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RWANDA
UTILITIES
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AUTHORITY

ANNUAL REPORT
2021-2022

RWANDA UTILITIES REGULATORY AUTHORITY

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OUR VISION

To be a leading global regulator of public utilities.

OUR MISSION

In regulating public utilities, RURA:
- promotes free and fair competition;
- protects the rights of consumers and balances the interest of all stakeholders;
- promotes availability of affordable, quality services to all; and
- leads in the development of the public utilities sectors.

OUR VALUES

The Authority upholds the following core values:

- Independence
- Transparency and Accountability
- Fairness
- Integrity
- Professionalism
- Innovation
- Sustainability

OUR MOTO

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TABLE OF CONTENT

rura RWANDA UTILITIES REGULATORY AUTHORITY
Inspiring development

ANNUAL REPORT
2021 - 2022

ANNUAL REPORT
2021 - 2022

RWANDA
UTILITIES
REGULATORY
AUTHORITY

Inspiring development

5

LIST OF FIGURES

LIST OF TABLES

ABREVIATION

AGO	: Automotive Gas Oil
AR	: Advanced Routing
ATU	: African Telecommunications Union
BSC	: Broadband Systems Corporation
ccTLD	: Country Code Top Level Domain
CHOGM	: Commonwealth Heads of Government Meeting
CLMS	: Converged Licensing Management System
CoK	: City of Kigali
CPS	: Captive Power Systems
EACO	: East African Communications Organization
EREA	: Energy Regulators Association of East Africa
ESAWAS	: Eastern and Southern Africa Water and Sanitation
EUCL	: Energy Utility Corporation Limited
EWATSAN	: Electricity, Water and Sanitation
FM	: Frequency Modulation
FTTB	: Fiber to the Building
FTTH	: Fiber to the Home
GVA	: Group Vivendi Africa
ICANN	: The Internet Corporation for Assigned Names and Numbers
ICFM	: Intelligent Connected Fair Meter
ISP	: Internet Service Provider
ITU	: International Telecommunication Union
KTRN	: Korea Telecom Rwanda Networks
LPG	: Liquefied Petroleum Gas
MB	: Megabyte
MNO	: Mobile Network Operator
MOMO	: Mobile Money
MT	: Metric Tons
NMM	: Network Monitoring and Management
NOG	: Network Operator Group
NST1	: National Strategy for Transformation
PMS	: Premium Motor Spirit
RAERESA	: Regional Association of Energy Regulators for Eastern and Southern Africa
RICA	: Rwanda Inspectorate, Competition and Consumer Protection Authority
RICTA	: Rwanda Internet Community and Technology Alliance
RINEX	: Rwanda Internet Exchange Point
RNP	: Rwanda National Police
RTDA	: Rwanda Transport Development Agency
SIM	: Subscriber Identity Module
SSAC	: State System of Accounting for and Control of Nuclear Material
T.o. U	: Time of Use
TRES	: Trust Engineering Solution
TVR	: Rwanda Television
UAF	: Universal Access and Service Fund
UNEP	: United Nations Environment Programme
UPU	: Universal Postal Union
VAT	: Value Added Tax
WASAC	: Water and Sanitation Corporation
WHO	: World Health Organisation
WIRE	: Women in Rwanda Energy
WTDC	: World Telecommunication Development Conference

EXECUTIVE SUMMARY

During the financial year 2021-2022, the Reguratory Authority continued to play a significant role and executed a number of strategies to ensure fair market competition and that the regulated services are progressively made more accessible and affordable.

The objectives of the Management were to improve quality of service, market competitiveness and development of technical and human capacity.

Among the key achievements noted was the adoption of RURA's 5 years Strategic Plan 2022 – 2027 that clearly outlines how the institution intends to accomplish its mandate of regulating the public utilities that falls under its purview. The developed and adopted strategic plan is in line with national programs and policies such as the National Strategy for Transformation (NST1) and Rwanda's Vision 2050.

In line with the Government of Rwanda's ambition to adopt Zero-Trip Zero-Paper programme in all services, all licenses applications are processed online, with the approval processes being made within Converged Licensing Management System (CLMS) and the system generates an E-license.

The above licensing system led to a percentage increase from 76% to 100% compared to the previous year as a result of the digitization of licensing services.

In the ICT sector, to improve the coverage and quality of service of Mobile networks, RURA issued one hundred and one (101) authorizations to IHS and nine (9) to TRES for installing Telecom Towers.

The number of active mobile-cellular telephone subscriptions recorded was 10,575,038 SIM cards. As a result, the mobile-cellular subscriptions were 80.7% while fixed telephone subscriptions were 0.09%.

On the other hand, the mobile-cellular telephone subscription market shares for MTN Rwanda Ltd increased by 2.7 % from 62.9% to 65.6% whereas that for AIRTEL Rwanda Ltd dropped at the same margin from 37.1% to 34.4%.

In addition, the market shares in fixed telephone subscriptions for AIRTEL Rwanda Ltd increased by 2.5 % from 80.6% to 83.1% and BSC Ltd increased by 0.3 % from 10.7% to 11.0%.

However, the market shares for Liquid Telecom Ltd decreased by 2.7 % from 7.2% to 4.5 % whereas the one for MTN Rwanda Ltd dropped by 0.1 % from 1.5% to 1.4%.

The total number of internet subscriptions for both mobile and fixed decreased by 1.5% from 8,061,373 to 7,943,420 subscriptions as of June 2022. The internet subscriptions per 100 inhabitants have also decreased by 1.6 % from 62.2% to 60.7% as of June 2022.

ANNUAL REPORT
2021 - 2022

RURA
Inspiring development
RWANDA
UTILITIES
REGULATORY
AUTHORITY

9

Furthermore, the recorded active Pay TV subscribers increased by 3.1% from 79,048 to 81,500 and for Postal and Courier services, the market share is dominated by international Courier Operators with 61.22%, followed by the National Postal Office with 26.73% while other operators share the remaining 12.05%.

In Electricity and Renewable Energy, low voltage feeder lines length increased by 9.3% from 16,869.5 to 18,440.30 km, while the medium voltage feeder lines length increased by 2.5% from 10,186.86 to 10,440.42 km and the number of grid connections increased by 8.34% from 1,270,964 to 1,377,025.

Also, National grid installed capacity has increased by 16% from 238.052 MW to 276.052 MW and the electricity generation increased by 12% from 954,643.84 MWh to 1,069,565.73 MWh whereas 97% of the generated electricity was produced by domestic and regional shared and the grid's overall network losses reduced from 19.26% to 18.1%.

In Gas and Downstream Petroleum, progress was made in Liquefied Petroleum Gas where by the total LPG storage capacity has increased from 703. 7 Metric Tons (MT) to 765.7 due to a new installed storage facility of 52 MT by MEREZ.

In Nuclear and Radiation Protection, the sector has recorded three hundred and eleven (311) radiation generators and fifteen (15) radioactive sources and also issued six (6) industrial related importation and transportation licenses as well as three (3) medical use licenses.

In addition, the sector has attracted more emphasis on capacity both in human resource development and in required monitoring equipment.

Under Water and Sanitation Sub-Sector, water production and subscribers increased by 14.3% and 9.2% respectively. The sector recorded new entrants in terms of operation and management of simple rural water supply in cleaning service and in solid waste management upgrade of water treatment plants that contributed to the reduction of water shortages in various districts. In addition, water distribution networks were upgraded in Kigali, Musanze and Rubavu.

In water supply, Seven (7) licenses were renewed and a new license was issued for the management of a simple water supply system making a total of 55 licensed operators.

On the other hand, in cleaning service Twenty-five (25) licenses were granted to operators of which seven (7) were new licenses and Eighteen (18) renewed.

For solid waste management Two (2) new licenses were issued and Two (2) were renewed.

In the Transport Sector, the Authority worked closely with stakeholders to address some challenges in public transport like routes assessment, enforcement of laws and regulations, and restructuring motorcycle public transport sub-sector.

In line with the international cooperation and country visibility, RURA witnessed viable relationship and partnership with many Regional and International organizations including ITU, ATU, UPU, EACO, EREA, RAERESA, ESAWAS and ICANN aimed at building effective

partnerships exchange of regulatory experiences and harmonizing public policies within the Regional and International Organizations.

The Authority will continue its efforts to create a sustainable and enabling environment for the regulated sectors.

We would like to thank the Regulatory Board members for the counsel and guidance they provided and contributed in no small measure to the numerous successes achieved during their tenure. We sincerely wish them the best of luck in all their future endeavours.

To the staff, thank you for your contribution in advancing the Authority's vision and mission. I trust that you will redouble your efforts the years ahead.

We look forward to the future with hope and determination to address challenges and exploit opportunities to the benefit of Rwandans.

Thank You!

RURA Management

ANNUAL REPORT
2021 - 2022

rura
Inspiring development

RWANDA
UTILITIES
REGULATORY
AUTHORITY

11

01

INTRODUCTION

1. INTRODUCTION

1.1 RURA'S OPERATIONAL FRAMEWORK

RURA was created by Law N° 39/2001 of 13th September 2001 as a multi-sector Regulatory Agency to regulate certain public Utilities. This law was repealed and replaced by Law N° 09/2013 of 01/03/2013, establishing RURA and determining its mission, powers, organization, and functioning.

RURA has the mandate to regulate:

1. Telecommunications, information technology, broadcasting, and converging electronic technologies including the internet and any other audio-visual information and communication technology;
2. Postal services;
3. Renewable and non-renewable energy, industrial gases, pipelines, and storage facilities;
4. Water;
5. Sanitation;
6. Transport of persons and goods;
7. Radiation Protection and;
8. Other public utilities, if deemed necessary.

RURA has a legal personality, financial and administrative autonomy in the fulfilment of its mandate. RURA plays a pivotal role between policymakers, licensed service providers, and consumers. It reports to the Office of the Prime Minister, the supervising organ of RURA.

In executing its duties, RURA also coordinates with line ministries responsible for each regulated sector in line with the Prime Minister's Order No 89/03 of 11/09/2014, determining modalities of which Ministries in charge of regulated sectors shall coordinate their activities with RURA in implementing their Respective Mandate.

1.2 CORPORATE GOVERNANCE

1.2.1 REGULATORY BOARD

The Regulatory Board is the supreme management and decision-making organ of RURA. It has full powers and responsibilities of managing the property of RURA in order for it to full fill its mission.

The Regulatory Board is composed of seven Members including the Board Chairperson, Vice Chairperson and Members including the Director General who also acts as rapporteur. Daily activities of the Regulatory Authority are coordinated and directed by the Director General who is entrusted with executive powers.

For ordinary meetings, the Regulatory Board convenes once every month. However, if the need arises, extraordinary meetings may be held upon initiation by the Chairperson/Vice-Chairperson of the Regulatory Board, Office of the Prime Minister which is the supervising Organ of RURA, two-thirds (2/3) of members of the Regulatory Board or the Director General of RURA.

During its meetings, the Regulatory Board reviews and may approve any regulatory instruments, license applications, tariff changes and the Regulatory Authority's budget and action plan. It may also make administrative decisions like hiring or dismissal of employees and resolution of disputes referred to it among others.

During this year, the Regulatory Board conducted six (6) ordinary meetings where many decisions were taken and regulatory instruments adopted. Decisions taken includes among others, the approval of:

1. 5 Regulations;
2. 2 Licenses;
3. 2 Enforcement notices;
4. 3 policies;
5. RURA and UAF Budget for the FY 2021-2022;
6. Action plan for the FY 2021-2022;
7. Strategic Plan 2022-2027;
8. Annual Report for the FY 2020-2021;
9. Receivables and payables write-offs;
10. Write-off of some fixed asset from the asset register;
11. Revised Tariffs for moto taxi and ICFM services;
12. Financial procedure manual;
13. Revaluation report for RURA assets

1.2.2 BOARD COMMITTEES

For efficiency, the Regulatory Board is made up of three specialized committees that meet regularly to deliberate on different agenda items to be submitted to the Regulatory Authority. These committees include:

1.2.2.1 CORPORATE GOVERNANCE AND HUMAN RESOURCES COMMITTEE

This Committee oversees issues pertaining to Corporate Governance and Human Resource of the Regulatory Authority. The Committee reviews all human resource policies and makes an appropriate recommendation to the Board.

During the financial year, the Corporate Governance and Human Resource Committee held two (2) meetings towards discharging its mission. Among other key achievements, the Committee assessed the capacity building plan for the FY 2021-2022, internship and capacity building policy and submitted its recommendations which were adopted by the Regulatory Board.

1.2.2.2 ECONOMIC REGULATION, FINANCE AND AUDIT COMMITTEE

This Committee reviews all matters relating to economic regulation including reviewing tariffs in all regulated sectors, financial statements and internal control systems of the Authority and makes appropriate recommendations to the Board.

In the financial year under review, the Economic Regulation, Finance and Audit Committee held five (5) meetings. During these meetings, the key activities were the assessment of the action plan and the budget execution, the follow-up of the implementation of the Auditor General's recommendations on the Audit of the financial year 2019-2020, assessment of receivables and payables to be written off, internal auditor's reports, tariff review for moto taxi and ICFM services, financial procedure manual, RURA fixed asset management policy and the revaluation report for RURA assets.

1.2.2.3 TECHNICAL, LEGAL AND REGULATORY COMMITTEE

The Technical Legal and Regulatory Committee is allocated the task of reviewing all technical issues from all sectors regulated by the Authority including new regulations to be approved and makes appropriate recommendations to the Board.

During this Financial year, The Technical Legal and Regulatory Committee held four (4) meetings where it submitted for the Regulatory Board consideration a number of regulations and licenses.

02

CORPORATE PERFORMANCE REVIEW

2. CORPORATE PERFORMANCE REVIEW

During the financial year, among the key achievements noted was the adoption of RURA's 5 Year Strategic Plan for the financial years 2022 – 2027 that clearly outlines how the institution intends to accomplish its mandate of regulating the public utilities that falls under its purview.

For consistency purposes, the developed and adopted strategic plan is in line with national programs and policies such as the National Strategy for Transformation (NST1) and Rwanda's Vision 2050. As part of this process, RURA also ensured alignment with certain regional and international strategy documents that are relevant to the sectors.

2.1 International and National collaborations

During the financial year, the Regulatory Authority in collaboration with other different government institutions actively supported and participated in different key international conferences such as;

- World Telecommunications Development Conference (WTDC)- hosted in Kigali in June 2022 .
- World Telecommunication Standardization Assembly (WTSA)
- Conference of Plenipotentiary African Telecommunication Union (ATU)
- And many others

It is against this background that in today's fast-changing world especially in technologies, RURA as a regulator puts much emphasis on participating in and hosting such kinds of conferences.

2.2 RURA Workforce

The number of RURA staff by June 2022 reduced to One Hundred forty-nine (149) representing 68% and 32% of males and females respectively compared to One Hundred and Sixty (160) in the previous year.

The figure below illustrated the distribution of RURA staff by gender.

RURA Staff by Gender
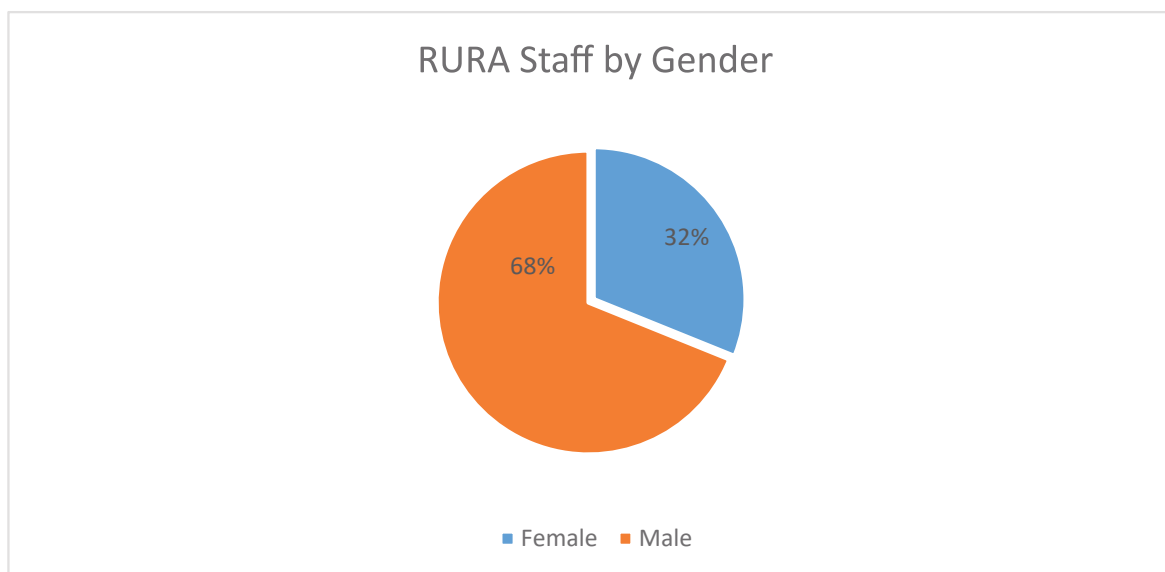
Figure 1: RURA staff by gender as of June 2022
Source: RURA

2.2.1 Distribution of RURA staff by Education Levels as of June 2022

The below graph represents the percentage of the staff with their different levels of education in RURA since it started.

Blue Colour reflects the number of staff members and the orange colour reflects the percentages in different levels of their education.

RURA through its training policy will continue to equip its staff with the required skills for the achievement of the RURA's vision, mission and strategic goals so that we inspire development. The figure below shows the distribution of RURA staff by education qualifications:

RURA Staff by Education Level June 2022
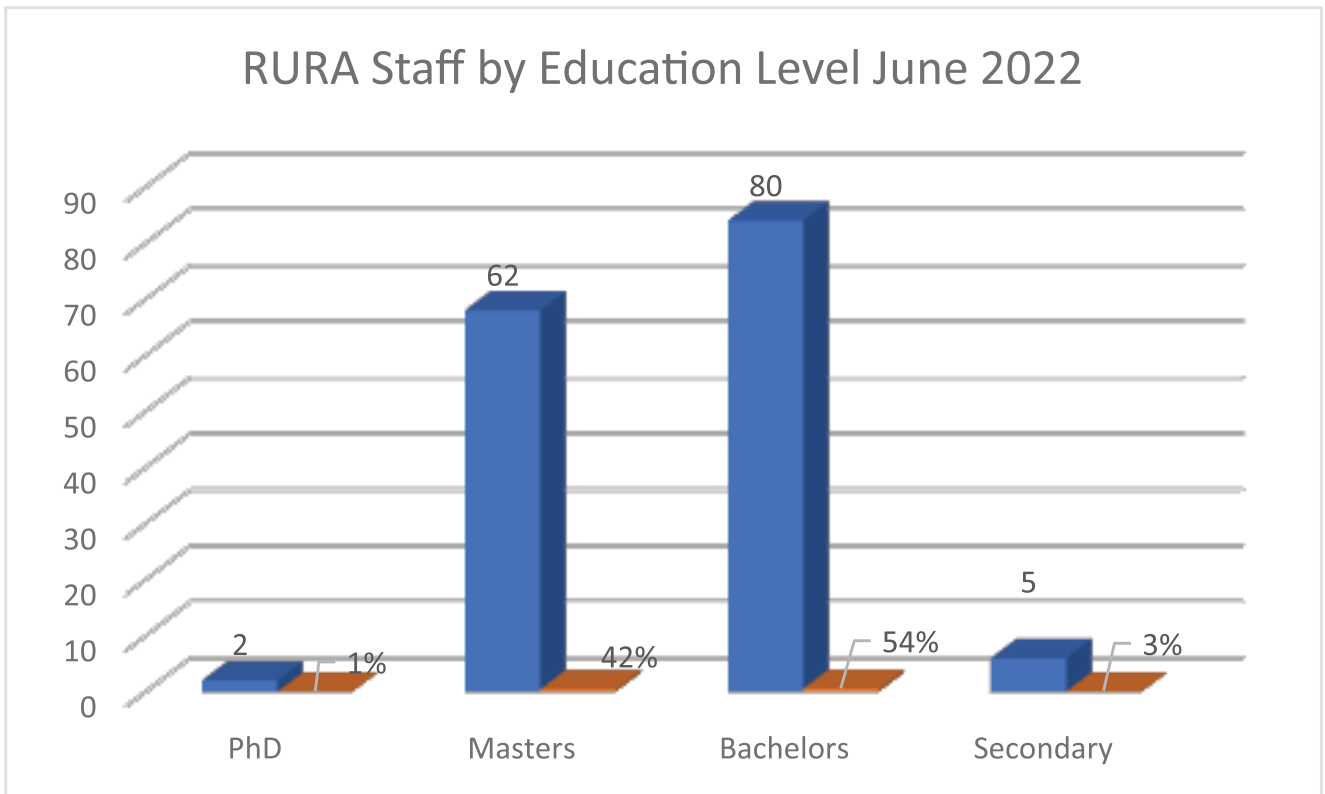
Figure 2: Distribution of RURA Staff by Education Levels
Source:RURA

2.2.2 Distribution of RURA staff by age as of June 2022

From the figure below, the composition of RURA staff by age groups is as follows;21% are between 25 and 35 years, 47% are between 36 and 45 years and 32 % are 46 years and above. Blue Colour reflects the number of staff members and the orange colour reflects the percentage.

The statistics on age show that the majority of RURA staff are between 36 and 45 as illustrated in the figure above which means that RURA has a young generation group of workers.
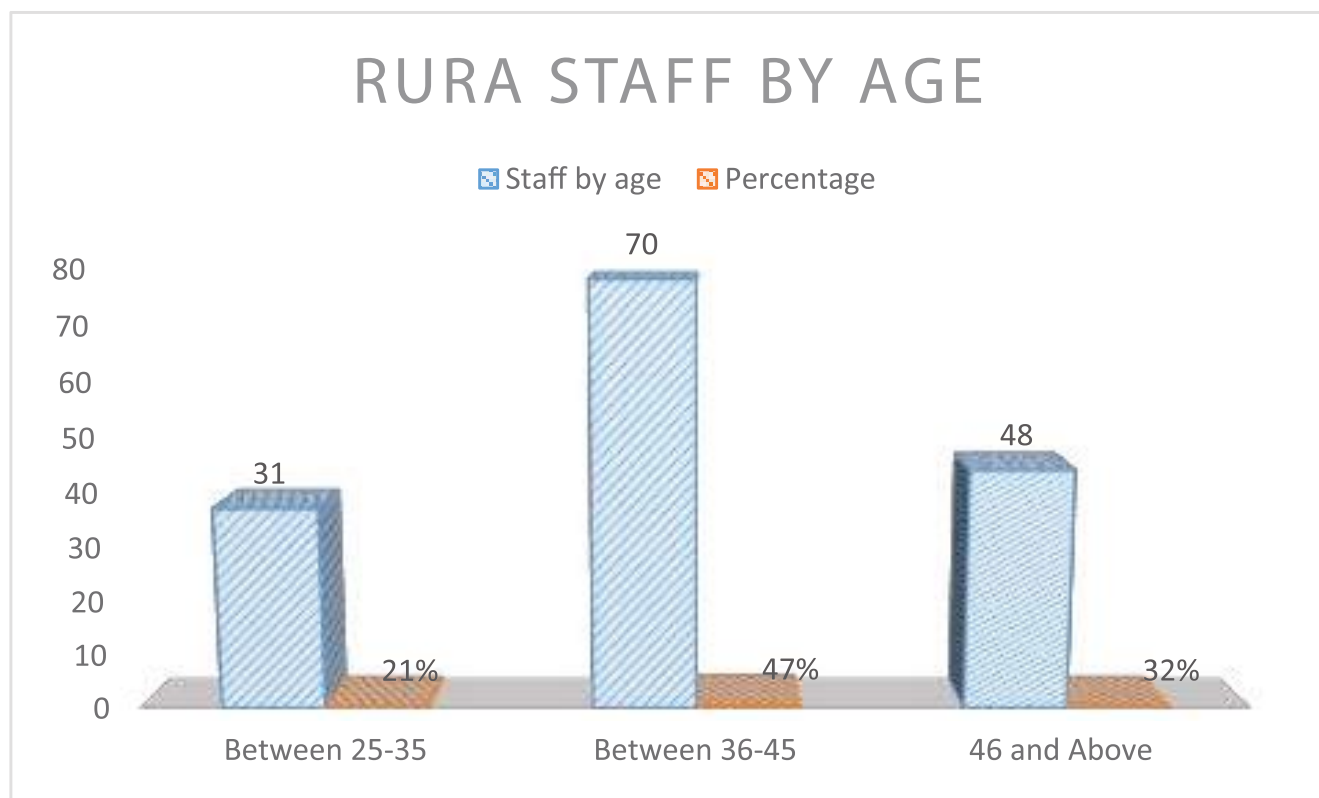
RURA STAFF BY AGE

Figure 3: Distribution of RURA Staff by age as of June 2022
Source: RURA

2.2.3 Training and Development

RURA continued to implement its strategic plan to improve its human resource capacity and promote a learning culture. Thirteen employees (13) got short training and one (1) staff got long-term training respectively.

2.2.4 Knowledge Transfer

Every year, RURA receives professional' interns for the knowledge sharing and transfer that will help them to put in practice the acquired academic knowledge.
During the year, forty-four (44) professional students from different higher learning institutions were provided with internship opportunities.

2.2.5 Service Delivery

In line with the Government of Rwanda's ambition to adopt Zero-Trip Zero-Paper programme in all Government services, all licenses applications are processed online. RURA staff are carrying out the approval processes within Converged Licensing Management System (CLMS) and upon payment confirmation of the requested service through CLMS payment gateway (which interconnects all payment channels with CLMS), the system generates an E-license.
This confirms a percentage increase from 76% last financial year to 100% as a result of the digitization of licensing services.

ANNUAL REPORT
2021 - 2022

In addition to the licensing services, RURA undertook the second phase of processes digitization which is the digitization of corporate services and the process is currently at 32%.

2.3 Public Relations

RURA is committed to building solid relationships with stakeholders, operators, and consumers in all regulated sectors to make its visibility to the public to promote, establish and maintain credibility and a good reputation.

2.3.1 Visit to Mukarange Genocide Memorial Site

On 20th May RURA staff visited Mukarange Genocide memorial site and handed over a 5-million cheque to IBUKA- Kayonza as a support for the renovation of the memorial site. RURA also paid health insurance for 2,279 families of the survivors of the Genocide against the Tutsi.

Picture 1: RURA staff visiting Mukarange Genocide memorial site, 20th May 2022

Picture 2: RURA staff listening to a briefing on the history Mukarange Genocide memorial site

2.3.2 Events and Meetings Hosted By RURA

During the fiscal year 2021-2022, RURA organized different events and campaigns as follows: 9th May 2022-13th May 2022: With the support of the International Atomic Energy Agency (IAEA), RURA hosted a week-long National Workshop on Responding to Criminal or Intentional Unauthorized Acts involving Nuclear and other Radioactive Material at Main Venues and other Strategic Locations of Major Public Events. This workshop took place at Lemigo Hotel.

Picture 3: Workshop Participants at Lemigo Hotel, 9th May 2022

*Picture 4: Group photo: RURA's Acting DG, Eng. Deo MUVUNYI with workshop participants and experts from IAEA, Lemigo Hotel Kigal*i

5th May 2022: Rwanda Utilities Regulatory Authority (RURA) at its Headquarters received the parliamentary Committee on Government Assurance from the National Assembly of Zambia. They were on a mission to learn about RURA's mandate in the ICT regulation.

Picture 5: Briefing Zambian National Assembly delegates at RURA headquarters

ANNUAL REPORT
2021 - 2022

RWANDA
UTILITIES
REGULATORY
AUTHORITY
Inspiring development

23

Picture 6: RURA management with Zambian National Assembly delegates.

April 19, 2022: RURA received at its headquarters a delegation from Autorité Malienne de Régulation des Télécommunications, des Technologies de l'Information et de la Communication et des Postes (AMRTP), on a mission to learn from RURA's experience in terms of dealing with consumer issues in the ICT sector.

Picture 7: Acting DG, Eng. Deo MUVUNYI briefing the Malian delegation on how RURA handles consumer issues.

March 29, 2022- RURA in collaboration with UN Environment Programme (UNEP) and International Telecommunication Union (ITU) hosted a workshop on Extended Producer Responsibility guidelines and regulations for e-waste management in Rwanda. This workshop took place in Kigali at Marriott Hotel.

Picture 8: Participants of E-waste Policy and Regulation Workshop in Rwanda at Kigali Marriott Hotel

March 15, 2022- In partnership with Rwanda Inspectorate, Competition and Consumer Protection Authority (RICA) & other stakeholders, RURA organized a one-day event at Marriott Hotel to celebrate World Consumers Day under the theme "Fair digital finance".

Picture 9: Participants from RURA, RICA and ADECOR and other stakeholders at Kigali Marriott Hotel Kigali.

December 2, 2021 – December 3, 2021: RURA in conjunction with The Global Green Growth Institute and Enviroserve hosted a two-day training at La Palisse Hotel Nyamata on the proper management of Electrical & electronic waste in Rwanda. This training brought together over 100 staff in charge of asset disposal in both public and private institutions.

Picture 10: Training participants at La Palisse Hotel Nyamata

November 1, 2021- RURA hosted a national training on the establishment and maintenance of an effective State System of Accounting for and Control of Nuclear Material (SSAC).

Picture 11: Former DG of RURA, Dr. Ernest NSABIMANA with workshop participants.

2.3.3 CAMPAIGNS IN MEDIA AND SOCIAL MEDIA

During the fiscal year 2021-2022, RURA conducted a number of campaigns across the regulated sectors in local media as well as social media in an effort to build strong partnerships with all stakeholders.

2.3.3.1 SOCIAL MEDIA

Social media plays an important role in this 24/7 world of communication, and hence the reason why RURA has put emphasis on the use of digital platforms including Twitter, Facebook, Instagram, Flickr, YouTube and LinkedIn to increase its online presence and reach as many people as possible

Social media especially Twitter is also serving as a key tool to brand the institution and help the institution to communicate effectively and keep everyone updated with its latest institution happenings.

Social media also plays a significant role in answering questions and handling all complaints raised by the online community.
During the period under review, we shared the content that not only improves RURA visibility in different areas of its interventions, but also for the country in general.

2.3.3.2 TWITTER/ GROWTH

From 1st July 2021 up to 30 June 2022, RURA Twitter got 30,000 new followers with 2 million impressions. It means that our tweets (posts) have been seen by Twitter users more than 2 million times during the 2021-2022 fiscal year. On top of that, 1000 tweets have been shared on our Twitter account in the last 12 months.

2.3.3.2.1 Answering questions on Twitter

When we receive complaints or inquiries we immediately channel them to the concerned department for follow-up and assistance.

More than 500 inquiries have been responded to on Twitter during the 2021-2022 financial year.

2.3.3.3 FACEBOOK PAGE INSIGHTS

RURA's Facebook page earned 2000 new likes, plus more than 700 posts that reached more than 150,000 Facebook users around the world in the last 12 months.
RURA is present and active on almost all digital platforms including Instagram, YouTube, Flickr as well as LinkedIn.

2.3.3.4 WEBSITE

RURA's digital strategy includes having an effective website while sharing information regarding the regulated sectors.
During the 2021-2022 fiscal year, RURA's website was visited by 150,000 people with 250,000 sessions (the number of times our website has been visited).
Stats by Google Analytics

ANNUAL REPORT
2021 - 2022

RWANDA
UTILITIES
REGULATORY
AUTHORITY

27

2.4 RURA Financial Performance Review

The Revenue forecasts as illustrated in the table below were achieved at 73% in the year 2022. The details on the actual collections Vs the projections have been provided per every sector

Table 1: The Revenues from the regulated sectors against the projections

Sector/source of funds	Actual Revenue collections June 2022	Projections 2021-2022
ICT	5,517,237,138	7,877,871,513
TRANSPORT	2,419,665,891	2,611,873,181
EWATSAN	1,953,626,971	3,081,916,164
ALL SECTORS	9,890,530,000	13,571,660,858

Source: RURA

2.4.1 CAPEX AND OPEX FOR 2021-2022

As of 30 June 2022, the overall operating budget (OPEX) execution was reasonably executed at 86% and Capital Expenditure (CAPEX) at 28.28% of the corresponding budgeted amounts.

The under execution of capital expenditure budget during the reporting year was a result of the huge projects in line with the construction project that were complex in nature and had to be implemented in phases following the completion of the construction works.

Table 2: Operating and Capital Budget Expenditure Execution

Description	Budgeted Amount for 2021-2022 (Frw)	Expenditures for 2021-2022 (Frw)
OPEX	9,897,026,959	8,406,873,987
CAPEX	31,273,945,13773	8,845,194,801
Total	**41,175,972,096**	**17,252,068,788**

Source: RURA

2.5 UAF Financial Performance Overview

The total estimated budget for the unit's planned activities in the financial year (FY) 2021-2022 was Frw 9,792,619,977 compared to the actual revenues amounting to Frw 5,343,116,118 generated by the end of the financial year excluding the bank balance.

The sector's major task during the year was to ensure that all Rwandans have access to a set of basic yet essential telecommunications/ICT services at affordable prices.

Therefore, to achieve this, the Universal Access Fund focused on strengthening the network coverage in rural areas. Accordingly, forty-five (45) sites have been completed and are now operational.

03

CONSUMER PROTECTION IN REGULATED SECTORS

3. CONSUMER PROTECTION IN REGULATED SECTORS

In the regulation of different utilities, consumer protection is a key component that the Regulatory Authority takes into consideration as away of enhancing fair competition while catering for consumer needs.

The Regulatory Authority engages in consumer education, Inspections to monitor Quality of Service (QOS), complaint handling, Investigations on raised consumer Issues, drafting regulatory tools related to consumer protection and analysis of promotions from Telecom operators to avoid consumer exploitation.

During this financial year, ninety-five (95%) of the lodged complaints were resolved and accordingly the general complaints received were 1014 complaints compared to 390 in the previous year.

3.1 Complaints Handling

The Unit received 1,014 complaints in total from all the sectors and 964 were successfully resolved. It is worth noting that out of the total complaints received seven hundred and ninety-six (796) were majorly associated with transport sector.

However, out of the received complaints, fifty (50) are still pending due to the fact that, there is more assessment and investigations in collaboration with other stakeholders to facilitate in decision making.

The pie chart below shows the percentage of complaints per sector compared to the total number of complaints from all sectors.
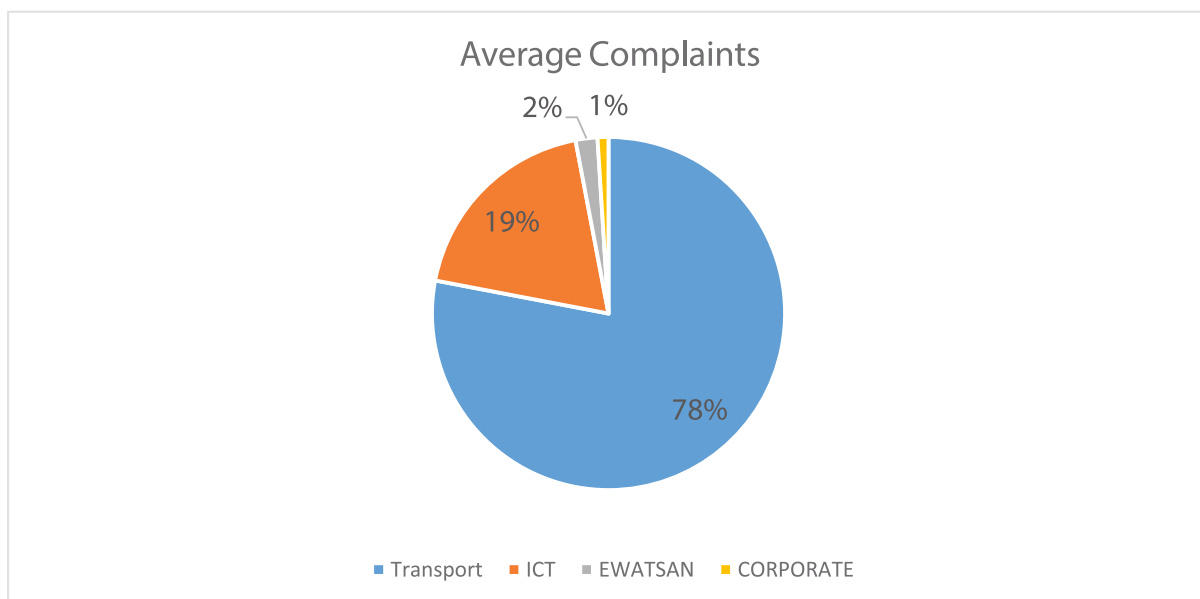

Figure 4: The percentage of complaints per sector compared to the total number of complaints from all sectors.

Accordingly, transport sector received the most complaints with 78% of complaints, ICT comes the second with 19% and EWATSAN occupies the third place with 2% as presented in the pie chart above.

The table below shows the total number of lodged complaints in all regulated sectors, the number of the resolved and pending ones.

Table 3: The total number of lodged complaints in all regulated sectors

S/N	SECTOR	NUMBER OF COMPLAINTS	SOLVED COMPLAINTS	PENDING
1	TRANSPORT	796	784	12
2	ICT	195	162	33
3	WATER	04	02	02
4	ELECTRICITY	08	07	01
5	GAS	04	04	0
6	PETROLEUM	02	0	02
7	SANITATION	0	0	0
Total		1,014	964	50

Source: RURA

In the ICT sector, most of the complaints were related to MOMO cash fraud as well as poor service delivery on purchased data bundles and its usage where the customer perception is that their money is being unfairly appropriated by telecom operators.

In addition, consumers lodged complaints against media companies (TV operators) for disconnecting TVR once their monthly subscription has expired.

Many complaints were also received from the Mobile money agents against Telecom operators for blocking their service SIM cards due to non-compliance with COVID-19 preventive measures. The agents requested for payment of their commissions without success until RURA's intervention.

A number of complaints from transport sector were inline with limited number of public buses within Kigali city and upcountry that has consequently led to long waiting hours.
The functionality of the Intelligent Connected Fare Meter (ICFM) and the associated technological challenges like; difficulties of online payment by some operators, offline of the meters from the start to the end of the trip, interoperability issues and overcharging travel ticket fares were among the complaints received.

In the water sub-sector, the main causes of complaints are related to billing issues resulting from not complying with the periodic collection of meter indexes by WASAC.
On the other hand, in the electricity sub-sector issues reported were mainly associated to high billing of industries and factories.

In the Gas sub-sector, complaints lodged were related to increased gas prices due to the trend in the international prices. Further to this, a complaint on poor service delivery on some petrol stations was as well received and resolved

3.2 CONSUMER EDUCATION AND AWARENESS CAMPAIGNS

5th June-24th June 2022: The Consumer protection unit conducted awareness campaign in the provinces with a focus on the role of RURA in national socio-economic development. The emphasis of the campaign was on the rights and obligations of consumers in the regulated sectors.

RURA's team met with local leaders at sector and district levels and briefed them on issues related to consumer protection.

Picture 12: Musanze District officials being briefed on the role of RURA in the socio-economic development of the country

20th September 2021 – 26th October 2021: RURA in collaboration with telecom companies' communication and external relations staff ran a campaign against sim swap & sim card fraud across the country, explaining to local government leaders about the new rules of registering sim cards and swapping sim cards, as part of the measures taken in response to sim swap & sim card scams.

RURA's had an opportunity to conduct inspections at the nearby telecom service centers to check if sim card registration directives were being observed and community radios were used to disseminate the campaign message.

Picture 13: RURA communication and external relations team explaining to local government leaders new rules for registering new sim cards or swapping sim cards

Picture 14: RURA Team explaining new rules for registering new sim cards or swapping sim cards on Radio Energy Musanze

Consumer Awareness campaigns in ICT

During the year under review, RURA initiated awareness programs with the objective to inform and educate licensees and the general public about some of their obligations and rights on the different components of the sector, such as;

- Awareness campaign on the use and importation electronic communication equipment and Type approval were conducted at Kigali International Airport, Magerwa, Rusumo Border, Gatuna Border and on TV.
- Awareness campaign on the use and importation of electronic communication

ANNUAL REPORT
2021 - 2022

RURA
RWANDA
UTILITIES
REGULATORY
AUTHORITY
Inspiring development

33

equipment and Type approval on TV Rwanda for a month and one article on New times was published.

- Awareness on accessibility of free to air television channels.
- Awareness on parental control mechanisms to protect children against inappropriate contents.
- Awareness on E-waste to the licensees, general public and stakeholders focused on educating and clarifying license obligations and consumer rights.
- Awareness on E-commerce promotion in Rwanda were conducted in collaboration with stakeholders. In this framework, a radio show on FM radio was done.

3.3 INSPECTIONS AND INVESTIGATIONS

20 September – 15th October 2021: Inspections were conducted across the country to check on public transport operators' compliance with the tariffs set by the Regulatory Authority. The purpose of this campaign was to raise awareness among passengers about their rights and obligations which primarily is to pay the exact amount as set by RURA and to report public transport operators who do not comply.

Picture 15: Consumer protection team interacting with passengers at different bus stations

In brief, during the period under review, despite the challenges as a result of COVID-19 pandemic, RURA in collaboration with other stakeholder raised awareness through consumer education programs, inspections, social media platforms and accordingly, a high number of complaints were resolved thus, improving and promoting consumer rights.

04
ICT SECTOR

4. ICT SECTOR

4.1 Sector Profile

One of the core mandates of RURA is to create an enabling regulatory environment for telecommunications, information technology, broadcasting, postal services and converging electronic technologies. RURA also plays an advisory role to policymakers to ensure that ICT contributes to the growth of other sectors in the country.

In 2021-2022, RURA put more effort into reviewing existing legal and regulatory instruments, monitoring compliance of licensed service providers, and conducting awareness campaigns for consumer and industry education. In line with this, the Regulatory Board approved two new regulations to enhance a conducive environment in the broadcasting and media market.

At the end of the period under review, the mobile telephone subscriptions were 10,575,038 with a mobile penetration of 80.7%. On the other hand, the internet subscriptions were 7,943,420 which provided an internet penetration rate of 60.6%. Furthermore, the equipped international bandwidth capacity increased from 134,190 Mbps to 173,649 Mbps which accordingly reflected an increase of 29.4%.

In addition, RURA continued to invest in building internal capability to monitor the quality of service for Telecom, Media and Postal services.

During this fiscal year, RURA issued general authorizations to seven (7) Companies in telecom market, seventeen (17) licenses were issued to two (2) Telecom Operators (BSC & MTN) in the lightly licensed bands. In addition, eight (8) licenses were also issued to ISPS. In media regulation, RURA licensed two (2) FM Radio stations, two (2) TV stations, five (5) print media companies and four (4) Multimedia services.

In Postal and Courier services, RURA renewed nine (9) licenses and issued four (4) new licenses.

4.2 Regulatory Environment

4.2.1 Legal and Regulatory Framework

During the year under review, the Authority issued three regulations to enable a conducive environment for Operators working in the ICT sector.

Those regulations are the following:

- The Regulation governing subscription satellite broadcasting services provision n° 016/R/MR-ICT/RURA/2021 of 23/12/2021;
- The Regulation governing broadcasting services in Rwanda n° 017/R/MR-ICT/RURA/202022 of 17/01/2022 and
- Regulation Nº15/R/CRCSI/RURA/2021 OF 27/9/2021 Governing the Operation of Intelligent Connected Fare Meter in Rwanda.

4.3 Licensing

In line with RURA mandate, in the telecommunication market, eight (8) Application Service Provider licenses were issued to:

- RWANDA TELECENTRE NETWORK
- NETPRO Ltd
- TRUCONNECT
- AC GROUP
- PIRAMIE INC
- BK Techouse
- G-MAX
- CB NET

In addition, seven (7) General Authorizations were issued to following companies:

- VANU Rwanda;
- REIMA Rwanda;
- TELOPTIMA LTD;
- TDT TEL CORPORATION LTD
- Emerald Telecom
- MINEGA Networks
- Whale Cloud Technology

In spectrum management, the following frequency bands (5470-5725MHz, 5725- 5850MHz, 61-66GHz) were opened and seventeen (17) licenses were granted to Telecom Operators and ISPs during the year under review.

In media regulation, specifically in broadcasting services, RURA also issued licenses to two (2) FM Radio stations and two (2) TV Content Providers, as follows:

- FM Radio Station: JF Films Productions LTD; Voice of America
- TV Stations: Big Concept Management Ltd (B Plus TV) and Yongwe Media Ltd (Yongwe TV)
- Pay TV Service Provider: Star Africa Media Co Ltd

Furthermore, the Regulatory Authority licensed five (5) print media companies and four (4) Multimedia services companies as it is highlighted below in table 1 and table 2, respectively:

Table 4: Licensed Print Media Houses in 2021-2022

S/No	Name of the Company	Name of the media house
1	The Partner Media Co Ltd	The Partner
2	Journal Imena Ltd	Imena Newspaper
3	Panorama Media (Pm) Ltd	Panorama Newspaper
4	Nation Media Group	Rwanda Today
5	Axis Media Ltd	Axis Magazine

Source: RURA

Table 5:Licensed multimedia services in 2021-2022

S/N°	Name of The Company	Name of the media house
1	BCMB Ltd	www.rwandanews24.rw
2	Ahupa Business Network Ltd	www.ahuparadio.rw
3	Calvary Independent Baptist Missions of Rwanda	Calvary Internet Radio
4	Bwiza Media Ltd	www.bwiza.com

Source: RURA

In order to enhance Postal and Courier services provision, nine (9) licenses were renewed and four (4) new licenses were issued to operators as follows:

Table 6: The renewed and issued licenses

S/N	Name of The Company	Type of license	Status
1	Alpha Express Company Ltd	Domestic	Renew
2	Excel Travel & Tours Agency Ltd	Domestic	Renew
3	International Express Ltd	Domestic	Renew
4	Omega Ltd	Domestic	Renew
5	UKINE Ltd	Regional	Renew
6	Virunga Courier Express Ltd	Domestic	Renew
7	Kigali Coach Tours & Travel Ltd	Domestic	Renew
8	Shaft	Regional	Renew
9	Horizontal	Domestic	Renew
10	Kivu Belt	Domestic	New
11	Log Express Ltd.	Domestic	New
12	VANOMA, INC. Ltd	Intra-city	New
13	EHS Logistics	International In-bound	New

Source: RURA

4.4   Compliance and Enforcement

RURA's Compliance activities focused on ensuring that the service providers operate in accordance with the license's obligations, regulations and laws in force. In this regard, regular inspections were carried out and measures were taken against non-compliant operators.

4.5   Quality of Service compliance

During the year 2021-2022, the Regulatory Authority monitored and cross-checked the compliance of Telecom Operators to improve the quality of service experienced by consumers. In the process, network issues were identified and consequently RURA issued an Enforcement to MTN RWANDACELL PLC.

The Enforcement Notice was "directing MTN RWANDACELL PLC to solve all network connection issues related to poor calls connections (first attempts failures), drop calls and Silent/Garbled-Speech Calls".

Taking into consideration of the above notice, various strategies were implemented by MTN including but not limited to: network optimization, expansion of existing sites, deployment of new sites and offloading of 3G traffic into 4G networks to improve the Quality of Service perceived by Consumers.

4.5.1 Network rollout

In order to improve the coverage and quality of service of Mobile networks, RURA issued one hundred and one (101) authorization to IHS and nine (9) to TRES for installing Telecom Towers.

Regarding the Fixed Broadband, one hundred and fourteen (114) authorizations were granted to ISPs (GVA and Liquid Telecom) and Telecom Operators (MTN and Airtel). Accordingly, this enabled the expansion of the fiber optic network (FTTH and FTTB) to the households and corporate services in the City of Kigali, Musanze and Rubavu.

4.5.2 Type approval of electronic communication equipment

During the year 2021 – 2022, RURA approved 9,511 models of electronic communication equipment that complied with Rwanda's technical requirements, while 912 were rejected due to non-compliance.

4.6   Inspection and Monitoring

4.6.1 Electromagnetic field Inspection

During the year under review, RURA resolved the complaints on Electromagnetic Field (EMF) radiations that were identified in residential areas, as follows:

- Kagugu   in Kinyinya Sector of Gasabo District,
- Rubona in Nyamyumba Sector of Rubavu District,
- Jari sector in Gasabo District and
- Kamabuye sector in Bugesera District.

4.6.2 Interference in radio communication services

RURA monitored and resolved two (2) interferences in aeronautical ground communication channels and three (3) interferences in FM broadcasting radios.

4.6.3 Cross-border frequency coordination

In the fiscal year 2021 – 2022, RURA conducted cross-border frequency coordination with neighboring countries to resolve the forced roaming and signal overshooting issues. The identified issues were addressed through implementing the agreed resolutions on regional basis.

4.6.4 SIM Cards registration

During the year under review, RURA introduced new SIM card registration procedures to eliminate SIM card-based frauds and crimes. In line with this, several inspections on SIM card registrations were carried out in different Districts with the objective to identify non-compliant MNOs and their Agents. During the inspection, three (3) non-compliant Agents were identified and regulatory measures were taken.

4.7   Market performance and statistics for ICT sector

4.7.1 Telecommunication Market

4.7.1.1 Mobile and fixed telephone subscriptions

The number of active mobile-cellular telephone subscriptions recorded at the end of June 2022 was 10,575,038 SIM cards. As a result, the mobile-cellular subscriptions were 80.7% while fixed telephone subscriptions were 0.09%.

Compared to the situation for the previous year 2020-2021, the mobile-cellular telephone subscriptions per 100 inhabitants have decreased by 3.6 %. This decrease was due to the enforced restriction measures on SIM card registration implemented during the year.
The below table illustrates the number of mobile and fixed Telephone service subscriptions per operator as of June 2022.

Table 7: Subscriptions for mobile and fixed Telephone service per telecom operators

Name of Operator	Active subscriptions		Fixed telephone subscriptions per 100 inhabitants	Mobile telephone subscriptions per 100 inhabitants
	Mobile –cellular telephone	Fixed Telephone	0.09	80.70
MTN Rwanda Ltd	6,938,550	161		
Airtel Rwanda Ltd	3,636,488	9,521		
Liquid Telecom Ltd	-	519		
BSC Ltd	-	1,261		
Total	**10,575,038**	**11,462**		

Source: Operators' reports, 2021-2022

The figure below displays the trends of mobile-cellular telephone subscriptions from the end of the financial year 2017-2018 up to the end of 2021-2022.
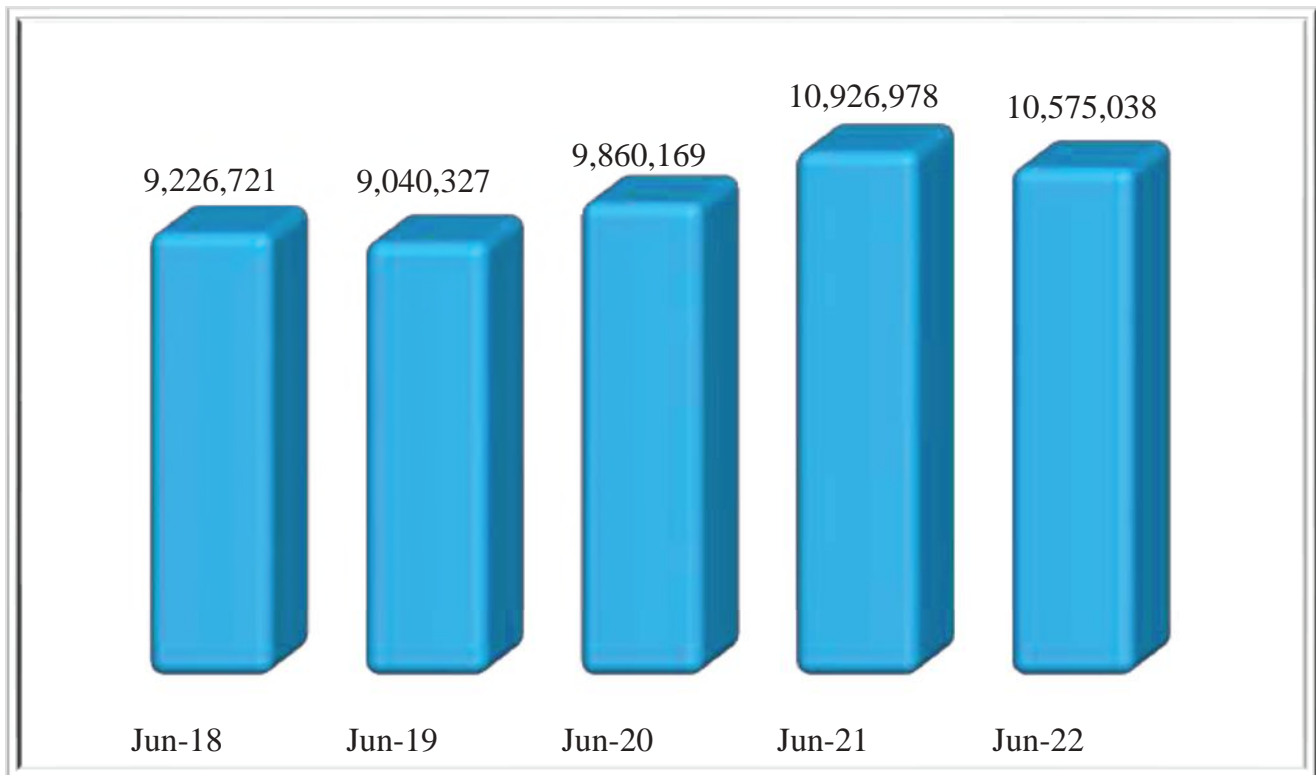
Figure 5: The trends of mobile-cellular telephone subscriptions
Source: Operators' reports

On the other hand, the number of fixed telephone subscriptions also decreased from 11,806 subscriptions recorded end of June 2021 to 11,462 as of June 2022.
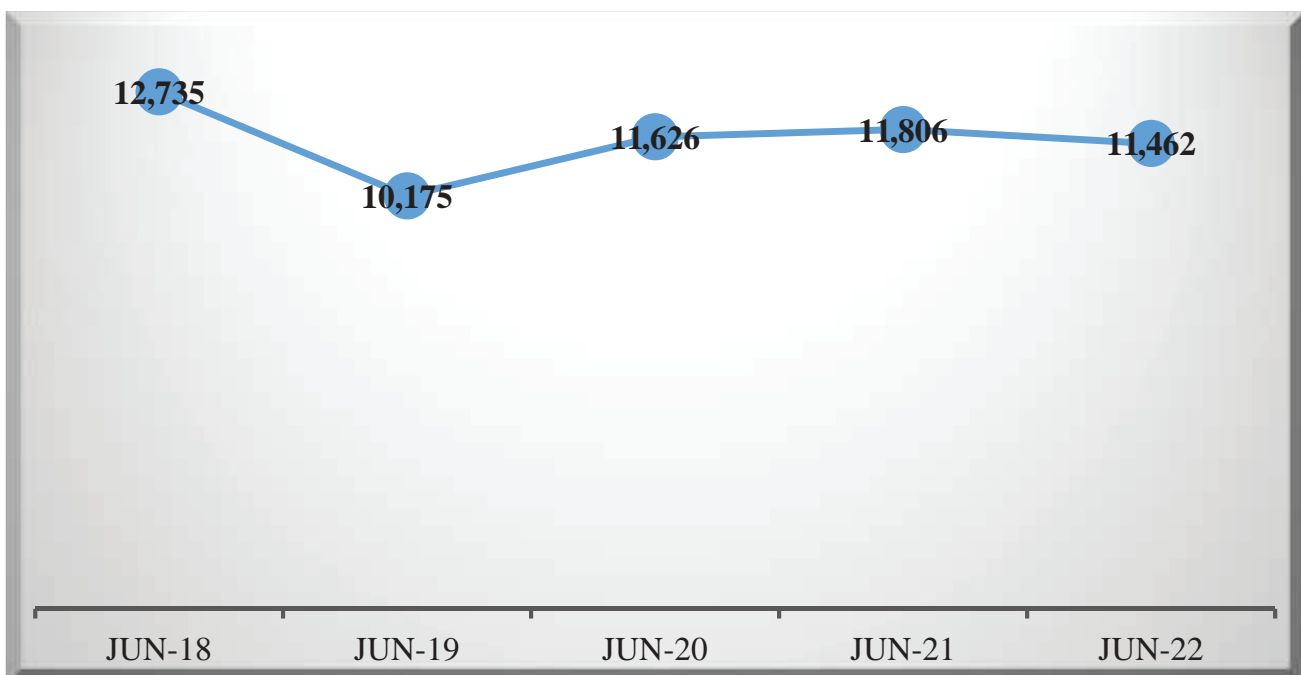
Figure 6: Trend of fixed telephone subscriptions
Source: Operators' reports

4.7.1.1 Market share for active mobile-cellular subscriptions

As of June 2022, the mobile-cellular telephone subscription market shares for MTN Rwanda Ltd increased by 2.7 % from 62.9% to 65.6% whereas that for AIRTEL Rwanda Ltd dropped at the same margin from 37.1% to 34.4%.
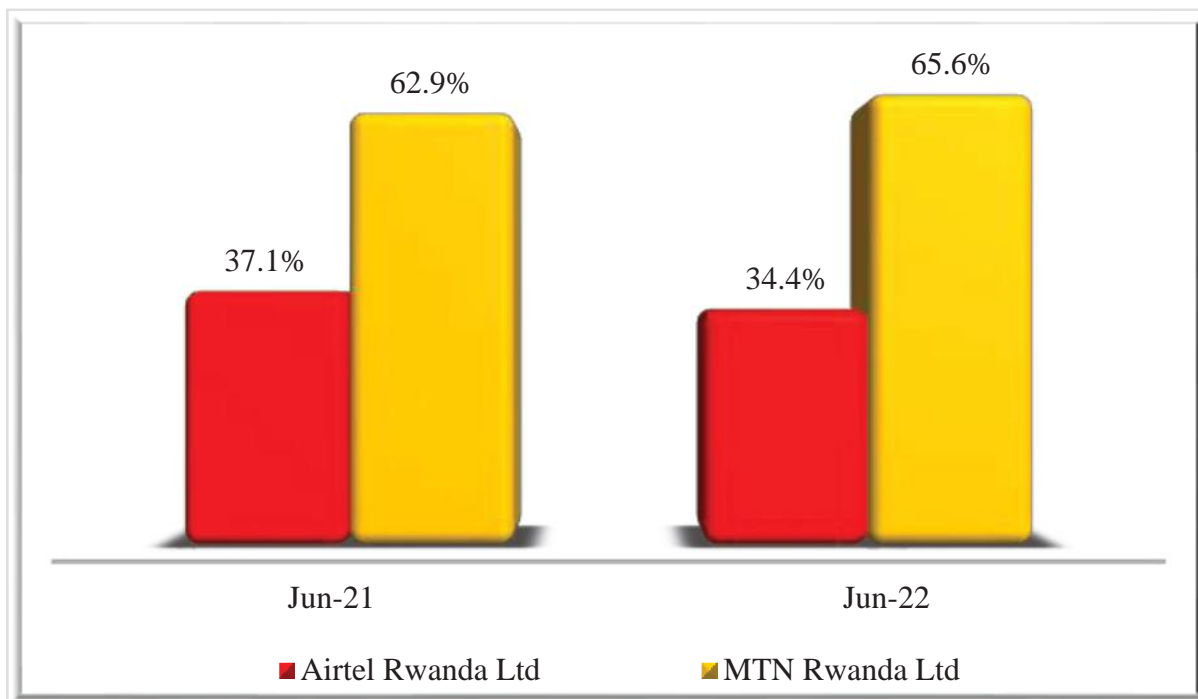
Figure 7: Market share for active mobile-cellular telephone subscriptions
Source: Operators' reports

4.7.1.2 Market share for fixed telephone subscriptions

At the end of June 2022, the market shares in fixed telephone subscriptions for AIRTEL Rwanda Ltd increased by 2.5 % from 80.6% to 83.1%. In addition, BSC Ltd increased by 0.3 % from 10.7% to 11.0%.

However, the market shares for Liquid Telecom Ltd decreased by 2.7 % from 7.2% to 4.5 % whereas the one for MTN Rwanda Ltd dropped by 0.1 % from 1.5% to 1.4%.
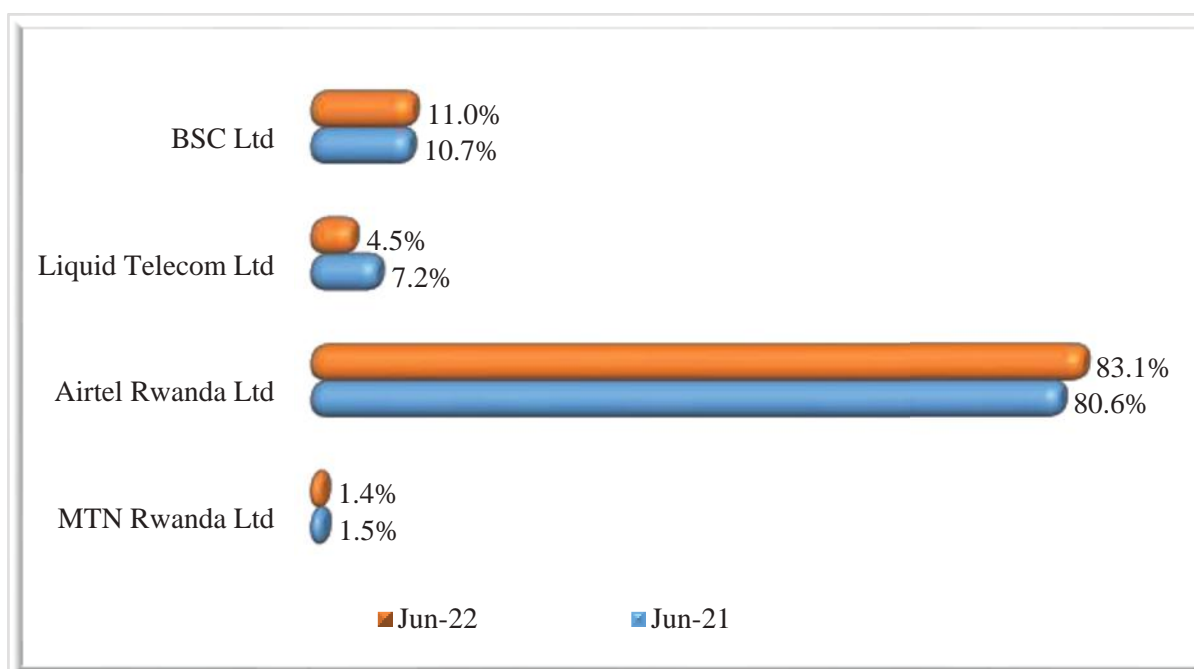
Figure 8: Market share for fixed telephone subscriptions
Source: Operators' reports

4.7.2 Retail Tariffs for Mobile and Fixed Telephone Service

During the 2021 – 2022 fiscal year, the Regulatory Authority monitored the implementation of voice, SMS, and internet retail prices. The below tables illustrate the constant trend for both Fixed and Mobile Telephone services tariff over the last three years.

Table 8: Fixed Voice Telephone Tariff Trend (Frw/Min)

	MTN Rwanda Ltd			Liquid Telecom Ltd			Airtel Rwanda Ltd		
	Jun-20	Jun-21	Jun-22	Jun-20	Jun-21	Jun-22	Jun-20	Jun-21	Jun-22
On net	45	45	45	10	10	10	35	35	35
Off net	45	45	45	30	30	30	35	35	35
ONA	70	90	90	408	408	408	70	90	90

Source: Operators' reports, 2021-2022

Table 9: Mobile voice tariff trend (Frw/Min)

Destination	MTN Rwanda Ltd			Airtel Rwanda Ltd		
	Jun-20	Jun-21	Jun-22	Jun-20	Jun-21	Jun-22
On net	45	45	45	35	35	35
Off net	45	45	45	35	35	35
One Area Network (ONA)	70	90	90	70	90	90
US/Canada/China/India/Belgium	51	51	51	50	51	51

Source: Operators' reports, 2021-2022

The following table below describes the standard tariff for sending a short text message per operator over the last three years.

Table 10: SMS tariff trend (Frw/SMS)

Destination	MTN Rwanda Ltd			Airtel Rwanda Ltd		
	Jun-20	Jun-21	Jun-22	Jun-20	Jun-21	Jun-22
On net	12	12	12	15	5	5
Off net	26	26	26	15	15	15
One Area Network (ONA)	45	47	45	45	40	40
Rest of the World	80	82	80	79	79	79

Source: Operators' reports

The standard internet tariff for mobile internet equals to 10 frw per MB for MTN and 5 Frw per MB for AIRTEL Rwanda Ltd

Table 11: Mobile internet tariff per MB in FRW

Operator	Jun-20	Jun-21	June-22
MTN Rwanda Ltd	10	10	10
Airtel Rwanda Ltd	51	5	5

Source: Operators' reports

Apart from the standard tariffs, there are different voice and internet packs which were convenient and available for consumers. The following table includes some comparable internet bundles as packaged by MTN Rwanda and AIRTEL Rwanda.

Table 12: Mobile internet tariff on bundles in FRW

Characteristics		MTN Rwanda Ltd		Airtel Rwanda Ltd	
Bundle prices	Validity Period	Bundle Name	MBs	Bundle Name	MBs
FRW 100	24 hours	3G_ 15MB_Daily Bundle	15	Surf daily 100	50
FRW 200	24 hours	3G_ 50MB_Daily Bundle	50	Surf daily 200	120
FRW 500	24 hours	3G_200 MB_Daily Bundle	200	Surf daily 500	500
FRW 1,000	24 hours	3G_1 GB_Daily Bundle	1,024	Surf daily 1,000	1,536
FRW 1,000	7 days	3G_500 MB_Weekly Bundle	500	Surf weekly 1,000	1,536
FRW 2,000	7 days	3G_1.5 GB_Weekly Bundle	1,536	Surf weekly 2,000	4,608
FRW 5,000	7 days	3G_7 GB_Weekly Bundle	7,168	Surf weekly 5,000	15,360
FRW 2,000	30 days	3G_1 GB_Monthly Bundle	1,024	Surf monthly 2,000	2,355
FRW 5,000	30 days	3G_3 GB_Monthly Bundle	3,072	Surf monthly 5,000	10,752
FRW 10,000	30 days	3G_10 GB_Monthly Bundle	10,240	Surf monthly 10,000	46,080
FRW 21,000	30 days	3G_30 GB_Monthly Bundle	30,720	Surf monthly 21,000	100,352
FRW 30,000	30 days	3G_90 GB_Monthly Bundle	92,160	Surf monthly 30,000	149,504
FRW 40,000	30 days	3G_150 GB_Monthly Bundle	153,600	Surf monthly 40,000	192,512

Source: Operators' reports

4.7.3 Internet Service Provision

The total number of internet subscriptions for both mobile and fixed decreased 1.5% from 8,061,373 to 7,943,420 subscriptions as of June 2022. The internet subscriptions per 100 inhabitants have also decreased by 1.6 % from 62.2% to 60.6% as of June
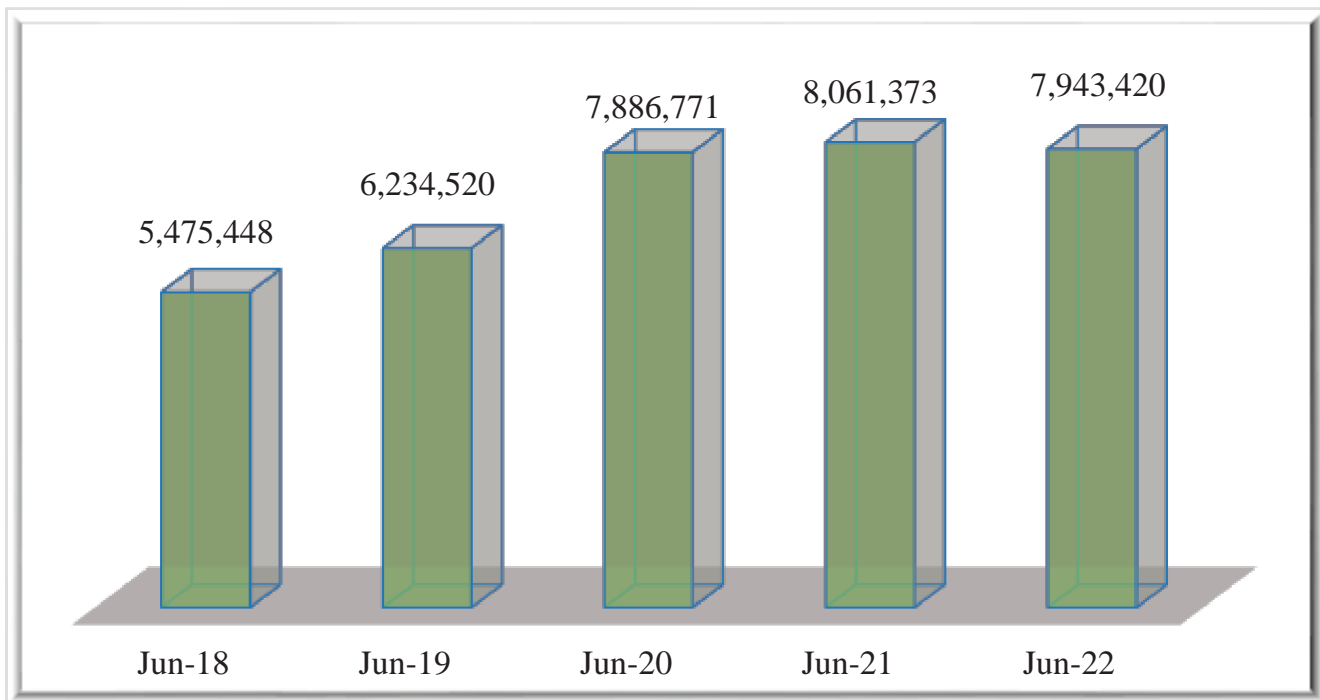

Figure 9: Trend of internet subscription
Source: Operators' reports

The total volume of equipped international bandwidth capacity available in the country increased by 29.4% from 134,190 Mbps to 173,649 Mbps as of June 2022.
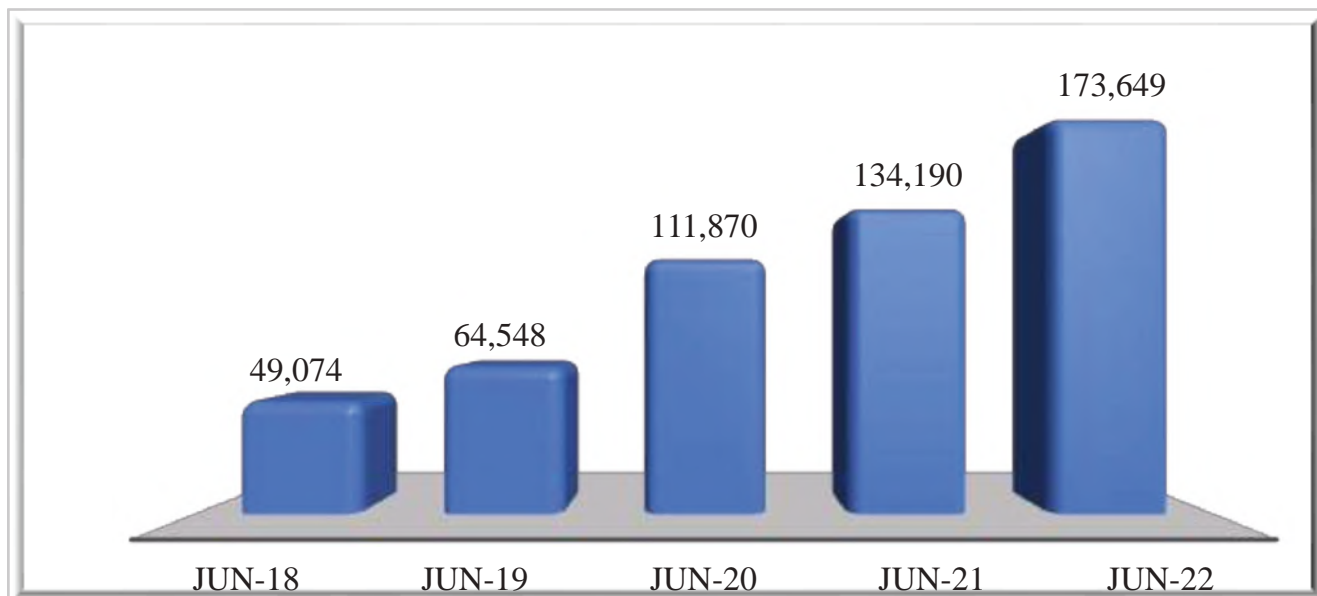

Figure 10: Trends of equipped international internet bandwidth (Mbps)
Source: Operators' reports

4.7.4 Broadband Traffic

During the year 2021-2022, there was a continuous positive trend for broadband traffic generated by the internet users due to working from home and resumption of Meetings, Conferences, and Exhibitions in Rwanda.

Table 13: Trend for broadband traffic

Broadband traffic in GBs	2020-2021	2021-2022
Fixed (Wired)-broadband internet traffic	107,084,357	220,189,130
Mobile- Broadband internet traffic (Within the country)	91,384,857	114,975,980
Mobile- Broadband internet traffic for roaming-out	16,638	31,888
Mobile- Broadband internet traffic for roaming-in	9,812	22,379
Total	**198,495,664**	**335,219,377**

Source: Operators' reports

4.7.4.1 PAY TV SUBSCRIPTION

4.7.4.1.1 Registered Pay TV subscriptions

As of June 2022, the Registered Pay TV subscribers increased by 4.9% up to 378,995 from 361,396 as of June of the year 2021.

Table 14: Trend of Pay TV Registered Subscribers

Name of Pay TV	June 2020	June 2021	June 2022
Azam Media Rwanda Ltd	13,803	14,313	14,511
Star Africa Media Ltd	257,855	273,482	260,398
Tele 10 Ltd	31,244	4,235	3,258
Canal+ Rwanda Ltd	-	69,366	100,828
Total	**302,902**	**361,396**	**378,995**

Source: Operators' reports

4.7.4.1.2 Active Pay TV subscriptions

At the end of June 2022, the recorded active Pay TV subscribers increased by 3.1% from 79,048 as June 2021 to 81,500 for June 2022.

Table 15: Trend of Pay TV active subscribers

Name of Pay TV	June 2020	June 2021	June 2022
Azam Media Rwanda Ltd	2,373	2,264	1,769
Star Africa Media Ltd	35,619	31,741	26,632
Tele 10 Ltd	21,702	3,987	3,054
Canal+ Rwanda Ltd	-	41,056	50,045
Total	59,694	79,048	81,500

Source: Operators' reports

4.7.4.2 Market share for Pay TV subscriptions

As of June 2022, the market shares for Canal+ Rwanda Ltd in terms of active Pay TV subscriptions was 61%, 33% for Star Africa Media Ltd, 4% for Tele 10 Ltd, and 2% for Azam Media Rwanda Ltd.
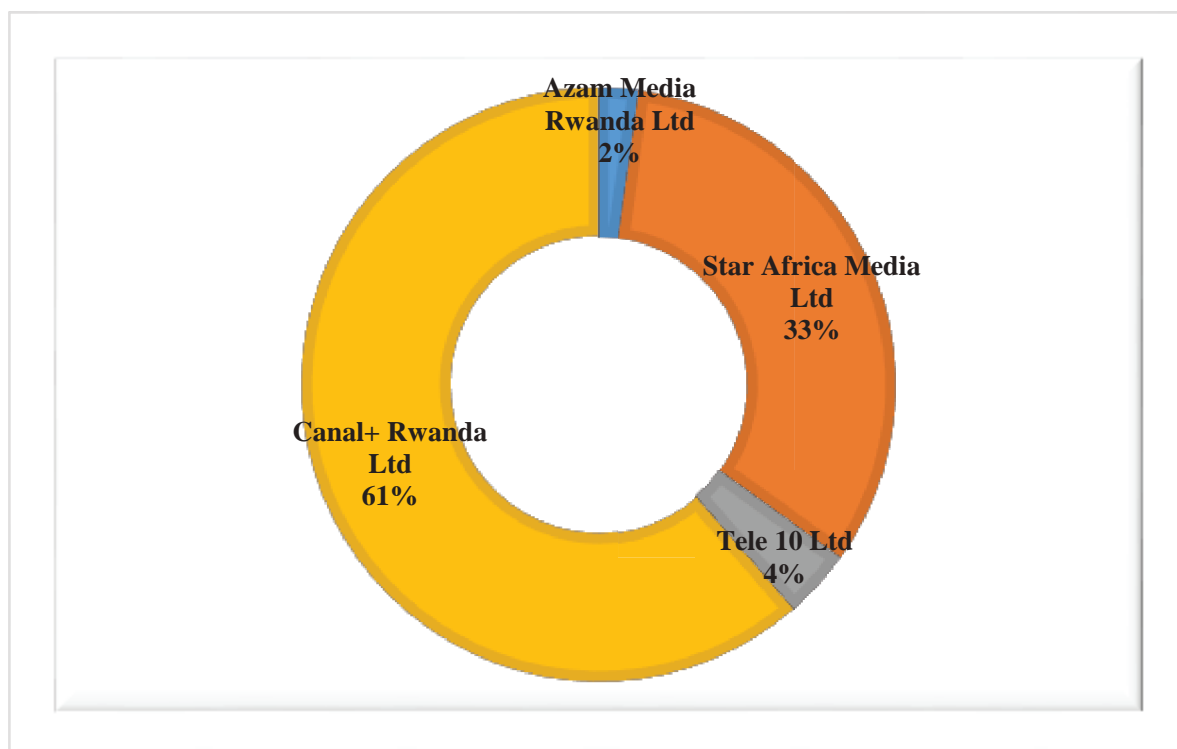
Figure 11: Market share for Pay TV active subscribers per operator
Source: Operators' reports

4.7.5 Postal and Courier

4.7.5.1 Private letter boxes

At the end of the 2021 – 2022 fiscal year, 25.4% of total postal boxes were in use while 74.6% were inactive.

Table 16: Status of private letter boxes for 2021 – 2022

Status of private letter boxes	June 2022
Installed	11,377
Active	2,887
Inactive	8,490

Source: Operators' reports

4.7.5.2 Postal and courier market shares

During the year under review, the market share was dominated by international Courier Operators with 61.22%, followed by the National Postal Office with 26.73% while other operators share the remaining 12.05%. The status of the Postal sub sector market share is highlighted in the chart here under:

Figure 13: Market share for postal and courier services
Source: Operators' reports

4.8   CYBERSECURITY AND STRATEGIC INTEGRATION

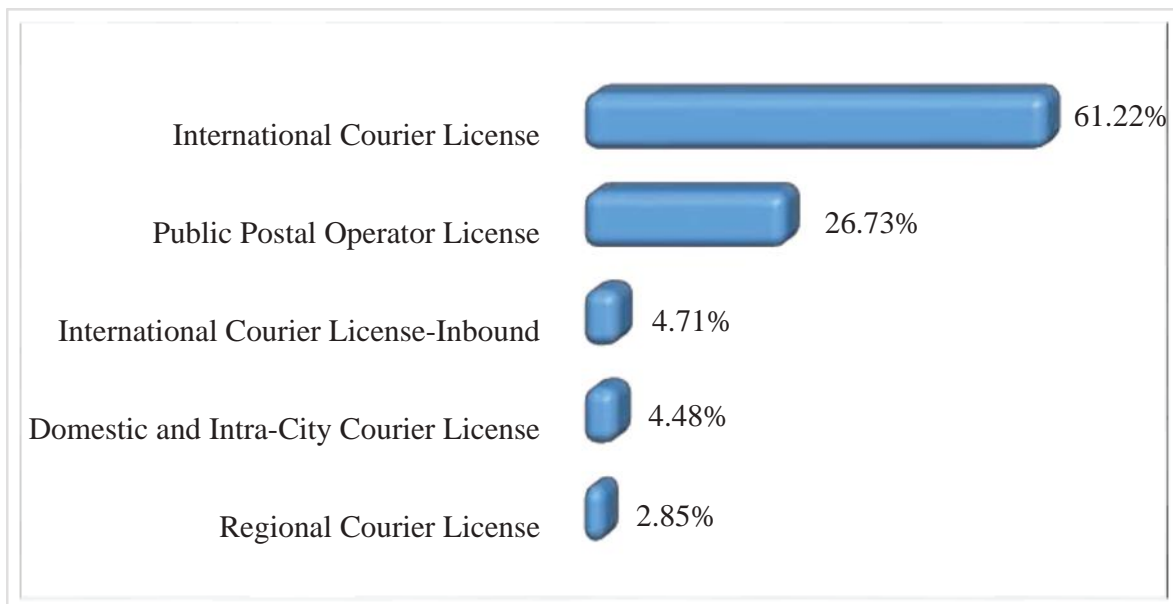In order to accommodate the ever-changing communication sector, RURA established the Cybersecurity and Strategic Integration department with three functions:

- Innovation that includes emerging technologies such as, AI, IOT, etc, …
- Cybersecurity to ensure that the solutions are secure enough for the users in terms of confidentiality, integrity and availability of networks and systems they are using
- Strategic integration with the key responsibility of having data within RURA correctly captured, processed and analysed to allow informed decision making.

Through the above-mentioned three functions the Department, with the help of the ICT law, is making sure that a conducive environment and all the necessary requirements are being put in place for the development and fulfilment of the different segments of the ICT sector.

4.8.1 Big Data Analytics

4.8.1.1 Mobile Traffic Evolution

The International Gateway Traffic Verification System (IGTVS) was created by the regulations N° 004/ICT/RURA/2012 of 7/05/2012 as a Regulatory tool used to collect data from telecom operators and validate figures related to telecom operations.

During the financial year 2021/22, a decrease in both incoming and outgoing traffic was noted. Outgoing traffic had the most drop of 42.5% from 89,701,796 to 51,575,779 minutes while incoming traffic decrease was 31% from 133,865,410 to 91,928,620 minutes. This change in international traffic is a combination of factors including global trends where Over The Top (OTT) services have consistently been on the rise but also on local factors including changes in operator billings that were implemented 2021.

4.8.1.2 Transport Subsidies Project.

Data analytics has been used to disburse transport subsidies to all public transport operators. We use data verification mechanism to spot out vehicles operated without RURA authorization. We also use fraud detection mechanism to monitor the use of exemption in fuel for those allowed to get exempted fuel. In total 40 operators have been granted subsidies during this fiscal year.

4.8.1.3 Rwanda's Digital Ecosystem

While most of the analysis is conducted for in-house Regulatory aspects as a continuous ongoing activity, RURA occasionally in cooperation with other GoR agencies does support activities of national importance that require insight to which RURA may have. It's in this respect that together with the Ministry ICT in 2021 - 2022 a similar activity was conducted to support Government planning and policy formulation exercises related to the digital economy based on transactions of the users of Mobile Financial Services.

4.8.2 Innovation - Smart Transport

4.8.2.1 Electronic Fare Collection Systems

RURA in partnership with CENFRI analysed the bus transport network in Kigali using April 2022 ticket data with an aim to understand:

1. The average distance travelled on each route;
2. If passengers travel from start to finish on a route or somewhere in between;
3. If passengers travel on multiple routes during one journey;
4. And if buses arrive at bus stops on time.

key policy insights have emerged from the analysis:

- The majority of bus users purchase five or fewer tickets during the month;
- In April 2022, 60% of bus users purchased five or fewer tickets while only 9% appear to be using it for their regular work commute (purchased 20+ ticket in the month);
- Looking at the available "tap in" data, there is some evidence to suggest that bus services on main routes are capacity constrained due to heavy passenger intake at particular nodes with little / no passenger intake at other points on the route;
- This is supported by anecdotal evidence of buses looking "at capacity" on the main routes in Kigali.

4.8.2.2 Interoperability of Electronic Fare Collection Systems

With the aim to facilitate passengers to use any of available e-ticketing system, the regulator initiated an exercise of ensuring that all e-ticketing systems are interoperable with other service providers for both city and intercity public transport services. Currently, both AC Group and Centrika successfully integrated their systems, passengers can use any cards to get transport services.

4.8.2.3 Inspection on Fare Collection Systems

During this fiscal year RURA has conducted an inspection on the e-ticketing services. Mainly the inspection aimed to check if the e-ticketing service providers offers good services to the clients and if passengers are benefiting the cashless services.

The e-ticketing services are provided electronically to all 39 Transport companies country wide by two e-ticketing service providers AC Group and Centrica.
On one hand the inspection reported that the electronic fare systems have improved during this fiscal year, and the service providers upgraded their systems for an advanced service performance.

On the other hand, transporters reported that the electronic fare collection systems improved their sales revenues by reducing human interactions in their transport business.

Despite the improvement, it was highlighted that there still more to do mainly on activating bus validators in intercity buses and in availing more digital payment options which are easy to access.

In addition, transporters and e-ticketing providers shall conduct passenger sensitization on the use of available digital solutions in transport sector.

4.8.2.4 Internet in Bus

The Wi-Fi services are provided in public buses in City of Kigali. In order RURA to ensure the internet in bus is provided as per the License obligations a number of enforcement actions are conducted.

During this fiscal year, RURA conducted an inspection on internet usage in public transport in City of Kigali. The findings revealed that Wi-Fi was available in most case with exception of some areas. It however also revealed the need for improvement in ensuring data (bundles) availability.

The inspection recommended Telecom service providers to improve the QoS of internet and for AC Group to do more awareness to passengers on the internet availability and also ensure availability of Data Bundles in buses.

4.8.3 Artificial Intelligence

4.8.3.1 Hosting AI fellows (AI)

In 2019, Rwanda Utilities Regulatory Authority (RURA) signed a memorandum of Understanding with Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ). One of the main goals of this initiative focuses on strengthening a technical know-how on AI whereby the Fair-forward Initiative should support digital learning. Another goal aims at removing entry barrier to AI by facilitating the provision of open, non-discriminatory and inclusive training data and open source models and frameworks from machine learning.

It is in that context, that RURA will be hosting AI fellows who will be working on two machine learning models related to problems in sectors that RURA regulates.

In February 2022, AI fellows started to be trained by GIZ in collaboration with Leapr lab. Fellows will be trained for a period of three months and would acquire necessary skills in addressing different problems using machine learning.

Two machine learning use case were shared to them and were addressing problems respectively linked to water and transport sector.

The first use case addresses real and apparent losses by using training data taken from water bill list, whereas the second use case aims at spotting and understanding abnormalities in speed governors from speed governor data.

AI fellows were also trained on the draft AI ethics developed by RURA so that they can acquire skills on how to develop AI applications that do-good people.

4.8.3.2 Africa-Asia AI Policy Maker Network: AI Crash Course & Ideathon for Policy-Makers in Rwanda, 21-25 March 2022

The "AI Crash Course & Ideathon for Policy-Makers" was held from 21-25 March 2022 in Kigali, Rwanda and provided a consolidated version of the Peer Learning and Capacity Building Programme for Policy Makers on Artificial Intelligence, which was held virtually from September to December 2021. The AI Crash Course & Ideathon in Rwanda formed part of "FAIR Forward, a joint initiative between RURA and GIZ.

The Crash Course and Ideathon was offered to a broad group of government stakeholders to build a greater technical capacity and general understanding of how AI can be leveraged to achieve some of the country's key developmental goals. The curriculum was co-created with local partners to ensure the material was situated within the Rwandan context (from both a legislative and policy perspective). It highlighted the work already being done by experts across the country and focused on priority areas such as data governance and data-sharing, AI ethics, assessing institutional readiness, and components for building an AI ecosystem.

4.8.3.3 First Africa-Asia AI Policy Maker Network: 29 March - 1 April 2022

Policymakers from Ghana, India, Uganda, Kenya, Rwanda (Represented by RURA), South Africa and Kenya met in Cape Town to launch the first Africa-Asia AI Policy Maker Network. - The Network will serve as a forum for extended policy exchange on responsible AI, joint project development and continuous peer-learning on Artificial Intelligence. - In addition, the event laid the foundation for the development of national and regional strategies on responsible AI and launched the Handbook on Implementing a Capacity Building Course on Responsible AI.

Leading up to the event, the policymakers had participated in a four-month Peer Learning and Capacity Building Programme on Artificial Intelligence, led by the Human Sciences Research Council. - Among other things, the programme focused on the promotion of local AI innovation, AI ethics and how AI can contribute to the achievement of the SDGs.

4.8.4 Cybersecurity

The Cybersecurity activities conducted in the year 2021 – 2022 were governed by the regulation No 010/R/CR-CSI/RURA/020 of 29/05/2020 Governing Cybersecurity in Rwanda to ensure that operators secure networks and their subscribers. The objective of the regulations is to ensure that operators not only protect their critical infrastructure to ensure services availability and sustainability but also protect consumers or subscribers and their personal data.

RURA's Cybersecurity mandate is geared towards the security of the infrastructure and systems used by licensees in providing services in public utilities.
The above is achieved through:

4.8.4.1 Enforcement of cybersecurity regulations (critical infrastructure & data protection)

During the period of 2021-2022, several activities were carried out to validate that services providers put in place measures agreed upon plans to address any gaps identified during previous regulatory compliance audit or internal operator audits. In addition to this, review of operators' requests to conduct new business processes related to new projects or partners was conducted.

The purpose of the conducted review/analysis was to ensure that the planned activities being implemented by the operators would indeed achieve their objectives while at the same time ensuring the protection of subscribers' data and operators' systems data which is critical to the security, availability and sustainability of the services offered to the public by licensees. A large part of these activities related to the evaluation of the service providers requests related to outsourcing external skill sets for many specialised services.

4.8.4.2 Support in addressing consumer complaints

Consumer protection being one of the key functions of RURA and CSI department, activities were carried out in collaboration with concerned departments by using available systems to address received complaints concerning fraud cases. These range from interpretation of system logs to confirm fraud and support the concerned department in resolving issues raised on an ongoing basis plus review of existing mechanisms to improve processes and reduce the fraud such as the improved SIM registration process.

4.8.4.3 Sim Box

RURA continued with activities related to countering fraud related to international incoming traffic. This fraud commonly referred to as SIM box not only affects quality of the received call but is also illegal in Rwanda. As such, RURA has implemented a fraud management system and during the period 2021 – 2022, 381,732 test calls were placed from multiple countries in trying to identify and close traffic routes used by the fraudsters and 688 test calls were identified as fraudulent. A significant decrease of detected numbers was recorded this year compared to previous year and this is mainly attributed to improved SIM Card registration regulations.

4.8.5 Licensing

The Authority CSI supported to analyse in terms of technology innovation and cybersecurity perspective the below approved licenses:

- General Authorization for Managed Services granted to Nokia Solutions and Networks Branch Operations OY-RWANDA;
- General Authorization for Managed Services granted to Ericsson AB Rwanda;
- General Authorization for Managed Services granted WHALE CLOUD TECHNOLOGY (RWANDA)
- Application Service Provider License provided to SITA B. V Rwanda
- A Non-objection Certificate related to digital addressing system granted to ADDRESSYA Rwanda
- A Non-Objection Certificate related to assistive technologies service for visual impaired people granted to Imboni Solutions Company Ltd.

4.9   UNIVERSAL ACCESS

4.9.1 Introduction

The Universal Access and Service Fund (UAF) seeks to ensure that all Rwandans have access to a set of basic yet essential telecommunications/ICT services at affordable prices. While guarding against market distortions, the Fund focuses its assistance on areas which are beyond the reach of telecommunications/ICT services, enabling underserved and unserved communities to connect with other populations and take advantage of the opportunities and benefits that come with access to broadband Internet and other ICT services.

Rwanda Utilities Regulatory Authority (RURA) collaborates with different telecommunications operators to support "through UAF financing scheme" various initiatives aiming at facilitating access and use of telecommunications/ICT services, on affordable terms, to the general public located in unserved or underserved regions. Initiatives financed by UAF in this financial year 2021-2022 were the following:

During the year under review, the Universal Access Fund focused on strengthening the network coverage in rural areas. Forty-five (45) sites have been completed and are now operational.

4.9.2 Monitoring of Rwanda Internet Exchange Point

As shown in the table below, the average and maximum traffic at the Rwanda Internet Exchange Point increased during the year under review.

Table 17: Traffic at Rwanda Exchange Point

Direction	ISP/CS ISP/CSP/Route Server					
	30 June 2020		30 June 2021		30 June 2022	
	Average	Average	Average	Maximum	Average	Maximum
Inbound	1.41Gbps	2.08Gbps	1.53Gbps	3.48Gbps	2.90 Gbps	4.68 Gbps
Outbound	1.37Gbps	2.30Gbps	1.97Gbps	3.99Gbps	2.91 Gbps	4.73 Gbps

4.9.3 Monitoring of broadband performance of different institutions

During the preparations for the World Telecommunication Development Conference (ITUWTDC22) and Commonwealth Head of Government Meeting (CHOGM), Rwanda Utilities Regulatory Authority (RURA) inspected sixty (60) hotels in the first phase and forty-three (43) hotels in the second phase in the City of Kigali. The hotels improved their broadband capacity. Most of them are using fiber optic point-to-point links and 4G LTE. Most of the hotels meet the requirements that are set in the guideline like broadband capacity and wireless coverage whereas other have plan to upgrade the capacity and achieve the requirements. The inspection found that among all hotels and apartments inspected, frequent challenges were related to the broadband capacity provided, network coverage and broadband Infrastructure. In order to improve the quality of broadband service provision and network coverage on a short and long-term basis, the non-compliant hotels have been requested to have a roadmap to comply with the requirements.

4.9.4 Subsidizing the cost of Internet in rural and remote areas

The universal access fund ensures access to affordable Internet services and wider penetration of ICTs services to public and private institutions in rural and remote areas of the country. RURA through UAF has adopted a scheme of subsidizing broadband bandwidth acquisition to the rural communities in underserved remote areas of Rwanda. During the year under review, a total of 93 sites from public institutions have benefited from this initiative and the Broadband Systems Corporation (BSC) provides Internet Service to all UAF subsidized sites through different access technologies. The sponsorship is valued at one hundred million Rwandan francs (100,000,000 FRW) per year.

4.9.5 Subsidizing the passive infrastructure for Mobile Network Operators in remote Areas

The Presidential Order No 05/01 of 15/03/2004 determines the functioning of the Universal Access Fund and Public Operators' contributions. During the year under review, the Regulatory Authority sponsored the OPEX for the construction of passive infrastructure in all identified 45 sites. The cost of the subsidy is valued at 2,644,000,000 FRW for one-year period. All sites are now operational.

4.9.6 Constructing of Passive Infrastructure for Mobile Network Operators in Remote Areas

In the spirit of providing equal opportunity and access to telecommunication/ICT services to all Rwandans, through UAF, the Regulatory Authority continued to support MNOs to increase their network coverage countrywide.

To bridge the mobile network connectivity gaps and provide coverage in different uncovered and underserved areas of the country, Universal access funded the construction of two new sites in Nyungwe National parks in order to improve the network coverage in the area. The sites are now operational and the operational cost shall be subsidized for three years.

4.9.7 RICTA's strategic plan for 5 years

Rwanda Utilities Regulatory Authority supported the development of RICTA's strategic plan 2022-2026. Since its inception, RICTA has been a vital enabler of Internet growth within the ICT sector in Rwanda. RICTA is mandated with the responsibility of managing and administering the dot RW Country Code Top Level Domain (ccTLD), Rwanda's Internet Exchange Point (RINEX) and the Internet Community at large. A strategic plan is necessary to determine the direction of any organization as it focuses on efforts and ensures that everyone in the business is working towards a common goal. It will contribute to business growth, align resources for optimal results and prioritize financial needs. RURA sponsored RICTA to undertake the development of the 2022-2026 strategic plan and ensure everyone in the business is aligned with the company's goals, mission and objectives. The sponsorship is equivalent to 15,340,000 RWF VAT inclusive.

4.9.8 Supporting the organization of Rwanda Internet Governance Forum

The Regulatory Authority in partnership with stakeholders sponsored the organization of the Rwanda Internet Governance Forum, 2021. The Rwanda Internet Governance Forum (RWIGF, 2021) edition was held on the 30th November 2021 at LEMIGO Hotel, Kigali-Rwanda. It attracted a wide spectrum of stakeholders from the public, private, academia and civil society domains to discuss a wide range of pertinent issues, opportunities and frameworks suitable for a digital nation. The main objective of this forum was to provide a platform to maximize the opportunity for open and inclusive dialogue and the exchange of ideas on Internet governance (IG) specifically on Child Online safety, opportunities for e-commerce and public service delivery. The theme was, "Internet in Post COVID-19 era, Lessons learned", and gathered the local Internet community and beyond, to discuss about merging challenges and opportunities resulting from the COVID-19 crisis. The activity was sponsored at an amount of two million Rwanda Francs (2,000,000 FRW).

4.9.9 Supporting the organization of the Rwanda Network Operator Group training (Rwanda NOG)

Rwanda Utilities Regulatory Authority sponsored the amount equivalent to four million Rwandan francs (4,000,000 FRW) to organize Rwanda NOG 2021. Rwanda NOG 2021 was held on October 25-29, 2021 at the University of Rwanda, College of Science and Technology. It attracts engineers from government institutions, Internet Service Providers, Banks, Universities and Civil Society organizations. Rwanda NOG2021 was attended by 54 engineers composed of 6 females and 48 males in both Network Monitoring and Management (NMM) and Advanced Routing Techniques (AR). All 54 trained engineers are employed.

4.9.10 Support the COCCA registry project

Rwanda Utilities Regulatory Authority sponsored the first phase of the CoCCA registry. The shared Registry system is a software application mostly used by registries in Africa, it was developed by CoCCA Registry Services (NZ) Limited ("CoCCA"), registered with the New Zealand Companies Office.

RICTA has been using the CoCCA platform as the .RW registry software application since 2013 as it meets ICANN technical standards for domain names management.

The application has been stable and integration of cards payment (VISA, MasterCard) and of recent Mobile Money have been integrated as a way to facilitate the resellers and clients. The amount sponsored for the first phase of the project is equivalent to 10,087,449 FRW. This amount is equivalent to 10,000 USD for the first phase.

4.9.11 RINEX Cybersecurity Assessment

Rwanda Utilities Regulatory Authority Sponsored Cybersecurity assessment for ccTLD and RINEX. Today's cyber threat landscape is evolving at an alarming pace. It is becoming increasingly important for businesses to take every conceivable precaution to protect themselves and their assets from risk and breach. Millions of dollars are being lost, and countless crucial data sets are being compromised. These security breaches can cause loss or significant damage to people, brands, reputation and profits. While organizations are constantly flooded with the latest and supposedly greatest tools and technologies, cybersecurity assessment remains one of the most popular and critical tools to strengthen the security defiance. Cybersecurity assessment analyzes organization's cybersecurity controls and its ability to remediate vulnerabilities.

RICTA's primary goal in carrying such assessment was to identify vulnerabilities and minimize gaps in security, facilitating compliance with strict standards and regulations. It also aimed to keep key stakeholders, donors and Board members in-the-know on the organization's cybersecurity posture, making it possible to make more informed decisions about how security strategies can be implemented into day-to-day operations.

The amount equivalent to 21,240,000 FRW was spent on internal vulnerability assessment, web & application security assessment, external penetration testing and cybersecurity awareness training for RICTA's staff.

ANNUAL REPORT
2021 - 2022

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AUTHORITY
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57

05

ENERGY SECTOR

5. ENERGY SECTOR

5.1 SECTOR PROFILE

The Energy sector is composed of different energy sub-sectors, namely; Electricity, Renewable Energy, Gas and Downstream Petroleum. The regulator's responsibility is to develop regulatory tools, licensing, compliance monitoring and promotion of continuity of service delivery, affordability and accessibility of energy supply to all consumers.

The government of Rwanda believes that availability of affordable, reliable and improved quality energy supply is one of the key enablers for the country's aspiration for economic development, especially industrial development and social welfare goals set out in the National Strategy for Transformation (NST1).

During the year under review, the Rwandan energy sector has recorded progress and the country is on track towards achieving some of the targets of the Energy Sector Strategic Plan (2017/18-2023/24).

5.2   LEGAL AND REGULATORY FRAMEWORK

During the year under review, RURA initiated the amendment of the existing Regulations governing Liquefied Petroleum Gas business and petrol service stations. The aim was to address the challenges encountered during their implementation, and improve both LPG and fuel retail business in general.

5.3 LICENSING

5.3.1   Electricity and Renewable Energy

The Regulatory Authority issued a new electricity generation license to Shema Power Lake Kivu with 56 MW of installed capacity thus, increasing the number of licensed operators in electricity generation segment from 39 to 40.
In order to improve the safety of electrical installation for commercial, industrial and residential premises, new ninety-five (95) electrical installation practitioners were certified.

It is worth noting that a share of women participation during the year under review was 39.2% of the total applicants and 45.7% of successful candidates. This came as a result of the partnership between Women in Rwanda Energy (WIRE) and RURA that aims at increasing the number of certified women to carry out electrical installations.

5.3.2 Gas and Downstream Petroleum

In the downstream petroleum sub-sector, RURA issued one hundred and eight (108) new licenses (30 for LPG & 78 for Petroleum) compared to 90 (44 for LPG & 46 for petroleum) in the previous year.

Table 18: Types of all licenses and authorizations granted

S/N	Type of License / Authorization in the Gas and Downstream Petro-leum Subsector	Number
1	Licenses for Liquefied Petroleum Gas (LPG) plants/skids installation	1
2	Authorizations for Liquefied Petroleum Gas (LPG) plants/skids upgrade	1
3	License for wholesale of Liquefied Petroleum Gas (LPG)	5
4	License for transportation of Liquefied Petroleum Gas (LPG)	23
5	License for installation of new petrol service stations	49
6	Retail license for Petrol Service Station	15
7	Fuel importation licenses	5
8	Authorization for transportation of fuel using road tankers	9

Source: RURA

5.4   MARKET PERFORMANCE

5.4.1 Electricity and Renewable Energy

5.4.1.1 Access to electricity

The grid extension activities resulted into increase for both low and medium voltage power lines length. Compared to the previous financial year, low voltage feeder lines length increased by 9.3% from 16,869.5 to 18,440.30 km, while the medium voltage feeder lines length increased by 2.5% from 10,186.86 to 10,440.42 km.

The number of grid connections increased from 1,270,964 to 1,377,025 connections, corresponding to an increment of 8.34%. The electricity grid customers are predominated by residential consumers as shown on the figure below.
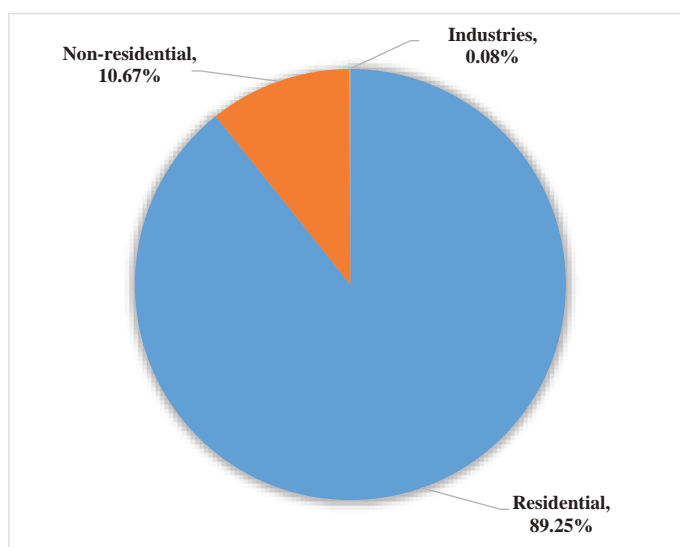

Figure 12: Shares of Grid Electricity Customers
Source: EUCL

5.4.1.2 Electricity supply and demand

The national grid installed capacity has increased by 16% from 238.052 MW to 276.052 MW. This increment resulted from the commissioning of Hakan Peat power plant (35MW) and Rukarara V HPP(3MW).

In addition, the electricity generation increased by 12% from 954,643.84 MWh to 1,069,565.73 MWh and ninety-seven per cent (97%) of the generated electricity was produced by domestic and regional shared (Rusizi II) power plants.

During the year under review, the peak demand registered an increase of 8.7% from 164.38 MW to 178.71MW. The figure below shows the last 3 years' trend of the national grid's annual electricity generation, installed capacity and peak demand respectively.
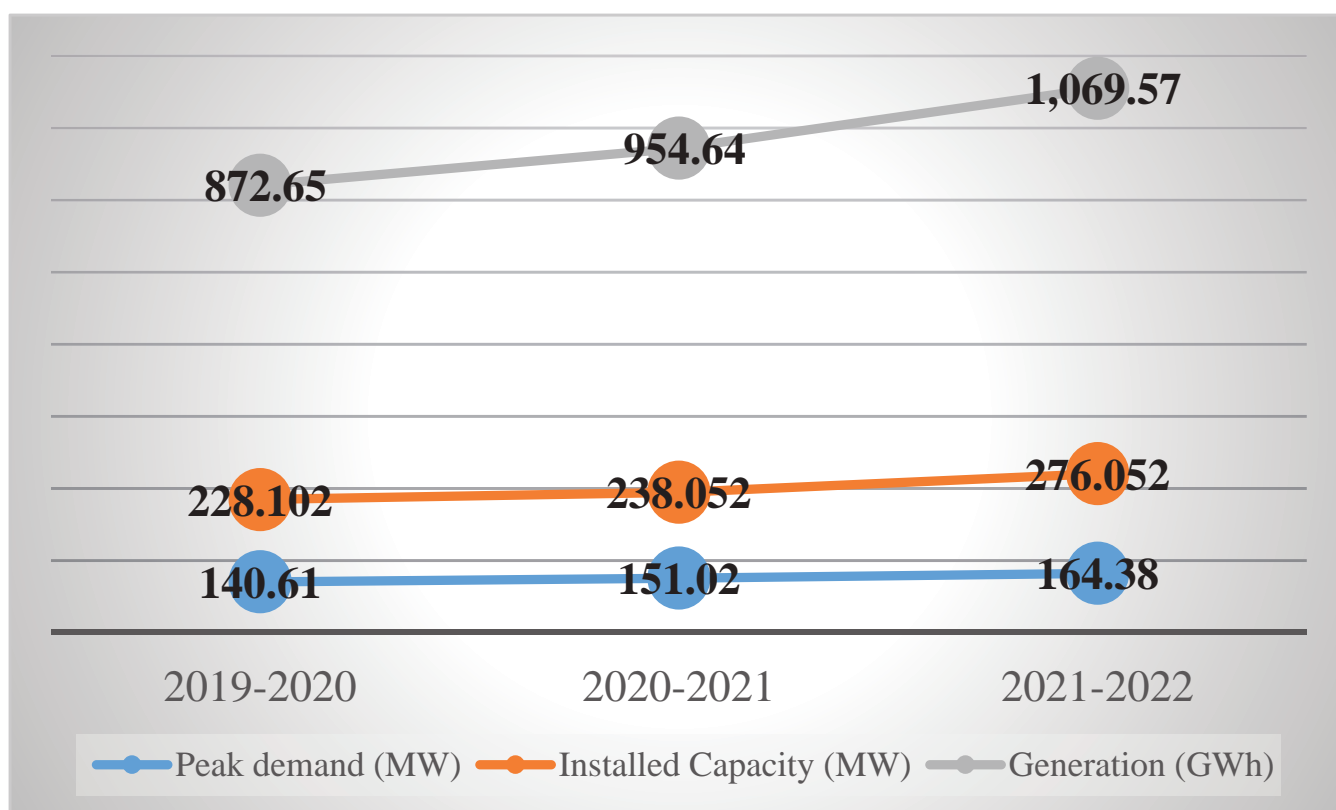

Figure 13: Trend of the national grid's annual electricity generation, installed capacity and peak demand. Source: EUCL data

ANNUAL REPORT
2021 - 2022

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AUTHORITY
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61

The figure below illustrates the shares of energy consumed per customers' categories.
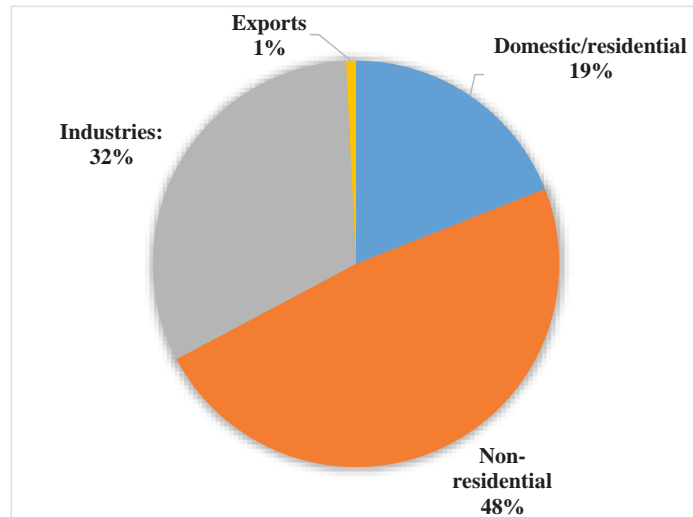

Figure 14: Electricity sold/consumed per customers' categories
(Source: EUCL data)

As in the previous year, the non-residential category registered the highest share of consumption with 48%, followed by industries and Domestic with 32% and 19% respectively.

5.4.1.3 Renewable vs conventional energy resources' shares

The share of renewable energy resources in both electricity generation and installed power capacity reduced from 62.3% to 50.82% and from 53.9% to 47.6% respectively. This was mainly caused by the commissioning of Hakan Peat Power plant.

The shares of different sources of electricity production and installed power capacity are detailed in the figures below.
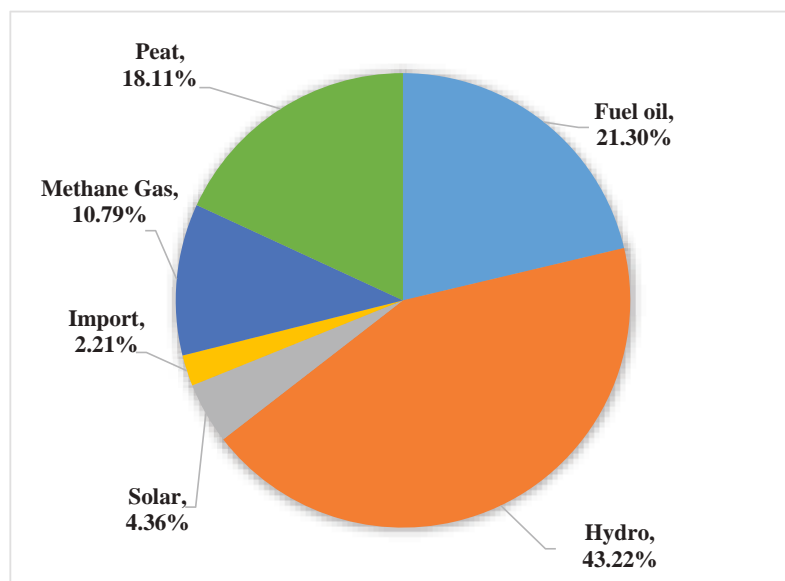

Figure 15: Energy mix per installed power capacity
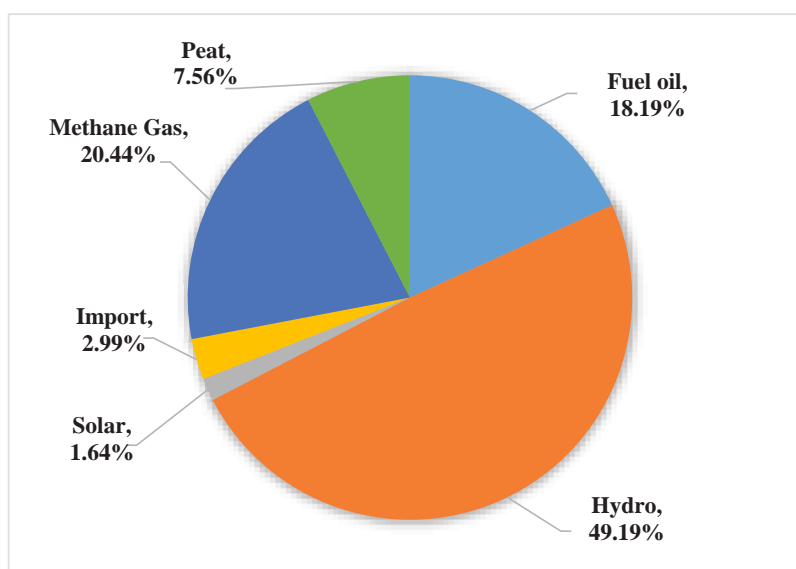*Source: EUCL*

Figure 16: Electricity generation mix
Source: EUCL

The share of hydro encompasses both domestic and regional shared (Rusizi II) power plants, while the imports include importation from Gatuna and Rusizi I.

The table below illustrates the share of renewable energy resources relatively to the rest of resources in both installed capacity and electricity generation for the year under review.

Table 19: Renewables resources versus conventional resources & Imports

	Renewable resource	Conventional resource	Imports
Installed power capacity	47.6%	50.2%	2.2%
Electricity generation	50.82%	46.2%	3.0%

Source: EUCL

5.4.1.4 Efficiency and reliability

The grid's overall network losses (both commercial and technical) reduced from 19.26% to 18.1%.

Unlike the previous fiscal year where the grid's power interruptions in terms of duration had reduced by 3.9%, this year the duration of power interruptions increased by 3%. As the previous year, the frequency of power interruptions continued to increase (notably by 0.17% this year).

The figure below compares the frequency and duration of power interruptions. i.e. previous year versus the year under review.
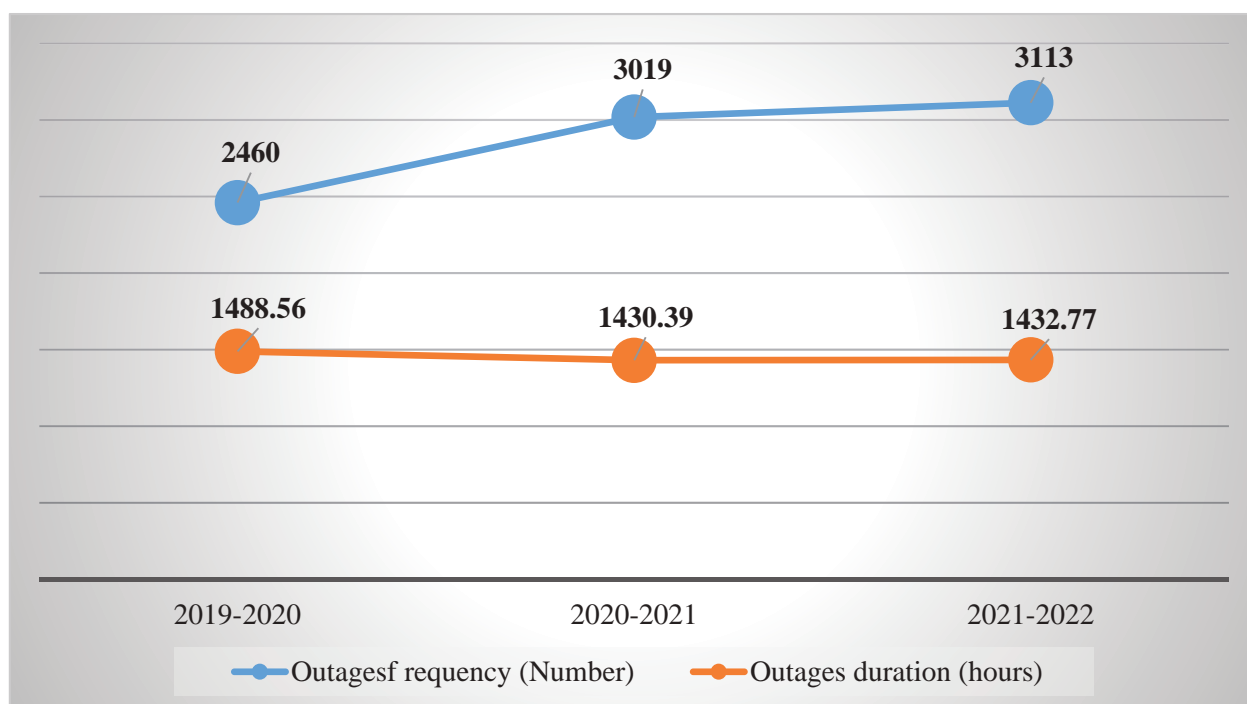

Figure 17: Grid outages frequency and duration
Source: EUCL

5.4.2 Gas and Downstream Petroleum

LPG

The total LPG storage capacity has increased to 765.7 from 703. 7 Metric Tons (MT) arising from a new installed storage facility of 52 MT by MEREZ.

The table below shows all the LPG filling plants in the country and their respective storage capacity.

Table 20: LPG storage facilities, capacity and location

District	LPG storage facilities	Sector, cell, and village	Capacity (MT)
Gasabo	Rubis Energy Rwanda Ltd	Gatsata, Nyamugari, Akisoko	103
	Abbarci Petroleum Marketing Co. Ltd	Jabana, Akamatamu, Cyeyere	95.2
	Rwanda Oxygene	Ndera, Kibenga, Ururem-bo	100
	Mount Meru Gas Rwanda ltd	Rusororo, Kabuga II, Ru-hangare	150

Kicukiro	Sulfo Rwanda Industries Ltd	Gatenga, Karambo, Ihuriro	28.5
	Societe Petroliere Ltd	Kanombe, Kabeza, Gipo-roso l	10
	Merez Petroleum Ltd	Gahanga, Gahanga, Rinini	23
	Merez Petroleum Ltd	Masaka, Gitaraga, Nyange	52
Kamonyi	Lake Petroleum Rwanda Ltd	Rugarika, Sheli, Ntebe	23
	Hashi Energy Rwanda Ltd	Runda, Muganza, Nyaga-cyamu	10
Muhanga	Societe Petroliere Ltd	Nyamabuye, Gitarama, Nyarutovu	10
Rusizi	Societe Petroliere Ltd	Kamembe, Kamashangi, Badura	10
Musanze	Societe Petroliere Ltd	Muhoza, Mpenge, Gik-wege	20
Rwamagana	Societe Petroliere Ltd	Muhazi, Nyarusange, Plage	60
Rubavu	Societe Petroliere Ltd	Gisenyi, Nengo, Gikarani	10
Bugesera	Standard Gas Ltd	Ntarama, Kanzenze, Ka-baha	51
Total			**765.7**

Source: RURA database

The total imported LPG reduced from 32,931,501 kg to 30,144,767 kg, which corresponds to a decrease of 8.46 % compared to the previous year. This was mainly due to a rise in LPG global prices that caused a switch from LPG consumption to alternative fuels (biomass) especially for households.

White fuel (gasoline, kerosene, diesel, and jet fuel)

The total storage capacity of fuel has increased to 118,100m3 as a result of an additional 6,000 m3 capacity of the strategic reserve of Jet A1 commissioned at Rusororo. The Government of Rwanda continues to make effort in attracting investment in petroleum infrastructure to reach the targeted volume of 198,000m3 as per petroleum policy.

Imported diesel, gasoline, kerosene, Jet A-1, and heavy fuel oil increased by 26.07%, 10.66%, 7.01%, 54.39%, and 27.69% respectively compared to last year. This increase reflects a gradual recovery in economic activities from restrictive measures of Covid-19 pandemic.

The figure below shows the trend of imported petroleum products for the past 3 financial years.
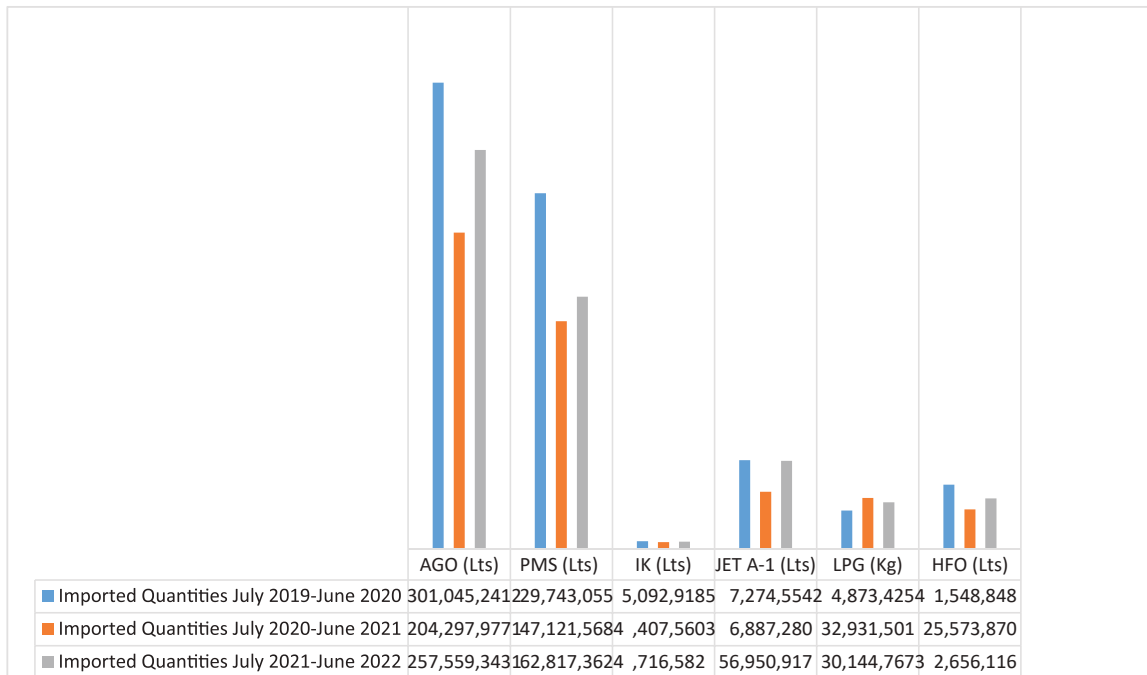

	AGO (Lts)	PMS (Lts)	IK (Lts)	JET A-1 (Lts)	LPG (Kg)	HFO (Lts)
■ Imported Quantities July 2019-June 2020	301,045,241	229,743,055	5,092,9185	7,274,5542	4,873,4254	1,548,848
■ Imported Quantities July 2020-June 2021	204,297,977	147,121,5684	,407,5603	6,887,280	32,931,501	25,573,870
■ Imported Quantities July 2021-June 2022	257,559,343	162,817,3624	,716,582	56,950,917	30,144,7673	2,656,116

Figure 18: Trend of petroleum products importation for home consumption
Source RURA database

5.4.3 Fuel Pricing

The pump price for gasoline and diesel is reviewed every two months, while the cost of Jet A-1 is reviewed every month to absorb global events and international oil price fluctuations.
During the year under review, the pump price for gasoline (PMS) and diesel (AGO) were subsidized by the Government of Rwanda to curb the sharp increase in fuel prices.
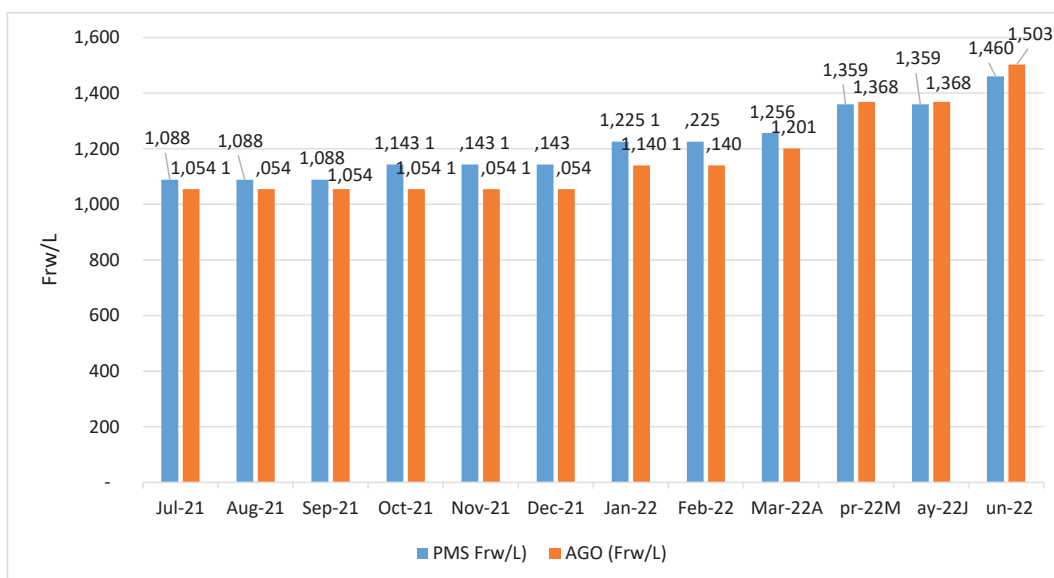The graph below illustrates monthly variations of gasoline, diesel and Jet A1 retail prices.

Figure 19: Kigali Public Price (Frw/Liter)
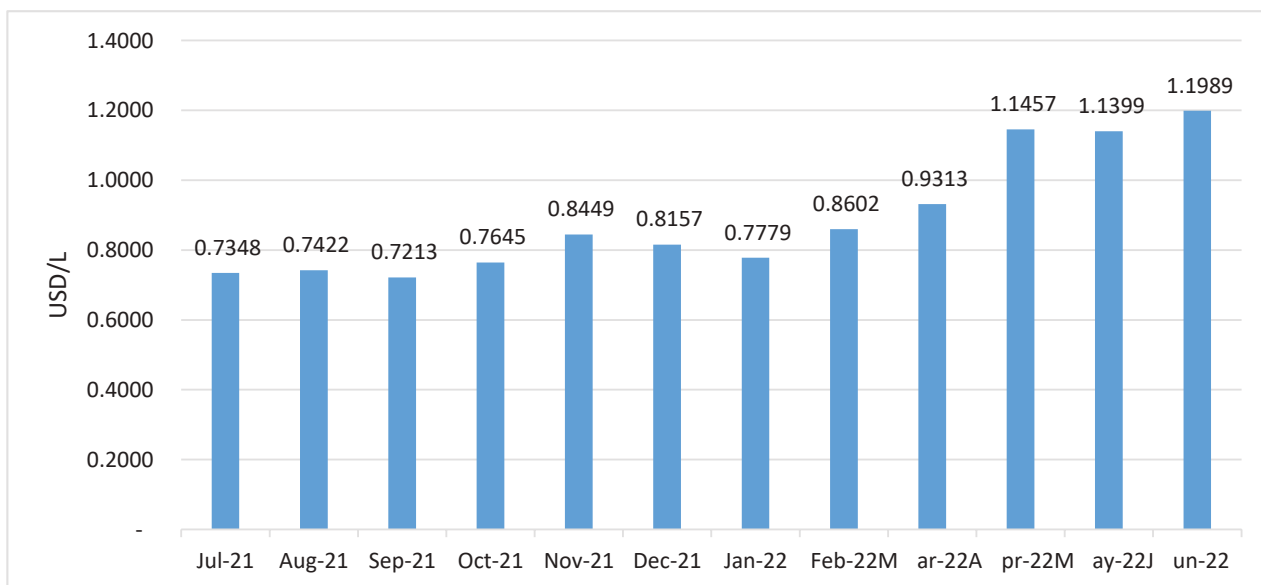*Source: RURA database*

Figure 20: Jet A-1 Retail Price (USD/Liter)
Source: RURA

5.5 COMPLIANCE MONITORING

5.5.1 Electricity and Renewable Energy

To ensure compliance, inspections were conducted to the national grid (quality of service inspection), operational power plants and projects under-construction.

The QoS inspections were conducted to EUCL six (6) branches and four (4) power substations to track the level of compliance in terms of Commercial and Technical Quality of service. The inspection findings revealed issues related to voltage drops, delays in customers' complaints handling and new customers 'connection, and wrong customer categorization.

In addition, eighteen (18) operational power plants and two (2) projects under-construction power (Ntaruka A and Shema Power Lake Kivu) were inspected and some operators were recommended to improve occupational safety and health requirements accordingly.

5.5.2 Gas and Downstream Petroleum

Regular site inspections were conducted to Liquefied Petroleum Gas (LPG) operators to monitor compliance with LPG regulations and set prices.

The compliance with retail price was a concern due to individual margins and transport costs specifically in secondary cities and rural areas.

Furthermore, RURA conducted regular inspections of fuel depot facilities and different petrol stations to monitor operations safety and to reduce fuel loss during fuel transportation and offloading activities.

ANNUAL REPORT
2021 - 2022

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67

5.6 RESEARCH AND DEVELOPMENT

5.6.1 Electricity and Renewable Energy

During the year under review, three studies were conducted, namely; Impact assessment of Captive Power Systems (CPSs) in Rwanda, Impacts assessment of Time of Use (T.o.U) tariff on electricity end-users, and the Review of the reliability indices "SAIDI, SAIFI &CAIDI".

5.6.1.1 Impacts assessment of Captive Power Systems in Rwanda

The aim of this study was to assess the impacts of captive power systems (CPSs) adoption in Rwanda. The assessment specifically analyzed and demonstrated the current status of CPSs, their benefits on end-users, their impacts on utility's revenues collections and electricity end - users' tariff.

The results showed an increasing interest in the adoption of CPSs by the national utility customers, that is mainly driven by the gradually increasing electricity tariff, unreliable power supply, and the declining price of solar photovoltaic systems on the global market. The adoption of CPSs has resulted in financial savings on the side of customers and losses on the side of the national utility, that are more likely to increase in the future. The results showed no impact on the current electricity tariff, but this may not be the case in the future as the national utility may be forced to increase the tariff to compensate for losses.
The study proposed a regulatory mechanism that will enable the adoption of CPSs without compromising the national grid's financial sustainability, while promoting the use of renewable energy sources.

5.6.1.2 Impacts assessment of Time of Use (T.o.U) tariff on electricity end-users

The main objective of assessing the time of use tariff impacts on grid electricity end-users was to evaluate the level of end-users understanding of the T.o.U tariff scheme, and evaluate its impacts on their businesses. 73% of the responded customers understand the T.o.U tariff scheme.

In terms of electricity bills; 41% reported an increase and 32% reported a reduction in their bills, while the remaining 27% did not notice any change.
In terms of working hours and considering the nature of business; 23% revealed that T.o.U conforms to their business, 27% had shifted some of their activities to off-peak hours, 27% had reduced their working hours, while the remaining 27% could not change their working hours due to the nature of their business.

In terms of production; 64% reported that the T.o.U has reduced their production, and 36% reported no change in their production costs.

In terms of staff cost; 50% of the end-users reported that the T.o.U tariff scheme has affected their staff costs, because they were obliged reduce the number of staff, or had to pay overtime for some workers or even increase the staff salaries or wages

The findings of this study will support the Regulatory Authority to improve the current electricity pricing methodology in order to boost the electricity demand, while promoting industrial competition.

5.6.1.3 Review of reliability indices "SAIDI, SAIFI &CAIDI"

The aim of this study was to cross-check the computation method of the grid's reliability indices that are published by EUCL. It was found that EUCL follows international best practices while computing these indices, however some adjustments were needed to harmonize the published results. Further adjustments to be made by EUCL include; harmonization of feeder lines' names in all reports, speeding up customers mapping process for feeder lines that appear without connected customers, and avoiding inconsistency in submitted reports.

ANNUAL REPORT
2021 - 2022

RWANDA
UTILTIES
REGULATORY
AUTHORITY

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69

06

NUCLEAR AND RADIATION PROTECTION

6. NUCLEAR AND RADIATION PROTECTION

6.1 SECTOR PROFILE

RURA's mandate in nuclear and radiation protection sector is to regulate the use of ionizing radiation related activities to ensure protection of people and biodiversity.
Pursuant to Article 5, 6 and 7 of the Law N°59/2017 of 24/1/2018 Governing Radiation Protection, the main regulatory responsibilities in the sector include:

1. Protect people and environment against harmful effects of radiation;
2. Develop regulations pertaining to Nuclear and Radiation Protection;
3. Assess in due diligence submitted documents by operators and service providers,
4. Issue licenses pertaining to nuclear and radiation use, their transport, import and export;
5. Control the use of radiation in medicine, Agriculture, industry, mining and dealing with any other activities related to its attributions.

So far, the sector has recorded three hundred and twenty-six (326) radiation sources consisting of three hundred and eleven (311) radiation generators and fifteen (15) radioactive sources. In addition, the sector has attracted more emphases on capacity both in human resource development and in required monitoring equipment.

6.2 LEGAL AND REGULATORY FRAMEWORK

During this year under review, two new regulations were approved. Regulation No 006/R/RS-NRP/RURA/2021 of 16/11/2021 on Radiological and Nuclear Emergency Preparedness and Response as well as Regulation No 005/R/RS-NRP/RURA/2021 of 16/11/2021 on transport of nuclear and other radioactive material.

6.3 LICENSING

In the process of implementing the Radiation Regulations, in this financial year, the sector received, assessed and thereafter, issued six (6) industrial related importation and transportation licenses as well as 3 medical use licenses to comprehensible operators.

6.4 COMPLIANCE MONITORING

To introduce compliance process, different inspections were conducted to track and update the national registry of radiation sources across the country. The table below summaries the current status.

Table 21: National registry of radiation sources

Nature of inspected radiation sources use	Number facilities	Number of sources
Medical facilities (Imaging and Therapy)	32	143
Facilities with security scanners	72	163
Facilities with sealed sources and bremsstrah-lung X ray sources	6	15
Facilities with X-ray fluorescence (XRF)	5	5
Total	**115**	**326**

07

WATER, SANITATION AND WASTE MANAGEMENT

7. WATER, SANITATION AND WASTE MANAGEMENT

7.1 SECTOR PROFILE

Water and sanitation services are crucial to life and constitute the basis for human health and well-being. These services are not only prerequisite for health but also contribute to human dignity, environmental resilience (WHO, 2022) and key development pillars that contribute to socio-economic development and drivers of economy.

The proportion of population using safe water and sanitation facilities continue to increase as per the commitment of the Government of Rwanda to achieve universal access to these basic services by 2024.

During the financial year, the water and sanitation sector recorded the following improvements:
- In water supply, water production increased by 14.3% and the number of water subscribers increased by 9.2%.
- The sector recorded 37 new entrants in terms of operation and management of simple rural water supply, in cleaning service and in Solid waste management.
- Upgrade of water treatment plants that contributed to the reduction of water shortages in various districts. In addition, water distribution networks were upgraded in Kigali, Musanze and Rubavu.

7.2 LICENSING

The Regulatory Authority issued licenses to operators in various sub-sectors as follows:

- In water supply: Seven (7) licenses were renewed and a new license was issued for the management of a simple water supply system making a total of 55 licensed operators;
- In cleaning service: Twenty-five (25) licenses were granted to operators of which seven (7) were new licenses and Eighteen (18) renewed.
- For solid waste management: Two (2) new licenses were issued and Two (2) were renewed.

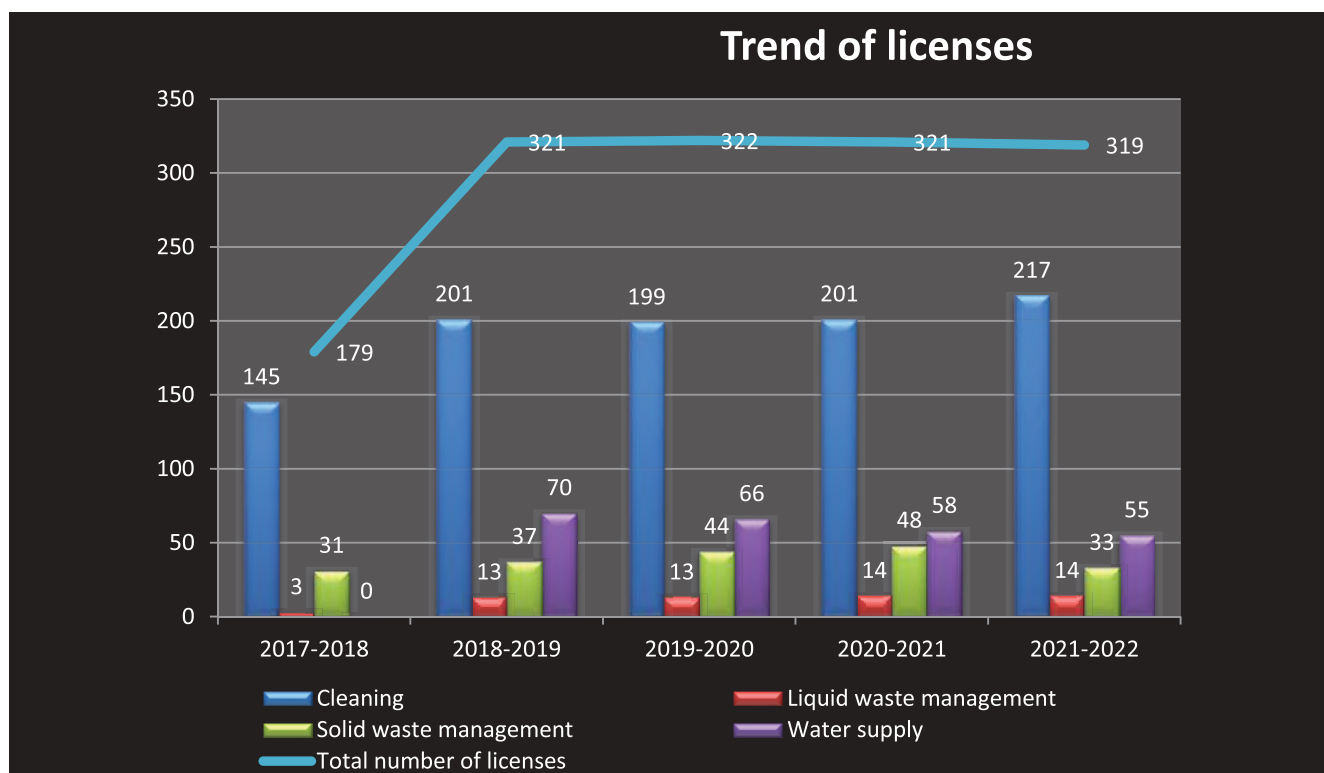*The chart below shows the trend in valid licenses for the past five (5) years.*

Trend of licenses

Figure 21: Trend in the number of licensed operators in water and sanitation.
Source: RURA database

The decrease in the number of licenses (as reflected in the above figure) in solid waste management is mainly due to licenses of second and third categories that expired and not renewed due to changes in regulation requirements.

7.3 MARKET PERFORMANCE

During the fiscal year 2021-22, water production and the number of customers in Urban Water supply have increased. The urban water production increased by 14.3% from 59,524,525 m3 to 69,454,409 m3. This increase was mainly due to the upgrade of Gihira and Mutobo as well as acquisition of Mata, Nyabimata, Nyabahanga and Mwange water treatment plants into urban areas. In addition, the quantity of water supplied recorded also an increase of 18.35% from 55,634,657 m3 to 68,139,551 m3. The figure below illustrates water produced and supplied in urban areas.
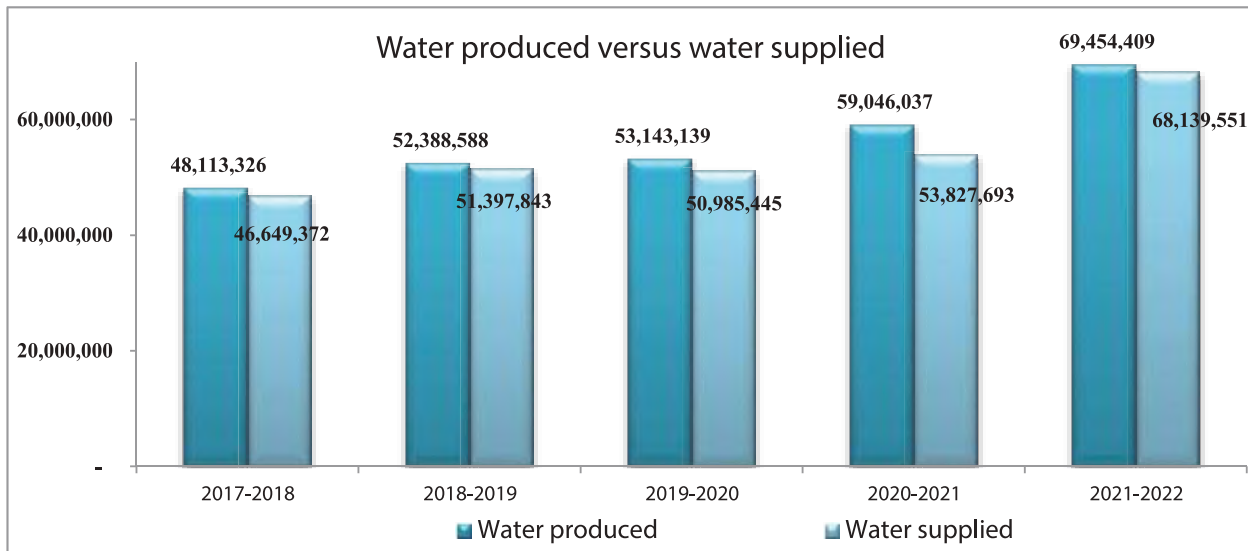
Figure 22: Trend of the Quantity of water produced versus supplied
Source: WASAC

As shown in the figure below, water subscribers in urban and peri-urban service areas showed an increase of 9.2% from 263,344 to 287,608.
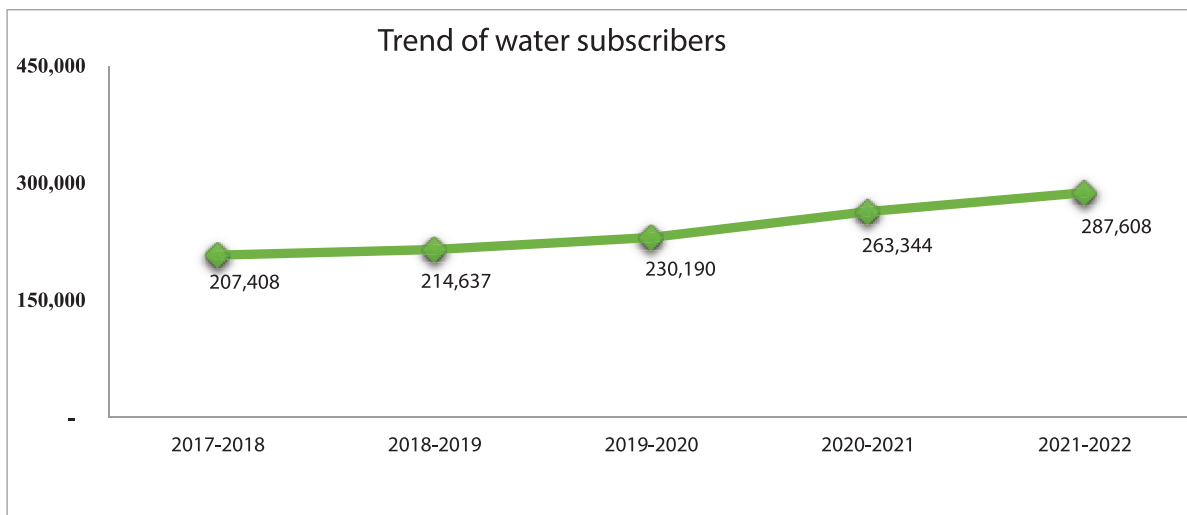

Figure 23: Trend of Water subscribers since 2015- 2022
Source: WASAC

Water loses within the network increased by 3% from 42.3% to 45.3% due to pipe bursts. The bursts were caused by pressure within networks resulting from additional production capacity. The figure below shows the trend of water losses.
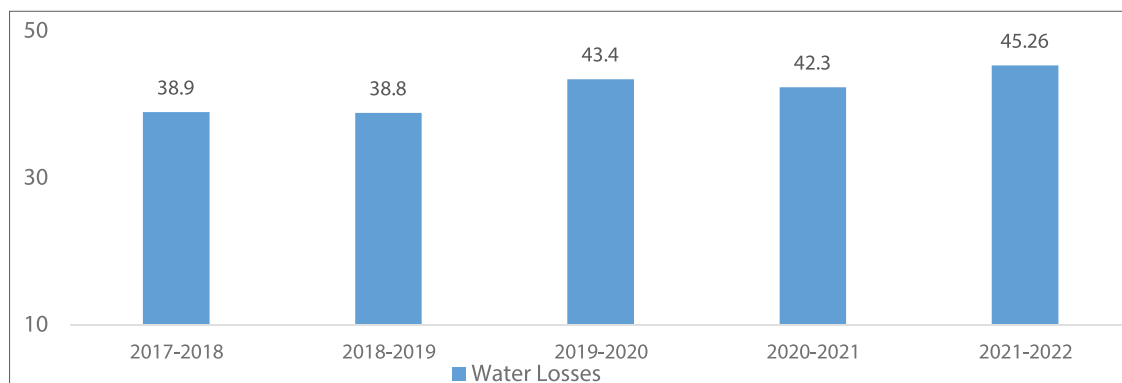

Figure 24: Trend of Water Losses
Source: WASAC

7.4 COMPLIANCE MONITORING

- To enhance the quality of service, inspections were conducted to licensed operators to assess the level of compliance and the following were recorded;
- In water supply, inspections were conducted in 18 districts to various water treatment plants and distribution networks managed by WASAC Ltd and Rural water systems managed by Private Operators;
- In Sanitation, eleven (11) operators providing the service of sewage emptying and transportation and three (3) wastewater treatment facilities were inspected;
- Inspections were also paid to Eleven (11) operators that provide services of garbage collection and transportation as well as seven (7) waste disposal facilities;
- Seventy-four (74) different sites including offices and roads were inspected;

Inspections revealed the following key findings;

- Water Treatment Plants operate properly but some need urgent rehabilitation. Further improvements recommended in the water supply are related to water treatment and catchment protection in rural areas where chlorination of all water systems is needed to ensure that drinking water is safe;
- In the Waste Management, it was noted that operators collect garbage on the scheduled program but unsanitary dumpsites constitute a serious challenge in Rubavu, Musanze and Bugesera Districts;
- Waste sorting needs to be assured from the source and reduce the burden to waste disposal facilities. In addition, employees need to be fully protected at various dumpsites with a full package of personal.

08
TRANSPORT SECTOR

8. TRANSPORT SECTOR

8.1 SECTOR PROFILE

The law establishing RURA gives it the mandate to ensure the availability and continuity of transport services throughout the country.

RURA is responsible for issuing licenses and authorizations for transport services, planning routes, monitoring transport services and enforcement of transport laws and regulations. The inspection exercise was carried out countrywide in all transport subsectors namely; the public transport, goods transport, taxi cabs, rental cars, driving schools, school buses and motorcycles.

The Regulator worked closely with stakeholders including MININFRA, CoK, RTDA and RNP to address some challenges in public transport including but not limited to routes assessment, enforcement of laws and regulations, and restructuring motorcycle public transport sub-sector.

In general, public transport service was highly affected by Covid-19, and to ensure smooth continuation of the sub-sector, RURA advocated to the policy maker to inject incentives into the sub-sector which was granted.

8.2 LEGAL AND REGULATORY FRAMEWORK

During year 2021-2022, the Authority issued two new regulatory tools for tthe transport sector as follows:

- Regulations N° 010/R/TLTPT/Trans/RURA/2021 of 14/12/2021 Governing Public Transport Bus Services.
- Board Decision N˚ 03/BD/RD-TRP/2021 of 27th September, 2021 Reviewing the fare for Motorcycle Public Transport Services in Rwanda.

8.3 LICENSING

8.3.1 Restructure of Sub-Sector

In course of the year 2021-2022, RURA contributed to motorcycle public transport restructuring aimed at improving the well-being of the moto-taxi drivers, security and ensuring efficiency in service delivery. In addition, RURA also reviewed the regulatory tools governing the sub-sector including but not limited to application and authorization fees.

RURA resumed the Intelligent Connected Fare Meter (ICFM) project in March 2022 after the project was suspended due to technical issues as well as covid-19. After several tests were conducted only one Service Provider was qualified to resume the service.

8.3.2 Implementation of Green Agenda Policy

In order to implement the green agenda policy, RURA waived application and authorization fees for electrical mobility. During the reporting year, 687 electric motorcycles and 21 electrical vehicles were licensed. In addition, RURA granted a Non-objection to SAFI to provide SAFIRIDE; an e-mobility solution through ride-hailing that will be provided countrywide starting in Kigali.

8.4 MARKET PERFORMANCE

During the year under review, except in the city of Kigali where public transport fleet size decreased due to Covid-19, the rest of the fleet size increased in all transport sub-sectors namely; the transportation of goods, Car Rental Services, driving schools, taxicab and waterways.

8.4.1 New Routes in Urban and Rural Areas

To protect the interests of regulated service users by ensuring that demand is met with reliable, cost-effective and high-quality services, the transport department carried out an inventory of underserved urban and rural areas in collaboration with other stakeholders and in so doing, twenty routes were identified and currently are operational.

Table 22: List of the New routes

	New routes	Assigned Companies
1	Nyabugogo – Rugarika	Indonyi T.:
2	Nyabugogo – Ngarama – Buguma	Different Express
3	Nyabugogo – Kanogo – Cyumbati	Kivu Belt
4	Kimironko – Azam – Bumbogo	Ebeneza
5	Nyabugogo –Gihara Market (Jali TPT LTD	Jali TPT LTD
6	Nyabugogo – Downtown	
7	Karama (Norvege) – Ryanyuma	
8	Nyabugogo – Karuruma – Bweramvura	
9	Muyange – St Joseph – Niboye – Zinia Market	Royal express LTD
10	Remera – Gasogi –Cyaruzinge via Mulindi Market	KBS Ltd
11	Kanombe – Kibaya – Busanza – Samuduha	
12	Remera – Mulindi – Rudashya	
13	Cyumbati-Akarekare-Nyarugunga-Kanogo- Nyabugogo	Kivu belt ltd
14	Nyabugogo – Kaduha - Mushubi	Star Express

However, there are other routes identified but not yet served due to road conditions, low demand and capacity of the investors. The identified routes are; Gicumbi – Kivuye – Butaro – Musanze, Kirambo – Ruhunde, Musanze – Kinyababa, Kayonza – Video – Karubamba.

8.4.2 Development of Business Models for Public Transport Services for Intercity and Rural Bus Routes

RURA in collaboration with other stakeholders conducted a market study aimed at improving bus services in intercity and rural areas.

This study was focused on developing a clear understanding of the current public transport business viability, defining the conditions for developing a quality public transport service serving intercity and rural areas and to addres the country's transport challenges. The inception report was submitted to Rwanda Transport Development Agency (RTDA) for further considerations.

8.4.3 Public Transport Routes Network Map

During the year under review, the transport department designed data collection tools intended to collect data for public transport routes network map;

Data collection was conducted whereby:

- 143 new bus stops were identified and mapped
- 25 routes newly mapped.
- 6 bus terminals
- 8 taxi cab parking were also mapped.

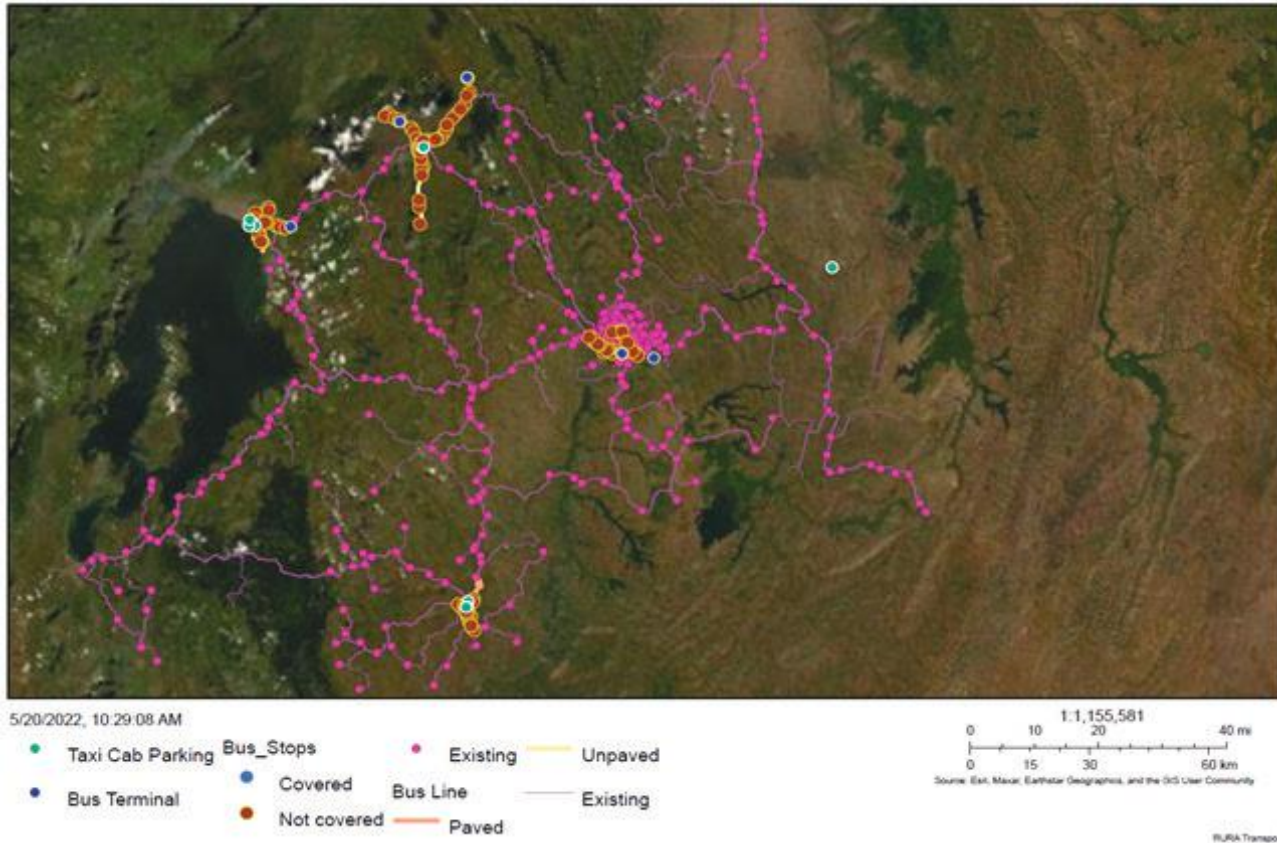The following map shows the reviewed routes network.

Figure 25: The map shows the reviewed routes network
Source: RURA

8.5   TRANSPORT MONITORING AND ENFORCEMENT

During the year under review, the inspection exercise was carried out countrywide mainly checking on compliance with the regulatory tools for ensuring transport development and good service delivery to the end users.

8.5.1 Transport rules and regulations enforcement

RURA ensures that all transport operators comply with the regulations, license obligations and other applicable laws. In this context, field inspections are always organized and sanctions are given to non-compliant operators.

8.5.2 Inspection for regulation enforcement

The ttransport department carried out inspections all over the country for transport regulation enforcement and compliance.

The inspections covered all transport subsectors, public transport by bus, transport of goods, taxi cabs, rental cars, driving schools, school buses, inland waterways and motorcycles.

8.5.3 Monitoring of Student's Transportation

The Transport department monitored the transportation of students from and to schools in collaboration with Public Transporters, RNP, MINEDUC and LOCAL GOVERNMENT. The exercise covered twenty-three taxi parks and students were assisted. In order to carve the spread of COVID-19 pandemic, the inspectorate monitored the transportation of students who were doing the National exams of A2 and O levels.

Picture 16: The inspectorate monitored transportation of students who were doing the National exams of A2 and O levels.

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Inspiring development

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