

REPUBLIC OF RWANDA



MINISTRY OF INFRASTRUCTURE

**INFRASTRUCTURE SECTOR ANNUAL
REPORT FOR FISCAL YEAR 2018/19**

August 2019

FOREWORD

It is with great pleasure that the Ministry of Infrastructure presents its Annual Report for the fiscal year 2018/2019. This report highlights the Ministry's key achievements in the sectors of Energy; Transport, Water and Sanitation; Urbanization, Human settlement and Housing Development. During the Fiscal Year 2018/2019, concerted efforts were directed towards enabling access to safe, reliable and cost effective infrastructure to ensure adequate service delivery and sustainable development.

In energy sector, interventions were directed towards increasing power generation and households' accessibility to grid and off grid electricity. As a result, households' connections reached 51% by end June 2019 from 46.7% of June 2018 and total power generation capacity reached 225MW from 218MW achieved by June 2018.

In the transport sector, notable achievements were realized in the areas of roads rehabilitation, upgrading, maintenance and air transport. The number of passengers transported by RwandAir increased considerably hitting, for the first time, a seven-digit figure per annum (1,151,300 passengers).

In the Water and Sanitation sector, more efforts were concentrated on achieving universal access to clean water whereby water production capacity increased from 237,120m³ by end June 2018 to 267,660m³/day by June 2019 and water network was extended with new 820.1Km to serve 405,295 people.

In the Urbanization, Human settlement and Housing; remarkable achievements were realized in the relocation of households from scattered settlements and high-risk zones (11,491 households were relocated); upgrading of IDP Model villages, Provision of basic infrastructure for affordable houses and sports related infrastructures were constructed and Kigali Arena, the most adorned stadium was completed.

The Ministry, therefore, wishes to thank all stakeholders that contributed to 2018/19 achievements and calls for continued/renewed commitments with regard to providing competitive and sustainable infrastructures in order to achieve the Country's objectives as outlined in the National Strategy for Transformation.

Hon. Claver GATETE
Minister of Infrastructure

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LIST OF ABBREVIATIONS

ACM	Asbestos Containing Materials
BPMIS	Building Permit Information System
CHL	Community Housing Limited
CHOGM	Commonwealth Heads of Government Meeting
CoK	City of Kigali
DRC	Democratic Republic of Congo
EAC	East African Community
EPC	Engineering, Procurement and construction
ERP	Energy Resources Petroleum Limited
ESRI	Environmental System Research Institute
ESSP	Energy Strategic Plan
FIBA	International Basketball Federation
FY	Fiscal Year
GoR	Government of Rwanda
GCI	GC Investment ltd
GPD	Groupe Palmeraie Developpement
GWh	Gigawatt hours
HV	High Voltage
IDP	Integrated Development Program
ILPD	Institute of Legal Practice and Development
JICA	Japan International Cooperation Agency
KIA	Kigali International Airport
KM	Kilometers
KV	Kilovolt
LPG	Liquefied Petroleum Gas
Ltd	Limited
LV	Low Voltage
MHPP	Micro Hydro Power Plant
MIS	Management Information System
MoS	Minister of State

MV	Medium Voltage
MVA	Mega Volt Amp
MW	Megawatts
NBIA	New Bugesera International Airport
NIRDA	National Industrial Research and Development Agency
NRW	Non-Revenue Water
NUC	National Umushyikirano Council
NUP	National Urbanization Policy
OSBP	One Stop Border Post
RCAA	Rwanda Civil Aviation Authority
PPP	Public Private Partnership
PwDs	People with Disabilities
RAP	Resettlement Action Plan
REG	Rwanda Energy Group
RLRC	Rwanda Law Reform Commission
RTDA	Rwanda Transport Development Authority
RUDP	Rwanda Urban Development Program
SDG	Sustainable Development Goals
SGR	Standard Gauge Railway
SDF	National Spatial Development Framework
SSP	Sector Strategic Plan
TL	Transmission Line
TV	Television
WASAC	Water and Sanitation corporation
WASH	Water, Sanitation and Hygiene
WSS	Water Supply and Sanitation
WTP	Water Treatment Plant

EXECUTIVE SUMMARY

This report highlights the key achievements realized in the Fiscal Year 2018/19 by the Ministry of Infrastructure in the sectors of Energy, Transport, Water and Sanitation as well as Urbanization and Human Settlement against sector targets that were agreed upon during Planning and Budgeting consultations in alignment with national strategic programs such as Vision 2020, NST1 and other high level decisions.

In the energy sector, the customer base grew by 146,337 new connections that are on-grid and 72,738 connected by solar home systems, which contributed to an increase from 46.7% to 51% of electrification penetration rate and 471 productive use areas were connected. In addition, power generation capacity increased to 225MW from 218MW reported by end June 2018. This resulted from the commissioned and upgraded MHPPs.

In order to improve power transmission capacities of the network, the total transmission network increased to 1,278.82 km from 1,139.62 km. This resulted from the completion of 27 km from 110kV Jabana-Mt Kigali-Gahanga; 110 km from Rulindo-Gabiro-Musha and 2.2 km from the derivation to connect Ndera Substation. Several distribution projects covering 3,939km (1,106km/MV and 2,833 km/LV) were completed and commissioned across the country.

In the Transport sector, the paved road network was improved with the rehabilitation of Rusumo – Kayonza _ Kagitumba (208km) as well as upgrading of national roads and urban roads across the country. All of these had a positive impact on the riding quality whereby paved roads network was sustained at 97% of roads in good conditions and 73% for paved and unpaved national roads combined were in good conditions.

In air transport, major airport infrastructure developments continued. The construction of Bugesera International Airport progressed to 27.52% from 16.1% reported end June 2018 and preparations for the upcoming CHOGM has started. This involves the implementation of different projects at Kigali International Airport including Expansion of Kigali International Airport South Apron, Construction of a road connecting the south apron to the main apron at KIA and KIA runway strip grading.

In Water and Sanitation sector, water production capacity was increased from 237,120m³ recorded end June 2018 to 267,660m³/day. To ensure produced water are supplied to the population,

forwarding infrastructures were prioritized and as a result water network was extended by 820.1Km (with 637.7Km constructed in rural areas and 182.4 km in urban areas) to serve 405,295 people (335,306 in rural and 69,989 in urban respectively) and 15,553 new customers were connected. In addition, 10 boreholes were constructed to serve population in the remote areas.

Under Urbanization, Human Settlement and Housing development sector, 10,521 households were relocated from scattered settlements and 970 Households from High Risk Zones in different districts and resettled into planned settlements. Existing IDP model villages were upgraded and new IDP sites were developed. To this end, KARAMA modern IDP Model Village in NYARUGENGE District was completed providing 240 dwelling units that accommodated families relocated from Mont Kigali, Jali and Rebero high-risk zones.

Sports related infrastructures were constructed; these include Kigali Arena and other 3 stadia for football that are under construction in Bugesera, Ngoma and Nyagatare districts. Kigali Arena, the most magnificent sports and events facility, is among the top 10 indoor sports venues on the continent, and the biggest (with 10,000 seats capacity) in the Eastern Africa region and is expected to host the 2021 FIBA Men's Africa Basketball Championship following Rwanda's successful bid to host the championships.

1. INTRODUCTION

This report highlights key achievements registered in the period between July 2018 and June 2019 in alignment with key sector strategic objectives outlined in the National Strategic documents such as Vision 2020, NST1, Sector Strategic Plans (SSPs) and other sector priorities as adopted in different national fora such as National Leadership Retreat (NLR), National Umushyikirano Council (NUC), Cabinet decisions and other high level commitments.

The purpose of its publication is to provide information that depicts infrastructure performance to the Public, Development partners and other stakeholders.

2. INFRASTRUCTURE SECTOR ACHIEVEMENTS FOR 2018/2019

Access to safe, reliable and cost effective infrastructure is essential to achieve the levels of growth defined under the National Strategy for Transformation (NST1) and Vision 2020. In order to attain the desired development impact of the above programs and other strategic interventions, the Ministry implemented different projects alongside the formulation of various policies and legal frameworks in the 2018/19. Key achievements per sector are provided in the following sections.

2.1.ENERGY SECTOR ACHIEVEMENTS

The primary objective is to meet the energy demand, which is imperative for Private sector development, and increasing households' access to both on-grid and off-grid electricity that is sufficient, reliable and affordable for all in order to boost economic activities and social welfare. It is planned that by 2024, universal access to electricity shall be attained 100% (52% on-grid and 48% off-grid). The status below therefore, provides an insight of how the sector performed towards this ambitious target.

2.1.1. Energy generation

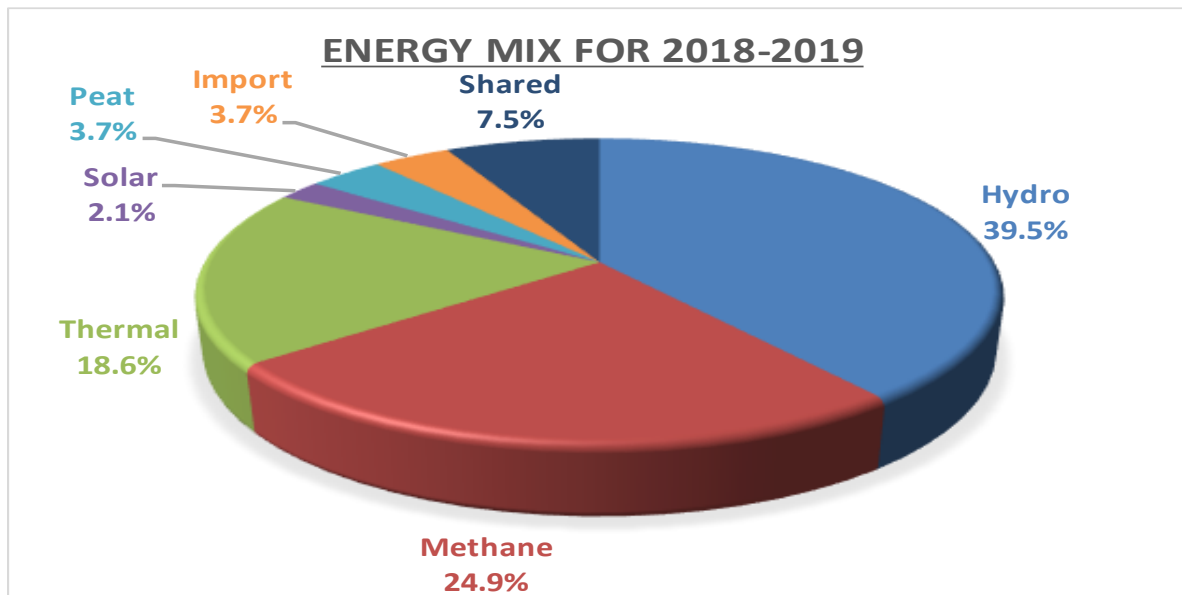
In the area of energy generation, the total installed capacity increased to 225 MW from 218 MW achieved by end June 2018. The additional generation capacity was from the following hydro power plants that were commissioned and upgraded:

- ◆ Rukarara V phase I (2MW) commissioned; RWAZA MUKO (2.6MW) commissioned
- ◆ Rubagabaga (0.45MW) commissioned; Gisenyi plant upgraded from 1.2 to 1.7 MW;

- ◆ Mukungwa II upgraded from 2.5 to 3.6 MW; Rugezi plant upgraded from 2.2 to 2.6MW;
- ◆ Gashashi plant upgraded from 0.2 to 0.28 MW.

The energy produced from diesel (thermal source) was reduced by 25.7% moving from 2015/16 to 2016/17. However, it increased by 7% in 2017/18 and by 14.5% in 2018/19 due to an increase in demand without similar increase in new commissioning of other sources of power.

Figure 1: Energy mix (2018-2019)



2.1.2. Electricity Transmission and distribution

In order to improve power transmission capacities of the network, the total transmission network increased to 1,278.82 km from 1,139.62 km. This resulted from the completion of 27 km of 110kV TL Jabana-Mt Kigali-Gahanga; 110 km of Rulindo-Gabiro-Musha and 2.2 km from the derivation to connect Ndera Substation.

Key transmission line projects under implementation include:

- ◆ Construction of 79.3km of 220kV Mamba-Rwabusoro-Rilima and 110kV Bugesera - Gahanga TL and associated SS with overall works completed at 85%.
- ◆ Construction of 119km of 220kV Single circuit Rusumo-Bugesera-Shango TL and substations with designs and site mobilization completed.
- ◆ Construction of 63.5km of 220kV Rwanda-Burundi TL and associated substations, with overall project progress completed at 25%.

- ◆ Construction of 23km of 110kV Mukungwa-Nyabihu TL and associated substations, with designs submitted and preliminary works started.

Several distribution projects covering 3,939km (1,106km/MV and 2,833 km/LV) were completed and commissioned across the country. This led to national grid extension to 7,549 km of medium voltage and 16,775 km of low voltage by end June 2019.

Key projects implemented for network performance improvement include:

- ◆ Implementation of Kigali Ring project (Jabana – Mont Kigali – Gahanga) completed in April 2019
- ◆ Construction of NZOVE substation (110/15KV/20MVA) completed in March 2019
- ◆ Rehabilitation of 6 switching substation in Kigali Civil works completed in June 2019
- ◆ Rehabilitation of 11 switching substations in Kigali which is at 85%
- ◆ Reactive power compensators which is at 98%
- ◆ Reinforcement of Kigali distribution network (Installation of MV Underground cables within Kigali City) completed at 68.7%.

The average total power losses (technical and non-technical losses) was evaluated at 19.4% compared to 19.82% recorded in 2017/18. This reduction was a result of a number of projects that were initiated to improve and strengthen grid network with support from development partners such as European Union, the World Bank, African Development Bank and JICA.

2.1.3. Access to Electricity

The government has committed to meet universal access to electricity by the year 2024. To achieve this, significant investments have been made in construction and extension of the existing network closer to end users. As a result, the customer base grew by 146,337 new connections that are on-grid and 72,738 connected by solar home systems, which contributed to an increased households' access to 51% from 46.7% and 471 productive users were connected to the grid.

2.1.4. Use of biomass energy solutions

About 80% of Rwandan Households use traditional biomass fuels for cooking and heating. However, the NST1 targets to reduce the use of these fuels to 42% by 2024. Therefore, following were key achievements realized:

- ◆ The Biomass strategy that forecasts demand and supply balance and includes action plan to deliver targets was developed. At the same time, National Biomass Programme (NBP) was adopted to present clear initiatives to promote use of efficient and alternative cooking technologies and establish sustainable biomass consumption.
- ◆ In addition, a feasibility study has been commissioned by the Ministry of Infrastructure in collaboration with European Union on clean cooking technologies in schools to determine the feasible technologies and requirements to implement a pilot project on shifting from the use of wood to cleaner cooking solution. The study is expected to be completed in the first quarter of 2019/20 and more than 400 schools are expected to benefit from the program.

2.1.5. Petroleum Storage Reserves and security of supply

Rwanda imports all its petroleum products since there is no local production. The consumption of petroleum in Rwanda stands at 23 million liters per month. This constitutes about 20% of total national imports and has been steadily increasing in the past five years, with an average annual increase of 12%.

In order to enhance the security of supply and increase petroleum strategic reserves to cover three months' supply as envisaged in ESSP, there are projects that are under implementation. The contract negotiations to lease Rwabuye fuel storage facility is ongoing with the contractor ERP; the construction of 60 million-liter national strategic reserves is ongoing and expected to be concluded by 2020; so far, 32-million-liter facility has been completed with the remaining 28 million liters expected to be completed by 2020. Currently, the national petroleum storage reserves stands at 84 Million-liter capacity.

2.1.6. Energy policy and strategic frameworks

- ◆ The Electricity law was amended to streamline governance of the electricity sector with reference to the new challenges. The amended law was adopted and published in the official gazette on 13th August 2018.
- ◆ The development of the Biomass energy strategy and action plan was concluded
- ◆ In order to optimize generation planning, the periodic update of the Least Cost power development plan was finalized
- ◆ New national electrification plan to enhance least cost electrification planning was developed

- ◆ Guidelines on solar home systems standards have been developed and published to streamline service level delivery especially in rural electrification.
- ◆ Guidelines and licensing frameworks for the development of mini grids were developed and validated by stakeholders to guide and ease private sector involvement in the development of the mini grids.

Key planned projects in the energy sector for FY 2019/2020

- ◆ Reinforcement of Kigali distribution network (8 Cabins)
- ◆ Construction of 30kV line from KABARONDO to NASHO irrigation project in Eastern Province
- ◆ Construction of 79.3 km of 220kV Mamba-Rwabusoro-Rilima and 110kV Bugesera - Gahanga TL and associated SS
- ◆ Construction of 119km of 220kV Single circuit Rusumo-Bugesera-Shango TL and substations
- ◆ Construction of 63.5km of 220kV Rwanda-Burundi TL and associated substations
- ◆ Construction of 23 KM of 110kV Mukungwa-Nyabihu TL and associated substations

2.2.TRANSPORT SECTOR ACHIEVEMENTS

Under NST1, the transport sector is expected to play an important role in increasing the domestic and international connectivity. The interventions made in the Transport sector focused on the key areas of land transport, inland transport, air transport, trans-border infrastructure development and regulatory frameworks. Here below shows an overview of achievements recorded during the Fiscal Year 2018/2019.

2.2.1. Land transport

Land transport encompasses the upgrading, rehabilitation and maintenance of National roads, districts roads (class 1 & 2), feeder roads development and unclassified roads as well related public transport services. Moreover, the country is also planning to have a railway infrastructure in few years to come that will reduce transport costs on exports and imports services in the region.

2.2.1.1. Road transport

Unpaved and paved national and urban roads were upgraded and rehabilitated to improve internal mobility and international connectivity. The total paved road network was extended to 1,973 km as shown in table below from 1,930.4km reached by end June 2018. As a result, the riding quality for national paved roads network was sustained at 97% of roads in good conditions; national paved and unpaved roads combined recorded a 73% of roads in good conditions (according to the Road Condition Survey carried in 2018).

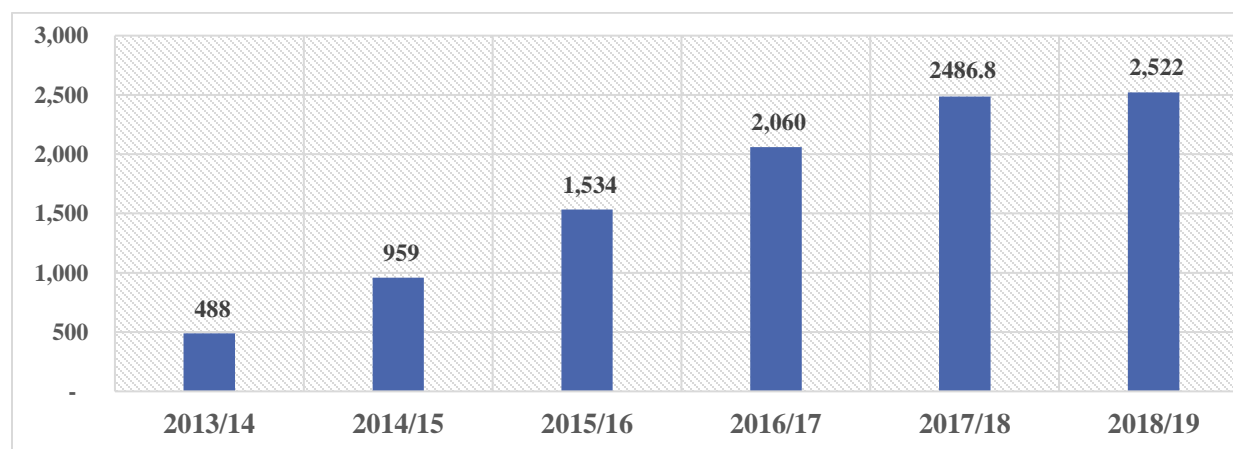
Table 1: Paved road network

Roads category	Km
National roads paved network (asphalt)	1,390.5
District roads Class 1 asphalt paved	106
District roads Class 2 asphalt paved	131.92
Unclassified roads asphalt paved (CoK) and Secondary Cities	345
Total road network	1,973.42

Source: RTDA administrative data

Linking rural communities and productive use areas to market was also prioritized whereby 35.2km of feeder roads were upgraded and rehabilitated to gravel roads in Karongi and Nyamasheke districts. Moreover, there are 450km planned to be constructed in the FY 2019/20 with the introduction of chip seal surfacing (253km) in Nyabihu, Gakenke, Nyaruguru, Nyagatare, Gatsibo and Rutsiro districts. Contracts are signed and design services are ongoing.

Figure 2: Feeder roads trend for the period from 2013/14-2018/19



Source: RTDA Administrative data

Upgrading of unpaved national roads to paved roads

The key projects under implementation include:

- ◆ Additional works of 19km on Kivu belt lot 7: Rubavu-Gisiza Road Upgrading Project with overall works progress completed at 24%. These include:
 - ✪ Lot 1: Access road (tarmac) to Murunda Hospital (4.2km),
 - ✪ Lot 2: Bralirwa-Burushya Tarmac Road (4.1km),
 - ✪ Lot 3: Bralirwa-Rubavu Tarmac Road (Marine) (6.2km),
 - ✪ Lot 4: Access Road to Symbion Methane Gas (4.2km)
- ◆ Base-Rukomo (51km) in the Northern Province completed at 90.50%.
- ◆ Rukomo-Nyagatare (73km) in the Eastern Province completed at 31.96%
- ◆ Huye-Gisagara (13.8km) in Southern Province completed at 31.31%
- ◆ Huye-Kibeho-Munini (66km) in Southern Province that is at preparatory work stage
- ◆ The construction works for 54 Km of roads in CoK that is completed at 86.1%.

Roads rehabilitation projects

The rehabilitation works continued on the following roads and works progress was as follows by end June 2019:

- ◆ Huye-Kitabi Road (53km) rehabilitation works completed at 89.53%
- ◆ Kagitumba-Gabiro Road (60km) rehabilitation works completed at 85.72%
- ◆ Gabiro-Kayonza Road (56km) rehabilitation works completed at 99.21%
- ◆ Kayonza-Rusumo Road (92km) rehabilitation works completed at 71.63% (after approving the structure reinforcement).

Multi-year maintenance of paved roads

About 771.8 km were under multi-year maintenance program and key actions implemented include putting in place crush barriers, repairing road shoulders, installation of signposts, road markings and installation of other safety features. In summary, 25km of crush barriers were installed and 90% road safety features were constructed on National paved roads.

The maintained roads include:

- ◆ Kigali-Huye-Akanyaru Road (157km); Rusizi-Bugarama Road (46km);
- ◆ Crete Congo-Nil-Ntendezi Road (30km); Kigali-Kayonza Road (74.8km);

- ◆ Kicukiro-Nemba Road (61km); Muhanga-Karongi Road (78km);
- ◆ Muhanga-Ngororero-Mukamira road (98 Km); Kigali-Gatuna road (78 Km);
- ◆ Kigali-Musanze road (82 Km); Musanze-Rubavu Road (67 km).

Maintenance of unpaved roads and bridges

The following unpaved roads and bridges were maintained and its implementation status is provided as follows:

- ◆ Giticyinyoni-Ruli-Rushaki-Gakenke (68.7Km) completed
- ◆ Kaduha-Buhanda-Kirengeri (39km); completed at 99.1%
- ◆ Mukunguri-Rugobagoba (19km); completed at 63%
- ◆ Kibangu-Bakokwe-Nyabarongo (28.5km) with overall works progress completed at 61%
- ◆ Kabuhanga-Kinigi (48.6km); with works progress completed at 80%
- ◆ Maintenance of Rubagabaga and Satinsyi bridges where the overall physical progress is at 37%.

2.2.1.2. Public transport services

In a bid to improve public transport services and promote green transport to cater for the needs of exponentially growing population, the feasibility study and preliminary design for Kigali Bus Rapid Transit (BRT) project in the City of Kigali was undertaken. The final study report was validated by Stakeholders and City of Kigali is mobilizing funds for project implementation.

The Ministry of Infrastructure also, through Esri Rwanda Ltd, completed a full-scale study on road and public transport accessibility in Rwanda. The study was conducted in a response to establishing baseline for the two SDG indicators related to transport accessibility. The study results revealed that the rural population who live within 2 km of an all-season road is **52%** (5,866,360 people) of the national population (11,298,376 people) and **63%** of the rural population (9,321,721 people).

Regarding motorcycle transport reform, the Ministry of Infrastructure jointly with its stakeholders held a number of sessions to streamline motorcycle transportation in Rwanda. Among key actions undertaken include: Re-organization of motorcyclist's cooperatives; online licensing and individual authorization; legislation of motorcycle transport as well as establishment of an ICT monitoring platform to control the operation of motorcycles.

2.2.1.3. Freight transport and logistics

Freight transport and logistics industry has a considerable impact on economic development of the country. To ensure proper engagement of both policy makers and private sector, the GoR has initiated the following:

- ◆ Elaboration of regulations and guidelines for freight transportation in Rwanda;
- ◆ Development of a law governing freight transport.

2.2.1.4. Railway transport

The long waited railway transport infrastructure is shaping up as the design review and updating of feasibility study for Isaka-Kigali Standard Gauge Railway (SGR) was completed. Rwanda and Tanzania are negotiating the financing model of this project and railway corridors demarcation works are expected to start in FY 2019/20.

2.2.2. Inland water transport

Maritime infrastructure development on Lake Kivu is ongoing. The contract for design review and ports works supervision was signed. The tender document for construction of port facilities in Rusizi and Rubavu Districts and installation of navigation aids was launched and bids evaluation completed. The contract negotiation is expected to start in August 2019 and the entire project will take 18 months after signing of the contract.

The government has also ordered the supply of two high-speed vessels (i.e. with the capacity to carry 30 persons and 150 persons respectively) to operate in Lake Kivu. It is expected that these vessels will start operating in September 2019 and January 2020 respectively and therefore, private sector will be mobilized to bring in more vessels upon completion of ports construction works.

2.2.3. Trade facilitation infrastructure

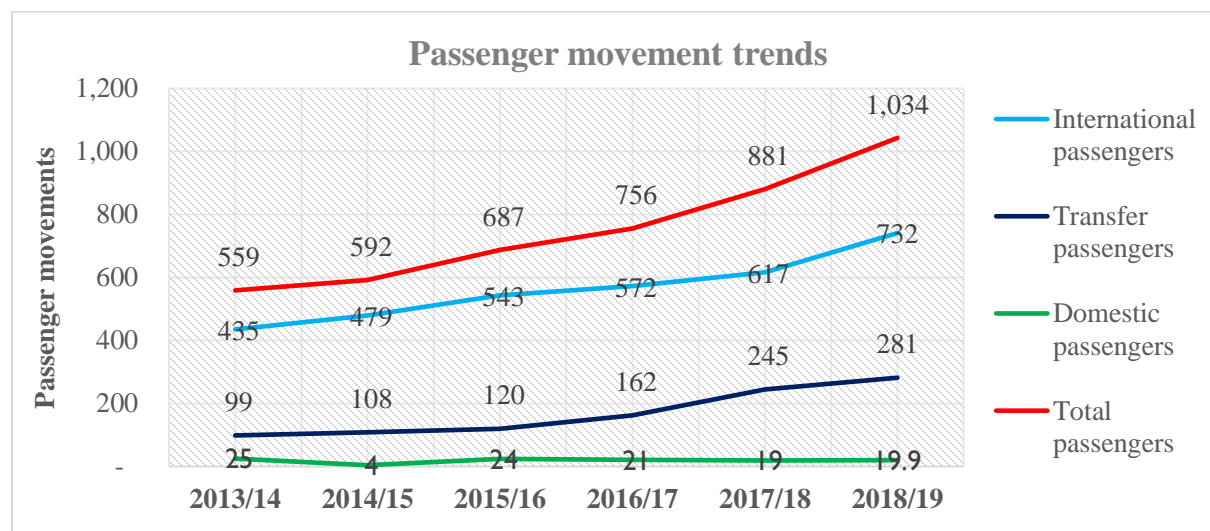
In order to reduce Non-Tariff Barriers and trade costs with Rwanda's neighboring countries, the government continued to put in place required physical infrastructure to facilitate trade in the region. In this context, the construction of Gatuna OSBP to reduce border-crossing time along the Northern Corridor was completed at 97%.

2.2.4. Air transport

Rwanda being largely land locked, air transport has become an essential driver of the economic, social and cultural development and has totally changed the way businesses are conducted. Rwanda's aviation industry continues to see a tremendous growth in different aspects, with the anchor on the Government policies that have set aviation as one of the key pillars and a priority sector for the economic growth of the Country. Rwanda's connectivity to the rest of the world has continued to increase through new routes opening by the National carrier as well as other airlines that have introduced Kigali in their networks.

Therefore, overall passenger movements for all airlines combined increased from 880,704 in 2017/2018 to 1,033,935 passengers in 2018/2019, recording an increase of 17.4%. The increase was driven by the major events hosted in Rwanda that attracted more passengers; also connecting passengers has been increased considerably as shown below:

Figure 3: Trend analysis for passenger movements (in thousands)

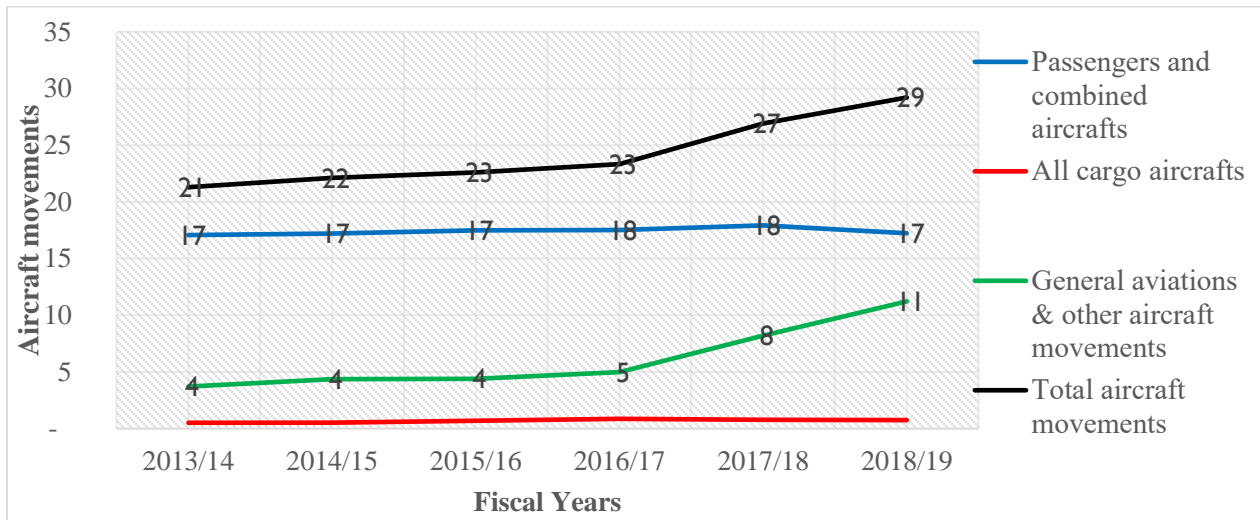


Source: RCAA Administrative data, July 2019

Aircraft movements

Over the fiscal year 2018/2019, aircraft movements have increased from 26,926 movements in 2017/2018 to 29,209 movements in 2018/2019 which is equivalent to an increase of 8%. This increase is mainly recorded in international general aviation with an increase of 16%. On the other hand, International scheduled and recorded a decrease of 4% which is due to Rwanda's temporarily cancellation of some of its international flights while three of its aircrafts were undergoing maintenance.

Figure 4: Aircraft movement trends (thousands)

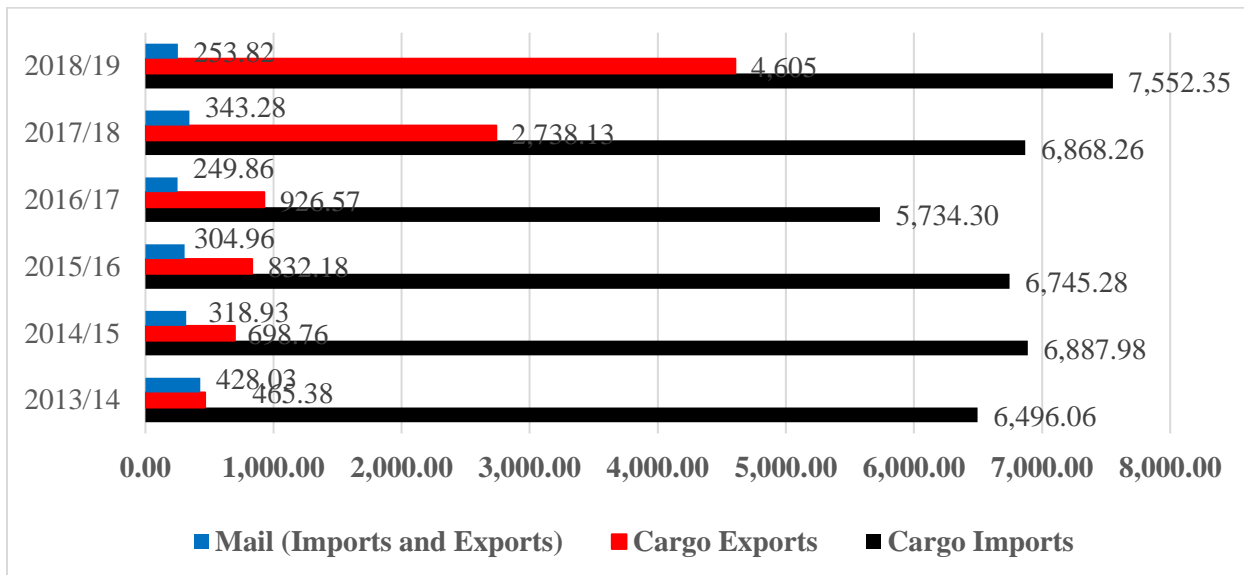


Source: RCAA Administrative data, July 2019

Cargo tonnage

As indicated in figure 5, the overall cargo handled at KIA has marked an increase of 25%, from 9,949.67 tons in 2017/2018 to 12,410.95 tons in 2018/2019. On the side of exports, an increase of 66% compared to 2017/18 exports was registered. This growth is driven by the increase in exportation of made in Rwanda products, Foods and Beverages plus minerals. On the other hand, imports registered an increase of 8%.

Figure 5: Trend analysis for cargo movements



Source: RCAA Administrative data, July 2019

RwandAir passenger numbers and fleet expansion

The year 2018/2019 was a success for the national carrier considering the fact that there was substantial growth in terms of passenger numbers, routes expansion and airport expansion. The passenger numbers reached 1,151,300 by end June 2019 compared to 926,571 passengers recorded by June 2018. This resulted from an increase in the number of destinations to 29 from 26 destinations of 2017/18. The added destinations in 2018/19 include Kinshasa (DRC), Guangzhou (China), and Tel-Aviv (Israel) and it is planned to add more destinations in 2019/2020.

Physical infrastructure development

Major airport infrastructure developments continued at KIA and Bugesera International Airport. Therefore, KIA transit lounge was expanded; KIA Airfield Ground Lighting System (AGL) were upgraded from CAT I to CAT II, and construction of Bugesera International Airport progressed to 27.52% from 16.1% reported end June 2018. Moreover, preparations for the upcoming CHOGM has started. This involves the implementation of different projects at Kigali International Airport including Expansion of Kigali International Airport South Apron, Construction of a road connecting the South Apron to the main apron at KIA, and KIA runway strip grading.

2.2.5. Transport sector policies, strategies and laws

The following are the ongoing policies, strategies and laws implemented in the FY 2018/19:

- ◆ Draft law governing water transport, Revised traffic law, and Law governing public and freight transport on road that are under review at Rwanda Law Reform Commission.
- ◆ Ministerial Order N^o. 05/MoS/Trans/018 of 06/12/2018 amending Ministerial Order No. 04/MoS/Trans/015 of 08/04/2015 determining the model of National Driving License was approved.
- ◆ Ministerial instructions N^o 01/MoS/Trans/019 of 25th June 2019 determining monthly lump sum and other fringe benefits for Government officials and people's representatives under the fleet policy of GoR and development of a digitized civil servants' travels management system were approved.
- ◆ Ministerial Order N^o 01/CAB.M/019 of 06/02/2019 amending Ministerial Order N^o 04/CAB.M/08 of 24/07/2018 establishing civil aviation regulations.
- ◆ Law N^o007/2019 of 13/04/2019 establishing Rwanda Civil Aviation Authority.
- ◆ Amended laws regarding the Civil Aviation Security.

- ◆ Final draft National Transport Policy and Strategy has been approved by Senior Management and was sent to Rwanda Law Reform Commission (RLRC) for legal opinion prior to submission to Cabinet for consideration.
- ◆ New strategy for construction and maintenance of low traffic volume unpaved roads using chip seal surfacing (traffic < 200 Vehicle/day) was developed and was approved by the Cabinet on 3rd April 2019. Low traffic volume roads are predominantly feeder, urban and neighborhood roads.
- ◆ **The strategy for upgrading neighborhood roads using chip seals surfacing:** The technical and financial model for sealing unpaved neighborhood roads in the City of Kigali was developed.
- ◆ Motorcycle management strategy was approved by the Cabinet on 30th April 2019
- ◆ Developed the law authorizing ratification of 31 BASAs between Rwanda and other countries.
- ◆ In implementing the provisions of the Chicago Convention and the Yamoussoukro Declaration on liberalization of Air Transport services in Africa, Rwanda has signed BASA with the following countries: *China, Mozambique, Italy, Burkina Faso, Bahamas, Comoros, Gambia, Greece, Iceland, Namibia, Qatar, Saudi Arabia, Seychelles, Sierra Leone, Spain, DRC, Equatorial Guinea, and Israel.*
- ◆ Signed MoU and Initialed BASAs with the following Countries: *Lesotho, Cambodia, Tunisia, Chile, Colombia, Czech Republic, Dominican Republic, Finland, Guyana, Jamaica, Luxembourg, Portugal, Thailand, Australia, Cambodia, Oman, Republic of Korea, and the UK.*

Key Planned projects for land, Inland and Air Transport in FY 2019/20

A. Roads upgrading projects

- ◆ Base-Butaro-Kidaho Road (63 Km) in the Northern Province
- ◆ Rukomo-Base (Lot 2:51.5km) in the Northern Province
- ◆ Nyagatare-Rukomo Road (Lot 1:73.3 Km) in the Northern & Eastern Provinces
- ◆ Ngoma-Nyanza (Lot 2: Kibugabuga-Gasoro) in the Eastern & Southern Provinces.
- ◆ Huye-Kibeho-Ngoma-Munini Road (68km) in the Southern Province
- ◆ Huye-Gisagara road (13.8km) and Nyamagabe – Murambi road (2.8km) in the Southern Province.

B. Roads under rehabilitation

- ◆ Huye-Kitabi Road (53km) in the Southern Province
- ◆ Kagitumba-Kayonza-Rusumo Road in the Eastern Province

C. Air transport

- ◆ The construction of Bugesera International Airport (BIA)
- ◆ Expansion of Kigali International Airport South Apron,
- ◆ Construction of a road connecting the South Apron to the main terminal building
- ◆ KIA runaway strip grading
- ◆ Expansion of arrival terminal
- ◆ Upgrading of Kamembe airport

D. Inland water transport

- ◆ Development of inland Ports on Lake Kivu in the Western Province.
- ◆ **Navigability of Rusizi River** to connect Lake Kivu and Lake Tanganyika through Rusizi River.
- ◆ **Navigational Route between Lake Victoria and Mediterranean Sea through River Nile (VICMED):** This is one of the Presidential Infrastructure Champion Initiatives (PICI) under the African Union Agenda. Rwanda will connect to the route via Akagera River.

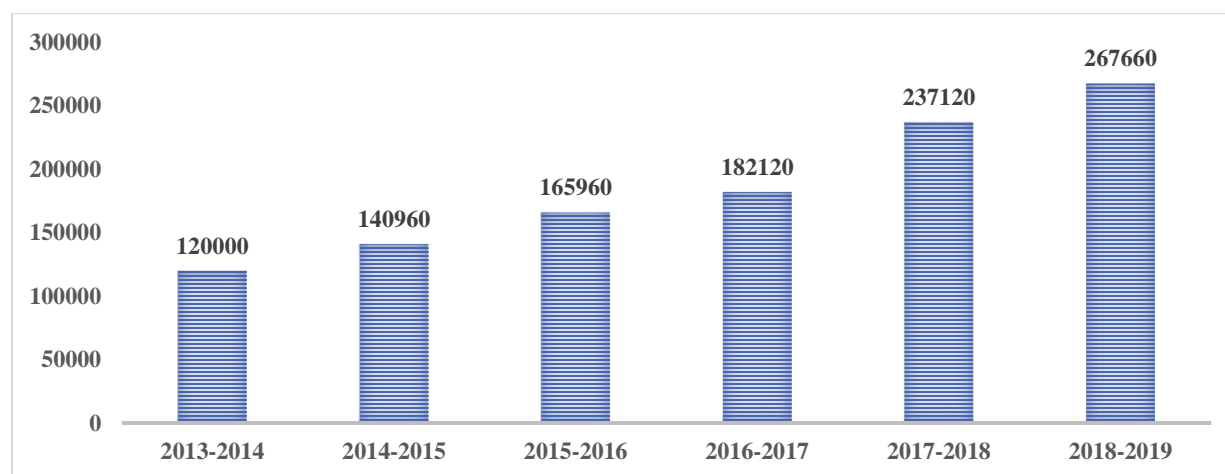
2.3.WATER AND SANITATION SECTOR ACHIEVEMENTS

Under NST1, water and sanitation services are expected to be supplied to both urban and rural households to achieve universal access by 2024. To reach this ambitious target, the sector continued to implement projects and programs that are aligned with this objective. Here below are stated key achievements registered in the sector.

2.3.1. Water production

Water production is among the key components for the sustainable water service delivery. To date, 23 water treatment plants and water source are operational. The total designed production capacity of the 23 WTPs in June 2019 reached 267,660m³/day from 237,120m³/ day after upgrading Nzove I production capacity to 40,000m³/day and considering Yungwe, Bikore and Mizingo water treatment plants and completion of Kanyonyomba water treatment plant.

Figure 6: Trend analysis for water production capacity from 2013/2014 to 2018/2019



Source: WASAC Administrative data

Moreover, there are water production projects that are ongoing with good progress and are planned to be completed in the fiscal year 2019/20. These include

1. Construction of Gihira water treatment plant with production capacity of 15,000 m³ per day with works completed at 22%
2. Construction of Kanzenze water treatment plant of 40,000m³ per day with works progress at 50.1%.

2.3.2. Access to clean drinking water

To ensure produced water are supplied to end users, forwarding infrastructure were as well prioritized. In this context, during 2018/2019 a total number of 820.1Km (637.7 Km in rural and 182.4 km in urban) were constructed. This led to serving 405,295 people across the country (335,306 in rural and 69,989 in urban respectively) and 15,553 new households were connected in urban areas.

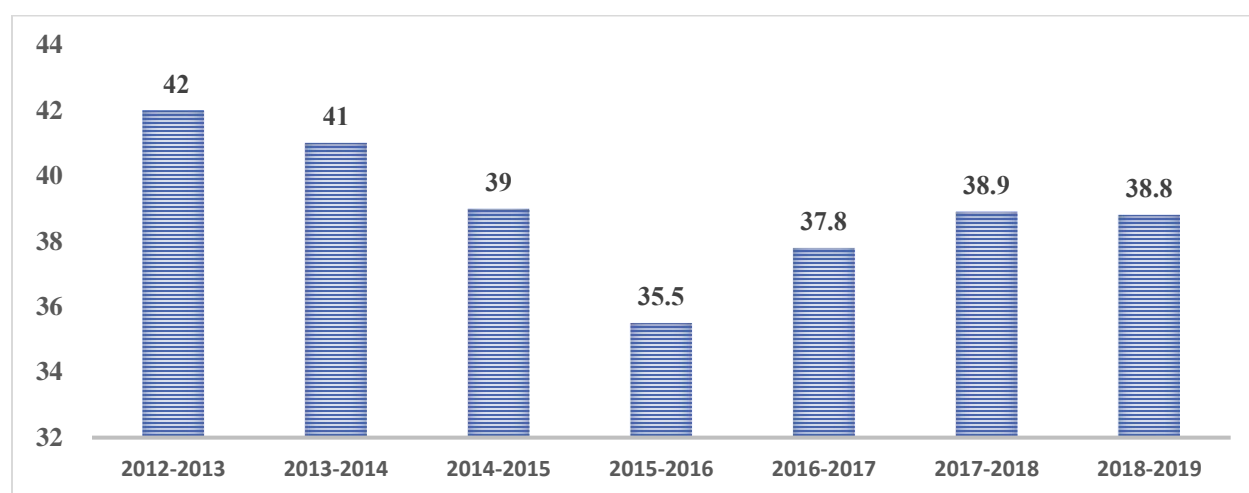
To respond to the needs/ demand of cities in particular, 568 km are under implementation in Kigali with overall works progress standing at 7.6%. In order to boost the development of Secondary cities 1,112km of rehabilitation and extension projects are ongoing with works progress completed at 2%.

In addition, 10 boreholes were constructed to serve the population in the remote areas and 44 nonfunctional rural water supply systems are under rehabilitation with overall works progress completed at 88%.

2.3.3. Non-Revenue Water reduction

More efforts were concentrated on reducing progressively NRW from 42% end 2013 to 35% by 2018/19; however, slight reduction from last year was observed as shown in the below figure due to delays in implementing agreed strategies. Nevertheless, there are high commitments to considerably reduce non-revenue water in the coming fiscal year. The following are the key strategies to ensure reduction of non-revenue water: *Monitoring of pressure in water network; Leakage Survey and Control; Inspection of Big consumers installations; Acquisition and installation of bulk and Automatic meter reading; Replacing old and faulty meters.*

Figure 7: Chart in percentage of water loss period from 2012/13-2018/19



2.3.4. Sanitation projects

Concerted efforts were as well directed towards improving sanitation services and the following were achieved during the period 2018-2019:

- ◆ Construction of 12 model public toilets completed at 70%
- ◆ Construction of 4 model latrines in schools, Contract for works signed, pending that of supervising firm
- ◆ Construction of Kigali centralized sewerage system with RAP completed at 40% and contractor recruitment is ongoing.

2.3.5. Water and Sanitation policies, guidelines and strategic frameworks

There were major policy actions performed during 2018/19;

- ◆ Sewerage connection guidelines development is ongoing and an interim report is available.

- ◆ Operationalization of MIS to Monitor and Evaluate access and sustainability of WASH Services was piloted in Ruhango and Rulindo districts and the plan is to have the system operational in all districts in the FY 2019/20.

Key planned projects for FY 2019-2020

- ◆ Construction of Gihira II WTP to increase water production in Rubavu Town (15,000m³/d)
- ◆ Construction of Kanzenze WTP (40,000m³/day) to increase water production in Kigali and Bugesera
- ◆ Construction of Ruhunde - Rushara Water supply system (19.6 km)
- ◆ Construction and extension of the water supply system (10Km) to supply Rwamagana Industrial park & Ntungwa.
- ◆ Construction of Nyabizi-Rusarabuye Water Supply System (14km)
- ◆ Construction of 340Km and rehabilitation of 216km in six secondary Cities and peri urban areas; Construction of new main pipe of 11km from Nzove to Ntora (Gisozi)
- ◆ Extension of 19km Kanzenze-Karumuna water supply project
- ◆ Construction of 4 Faecal sludge treatment plants and 4 Landfills in Musanze, Rubavu, Karongi and Rusizi districts.
- ◆ Completion of 4 model latrines and construction of 10 New Model Latrines for Schools
- ◆ Extension of 127 km of water network in Gicumbi District; 34km of water network in Burera District; 10km of water network in Rwamagana District; 15km of water network in Gisagara District.

2.4.URBANISATION AND HUMAN SETTLEMENT SECTOR

Under urbanization, Housing and Human settlement sector, notable achievements were registered in the following key sector areas:

- ◆ The relocation of households from scattered settlements and high risk zones;
- ◆ Provision of basic infrastructure for affordable housing; Upgrading of IDP Model villages;
- ◆ Provision of basic infrastructure in six secondary cities through the implementation of RUDP project; Upgrading of informal settlement in CoK;
- ◆ Construction of government buildings and overall public assets management;
- ◆ Review of legal and strategic frameworks.

2.4.1. Urban settlement planning and development

The sector continued to put more efforts in addressing unplanned urbanization and the informal settlements, coupled with the housing backlogs and as a result, the following were achieved:

- ◆ Under the support of RUDP phase I, 28.3 Km of Urban Asphalt roads and 13.3 Km of Standalone drainage were completed and officially inaugurated. RUDP Phase II Designs were completed, the plan is to develop over 31 km of urban asphalt roads and 3.5 km of standalone drainage including upgrading of informal settlement sites in six Secondary Cities (SCs).
- ◆ Upgrading of urban informal settlement has started in many urban areas countrywide. The largest ongoing project is the upgrading of 86Ha in Agatare, one of the oldest densely populated areas with a population of almost 19,000 in Nyarugenge District with overall project progress completed at 12%.
- ◆ 4 Local Urban Development Plans for emerging centers were developed and approved by concerned District councils. These include: Ruri Center in Gakenke, Jenda Center in Nyabihu, Nyagasambu Center in Rwamagana and Karambi center in Huye district.
- ◆ To ensure effective implementation of developed Master plans, Master plans implementation audit was conducted in 14 Districts (Gasabo, Nyarugenge, Kicukiro, Huye, Muhanga, Rusizi, Rubavu, Musanze, Gicumbi, Nyagatare, Bugesera, Nyamasheke, Karongi, Kamonyi) and City of Kigali (CoK). Recommendations were formulated and shared to concerned districts for compliance.
- ◆ The review of CoK, Nyagatare, Rubavu and Muhanga master plans was completed and initiatives to review Musanze, Rusizi and Huye master plans were started.
- ◆ Building Permit Information System (BPMIS) was scaled up in 6 more districts (Rwamagana, Ngoma, Bugesera, Kamonyi, Karongi and Gicumbi district) joining 9 districts that are already using the system.

2.4.2. Rural Settlement planning and development

- ◆ In total, 10,521 were relocated from scattered settlements whereas 970 Households were relocated from High Risk Zones in different districts.
- ◆ New IDP Model villages were developed while the existing ones were scaled up by adding up the remaining pillars. Remarkably, KARAMA IDP Model Village was developed in NYARUGENGE District and inaugurated, providing 240 dwelling units that

accommodated families relocated from Mont Kigali, Jali and Rebero high-risk zones. The village is also equipped with several other pillars such as school, market, green houses for urban agriculture and a poultry facility.

- ◆ The other IDP Model villages in the Corridor of Nyagatare, Gicumbi, Musanze, Burera and Nyaruguru Districts were constructed. The overall works progress for the construction works is estimated at 98% for all IDPs under this category: (Musanze/ Nyejoro site at 100%; Burera/ Kagano site at 100%; Nyagatare/ Shonga site at 100% (pillars); Nyarugenge/ Karama site at 99% and Gicumbi/ Rubaya site at 52%).
- ◆ Rural settlement zoning plans and site maps for 6 Districts (Nyanza, Huye, Ngororero, Rwamagana, Kirehe and Kamonyi Districts) were elaborated and validated.

2.4.3. Affordable housing development

Affordable housing program implementation is perceived as the sustainable solution to respond to the danger of informal settlements. The main objective for this fiscal year was to provide basic infrastructure to facilitate the development of different sites and mobilize investors in affordable housing. From this perspective, different projects were implemented and achievements made are as follows:

- ◆ **Busanza II (7Ha):** Civil works drawings and assessment were completed at 100%
- ◆ **Busanza I:** Houses construction works are at 51.7 %, and road grading was completed at 100%
- ◆ **Ndera (19Ha):** Draft designs were completed and are under review by the Developer. The development of infrastructure is still on hold until the Investor approves the designs.
- ◆ **Abadahigwa /Kabuga II (1Ha):** Road grading works completed at 100%
- ◆ **Batsinda II:** Houses construction works progress completed at 15.9% and road grading completed at 100%
- ◆ **Masaka (5Ha):** Road grading completed at 100%
- ◆ **Rugarama I (14Ha):** Road grading completed at 100%
- ◆ 4 investors (GPD, GCI, CHL & Abadahigwa) are already mobilized,
- ◆ **Secondary cities:** 4 investors who submitted bids for Musanze, Rubavu, Nyagatare, Rwamagana and Muhanga are under evaluation.

2.4.4. Government Assets Management

During 2018/2019, different projects linked to Government assets and office space management were implemented as highlighted here below:

- ◆ **Administrative Office Complex:** Construction works were completed at 100% and inaugurated.
- ◆ **Kigali Arena:** Construction works were completed at 100% (with 10,000 seats capacity) and inaugurated.
- ◆ **Bweyeye Boarder Post:** Construction works were completed at 100%
- ◆ **High Commercial Court Building:** Construction works were completed at 95%.
- ◆ **National archives building:** Construction works were completed at 47%
- ◆ **District Stadia:** Overall construction works were completed at 72%
- ◆ In addition, technical support was provided in the ongoing construction works of Hospitals (Byumba, Munini, Gatonde, Gatunda, and Nyabikenke), ILPD building, Huye ICT building rehabilitation, Huye NIRDA Laboratory and Administration block renovation, NIRDA_Banana Community Processing Center (CPC) and the rehabilitation and extension of Court Buildings.

2.4.5. Asbestos eradication

100,604m² of Asbestos Containing Materials (ACM) were safely removed from public and private buildings this fiscal year 2018/2019. The cumulative total of Asbestos removed so far stands at 1,003,674.24m² which accounts for 62%.

2.4.6. Policy, legal and strategic frameworks

- ◆ Reviewed the Ministerial Order determining categorization of buildings and procedures for applying for and granting building permits.
- ◆ Reviewed the Ministerial Order determining urban planning and building regulations with four annexes that includes Green Building Minimum Guidelines.
- ◆ Elaborated PPP Guidelines for affordable housing development and Rental Housing Strategy in addition to five Informal settlement upgrading implementation Manuals.
- ◆ Updated SDF and its strategic action plan with decision room installed and operational. The tool is to facilitate the implementation of National Urbanization Policy (NUP) adopted in December 2015.

Key planned projects for FY 2019/2020

- ◆ Completion of Commercial Court Building;
- ◆ Completion of Construction of District Stadia (Bugesera, Ngoma, and Nyagatare).
- ◆ Construction of National Archives building;
- ◆ Continue with Agatare informal settlement upgrading
- ◆ Continue servicing affordable housing sites with basic infrastructure;
- ◆ Construction of IDP Model Villages at the borders: Nyagatare, Gicumbi, Burera & Nyaruguru, phase II
- ◆ Local urban Development Plans for emerging centers elaborated (Rusizi: Ruganda, Muhanga: Remera, Kayonza: Rwinkwavu, Burera: Kirambo).
- ◆ Coordinate the relocation of households from High Risk Zones to planned settlements.
- ◆ Master Plan Implementation audit, monitoring and enforcement done in 15 Districts.
- ◆ Conduct studies for upgrading informal settlement in 10 sites of CoK.

3. MAINSTREAMING CROSS CUTTING ISSUES

Environment and climate change

The implementation of infrastructure sector projects has a direct impact on the environment; therefore, it is important to take into consideration environmental aspects while planning for infrastructural projects. In this context, projects have undergone environmental impact assessments and the environment component of the sector was monitored on quarterly basis.

The extensive awareness campaigns to promote clean cooking technologies (use of LPG, Improved Cook Stoves) coupled with the dissemination of improved carbonization techniques were conducted and by end June 2019, all 30 districts were covered. Promotion of LPG use mainly in large institutions such as schools, prisons, military barracks and urban areas of Kigali city, secondary cities and other urban areas was also prioritized.

Sensitization on road construction projects during which people were sensitized on environmental protection and disaster recovery and preparedness. For instance, 34,003 people were sensitized on environmental protection and 37,969 trees were planted in 2018/19.

Regional integration

Connectivity is central to the country's medium and long-term development agenda also aligned with the EAC agenda. Rwanda has prioritized rehabilitation and widening of Kagitumba Kayonza-Rusumo road (208km), railway and inland water transport development and trans-border infrastructure in 2018/19. Along with Northern Corridor and Central Corridor partner states are accelerating the implementation of selected regional projects including the Standard Gauge Railway (SGR) along the Northern and Central Corridors, completion of trans border infrastructure such as Gatuna and Rusizi I (on-going) One Stop Board Posts (OSBPs).

Gender

The recent midterm review indicated that women were represented within the grievance redress committees established in four Districts where feeder road projects were implemented. In addition, women constituted 43% of Local Community Associations (LCAs) that received training on maintenance for rehabilitated roads. Regarding HIV/AIDS sensitization, 15,527 women benefited from counseling and awareness creation activities on Base-Rukomo road upgrading project.

Capacity building

Capacity building initiatives have been undertaken across sectors:

- ◆ 338 staff were trained in Technical operations, Oracle and management, in procurement, revenue collection and customer care, legal and governance related matters under WASAC and 1,212 targeted participants were trained on WASH MIS data collection and entry.
- ◆ OSCs, Sector land Managers and those from private sector were trained on urban management tools (NUP, Building code, master plan implementation).
- ◆ 50 staff were trained in different domains such as Project management, Road maintenance and management; Road transport sector capacity building; International training program on climate change, mitigation and adaptation for East African 2018; Asset management and new financial reporting and e-procurement; Bridge design and construction; Quality control and quality assurance; and Computer aided design.
- ◆ In an effort to build a critical mass of skilled Rwandans in energy sector as a contribution to the National Skills development programs, 60 interns were offered internships in different domains (33 professional internships & 27 academic internships). In addition, 8 staff were trained on first-aid skills, 48 staff trained on fire-fighting.

- ◆ In air transport, 140 staff were trained in the Procedures for Air Navigation services – Aircraft operations; Aeronautical Message Handling System (AMHS) operations; Instrumental Landing System (ILS) maintenance; Basic Aeronautical Information Exchange Model (AIXM); Advanced Meteorological Technicians; Artificial intelligence and Quality assurance.

Disability and social inclusion

Key interventions were to legislate and enforce accessibility to infrastructure for persons with disabilities. This was taken into consideration during the construction of bus shelters with facilities for persons with disabilities and four (4) new public transport buses with reserved seats for persons with disabilities were acquired in 2018/19.

Housing instructions/ regulations were developed and validated to ensure disabled people are facilitated to have access on the public buildings. For instance, Ministerial order n° 03/cab.m/019 of 15/04/2019 determining urban planning and building regulations (with Rwanda Building code version 2 included) was validated. This code outlines the required facilities for People with Disabilities (PwDs) that have to be part and parcel for the buildings under construction and a checklist for building permit application that cater for PwDs facilities was developed.

3. MAIN CHALLENGES & PROPOSED SOLUTIONS

Key Challenges:

- ◆ Budget constraints led to partial and delays in execution of projects.
- ◆ Study adjustments, unexpected additional works and extension of contracts affected projects completion timelines.
- ◆ Pending expropriation issues have greatly impeded timely implementation of different projects.
- ◆ Long procurement processes associated with appeals, non-objection process delayed the implementation of different programs/projects.

4. LESSONS LEARNT

- ◆ Involving stakeholders as earlier as possible is very essential especially in planning process to ensure successful implementation;

- ◆ Improved coordination and communication is very critical to ensure effective implementation of projects;
- ◆ Effective and timely Monitoring and Evaluation is believed to help in the successful projects implementation;
- ◆ Increased ownership by projects implementers and stakeholders has raised projects execution rate and this needs to be sustained;
- ◆ Lastly, improving on contract management is perceived to be the key element that shall lead to improved projects performance in the FY 2019/20.

5. CONCLUSION

This report highlights the key achievements realized in the infrastructure sector over the course of fiscal year 2018/19.

The concerted efforts were guided towards building sustainable infrastructure through roads upgrading, rehabilitation and maintenance; Increasing people's access to clean Water and Sanitation services in both rural and urban areas; Increase people's access to electricity through the implementation of power generation and distribution projects; Urban development planning and rural settlements which contributed to the remarkable achievements highlighted in this report.

However, some of the projects were not fully implemented due to financial issues/budget constraints; poor performance by some contractors, persistent expropriation issues as well as technical issues.

Despite of the above-mentioned challenges, the sector is committed to build on the achievements realized and continue to implement policies, programs and strategies to achieve NST1 targets in close collaboration with all stakeholders involved in the sector. Therefore, resilient and concrete measures are put in place to guarantee improved performance across all the infrastructure sectors in the fiscal year 2019/20.



REPUBLIC OF RWANDA