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**INFRASTRUCTURE  
SECTOR ANNUAL REPORT  
FOR FY 2016/17**

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## LIST OF ABBREVIATIONS

7YGP:	Seven Year Government Programme
ACM:	Asbestos Containing Materials
AfDB:	African Development Bank
AMO:	Approved Maintenance Organization
BoQ:	Bills of Quantity
BPMIS:	Building Permitting Management Information System
CACRO	Customer Accounts Conformity and Recovery Operation
CASSOA:	Civil Aviation Safety and Security Oversight Agency
CHAN:	African Nations Championship
CMS:	Customer Management System
CoK:	City of Kigali
COMESA:	Common Market for Eastern and Southern Africa
EAC:	East African Community
EARP:	Electricity Access Rollout Program
ECD:	Early Childhood Development
EICV:	Integrated Household living Conditions survey
ESIA:	Environment and Social Impact Assessment
FY:	Fiscal Year
GIS:	Geographic Information System
HV	High Voltage
IATA:	International Air Transport Association
ICAO:	International civil aviation Regulations
IDP:	Integrated Development Program
IOSA:	IATA Operational Safety Audit
ISAGO:	IATA's Safety Audit for Ground Operations
KIA:	Kigali International Airport
KM:	Kilometers
LPG:	Liquefied Petroleum Gas
LUDPs:	Local Urban Development Plans
LV	Low Voltage

LVEMP:	Lake Victoria Environmental Management Program
LVWATSAN:	Lake Victoria Water and Sanitation
MIFOTRA:	Ministry of Public Service and Labor
MINALOC:	Ministry of Local Government
MININTER:	Ministry of Internal Security
MOU:	Memorandum of Understanding
MV:	Medium Voltage
MW:	Megawatts
NBIA:	New Bugesera International Airport
NDC:	National Dialogue Council
NMT:	Non-Motorized Transport
OSBP:	One stop border post
OSCs:	OSC: One Stop Centers
PIP	Performance Improvement Program
RCAA:	Rwanda Civil Aviation Authority
REIT:	Real Estates Investment Trust
RLMUA:	Rwanda Land Management and Use Authority
RTDA:	Rwanda Transport Development Authority
SCs:	Secondary Cities
SE4ALL:	Sustainable Energy for All
SGR	Standard Gauge Railway
SIDA:	Swedish International Development Agency
SMS:	Safety Management System
TMEA:	Trademark East Africa
TQM:	Total Quality Management
WASAC:	Water and Sanitation corporation
WASH:	Water, Sanitation and Hygiene
WSS:	Water Supply and Sanitation
WTP:	Water Treatment Plan

## EXECUTIVE SUMMARY

This report highlights the key achievements registered in the Infrastructure Sector for the Fiscal Year 2016/17 for all the sectors of Energy, Transport, Water and Sanitation & Urbanization and Human settlement. It is based on the sector targets/milestones that were set at the beginning of the year aligned with National programs such as Vision 2020, EDPRS II and 7YGP. Below is a summary of achievements realized.

In the energy sector, the primary focus was to have a balanced power production and supply with the aim of achieving system reliability and stability as well as affordability. The generation capacity increased by 18.3 MW as result of commissioning Gishoma Peat Power Plant (15MW) and Nasho Solar Power Plant (3.3MW).

The electricity access increased from 26.97% in 2015/2016 FY to 34.5% of which 27.2% and 7.3% on-grid and off grid connections, respectively.

In the Transport sector, the road network was improved with 85.27Km upgraded to paved. The upgrade, rehabilitation and maintenance of paved and unpaved roads led to the riding quality improvement resulting in 72.8% of roads in good conditions.

For air transport, Kigali International Airport was upgraded to cope with exponential traffic growth and provide customer comfort, security and convenience; whereas construction of Bugesera International Airport has started with construction works ongoing.

There has been a substantial growth in terms of passenger numbers, routes expansion, Airport expansion and upgrade. Rwanda's national carrier, RwandAir, renewed its certification for International Air Transport Association (IATA) Operational Safety Audit (IOSA) and passed the IATA's Safety Audit for Ground Operations (ISAGO). It launched flights into the Asian and European continents with inaugural destinations to Mumbai and London respectively.

In the water and Sanitation sector, total water production increased from 45,031,510m<sup>3</sup> in 2015/2016 to 48,977,110m<sup>3</sup> per year in 2016/17. To further increase households access to clean and safe water in both urban and rural areas, a total of 580km of water distribution network were constructed (249km in urban and 331km in rural).

In the urbanization and Human settlement, progress was made in relocating households from both scattered settlements and high risk zones whereby 32,301 and 2,707 households were relocated from scattered and high risk zones respectively and resettled to planned settlement.

Thirty (30) new Integrated Development Program (IDP) model Villages were developed and existing 15 IDPs were upgraded. This included the construction of 1,296 dwelling units (already handed over to the selected beneficiaries).

## **INTRODUCTION**

### **Rationale**

This report portrays the achievements registered in the period between July 2016 - June 2017 and mainly focuses on the Ministry's performance against the key objectives outlined in the national strategic documents i.e. Vision 2020, EDPRS II, 7YGP, Sector Strategic Plans and other priorities as adopted in different national fora or dialogue such as the National Leadership Retreat, National Dialogue Council (NDC) and Cabinet decisions.

### **Objective and Scope**

The Infrastructure Sector's Annual report provides timely and focused information to the public, development partners and other stakeholders. The 2016-17 Annual report highlights the achievements made in the four infrastructure sectors of Transport, Energy, Water & Sanitation and Urbanization & Human Settlements.

### **Methodology and Data Sources**

The data used in this report was drawn from reports provided by the Ministry's affiliated agencies and other sources as a result of continuous monitoring conducted jointly by the Ministry and its affiliated agencies. Integrated Households Living conditions Survey for previous years was as well used for comparison purposes.

## **INFRASTRUCTURE SECTOR ACHIEVEMENTS 2016/2017**

Access to safe, reliable and cost effective infrastructure is essential to achieve the levels of growth defined under the Economic Development and Poverty Reduction Strategy (EDPRS II). Infrastructure development is a critical productive component that catalyzes broader economic growth and contributes significantly towards the realization of country's ambitious social economic transformation agenda. In order to attain the desired development impact of 7-year Government Program, EDPRS-II, Vision 2020 and other strategic interventions, the infrastructure sector implemented different projects and programs alongside formulation of various institutional frameworks in the 2016/17 fiscal year, as reflected in the following sub-sector achievements:

### **1. LEGAL AND POLICY FRAMEWORKS**

#### **Energy sector**

Appropriate policies and strategies for the energy sector were elaborated and are at different levels:

- ✓ Sustainable Energy for All Action Agenda (SE4All) that was officially launched during Rwanda Energy Infrastructure Forum (iPAD) held on 1<sup>st</sup> November 2016.
- ✓ Rural Electrification Strategy awareness was carried out jointly under “Duture heza, amashanyarazi kuri bose campaign”.
- ✓ Updated Biomass Energy Strategy, draft final report was submitted for approval by senior management.
- ✓ Energy Efficiency Strategy developed

#### **Transport sector**

In the Transport sector, a number of laws, policies and strategies were elaborated to ensure the transport sector is efficiently regulated and coordinated;

- ✓ Feeder roads Policy and strategy was adopted in April 2017.
- ✓ The Road Safety Policy and strategy; Inland Water transport Policy and strategy; Transport fares policy; Road Transport Law; Inland water Transport law are under elaboration.

## **Water and Sanitation sector**

Under Water and Sanitation sector, different policies and strategies to make the water and sanitation sector more effective were developed and approved. These include;

- ✓ National Water supply policy and Strategy approved by the Cabinet in December 2016.
- ✓ National Sanitation Policy and Strategy approved by the Cabinet in December 2016.
- ✓ The law governing Water and Sanitation services is under elaboration and first draft is available for further discussion with stakeholders.

The above revised National Water supply and Sanitation Services policies/strategies were disseminated at Provinces level.

## **Urbanization and Human settlement sector**

Under this sector, a number of laws, Instructions and strategies were elaborated and disseminated to ensure community/public awareness and conformity. These include Legal tools elaborated:

- ✓ Ministerial instruction on risk based inspection,
- ✓ Law governing urban planning and building of 2012 reviewed and updated
- ✓ Prime Minister instructions number 001/03 of 23 Feb. 2017 determining the conditions and procedures for obtaining government support for affordable and high density housing project, gazetted on 23<sup>rd</sup> February 2017.

## **2. ENERGY SECTOR ACHIEVEMENTS**

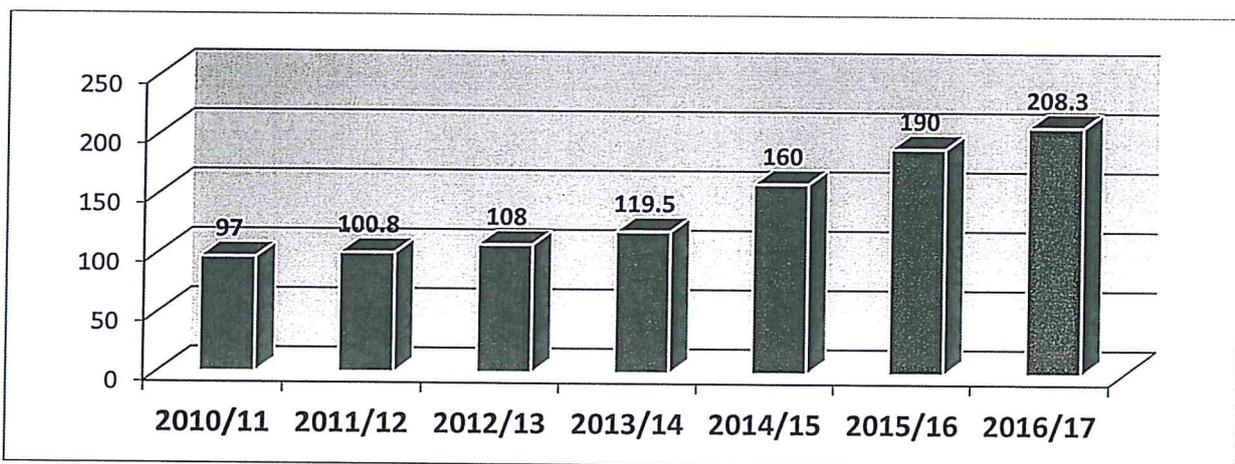
Sufficient, reliable and affordable energy supply is critical to country's economic transformation. The government of Rwanda adopted and implements sound, comprehensive national energy policies and plans capable of taking into account dynamic factors such as, economic and population growth, natural resource constraints and dispersed settlement patterns. It was planned that by the end of the EDPRS II in 2018, the electricity generation installed capacity shall be 563MW, while the overall access to electricity nationwide shall be at 70% (48% on-grid and 22% off-grid), with the priority being given to the electrification of productive use areas. The following achievements were registered in the energy sector.

## 2.1. Energy generation

Generation sources are: Hydro, Solar, Peat to power and methane. For the year 2016/2017, 18.3MW were commissioned leading to the installed capacity of 208.3 MW from 190 MW recorded in the previous year. This was mainly achieved by the completion and operationalization of Gishoma Peat to Power 15MW and 3.3MW from Nasho Solar Power plant.

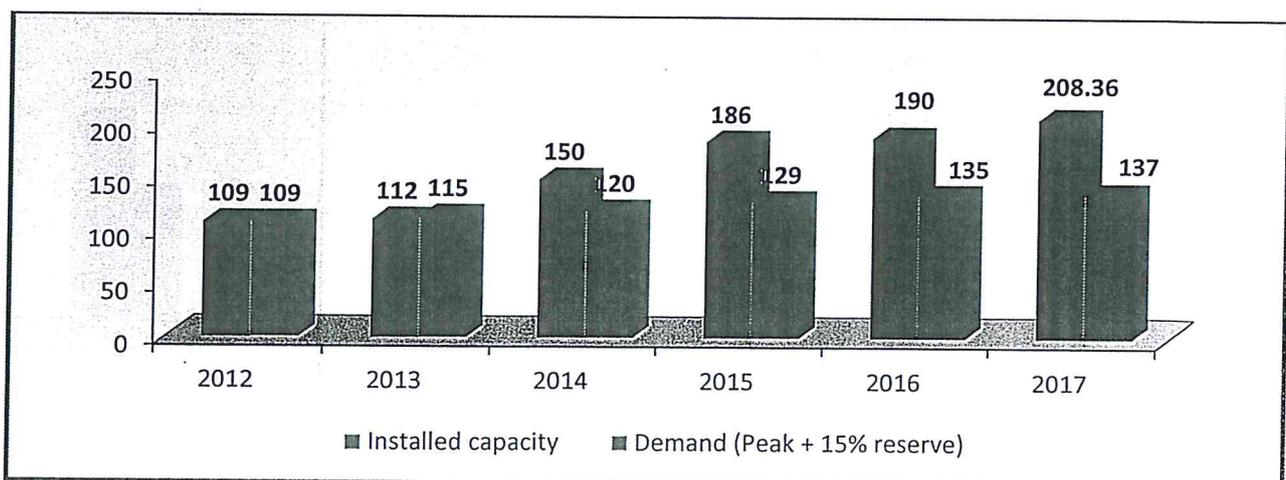
As indicated in the figure below, the installed capacity doubled from 97 MW in 2010 to 208.3 MW in 2016/17.

**Figure 1: Energy generation Installed Capacity Trends (2010-2017)**



The current demand is at 137MW during the peak hours and 95MW at off peak hours. All this is against the current installed capacity 208.3 MW. Considering the projected power supply, it is evident that there is need for heavy investments in both light and heavy industries to stimulate the demand.

**Figure 2: Installed generation Capacity Vs electricity Demand in MW**



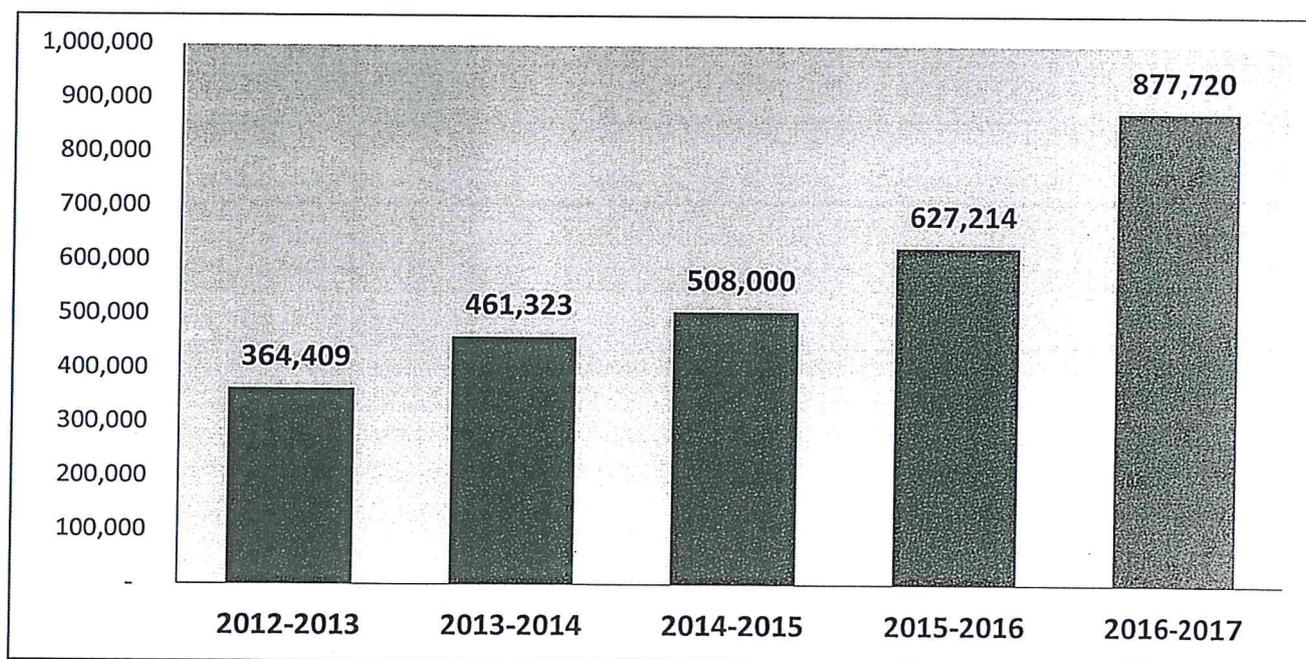
### Generation projects in pipeline include:

- ✓ 80MW Hakan Peat to Power
- ✓ 26.7MW Rusumo (Regional projects)
- ✓ 147MW Rusizi III (Regional projects)
- ✓ 55MW Symbion power project
- ✓ 25MW Symbion power (KP1 upgrade)
- ✓ 16MW Seven (7) Micro-hydropower plants.

### 2.2. Access to Electricity

In the year 2016/2017, a total of 250,506 households were connected, of which 107,603 households were connected to the grid and 142,903 off grid leading to 877,720 (34.5%) total connections by June 2017. A total of 270 productive use areas were connected; these included Schools, Markets, Health centers, Milk Collection Centers, Water pumping stations.

Figure 3: Trend (Evolution) of household connections (2012-2017)



### 2.3. Electricity Transmission and distribution

To improve the quality of power supply and loss reduction, a number of transmission lines and related substations were constructed and rehabilitated. These include the following:

- ✓ 220 kV Transmission line: Karongi–Rubavu–Shango–Birembo (180km).
- ✓ 110 kV transmission line from: Gishoma–Bugarama–Ntendezi running through Rusizi and Nyamasheke Districts. (30.5km).
- ✓ 110 kV transmission line: Rukarara–Kilinda through Nyamagabe and Karongi Districts. (31.5km).
- ✓ Network strengthening in Kigali Special Economic Zone (KSEZ) and the surrounding areas of Ndera, Kabuga, Kanombe and Nyarugunga Sectors.

#### Ongoing transmission projects include the following:

- ✓ 119km of 110 kV transmission line: **Rulindo – Ngarama – Gabiro – Musha** is expected to be completed by the end of the year 2017.
- ✓ Rehabilitation and expansion of 27km of 110 kV Kigali ring network, from **Jabana–Mont Kigali–Gahanga**. Works expected to be completed in the year 2018, to support planned industrial areas around the geographical scope of the project.
- ✓ Network strengthening around Kigali Special Economic Zone (KSEZ), especially in Ndera, Kabuga, Kanombe and Nyarugunga Sectors (this is planned to be completed next fiscal year (2017/2018)).
- ✓ Network rehabilitation (power lines and substation) within Kigali City, to address the problem of power cuts.

#### Planned transmission projects include the following:

- ✓ 220 kV Transmission line: **Mamba-Rwabusoro-Bugesera** (53km), expected to be completed in 2019 to evacuate power from the Peat-Power Plant underway in Gisagara District.
- ✓ 220 kV Transmission line: **Rusumo – Bugesera-Shango (119km)**, expected to be completed in 2019, to evacuate power from Rusumo Regional Hydro Power Plant.
- ✓ 220 kV Transmission line: **Karongi-Kigoma-Rwabusoro (74km)**, expected to be completed in 2019 to evacuate power from production points in the Western Province.
- ✓ 220 kV transmission line: **Kigoma-Gisagara-Gitega (Burundi Border)**. A (62km) line to be completed in 2019 to strengthen the network in parts of Gisagara and Huye Districts and potential power exchange between Rwanda and Burundi.

- ✓ 220 KV transmission line: **Karongi-Kamanyola**. A (92.8 km) line planned to evacuate power from **Rusizi III** regional Hydro Power plant.
- ✓ 110 KV transmission line: **Mukungwa-Nyabihu**. A (23.3km) line planned to be completed in 2019 to enhance network strengthening in parts of Nyabihu and neighboring areas.

## **Distribution**

Medium Voltage and low voltage network has been expanded to increase the national electrification rate. The increase of 616.2 km and of 235.7 km has been achieved on Low voltage network and Medium Voltage, respectively.

### **2.4. Use of biomass energy solutions**

The biomass reduction initiatives continued to be implemented and translated into the following achievements;

- ✓ 1 institutional biogas (Mageragere Prison) was constructed and 877 domestic biogas systems were constructed in all the 30 districts.
- ✓ 60 community biogas systems were constructed in IDP model villages of Gakenke, Nyabihu, Burera and Musanze districts.
- ✓ 349,539 ICS were disseminated; these stoves were disseminated from the following companies: ENDOM Rwanda, Inyenyeri, Ruliba Clay Ltd, Canarumwe Producers cooperatives and DelAgua and all IDP model villages constructed during 2016-2017 were equipped with improved cook stoves.
- ✓ 4 ICS selling points were established and 300 ICS promoters were supported in ICS promotion and marketing in 11 districts of the country.
- ✓ Promotional campaigns on the use of LPG were conducted countrywide and 1,000 new LPG customers started to use LPG.
- ✓ 392 Water heaters had been installed leading to cumulative total of 2,607 so far installed countrywide.

### **2.5. Energy efficiency and Security of Petroleum Supply**

The Petroleum storage reserves are maintained at 72 million, however, concession agreement has been signed with the private sector to construct additional 60 million liters strategic fuel storage reserves.

### 3. TRANSPORT SECTOR ACHIEVEMENTS

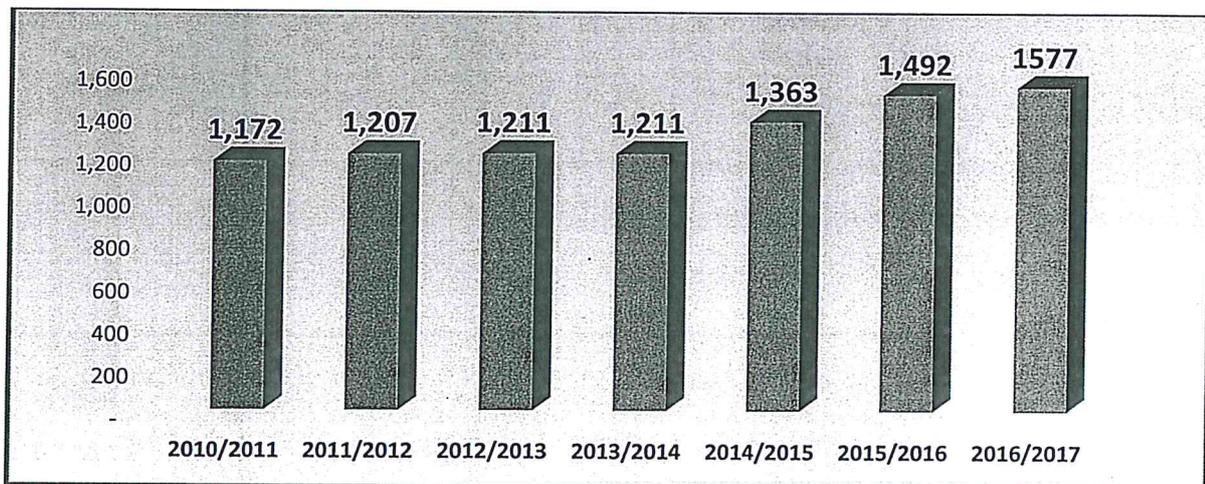
A number of transport infrastructure projects were implemented to improve domestic and external link to international Markets. Interventions in the sector focused mainly on roads upgrading, rehabilitation, and maintenance and aviation development. Major achievements include:

#### 3.1. Road Transport

85Km of paved roads were constructed leading to a total of 1,577Km paved roads countrywide. 526.4 Kms of feeder roads were also constructed to facilitate market access for rural farmers.

Currently, the percentage of National roads (paved and unpaved) in good conditions stands at 72.8%. Paved roads network in good conditions is at 96%.

**Figure 4: Paved roads network trend for the Period (2010-2017)**



#### *Roads Rehabilitation*

The rehabilitation of the following roads started and works are ongoing:

- ✓ Huye-Kitabi Road (53km), the progress is at 12%
- ✓ Kagitumba-Gabiro Road (60km), the progress is 9%
- ✓ Gabiro-Kayonza Road (56km), the progress is at 11%
- ✓ Kayonza-Rusumo Road (92km), the progress 10.9%

### ***Multi-year Maintenance of Paved Roads***

About 513km were maintained:

- ✓ Kicukiro-Nemba Road (61km)
- ✓ Kigali-Huye-Akanyaru Road (157km) with improvement of black spots in Kamonyi, Ruhango and Huye.
- ✓ Rusizi-Bugarama Road (46km) with improvement of Gisakura Black spot
- ✓ Kigali-Kayonza Road (74.8km)
- ✓ Musanze-Rubavu Road (67 km)
- ✓ Muhanga-Karongi Road (78km) with construction of retaining wall at Nyange Genocide Memorial Site (Urwibutso).
- ✓ Crete Congo-Nil-Ntendezi Road (30km)

#### **3.1.1. Upgrading of Unpaved National Roads to paved roads**

The upgrading works on the following roads were continued and at different stage of progress as highlighted below:

- ✓ Kivu Belt (Lot 6): Rubengera-Gisiza 24.1km in Western Province was at 80%.
- ✓ Kivu Belt (Lot 7): Gisiza-Rubavu (48km) in the Western Province was at 88%.
- ✓ Base –Rukomo 51km in the Northern Province was at 41%
- ✓ Base- Butaro Kidaho 63km in the Northern Province was 14.7%

#### **3.1.2. Maintenance of unpaved roads and bridges**

**The following unpaved roads and bridges were maintained:**

- ✓ Ruhango – Kinazi-Rutabo, Kinazi-Mukunguri road, (36.3 km) in the Southern Province was completed
- ✓ Access road to Rwamagana-Gishali flower plant (12 Km), in Eastern Province was completed
- ✓ Rukali-Kabuga unpaved road (DR95) in Nyanza District (40.1 Km) was completed.
- ✓ Gashora and Rwabusoro Bridges in Bugesera District: The physical progress of Rwabusoro Bridge was at 98% whereas Gashora was at 45%.

### **3.1.3. Feeder Roads construction**

526.4Km of feeder roads were constructed to facilitate access to markets for rural farmers which led to a cumulative length of 2060.25 Km countrywide.

### **3.1.4. Construction of One Stop Border Posts (OSBP)**

The following achievements were registered in the construction of OSBPs: Rubavu OSBP was completed while construction works for Bweyeye Border post was at 80% and construction of Gatuna OSBP was at 30% progress.

The construction of the above mentioned OSBPs aims at reducing the Non-Tariff Barriers (NTBs) and trade costs within East African member Countries.

### **3.1.5. Development of other Transport Modes (Railway and inland transport)**

In abid to reduce costs of transport for both goods and passengers, thereby boosting trade and interconnectivity within the country and the region, the Government initiated a preliminary engineering design for the Kampala-Kigali Standard Gauge Railway (SGR). The design study of the SGR was at 90% progress.

The study for the development of ports on Lake Kivu was completed and fund mobilization is currently ongoing.

### **3.1.6. Road Maintenance fund (Revenue collection)**

Revenues of Rwf 42,318,630,244 were collected for Roads maintenance compared to the planned Rwf 39,370,406,205. The collected funds were disbursed for maintenance of roads countrywide.

## **3.2. Air Transport**

There has been a substantial growth in terms of passenger numbers, routes expansion, Airport expansion and upgrade. Rwanda's national carrier, RwandAir, renewed its certification for International Air Transport Association (IATA) Operational Safety Audit (IOSA) and passed the IATA's Safety Audit for Ground Operations (ISAGO). It also launched flights into the Asian and European continents with inaugural destinations to Mumbai and London respectively.

### **3.2.1. Airports development**

#### **a. Upgrade and expansion of Kigali International Airport (KIA):**

- ✓ Construction of a wall along the South Apron was completed with the aim of enhancing security at the airport.
- ✓ Two vehicle security check points (along two access roads at KIA) and two pedestrian check points were constructed to improve security at KIA.

#### **b. Construction of NBIA**

The Ministry of Infrastructure signed a major deal with a private investor, Mota-Engil, to construct the Bugesera International Airport (BIA). It is expected that the construction of the first phase will be completed by December 2019 and the facility will accommodate an annual capacity of 1.7 million passengers.

### **3.2.2. RwandAir Passenger Numbers and fleet expansion**

The passenger numbers grew from 585,875 of the last financial year by 27% to 747,761. The increase was driven by RwandAir's acquisition of 4 new aircrafts (Airbus A330s and Boeing 737-800 NGs) and introduction of 5 new routes (Cotonou, Abidjan, Harare, Mumbai and London) bringing the total number of destinations to 22.

### **3.2.3. Safety Certification**

For safety purpose, a comprehensive Safety Management System (SMS) has been designed to ensure the proactive and systematic identification of risk. The processes therein are audited by industry regulators and RwandAir maintained its certification for the IATA Operation Safety Audit (IOSA) that was issued on June 13<sup>th</sup> 2016 valid for next two years. In addition, RwandAir passed the IATA's Safety Audit for Ground Operations (ISAGO) for the very first time with an exemplary 2 findings and 2 observations.

### 3.2.4. Key Planned Activities for FY 2017/18

The following projects will continue to be implemented in the FY 2017/2018:

#### *a. Roads under upgrade;*

- ✓ Base- Butaro- Kidaho Road (63 Km) in the Northern Province
- ✓ Rukomo-Base(Lot 2:51.5km) in the Northern Province
- ✓ Rubengera-Gisiza Road, 24.5 Km (Kivu-Belt Lot 6) in the Western Province
- ✓ Rubavu-Gisiza Road,50 Km ( Kivu-Belt Lot 7) in the Western Province
- ✓ Nyagatare-Rukomo Road (Lot 1:73.3 Km) in the Eastern Province
- ✓ Huye-Kibeho-Ngoma-Munini Road (68km) in the Southern
- ✓ Ngoma Nyanza (Lot 2: Kibugabuga-Gasoro) in the Eastern Province.
- ✓ Kagasa-Batima.

#### *b. Roads under rehabilitation*

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

#### *c. Ports development*

- ✓ Development of inland Ports on Lake Kivu in the Western Province.

#### *d. Airport development*

- ✓ Continue the construction works of BIA
- ✓ Installation of vehicle scanning machine
- ✓ Expansion of KIA transit lounge

## 4. WATER AND SANITATION SECTOR

Water and Sanitation services were extended to rural and urban areas, with additional 597,799 population and 162,731 households accessing clean water and improved sanitation facilities, respectively.

This was achieved through the construction of new water supply systems, rehabilitation and extension of existing network and sanitation infrastructure development.

The achievements recorded are highlighted in the following sections;

#### **4.1. Access to safe drinking water**

580km of piped water systems were constructed countrywide of which 331km are in rural and 249Km in Urban areas.

##### **Key projects completed Water Supply in Rural Areas includes:**

- ✓ Construction of Nkombo Water Supply System (WSS) of 3km,
- ✓ Construction of Nyungwe-Kibeho-Ndego-Coko WSS (105km),
- ✓ Construction of Giheke-Nkanka-Kamembe WSS (126km),
- ✓ Construction of Musasa-Boneza WSS (107km).
- ✓ 26 new boreholes were constructed while 73 boreholes were rehabilitated in Nyagatare and Kayonza.
- ✓ 26 Non-functional water supply systems were rehabilitated countrywide
- ✓ District water and sanitation boards were established in all districts for management and operations of rural water infrastructures, 800 water users' committees were formed.

##### **Ongoing projects**

- ✓ Construction of Nyabizi-Butaro Kivuye water supply system to supply water to UGHE at Butaro, the progress is at 71.6%.
- ✓ Construction of Gatonde Hospital water supply system, the progress is 5%
- ✓ Construction of distribution networks of Musheru phase II with 97Km from Ntoma-Rwimiyaga-Karangazi and Matimba-Kagitumba WSS in Nyagatare District, the progress is at 55%.
- ✓ Construction of water network from Gihengeri WTP, Nyagihanga, Ngarama, Gatsibo sectors in Gatsibo District (60 km), progress is at 60%.
- ✓ Reinforcement and extension of WSS Ruhashya-Ntyazo (95 Km) water supply system in Nyanza District, progress is at 63%.

##### **Key completed projects include in urban areas**

- ✓ Construction of Karuruma-Gatsata and Muko-Jali water network extensions (16 Km)
- ✓ Construction of water network extensions in WASAC Branches (48Km).

##### **Key Ongoing projects in urban areas**

- ✓ Construction of water network in Kicukiro (45km), progress is at 55%.

## 4.2. Water production capacity

Water production capacity increased from 45,031,510m<sup>3</sup>/year to 48,977,110m<sup>3</sup>/year. This was as a result of the constructed and upgraded Water Treatment Plants with additional water production capacity of 10,960m<sup>3</sup>.

Key implemented projects that contributed to these achievements include;

- ✓ Construction of Nkombo WTP with production capacity of 720m<sup>3</sup>;
- ✓ Construction of Nyagatare WTP with production capacity of 2,400m<sup>3</sup>;
- ✓ Construction of Kayonza WTP with production capacity of 2,800m<sup>3</sup>
- ✓ Construction of Nyanza WTP with production capacity of 5,040m<sup>3</sup>.

### Ongoing projects

- ✓ New Nzove I and operationalization & optimization of WTPs, progress is at 93%
- ✓ Construction of Kanyonyomba water treatment plant and forwarding infrastructures, general progress is at 77%.

## 4.3. Access to improved sanitation services

Commendable efforts were as well directed towards improving sanitation services, and the following were achieved during the period:

- ✓ 30 public toilets and 4.8 km of storm drainage system in Nyanza, Kayonza and Nyagatare
- ✓ Construction of 3 fecal sludge treatment plants and landfills in Nyanza, Kayonza and Nyagatare.
- ✓ 162,731 individual toilets were constructed in partnership with partners and WASAC.

### Completed Studies:

- ✓ Studies for Kigali centralized sewerage systems (ESIA, Institutional, Economic and financial report, preliminary engineering design and tender document);
- ✓ Feasibility study for construction of Kigali fecal sludge treatment;
- ✓ In partnership with Lake Victoria Environmental Management Program (LVEMP), developed Sanitation Master Plans for Huye, Muhanga and Rwamagana towns.

#### **4.4. Key planned projects for FY 2017-2018**

The following are key planned projects for both water supply and sanitation services:

- ✓ Upgrading of Gihira Water Treatment Plant
- ✓ Construction of Kigali Centralized sewerage system
- ✓ Sustainable mechanisms for operationalization of semi-centralized system
- ✓ Development of integrated National water supply and Sanitation Master Plan
- ✓ Construction of 24 new boreholes and rehabilitation of 53 in Nyagatare and Kayonza District.

### **5. URBANISATION AND HUMAN SETTLEMENT SECTOR**

Under urbanization and rural settlement sector notable achievements were recorded in urban settlement planning and development, rural settlement, affordable housing and Management of Government Assets.

#### **5.1. Urban settlement planning and development**

The sector has continued to put in place coordinated efforts geared at addressing uncapped urbanization and the upsurge of informal settlements, coupled with the housing backlogs.

- ✓ 4 Local Urban Development Plans for emerging centers were developed and approved by concerned district councils. These include: Mubuga in Karongi; Kinazi-Arrete in Huye; Rwimiyaga in Nyagatare and Kinigi in Musanze.
- ✓ Informal settlements detailed design studies for Muhanga, Rusizi, Rubavu Kicukiro and Gasabo districts were elaborated and validated.
- ✓ Master plan implementation audit was conducted in 12 Districts: Huye, Musanze, Rubavu, Nyagatare, Rusizi, Nyarugenge, Kicukiro, Karongi and Bugesera. Audit recommendations are being implemented in collaboration with concerned districts.
- ✓ The Building Permit Management Information System (BPMIS) was deployed and operationalized in six secondary cities.

## 5.2. Rural Settlement planning and development

- ✓ Thirty (30) new Integrated Development Program (IDP) model Villages were developed and existing 15 IDPs were upgraded. This included the construction of 1,296 dwelling units (already handed over to the selected beneficiaries), and other amenities such as Schools, Health Centers, Cowsheds, Multipurpose Halls, modern Markets, Early Childhood Development facilities (ECDs), artisan centers(*udukiriro*), Water and Electricity.
- ✓ In total, 32,301 households were relocated from scattered settlement to planned settlements whereas 2,707 households were relocated from high risk zone to planned settlements.
- ✓ 2,277 rural settlement village layout plans were elaborated and validated in 12 Districts of Nyagatare, Karongi, Gisagara, Gicumbi, Muhanga, Rubavu, Rusizi, Nyamasheke, Gakenke, Musanze, Bugesera and Nyaruguru.

## 5.3. Affordable housing development

A number of affordable housing development projects were implemented. These include:

- ✓ **Batsinda II (561 houses):** Works to provide basic infrastructure<sup>1</sup> were completed at 45%
- ✓ **Abadahigwa Kabuga (56 houses):** Works to provide basic infrastructure were completed at 65%.
- ✓ **Urukumbuzi (1000 houses):** 200 houses were completed through a Public Private Partnership (PPP).
- ✓ **Izuba (250 houses):** Construction works are completed at 40% through a Public Private Partnership.
- ✓ 18ha in the Secondary cities were serviced with roads, water and electricity network.

## 5.4. Government Assets Management

Different projects linked to Government assets and office space management were implemented at different progressive rates:

- ✓ **Administrative Office Complex:** Construction works were completed at 47%.
- ✓ **High Commercial Court Building:** Construction works were completed at 28.2%.

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<sup>1</sup>Basic infrastructure includes roads, water, electricity and internet network.

## 5.5. Asbestos eradication

In an effort to eradicate Asbestos materials from public and private buildings, the following achievements were registered:

- ✓ 130,974.5m<sup>2</sup> of Asbestos Containing Materials (ACM) were safely removed and dumped. This led to a cumulative total of 812,517.4m<sup>2</sup> (48%) removed out of 1,680,757.5m<sup>2</sup> of ACM to be removed countrywide.

## 6. MAINSTREAMING OF CROSS-CUTTING ISSUES

### 6.1. Environment

In the infrastructure projects formulation process, the Environment and Social Impact Assessment (ESIA) studies and the Environment Management Plan (EMP) were conducted to ensure that likely negative impacts are under control. Joint inspection and planning with environmental enforcers are regularly carried out to ensure compliance to environmental regulations and address any emerging environmental issues.

In a bid to enhance environmental protection from, initiatives geared to increase access to off-grid electricity and promote sustainable use of biomass and other resources were undertaken. Special efforts were directed towards clean renewable sources of energy and sustainable small-scale energy installation in rural areas (biogas, ICS dissemination, solar energy kits and LPG).

### 6.2. Gender

Gender Mainstreaming Strategy in Infrastructure sector was developed with the aim of reshaping how gender should be mainstreamed in sector policies, programs and plans.

Gender issues were as well considered in the bidding Documents for the Contractors/Consultants to show how Gender balance employment will be catered for during project implementation.

Jobs were created through infrastructure projects implemented during the period, in the four sectors as follows:

- ✓ 23% of the total jobs created were for women and girls in the Transport sector
- ✓ 20.5% of the total jobs created were for women and girls in the Urbanization and Human Settlement sector.

Implemented water supply projects provided access to clean water to 597,799 population (both women and men); and 162,731 households gained access to improved sanitation facilities. In the energy sector, 85,000 female and 65,000 male benefited from off-grid solutions dissemination.

### 6.3. Capacity building

Skills development trainings were provided as follows:

- ✓ Trainings for Rwandan cadet pilots and aircraft engineers were done in Rwanda through Akagera Aviation Training Academy.
- ✓ In Water and Sanitation 366 staff have been trained in: TQM, Operational and Maintenance, Oracle
- ✓ 1500 OSC Staff, RHA staff and other Stakeholders were trained in urban planning tools, use of Geo-data System, BPMIS application.
- ✓ 60 Senior and professional Staff of RHA, RTDA, CoK and MININFRA were trained on Project Management by Manchester University.

### 6.4. Regional Integration

To strengthen regional integration and break barriers to free movement of people and goods; progress was made through continued implementation of the following projects.

- ✓ Study of Kampala-Kigali Railway line (SGR); transaction advisory services for Dar E-Salaam Isaka-Kigali/Keza-Gitega-Musongati Railway;
- ✓ Base-Rukomo-Nyagatare all Lots (121km) connecting Eastern and Northern provinces to Uganda;
- ✓ Rehabilitation and widening of Kagitumba-Kayonza-Rusumo (208km) connecting to Uganda and Tanzania through the Eastern province.

## 7. CHALLENGES ENCOUNTERED

Though the sector managed to register some key achievements; there were a number of challenges encountered during projects and programs implementation:

- ✓ **Financing issues:** Some programs/projects lacked enough or had no funds allocated to enable realization of commitments. The biomass program for example had no budget allocated, same for SCs Detailed Master plans review and development.
- ✓ **Lengthy procurement procedures:** There were some challenges associated with securing of non-objection from development partners.

- ✓ **Increased Operational Cost:** RwandAir is currently outsourcing aircraft maintenance to various AMOs (SAMCO, Lufthansa Technik & Ethiopian Airlines), which RCAA as a Regulator has to inspect and certify, thereby increasing overhead costs.
- ✓ Overriding expropriation issues that have greatly impeded timely implementation of different projects, some of the challenges involved are associated with lack of land titles, complaints and non-compliance by some land owners.
- ✓ Unexpected additional projects scope, delays to start works by some contractors and suspension of works at some stage, have immensely hindered projects implementation.

## 8. CONCLUSION

This report highlights the achievements registered in the infrastructure sector over the course of fiscal year 2016/17.

The overarching efforts were guided towards building a sustainable infrastructure sector through roads construction, rehabilitation and maintenance; construction of cross border trade facilities; renovation and extension of airports; improving access to water sources and Sanitation services in rural and urban areas, electrification (both generation and access), urbanization and rural settlements development which contributed to the remarkable achievements highlighted in this report.

Some of the projects were not fully implemented due to financial issues/budget constraints; regional projects which depend on strides made by other players within the region (Railway, Regional Transmission lines) as well as capacity gaps and technical issues.

However, the sector is committed to build on the achievements made and continue to implement policies, programs and strategies to achieve the NST1 targets as provided for in its 3 pillars of economic transformation, Social transformation and Transformational Governance.