.0	100	2
Construction	0.0	100.0	100	2
Wholesale and retail trade; repair of motor vehicles and motorcycles	4.8	95.2	100	21
Administrative and support service activities	100.0	0.0	100	15
Human health and social work activities	0.0	100.0	100	1
Arts, entertainment and recreation	33.3	66.7	100	3
Other service activities	0.0	100.0	100	11
<b>Total</b>	<b>22.3</b>	<b>77.7</b>	<b>100</b>	<b>632</b>

Source: NISR, IBES 2016 Survey

The following table illustrates that 68.6 per cent of the big sized enterprises have exported their products in 2016.

**Table 3.1.3.30: Distribution of enterprises by whether they exported in 2016 and by enterprise size**

Enterprise size	Yes	No	Total	N
Micro 1-3	31.3	68.7	100	91
Small 4-30	12.9	87.1	100	431
Medium 31-100	36.7	63.3	100	60
Big 100 +	68.6	31.4	100	51
<b>Total</b>	<b>22.3</b>	<b>77.7</b>	<b>100</b>	<b>632</b>

Source: NISR, IBES 2016 Survey

Table 3.1.3.31 shows that 28.2 per cent of enterprises had the reason of not exporting in 2016, the most reason of not exporting was that enterprises could not find clients.

**Table 3.1.3.31: Distribution of enterprises by reasons of not exporting**

Reasons of not exporting	Yes	No	Total
Could not find clients	42.9	57.1	100
could not find financing to export	40.6	59.4	100
problems with certification of the product	20.1	79.9	100
too high quality standards in the country of destination	22.2	77.8	100
Insufficient production volume to meet demand	35.5	64.5	100
Unfavorable exchange rate	5.0	95.0	100
Lack of information on potential destinations	35.7	64.3	100
Transport costs	34.8	65.2	100
Other reasons	16.9	83.1	100
<b>Total</b>	<b>28.2</b>	<b>71.8</b>	<b>100</b>

Source: NISR, IBES 2016 Survey

### 3.1.3.8 Access to finance

As described in the following table, 72.5 per cent of small enterprises had a saving account and that most enterprises use a current account in micro small enterprises while medium and big ones prefer using the foreign exchange and letter of credit.

**Table 3.1.3.32: Distribution of enterprises by financial services type used and by enterprise size**

Financial services	Micro 1-3	Small 4-30	Medium 31-100	Big 100 +	Total	Freq.
Current account	32.9	60.7	4.6	1.9	100	11,979
Savings accounts	16.4	72.5	6.0	5.1	100	1,131
Foreign exchange	28.7	52.6	10.5	8.3	100	1,369
Letters of credits	7.4	59.1	17.0	16.6	100	254
Insurance	20.6	68.1	7.6	3.7	100	6,084

Source: NISR, IBES 2016 Survey

The following table shows that medical or life insurance and motor vehicles were the most insurance type used by enterprises with 59 per cent.

**Table 3.1.3.33: Distribution of enterprises by the type of insurance use**

Type of insurance	Yes	No	Total	Freq.
Motor vehicles	59.0	41.0	100	6,084
Medical and/or Life insurance	59.0	41.0	100	6,084
Other property	46.0	54.0	100	6,084

Source: NISR, IBES 2016 Survey

Table 3.1.3.34 shows that personal cash was the most important source of finance with 82.8 per cent.

**Table 3.1.3.34: Distribution of enterprises by the ranking of their source of finance, 1 is the most important**

Source of Financing/Rank	1	2	3	4	5	6	7	Total	Freq.
Personal Cash	82.8	15.5	1.4	0.3	0.0	0.0	0.0	100	10,169
Parent company in Rwanda	21.5	57.3	18.9	0.6	1.2	0.0	0.6	100	171
Loans from Rwanda	26.1	70.5	3.2	0.1	0.0	0.0	0.0	100	3,727
Loans from outside Rwanda	25.9	57.0	15.0	1.8	0.0	0.0	0.3	100	329
Government	73.8	20.4	5.5	0.1	0.2	0.1	0.1	100	1,375
NGOs	63.0	32.2	3.6	0.9	0.1	0.2	0.1	100	1,523
Others	31.4	56.3	10.8	1.2	0.1	0.0	0.1	100	2,284

Source: NISR, IBES 2016 Survey

The table below illustrates that 91 per cent of the enterprises have started their business by using equity capital whilst none of the enterprises start with credit card.

**Table 3.1.3.35: Distribution of enterprises by the type of start-up finance used**

Financial source	Yes	No	Total	Freq.
Equity capital	91.0	9.0	100	12,172
Bank overdraft	4.0	96.0	100	12,172
Credit card	0.0	100.0	100	12,172
Subsidized bank loan	0.0	100.0	100	12,172
Short term bank loan	10.0	90.0	100	12,172
Long term bank loan	4.0	96.0	100	12,172
Microfinance loan	1.0	99.0	100	12,172
Trade credit	2.0	98.0	100	12,172
Hire-purchase agreements (leasing)	0.0	100.0	100	12,172
Retained earning	4.0	96.0	100	12,172
Sales of assets	0.0	100.0	100	12,172
Sharedholders and related enterprises	7.0	93.0	100	12,172
Friends or family	10.0	90.0	100	12,172

Source: NISR, IBES 2016 Survey

The Table 3.1.3.36 shows that equity capital was the main source of finance used by enterprise from 2012 to 2016 but a decline has been observed over time.

**Table 3.1.3.36: Distribution of enterprises by used source of financing from 2011 to 2016**

Financial source	2012	2013	2014	2015	2016
Equity capital	54.5	54.8	54.1	53.0	52.4
Bank overdraft	2.9	3.3	3.5	3.2	3.5
Credit card	0.2	0.2	0.3	0.3	0.2
Subsidized bank loan	0.1	0.3	0.2	0.3	0.4
Short term bank loan	5.5	5.0	5.9	6.2	6.4
Long term bank loan	1.9	1.7	1.9	2.1	2.0
Microfinance loan	0.5	0.5	0.5	0.6	0.6
Trade credit	1.4	1.5	1.6	1.6	1.5
Hire-purchase agreements (leasing)	0.5	0.3	0.3	0.4	0.3
Retained earning	21.5	21.3	21.2	21.7	21.8
Sales of assets	0.3	0.4	0.6	0.6	0.9
Sharedholders and related enterprises	4.6	4.6	4.1	4.2	4.2
Friends or family	6.1	6.4	5.9	6.0	5.8
<b>Total</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>

Source: NISR, IBES 2016 Survey

Table 3.1.3. 37 illustrates that short and medium term bank loans were the most financial source received 100 per cent by enterprises from 2012 to 2016.

**Table 3.1.3.37: Distribution of enterprises that received 100 per cent of finance by negotiated source of finance, 2012-2016**

Financial source	2012	2013	2014	2015	2016
Short and medium term bank loan	602	604	869	937	1,008
Long term bank loan	202	217	276	374	294
Credit line or card or overdraft	261	361	419	431	435
Trade credit	180	226	262	279	294

Source: NISR, IBES 2016 Survey

### 3.2 Informal sector

This section provides an overview of the structure of informal economic activity as reported in the IBES 2016. In addition, as noted earlier, an Establishment Census (EC) was also undertaken in 2014 which provided information on the informal sector. The census indicated that there are some 137,251 informal enterprises at the time the listing for the census was complied, and the number of employees working in these enterprises was 209,863 (covering enterprises in all activities excluding Agriculture, Public Administration, Education and Health and Social Work). In the tables of this report section the estimates from the IBES 2016 sample survey are presented as percentages of this estimated total number of informal enterprises (or estimated total number of employees).

The IBES 2016 informal survey was undertaken from 24<sup>th</sup> August 2017 to 23<sup>rd</sup> February, 2018. The sample was therefore not selected directly from the Census listing. There are therefore some differences in the structure of the sample when compared to the EC. For example, comparing the percentage of micro-enterprises (i.e. those with



three or fewer employees), the EC gives a figure of 96.4 percent while, based on the IBES 2016 sample, the estimate is 94.8 percent.

Given the nature of informal businesses, notably that they are not registered for tax purposes, the actual total number of such enterprises in Rwanda is difficult to estimate with certainty. The IBES 2016 survey of these enterprises was therefore designed to produce estimates of the composition of activity, rather than an estimate of the levels. NISR remains committed to improving these estimates, which will be achieved in part through further surveys of the informal sector, but also by utilizing information from a wider set of data sources, including data on international imports and exports, the Agricultural Survey, and the Integrated Household Living Conditions Survey (Enquête Intégrale sur les Conditions de Vie des Ménages, EICV).

Table 3.2.1 shows the percentage distribution of informal enterprises by province and by ownership. For example, 17.8 per cent of all informal enterprises in Rwanda are estimated to be in the Northern Province and owned by Rwandan residents.

**Table 3.2.1: Percentage distribution of informal enterprises by province and ownership<sup>1</sup>**

Province	Resident Rwandans	Resident foreigners	Non- resident	Total
Kigali	16.0	0.2	0.1	16.3
South	9.8	0.0	0.0	9.8
West	32.5	0.0	-	32.5
North	17.8	0.0	-	17.8
East	23.5	0.2	-	23.7
<b>Total</b>	<b>99.5</b>	<b>0.4</b>	<b>0.1</b>	<b>100</b>

Source: NISR, IBES 2016 Survey

Note1: The estimated total number of informal enterprises based on the Informal IBES-2016 is 175,643.

Table 3.2.2 shows the percentage distribution of informal enterprises by activity and by ownership. For example, 49.0 per cent of all informal enterprises in Rwanda are estimated to be in Wholesale and retail trade, and owned by Rwanda residents.

**Table 3.2.2: Percentage distribution of informal enterprises by activity and ownership**

Activity / Ownership	Resident Rwandans	Resident foreigners	Non- resident	Total
Mining and quarrying	0.0	0.0	0.0	0.0
Manufacturing	9.9	0.0	0.0	9.9
Electricity, gas, steam and air conditioning supply	0.0	0.0	0.0	0.0
Water supply; sewerage, waste management and remediation activities	1.2	0.0	0.0	1.2
Construction	0.0	0.0	0.0	0.0
Wholesale and retail trade; repair of motor vehicles and motorcycles	49.0	0.2	0.1	49.2
Transportation and storage	0.0	0.0	0.0	0.0
Accommodation and food service activities	27.1	0.1	0.0	27.2
Information and communication	0.7	0.0	0.0	0.7
Real estate activities	0.1	0.0	0.0	0.1
Professional, scientific and technical activities	0.5	0.0	0.0	0.5
Administrative and support service activities	0.8	0.0	0.0	0.8
Arts, entertainment and recreation	0.2	0.0	0.0	0.2
Other service activities	10.2	0.0	0.0	10.2
<b>Total</b>	<b>99.6</b>	<b>0.3</b>	<b>0.1</b>	<b>100</b>

Source: NISR, IBES 2016 Survey

Note1: The estimated total number of informal enterprises based on the Informal IBES-2016 is 175,643

**Table 3.2.3: Percentage of total informal sector employees by gender and activity**

Activity / Gender	Male	Female	Total
Mining and quarrying	0.7	0.1	0.8
Manufacturing	8.5	3.5	12.0
Electricity, gas, steam and air conditioning supply	0.0	0.0	0.0
Water supply; sewerage, waste management and remediation activities	0.5	0.3	0.9
Construction	0.0	0.0	0.0
Wholesale and retail trade; repair of motor vehicles and motorcycles	20.1	23.6	43.7
Transportation and storage	0.1	0.0	0.1
Accommodation and food service activities	19.0	9.0	28.0
Information and communication	0.8	0.2	1.0
Real estate activities	0.1	0.0	0.1
Professional, scientific and technical activities	0.4	0.2	0.6
Administrative and support service activities	0.7	0.5	1.2
Arts, entertainment and recreation	0.2	0.1	0.2
Other service activities	8.8	2.7	11.5
<b>Total</b>	<b>59.8</b>	<b>40.2</b>	<b>100</b>

Source: NISR, IBES 2016 Survey

Note 1: The estimated total number of employees in informal enterprises based on the informal IBES 2016 is 296,281 (covering enterprises in all activities excluding Agriculture, Public Administration, Education and Health and Social Work).

Table 3.2.4 shows the percentage distribution of informal enterprises by activity and by size of enterprise. For example, 48.9 per cent of all informal enterprises in Rwanda are estimated to be the Wholesale and retail trade sector and employing three or fewer workers.

**Table 3.2.4: Percentage distribution of informal enterprises by size**

Activity	<=3	>3, <=9	>9, <=19	>19, <=99	100+	Total
Mining and quarrying	0.0	0.0	0.0	0.0	0.0	0.0
Manufacturing	8.3	1.6	0.0	0.0	0.0	9.9
Electricity, gas, steam and air conditioning supply	0.0	0.0	0.0	0.0	0.0	0.0
Water supply; sewerage, waste management and remediation activities	1.2	0.0	0.0	0.0	0.0	1.2
Construction	0.0	0.0	0.0	0.0	0.0	0.0
Wholesale and retail trade; repair of motor vehicles and motorcycles	48.9	0.3	0.1	0.0	0.0	49.2
Transportation and storage	0.0	0.0	0.0	0.0	0.0	0.0
Accommodation and food service activities	25.1	1.8	0.3	0.0	0.0	27.2
Information and communication	0.6	0.1	0.0	0.0	0.0	0.7
Real estate activities	0.1	0.0	0.0	0.0	0.0	0.1
Professional, scientific and technical activities	0.4	0.1	0.0	0.0	0.0	0.5
Administrative and support service activities	0.8	0.0	0.0	0.0	0.0	0.8
Arts, entertainment and recreation	0.2	0.0	0.0	0.0	0.0	0.2
Other service activities	9.3	0.8	0.1	0.0	0.0	10.2
<b>Total</b>	<b>94.8</b>	<b>4.6</b>	<b>0.5</b>	<b>0.1</b>	<b>0.0</b>	<b>100</b>

Source: NISR, IBES 2016 Survey

Table 3.2.5 shows the percentage distribution of informal enterprises by size of enterprise and gender of employees. For example, 45.0 per cent of all informal enterprises in Rwanda are estimated to be males working in micro enterprises (i.e. with three or fewer workers).

**Table 3.2.5: Percentage of employees by gender and size of informal enterprises**

Size Band/ Gender of employees	Male	Female	Total
<=3	45.0	34.0	79.0
>3, <=9	11.0	4.0	15.0
>9, <=19	3.0	1.0	5.0
>19, <=99	1.0	0.0	1.0
100+	0.0	0.0	0.0
<b>Total</b>	<b>60.0</b>	<b>40.0</b>	<b>100</b>

Source: NISR, IBES 2016 Survey

Note 1: The estimated total number of employees in informal enterprises based on the informal IBES 2016 is 296,281 (covering enterprises in all activities excluding Agriculture, Public Administration, Education and Health and Social Work).

**Table 3.2.6: Percentage distribution of informal enterprises by economic activity and TIN ownership**

Activity/ With TIN	With TIN %		No TIN %		Total %	
Year	2015	2016	2015	2016	2015	2016
Mining and quarrying	6.8	84.0	93.2	16.0	100	100
Manufacturing	15.0	59.0	85.0	41.0	100	100
Electricity, gas, steam and air conditioning supply	0.0	100.0	0.0	0.0	0.0	100
Water supply; sewerage, waste management and remediation activities	1.1	1.0	98.9	99.0	100	100
Construction	83.8	100.0	16.2	0.0	100	100
Wholesale and retail trade; repair of motor vehicles and motorcycles	14.8	72.0	85.2	28.0	100	100
Transportation and storage	17.7	56.0	82.3	44.0	100	100
Accommodation and food service activities	6.3	70.0	93.7	30.0	100	100
Information and communication	20.0	78.0	80.0	22.0	100	100
Real estate activities	10.4	78.0	89.6	22.0	100	100
Professional, scientific and technical activities	37.2	78.0	62.8	22.0	100	100
Administrative and support service activities	47.1	93.0	52.9	7.0	100	100
Arts, entertainment and recreation	7.1	43.0	92.9	57.0	100	100
Other service activities	5.5	43.0	94.5	57.0	100	100
<b>Total</b>	<b>11.9</b>	<b>67.0</b>	<b>88.1</b>	<b>33.0</b>	<b>100</b>	<b>100</b>

Source: NISR, IBES 2015 and IBES 2016 Survey

Table 3.2.6 above shows that in IBES 2015 only 11.9 per cent of informal enterprises had the tax identification number (TIN), and this increased in IBES 2016 Survey to 67.0 percent. In both 2015 and 2016 IBES Surveys, the construction sector had more informal businesses with TIN, 83.8 and 100 per cent respectively.

**Table 3.2.7: Distribution of informal enterprises by economic activity and years in operations**

Activities/Years in operations	<3	3 -5	6-9	10-14	15-19	>=20	Total
Mining and quarrying	14.0	27.0	59.0	0.0	0.0	0.0	100
Manufacturing	36.0	31.0	10.0	10.0	10.0	2.0	100
Electricity, gas, steam and air conditioning supply	0.0	33.0	67.0	0.0	0.0	0.0	100
Water supply; sewerage, waste management and remediation activities	30.0	48.0	14.0	4.0	2.0	3.0	100
Construction	46.0	0.0	0.0	54.0	0.0	0.0	100
Wholesale and retail trade; repair of motor vehicles and motorcycles	54.0	22.0	16.0	4.0	4.0	0.0	100
Transportation and storage	18.0	6.0	69.0	0.0	0.0	6.0	100
Accommodation and food service activities	60.0	30.0	3.0	7.0	0.0	0.0	100
Information and communication	41.0	36.0	13.0	10.0	0.0	0.0	100
Real estate activities	36.0	17.0	28.0	9.0	8.0	2.0	100
Professional, scientific and technical activities	45.0	39.0	14.0	2.0	0.0	0.0	100
Administrative and support service activities	41.0	38.0	17.0	4.0	0.0	0.0	100
Arts, entertainment and recreation	69.0	20.0	8.0	1.0	1.0	1.0	100
Other service activities	43.0	23.0	11.0	6.0	6.0	11.0	100
<b>Total</b>	<b>52.0</b>	<b>26.0</b>	<b>11.0</b>	<b>6.0</b>	<b>3.0</b>	<b>1.0</b>	<b>100</b>

Source: NISR, IBES 2016 Survey

Table 3.2.7 presents the distribution of informal enterprises by economic activity and years in operations. 52.0 per cent of all informal businesses in 2016 had less than three years of operations while 1.0 per cent was in existence of 20 years and above.

**Table 3.2.8: Percentage distribution of informal enterprises by enterprise size and years in operation**

Enterprise size / Years in operations	<3	3-5	6-9	10-14	15-19	>=20	Total
<=3	57.0	25.0	9.0	5.0	4.0	0.0	100
>3, <=9	31.0	38.0	25.0	4.0	1.0	0.0	100
>9, <=19	6.0	34.0	12.0	46.0	1.0	1.0	100
>19, <=99	14.0	14.0	49.0	22.0	0.0	0.0	100
100+	0.0	0.0	0.0	100.0	0.0	0.0	100
<b>Total</b>	<b>56.0</b>	<b>26.0</b>	<b>10.0</b>	<b>5.0</b>	<b>4.0</b>	<b>0.0</b>	<b>100</b>

Source: NISR, IBES 2016 Survey

Table 3.2.8 highlights the distribution of informal enterprises by enterprise size and Years in operation. Medium informal businesses are younger than other where 56 per cent had less than 3 year of operations in 2017.

## CHAPTER 4: Key concepts and data collection methodology

### 4.1 Distinction between Enterprise and Establishment

An enterprise is an institutional unit as a producer of goods and services. It has the autonomy in decision-making and allocating resources. It may be engaged in one or more economic (productive) activities. It can be a corporate or non-corporate enterprise. An establishment is an enterprise or part of the enterprise located in a single location and normally a single economic activity is carried out in the establishment. It is to be noted that in the majority of the cases, and particularly for the smaller or medium-sized units, enterprise and establishment are identical. Efforts were made to list and record details for each enterprise including all its branches. Information on whether or not the establishment was part of an enterprise was also recorded

### 4.2 Activity Coverage and Listing of Enterprises

The IBES considered only non-agricultural activities. Agricultural activities- the primary production of agricultural and plantation crops, livestock and poultry, agricultural services, forestry and fishing were not covered. Activities relating to the processing of the primary produce of agricultural and allied activities were treated as non-agricultural. The sale of agricultural produce by the producer himself directly to wholesalers, retailers, or even consumers was considered agricultural.

Detailed guidelines were provided to determine the broad activity category of an enterprise. Some are reproduced here. Manufacturing involves the transformation of raw materials into finished products. Trade is an act of purchase of goods and their resale, either wholesale or retail, without any intermediate physical transformation of the goods. A hotel (Division 55 of ISIC-4) provides accommodation with or without arrangements for meals, other prepared food and refreshments. A restaurant (Division 56 of ISIC-4) generally provides eating and drinking services where prepared meals, food, and refreshment and other snacks are sold for immediate consumption without any provision for lodging. Such enterprises are variously known as restaurants, cafes, cafeteria, snack bar, lunch counters, refreshment stands, milk bar, canteens etc. Bars and other drinking places also come under this category.

Transport is the act of carrying passengers and/or goods from one place to another. The operation of storage and warehouses on hire to the farm producer, dealer or trader, processor and manufacturing enterprises, including the general public, as a business is in the storage and warehousing industry (Division 52 of ISIC-4). But warehouses meant for storing farm produce, trading commodities, manufactured goods etc., owned by the owner of the farm, trader or manufacturer himself, were not treated as storage and warehousing.

### 4.3 Items of Information and Related Concepts

Apart from collecting background information IBES collects data on the number of people the enterprise employs and how much it pays them, its operating expenses and receipts, the value of fixed assets, and its outstanding loans.

- **Method of data collection:** this depended on whether the enterprise maintained accounts. If it did, data were collected from them. Otherwise, the information was

collected orally, as reported by the respondent. In both cases, primary field workers visited the sites of the enterprises and collected data from the respondents by interviewing them. Key concepts and methodology involved in data collection are discussed below.

- **Reference year/last year:** For most of the items, namely compensation, operating expenses/inputs, and receipts/output, the reference or last year meant last accounting year for the enterprises maintaining accounts and the previous 12 months for those not maintaining accounts.

- **Last day of the year:** Information on the value of fixed assets and outstanding loans related to the last day of the year. 'Last day' meant the closing day of the last accounting year for enterprises maintaining accounts. In other cases, it was the day preceding the date of survey.

- **Background information about the enterprise:** Certain background information about the enterprise was collected first. These included broad activity of the enterprise for which 12 codes were provided, main activity of the enterprise in terms of 4-digit code as per ISIC-Rev 4, location (within permanent structure or within temporary structure or without any structure), ownership status, whether registered under any Act, age of the enterprise, if received any government assistance during last 2 years, nature of problem faced during last year, whether accounts maintained, and whether establishment was part of an enterprise in case of an establishment.

- **Employment and compensation of employees:** As regards the employment position, data on average number of workers working per day during the major period of working in the last year were collected. Break-up of number of paid and unpaid workers was also recorded. Paid workers were those who got regular salary or wages. Break-up employment was also noted by (a) sex, (b) occupation (i.e. manager/professional/administrative and others), and (c) nationals or foreigners. Compensation payable to the workers included wages/salaries to hired workers and other remunerations in the form of providing food, canteen facility, health care facility or other facilities to its workers.

Given the importance of employment related statistics, a specific module (Labor Module) was designed to cover all the details judged to be important.

- **Operating expenses:** All the expenses incurred by the enterprise during last year including (a) compensation to workers, (b) rent on hired land and building (if any) and (c) interest payable on loan (if any) were covered under the head of expenditure. The relevant information was collected through two sections of the questionnaire module—one giving the details of the main inputs/raw materials used by the enterprise and the other recording the residual operating expenses involved in the day to day running of the enterprise. Value figures were recorded at the purchase price of raw materials and other inputs.

- **Income:** Information on income was also collected through two sections of the questionnaire – one furnishing details of the main receipts of the enterprise directly associated with the value of goods and services produced while the other recording other receipts of the enterprise. Valuation of income was at the sale value if sold or at



the market value of goods made ready for sale in the market or at producer's prices for manufactured goods.

- **Fixed assets:** Information on value of fixed assets as on last day of the year was collected. It was the book value if the enterprise maintained accounts otherwise it was the market value of the asset owned or rented/hired. This apart, data on net addition to fixed assets and rent payable for hired assets were also collected.

## Appendix 1: Rwanda Classification of Products by Activity, Level 2

<i>RC PA</i>	<i>Rwanda Classification of products by Activity</i>	<i>RC PA</i>	<i>Rwanda Classification of products by Activity</i>
A1	Food crops	H1	Land transport
A2	Export crops	H2	Air transport
A3	Livestock & livestock products	H3	Other transport & postal services
A4	Forestry	I0	Hotels & restaurants
A5	Fishing	J1	Publishing & broadcasting activities
B0	Mining & quarrying	J2	Telecommunication
C1	Manufacturing of food	J3	Information technology services
C2	Manufacturing of beverages & tobacco	K0	Financial services
C3	Manufacturing of textiles, clothing & leather goods	L0	Real estate activities
C4	Manufacturing of wood & paper; printing	M0	Professional, scientific and technical activities
C5	Manufacturing of chemicals, rubber & plastic products	N0	Administrative and support service activities
C6	Manufacturing of non-metallic mineral products	O0	Public administration and defense; compulsory social security
C7	Manufacturing of metal products, machinery & equipment	P0	Education
C8	Furniture & other manufacturing	Q0	Human health and social work activities
D0	Electricity	R0	Arts, entertainment and recreation
E0	Water & waste management	S0	Other service activities
F0	Construction	T0	Domestic services
G1	Maintenance and repair of motor vehicles	V0	Travel debits & credits
G2	Wholesale & retail trade	X0	Unallocated products

## IBES 2016 SURVEY STAFF

SURVEY MANAGER
NZASINGIZIMANA Tharcisse

MEMBERS OF TECHNICAL TEAM	
HABIMANA Schadrack	MURENZI Rafiki
HAKIZIMANA Jean Claude	MWANGABWOBA Janvier
HITIMANA Dieudonné	MWIZERWA Jean Claude
IRADUKUNDA Odile	NIYODUSENGA Eliphaz
KAGIMBURA Hervé	NSHIMIYIMANA Emile
KAYITARE Ivan Patrick	NZASINGIZIMANA Tharcisse
MPAYIMANA Fabien	UWURUKUNDO Nadine
MUDENGE Modeste	
MUGABO Gilbert	

FIELDWORK COORDINATOR
NZASINGIZIMANA Tharcisse

FIELDWORK ASSISTANT COORDINATOR
MWIZERWA Jean Claude

SUPERVISORS	REGIONAL SUPERVISORS
HABIMANA Schadrack	HAKIZIMANA Faustin
HAKIZIMANA Jean Claude	MBANJINEZA Ramadhan
MPAYIMANA Fabien	MUNEZERO Placide
MUDENGE Modeste	UMUTONIWASE Goreth
NSHIMIYIMANA Emile	UWIMPUHWE SHARAMANZI Claudette

TEAM LEADERS	
ABAYISENGA Claudine	TUYISINGIZE Marius
ABIMANA Janvière	TWAGIRIMANA Hamdoun
BYUKUSENGE Assoumpta	TWIZEYIMANA Samuel
HARAGIRIMANA Alexandre	UMUGWANEZA Theopiste
IYAKAREMYE Innocent	UMUHOZA Desanges
KARASIRA Yves Fabien	UMURAZA Delphine
KIMENYI Vincent	UMUTESI Fridaus
MBONYIRYOMVUGA Mathias	UMUTONI Annoncée
MUDAHEMUKA Jean Bosco	UMUTONI Consolee
MUSABYIMANA Jacky	UWERA Annick Louise
MUSANGWA Jean De Dieu	UWICYEZA Delphine
NDAMUKUNDA Noel	UWIMANA Jean Baptiste
NISHIMWE Alain Clement	UWIMANA Jean De Dieu
NYIRAMANA Faine	UWIMANA Noella
TUYIZERE Emile	UWIRAGIYE Christine
USABYIMANA Monique	UZARERWA Marie Claire
UWITONZE African	YABARAGIYE Jonie
MUTONI Josephine	NYINAWISUGI Léa
NDANDAYIRE UGIRASE Nadine	NYIRABARUTA Yvonne
NDITONZE Innocent	NYIRAGICIRO Dudu Aliane
NDUWAYEZU Jean Bosco	NYIRAMPORÉ Eugénie

TEAM LEADERS	
NIYIBIZI Emmanuel	NYIRANEZA Marthe
NIYIBIZI Felix	NYIRANSENGIMANA Bernadette
NIYONAGIRA Albert	RUDASINGWA Olivier
NIYONZIMA Seth	RUKUNDO Emmanuel
NIYOYITA Thacienne	SHYAKA GASINZIGWA Emmanuel
NKURANGA Justin	SIBOMANA Hassan
NSABIMANA Jean Marie Vianney	TUYISANGE Jean
NTAGANIRA Geoffrey	TWAGIRIMANA Hamdoun
NYINAWISUGI Lea	UMUHOZA Desanges
NYIRABARUTA Yvonne	UMURAZA Delphine
NYIRAGICIRO DUDU aliane	UMUTESI Fridaus
NYIRAMPORE Eugenie	UMUTONI Annonce
NYIRANEZA Marthe	UMUTONI Consolée
RUDASINGWA Olivier	UMUTONI Yvonne
RUGIRA Janvier	UWICYEZA Delphine
RUKUNDO Emmanuel	UWIMANA Noella
RUKUNDO Leon	UWINEMA Marie
RUTAGANIRA Theophile	UWIRAGIYE Christine
SEKIMONYO Sylvestre	UWIRINGIYIMANA Aime Sylvain
SHYAKA-GASINZIGWA Emmanuel	UWIRINGIYIMANA Jean Damascène
SIBOMANA Hassan	UWITONZE African
TUMUSIIME Generous	UWONKUNDA Gedeon
TUMWINE Sam	YABARAGIYE Jonie
TUYISANGE Jean	

DATA PROCESSING
MURINDABABISHA Edouard
NDAYISHIMIYE Jean Bosco

DATA ANALYSIS AND REPORT WRITING
KAGIMBURA Hervé
KAYITARE Ivan Patrick
MWIZERWA Jean Claude
NZASINGIZIMANA Tharcisse

SURVEY ADVISORS
Dr. MOHAMED Fatou Aboulata
ROBIN Youll
TIM Jones

