REPUBLIC OF RWANDA

MINISTRY OF INFRASTRUCTURE

Draft Final Transport Sector Strategic Plan for the National Strategy for Transformation (NST1)

May, 2018

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LIST OF ABBREVIATIONS

ACR	: Airport Company Rwanda Ltd
AfDB	: African Development Bank
ATL	: Aviation Travel and Logistics
BADEA	: Arab Bank for Economic Development in Africa
CCTV cameras	: Closed Circuit Television cameras
CoK	: City of Kigali
CPAF	: Common Performance Assessment Framework
DBLs	: Dedicated Bus Lanes
DCPG	: Development Partner's Coordination Group
DDS	: District Development Strategies
DQA	: Data Quality Assurance
DR	: District Roads
EDI	: Electronic Data Interchange
EDPRS	: Economic Development and Poverty Reduction Strategy
ESIA	: Environmental and Social Impact Assessment
EU	: European Union
GHG	: Green House Gas
GoR	: Government of Rwanda
IATA	: International Air Transport Association
ICAO	: International Civil Aviation Organisation
ICTs	: Information and Communication Technologies
IDA	: International Development Association
IOSA	: IATA Operational Safety Audit
IRI	: International Roughness Index
ISAGO	: IATA Safety Audit Ground Operations
ITS	: Intelligent Transport System
ITT	: Inland Intermodal Terminal
IWGs	: Implementation Working Group
IWT	: Inland Water Transport
JICA	: Japan International Cooperation Agency
JSR	: Joint Sector Review
KIA	: Kigali International Airport
LCAs	: Local Community Associations
LMiCs	: Low and Middle Income Countries
LUMP	: Land Use and Development Master Plan
MAP	: Multi Annual Plans
MINECOFIN	: Ministry of Finance and Economic Planning
MININFRA	: Ministry of Infrastructure
MIS	: Management Information System
MTR	: Mid-Term Review
NAFA	: National Forest Authority
NBIA	: New Bugesera International Airport
NISR	: National Institute of Statistics of Rwanda
NST	: National Strategy for Transformation
OFID	: Fund for International Development
ONATRACOM	: Office National de Transport en Commun
OSBP	: One Stop Border Post

OTP	: On-time Performance
PPP	: Public Private Partnerships
PTPS	: Public Transport Policy and Strategy
RCAA	: Rwanda Civil Aviation Authority
RCAA	: Rwanda Civil Aviation Authority
RDB	: Rwanda Development Board
RDQA	: Routine Data Quality Assurance
REMA	: Rwanda Environmental Management Authority
RITCO	: Rwanda Interlink Transport Cooperative
RLL	: Rwanda Links Logistics Limited
RMF	: Road Maintenance Fund
RRA	: Rwanda Revenue Authority
RSTMP	: Rwanda Strategic Transport Master Plan
RTDA	: Rwanda Transport Development Agency
RTE	: Rwanda Tours and Events Limited
RURA	: Rwanda Utilities Regulatory Authority
RURA	: Rwanda Utility Regulation Authority
SDGs	: Sustainable Development Goals
SSP	: Sector Strategic Plan
SWG	: Sector Working Group
TDB	: To Be Determined
TSSP	: Transport Sector Strategic Plan
TSWG	: Transport Sector Working Group
UN	: United Nations
WB	: World Bank

1 INTRODUCTION

1.1 The strategy, context and purpose

Rwanda is a landlocked country with a hilly landscape; however, the guarantee of efficiency and assurance of security in the transportation of people and goods has been always important for the development of the nation. The Government of Rwanda is conscious of the importance of transport infrastructure development in delivering on its long-term development vision. This mindful recognition was demonstrated through relentless commitments to increasing both domestic and international connectivity through provision of modern and sustainable Infrastructure. In an effort to improve both domestic and external connectivity, the Government of Rwanda through the Ministry of Infrastructure continued to develop and maintain infrastructure in order to fast-track economical export services geared towards improving the country's domestic and international trade performances thereby reducing trade deficits that have characterized Rwandan economy.

The transport sector is composed of road development, rehabilitation and maintenance of both paved and unpaved roads; air transport infrastructure development and services provision; maritime transport infrastructure development and services, as well as railway transport development in the very near future and setting of sector regulatory frameworks. Therefore, to ensure these infrastructure development and services provision commitments are met, the Ministry of Infrastructure continuously finds it farsighted to elaborate the **Transport Sector Strategic Plan** to implement transformational transport projects and put in place regulatory frameworks so as to deliver on the Ministry's mandate as well as providing quality infrastructure services to the nation as whole.

These plans were developed and implemented along with the first and second generation of Economic Development and Poverty Reduction Strategy (EDPRS). In due regards, the transport sector came as a support of ensuring food security and other important objectives because it was undoubtedly demonstrated that high-density level of roads in good condition empowers access to the market of agrarian products and regional trade facilitation. In addition, a sound management of international roads, continued investments in Air transport and introduction of new modes of transport continue to reduce high transport cost that represents approximately 40% of goods sold to last consumer in our country. These aforementioned considerations necessitate the elaboration of strategies in the transport sector based on lessons learnt and the projection of the period of this document in reference.

Road maintenance in the last two decades can be a good example. Since then, road administration has launched a program of road upgrading, rehabilitation and maintenance. This strategic policy has yielded fruits, as today Rwanda is one at the top countries with high roads density, clean and in good condition in the region. In parallel, the past experience enables us to involve more new modes of transport, finance the sector development, partners from public, private and local government for proper functioning of the sector.

Therefore, this Transport Sector Strategic Plan provides guidance to developing integrated medium transport sector programs for the next six years in conformity with the current Government priorities as provided for in the first National Strategy for Transformation (NST-1). The need to ensure policy integration of transport as a whole in nationwide social economic activities brings to periodic examination

of the objectives of strategies and action to be undertaken in the sector. This sector strategic plan seeks to guide investment and prioritization in transport sector that will translate into realization of set targets up to the year 2024.

1.2 Sector strategy context

The Government recognizes the pivotal role the transport plays in Rwanda's national development agenda. This is evidenced in national flagship documents such as the 7th Year Government Program, Sector Specific Policies and Vision 2050. The strategy is also aligned to international commitments such as the Sustainable Development Goals (SDGs) for an efficient transport system to stimulate production and development by linking production to demand, employment creation and income generation. The Transport Sector Strategic Plan (TSSP) was thus informed by these key national policies and plans.

1.3 Methodology for Transport Sector Strategic Plan Elaboration

The Transport Sector Strategic Plan has been developed through consultative and participatory processes involving all implementing agencies namely: Rwanda Transport Development Agency (RTDA), Road Maintenance Fund (RMF), Rwanda Civil Aviation Authority (RCAA) as well as RwandAir and other sector stakeholders. This exercise started with the review of flagship documents. The review exercise focused on the sector performance with reference to the TSSP targets for EDPRS II, Vision 2020, 7YGP, SDGs, Backward Looking JSR reports, annual performance contracts, Public Transport Policy and Strategy (PTPS), Rwanda Strategic Transport Master Plan (RSTMP) as well as the Feeder Road Policy and other relevant documents.

The review was then followed by the sector priorities setting and profiling, an exercise that involved updating and analysing the baseline status of the selected sector indicators relevant for the new TSSP elaboration. Regular consultations with the Ministry of Finance and Economic Planning (MINECOFIN) were held to have a common understanding on the strategy development approach and guidelines and wide consultations in Sector Working Group (SWG) meetings were conducted to get views from sector stakeholders and their valuable inputs have been contributed to the development of this TSSP.

Key reviewed documents and their rationale are:

1.3.1 Vision 2050

The long-term development of Rwanda, as elaborated in the Vision 2050, assigns fundamental importance to the development of the economic infrastructure of the country, and in particular transportation infrastructure. In dealing with transport infrastructure, Vision 2050 fronts strategies to overcome the negative impact of Rwanda's landlocked status has on transport costs to the seaports and the role regional rail transport can play to lessen this situation. Closely associated with transport infrastructure are land use management and the need to ensure its optimal utilization in urban and rural development as well as land for infrastructure. It also has to be recognized that Rwanda is currently characterized by low but accelerating urbanization and the role to be played by basic transport infrastructure. Vision 2050 promotes the following objectives:

- **Short-term**: Promotion of a macro-economic stability and wealth creation to reduce aid dependency;

- **Medium-term**: Transforming from an agrarian to a knowledge-based economy;
- **Long- term**: Creating a productive middle class and fostering entrepreneurship.

Cognizant of the projections in the population growth by 2050 that shall result in around twenty two (22) million inhabitants in the High Growth scenario and the fact that Rwanda is projected to be a High Income Country by then, it is proposed to develop a transport sector that will allow effective mobility of citizens with much emphasis on reducing travel time and ensuring high reliability on the mass transportation system.

1.3.2 National Strategy for Transformation (NST 1)

The National Strategy for Transformation is an amalgamation of the Economic Development and Poverty Reduction Strategy (EDPRS) and 7 Year Government Programme. It is a new Strategy adopted by Government of Rwanda to spur national development for the next 5-6 years towards economic growth and improving the well-being of its citizens. The development of an effective transport network at national and regional levels, the diversification of the modes of transport, and improvement in the quality of transport services on major transport corridors will certainly contribute to achieving these objectives. With regards to transport, the NST1 aims at increasing external connectivity of Rwanda's economy and boosting exports by building a new international airport, expanding RwandAir destinations, and finalising planning for an appropriate railway connection along the Central Transport Corridor to Dar es Salaam or to Uganda; transforming Rwanda's logistics systems and strengthening export promotion.

In line with the first pillar of Vision 2050 (Infrastructure Development) the development of the plans for railway will be coordinated with the growing requirement for provision for urban mass transit services. Accordingly, this Sector will seek synergies between the current railway project, conceived to respond mostly to grant external connectivity for the country, and its potential versatility as a mean to respond to sub-urban and urban mobility. Furthermore, the Government of Rwanda envisions a vibrant transport sector and it is committed to rehabilitating, maintaining and constructing new road in a sustainable way.

1.3.3 Sustainable Development Goals (SDGs)

Transport has relevance to SDGs and their targets. Many SDGs are dependent on transport to meet their targets. Transport stimulates economic and social development and ensures accessibility to opportunities. It is not only a matter of developing transport infrastructure and services, but rather the ease of reaching destinations in terms of proximity, convenience and safety. To achieve that goal and its targets, transport is necessary and acts as a vital "enabler". It has thus become clear that by ignoring sustainable transport it will be much more difficult to achieve most of the proposed goals. The SDGs promote the following direct transport targets:

- By 2020, halve the number of global deaths and injuries from road traffic accidents
- Develop quality, reliable, sustainable and resilient infrastructure, including regional and trans-border infrastructure, to support economic development and human well-being, with a focus on affordable and equitable access for all.

- By 2030, provide access to safe, affordable, accessible and sustainable transport systems for all, improving road safety, notably by expanding public transport, with special attention to the needs of those in vulnerable situations, women, children, people with disabilities and older people.

1.3.4 National Land Use and Development Master Plan

The National Land Use and Development Master Plan (LUMP) 2010 - 2020 for Rwanda is a collaborative approach that includes both transport and land use planning interventions and policies. The objective of integrated land use and transport planning is to find a balance between land use decisions and transportation planning so that the economic, social, cultural and physical potential of the transport system, and society as a whole, can benefit optimally from planning and investment decisions.
Notably, the high-density ratio combined with the low urbanization makes it difficult and costly to provide upgraded access to all area of the country in the short term. Accordingly, the Sector is actively pursuing activities that will enable the identification of criteria to select and prioritize interventions. At the same time, this Sector intends to strengthen cooperation with the Urbanization Sector to achieve and integrated approach.

The LUMP describes three future scenarios in terms of land use and development:

- Alternative Red (worse/critical) the land-use scenario where development continues in an uncontrolled, laissez-faire mode. It is a 'predictive' scenario – extrapolation of currents trends and processes and business as usual;
- Alternative Yellow (fair/acceptable) the land-use scenario where development continues in a relatively managed and controlled way. It is an 'exploratory' scenario-construction alternative, plausible futures;
- Alternative Green (good/prosperous) the land-use scenario where development continues in a very controlled way. It is a 'normative' scenario.

1.3.5 Existing Sector Strategic Plan

The current Transport Strategic Plan was developed and implemented in line with the second generation of the Economic Development And Poverty Reduction Strategy (EDPRS2) and is ending next year, 2018. The provisions have been successfully implemented but its unfinished provisions are to be incorporated in this Transport Sector Strategic Plan for the NST1.

2 OVERVIEW OF THE TRANSPORT SECTOR AND SUB-SECTORS

The transport system in Rwanda consists of three modes comprising; roads, air transport (with one international airport and six aerodromes spread across the country), and lake transport, which is limited to Lake Kivu. Road transport is the predominant form of transport, catering for over 90% of freight traffic and passenger travel. Rwanda's Road Transport network consists of around 14,000 Km of National, District, Feeder and Urban roads. The classified road national network consists of 6,660 km of which 1,210km is paved. The remaining about 7,400 km of the road network is unclassified unpaved roads. The transport sector is formal and coordinated. At present, there are about 63 operator companies in this sub-sector. As regards to public transport, intercity and urban public transport, it is distinctively essential to the economic growth to have an efficient transport system to promote mobility of persons and goods.

With reference to targets set in the national flagship documents; the transport sector has registered significant achievements during the last 5 five years. More importantly, reforms have been made to help the sector deliver on its mandate. This is evidenced in the strengthened sector planning as well as the development of sectors' policies and strategies that are all aligned to national planning instruments and Government of Rwanda policy orientation. A brief description of the achievements is given in the following subsections.

2.1 Key sector achievements

2.1.1 Land transport

Overall, the quality of road network has improved during the last decade due to substantial new investment and sustained improvement in maintenance. The total network for roads countrywide is 38,803km. The National paved road network was extended to 1,525.8 Km from 1,211 Km in 2012 (Figure. 2) and 96% of the 1525.8km national paved network is in good condition. With respect to ensuring sustainability of new investments in the road sector, Rwanda has consistently put in place Term Maintenance Contracts (TMC) of 3 years to ensure proper and timely maintenance of the national and international paved road network. Under the three years contract, the contractors have the responsibility to maintain the roads under their management at a service level prescribed by the Government of Rwanda using acceptable international standards. The Government intends to continue with systematic application of TMC to the entire trunk road network, which currently is 96% in good condition. Figure 1 shows that paved road network is sustained averagely at 96% in good condition due to periodic maintenance and rehabilitation works. This impacts positively on improving the riding quality, boosting regional connectivity, bolstering cross-border trade and significantly elevating the wellbeing of Rwandans.

Over the last seven years, 1,525.8km of unpaved roads were upgraded to paved roads through earmarked funds from Government and Development Partners. Government is also currently upgrading 445km of national and districts unpaved roads to paved status; these projects include; Base-Gicumbi (40km), Rukomo-Nyagatare (73km), Nyanza-Bugesera (66km), Bugesera-Nyanza (57km), Huye-Kibeho-Munini (66km), Kigali Ring Road (80km) as well as Base-Butaro-Kidaho (63km). There are also efforts to rehabilitate 343 km of paved roads, notably Kagitumba-Kayonza-Rusumo (209km), Huye-Kitabi (53km), Muhanga-Rubengera (60km) as well as Musanze-Cyanika (21km).

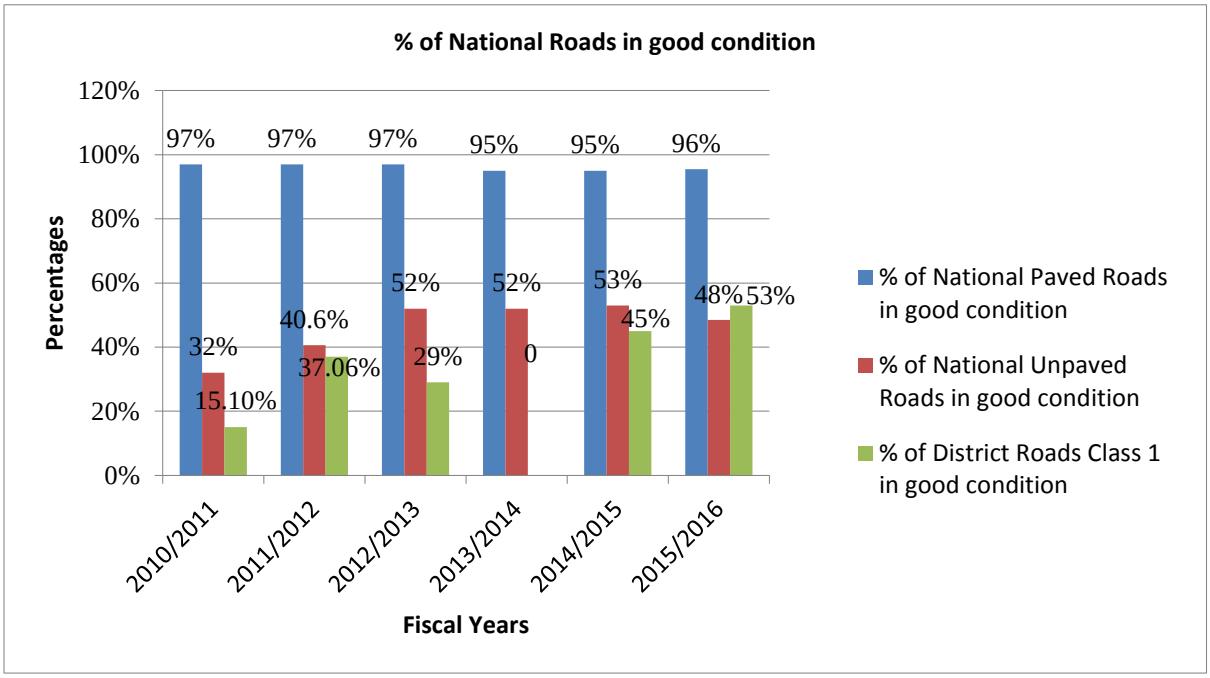

Figure 1: Chronological Evolution of the Roads in Good Condition (Source: RTDA, 2017)

In the newly elaborated national strategy for transformation (NST-1), 150km are envisaged for construction in City of Kigali and 200km in secondary cities and other cities. Of these 350km, 54 km is already under construction in City of Kigali and works have progressed to 51% completion. All phase one roads are due completion by June 2018 except Gatsata-Nyabugogo that will be completed in December 2018. 105km in City of Kigali is at 56% implementation and the due completion date is December 2018; 110km including new roads within City of Kigali are expected to start by June 2018 and will be implemented in a span of 4 years.

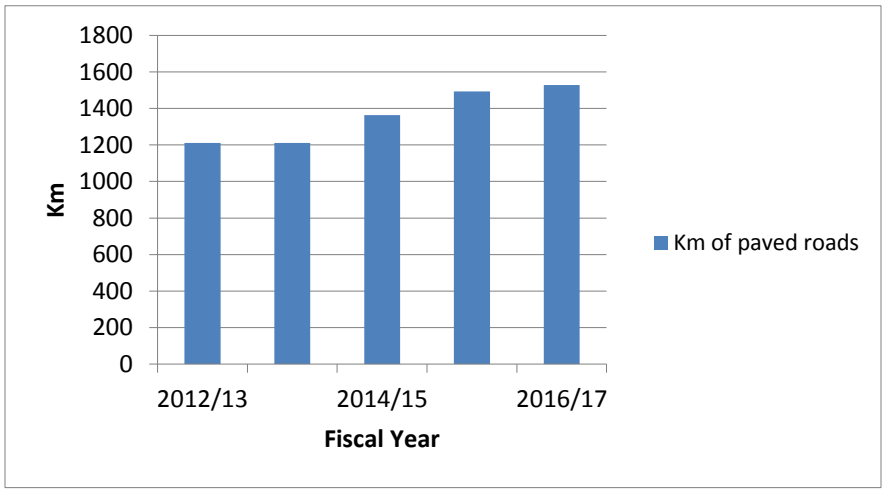

Figure 2: Chronological evolution of paved roads (Source: RTDA, 2017)

Key upgrading projects completed contributing to the total paved network include; Kivu Belt Lot 3 (Ntendezi – Mwityazo), Lot 4 and 5 (Mwityazo – Karongi), and Lot 6 and 7 (Rubengera – Rubavu) which are at completion stage, Cimerwa-Bugarama, 117.57 Km. In CoK, 65.3 Km were designed in different urban areas of mainly six satellite cities as provided for in the EDPRS2. Full rehabilitation was done and completed on the following key projects; Kigali - Gatuna (77.8 km), Kigali - Musanze (83.0 km), Rusizi – Ntendezi - Kitabi (63.0 km) and Karongi - Rubengera (17.0 km). Overall a total of 240.8 Km were fully rehabilitated for the period.

Multi-year maintenance was continuously carried out on the following key roads; Ngororero - Mukamira (55km), Rusumo - Kayonza (92km), Kayonza - Kagitumba (116km), Muhanga - Karongi (78km), Rusizi - Bugarama (38.4km), Musanze - Rubavu (67 km), Kicukiro - Nemba (61 km) and Kigali–Huye-Akanyaru (157km); implying that more than 664km were maintained during the period.

Feeder Roads

The planned feeder roads network in the context of bringing a motorable road to within 2 km of farms in Rwanda requires a global road network of about 30,000 km of which national roads with 2,749 Kms, district roads class 1 (D1) and Kigali city roads of 3,906 kms, district roads class 2 (D2) roads with about 8,000 kms, and unclassified roads with about 16,000 kms. District class 1 (D1), District roads class 2 (D2) and unclassified roads are considered as feeder roads. The law governing roads in Rwanda has classified the national roads, D1 and D2 roads while it has remained silent for the unclassified. Much of the existing 30,000kms of roads are poorly designed with poor conditions with a typical roughness higher than 10%. It is said that 70% of roads kms are in poor conditions. Rwanda has around 70,000 vehicles and 70,000 motorcycles servicing public and private transport of goods and passengers. The country records about 25,000 vehicle registrations per year[1]. Based on traffic counts, possibly 20,000 vehicles and 20,000 motorcycles are regularly serving D-1 and D-2 roads, where motorcycles are 30-40% of motorized traffic. Bicycles provide many short-distance services for goods and passengers[2]. The vehicle traffic across the roads network is growing at about 15% per year, while agriculture sector and rural population are growing at 7% and 2.5%, respectively.

There is urgent need to expand, rehabilitate and maintain the feeder roads networks to absorb the growing transport and business services that would be generated from the faster and sustained increase of agricultural growth. Investments in construction, rehabilitation and maintenance of feeder roads are expected to greatly stimulate economic growth. The current contribution of the transport services to GDP is 7 % and 15% of the services economic sector. For the past 5 years a total of 2,060 Km of feeder roads were constructed to facilitate market access for rural farmers. The national strategy for transformation (NST-1) targets 3,000Km of feeder roads rehabilitated and maintained by the year 2024. Currently, there are three on going feeder road programs; the European Union initial feeder road program started on

[1] *Data from Rwanda Revenue Authority (RRA) for 2013 show a cumulative total of 140,000 registrations, including 70,000 motorcycles. A news release from RRA in September 2015 reported a total of 170,000 vehicles. Registrations are about 25,000 per year. Allowing for discarded and 'scrapped' vehicles, the* ***available fleet*** *in 2015 is estimated at around 140,000.*

[2] *ITEC Engineering Ltd: Traffic Count on Selected Feeder Roads; September 2015*!

803km in Rulindo, Rubavu, Ngororero, Muhanga, Huye, Bugesera and Ngoma. The Kingdom of the Netherlands on 164 km in Burera, Gicumbi, Musanze, Nyamasheke and Rusizi completed in 2017 as well as the 742kms to be constructed in 10 Districts (Gisagara, Karongi, Rwamagana, Gatsibo, Nyaruguru, Rutsiro, Nyabihu, Karongi, Nyamasheke and Gakenke) under the World Bank. The entire project completion is expected by 2022 and the estimated budget requirement is FRW 400 Billion.

Railway

The Government is committed to developing a rail transport system as one of the envisaged solutions to boosting socio-economic development, welfare of Rwandans as well as cutting down the transport costs. At present, two major rail transport corridors connecting the country to the Indian Ocean are in pipeline, with the Northern Corridor running from Mombasa-Nairobi-Kampala to Kigali, and the Central Corridor linking Kigali with Dar Es Salaam. The proposed railway in Rwanda will be a single ballasted, standard gauge system with maximum speed of 120 Kph for passenger and 80 Kph for freight.

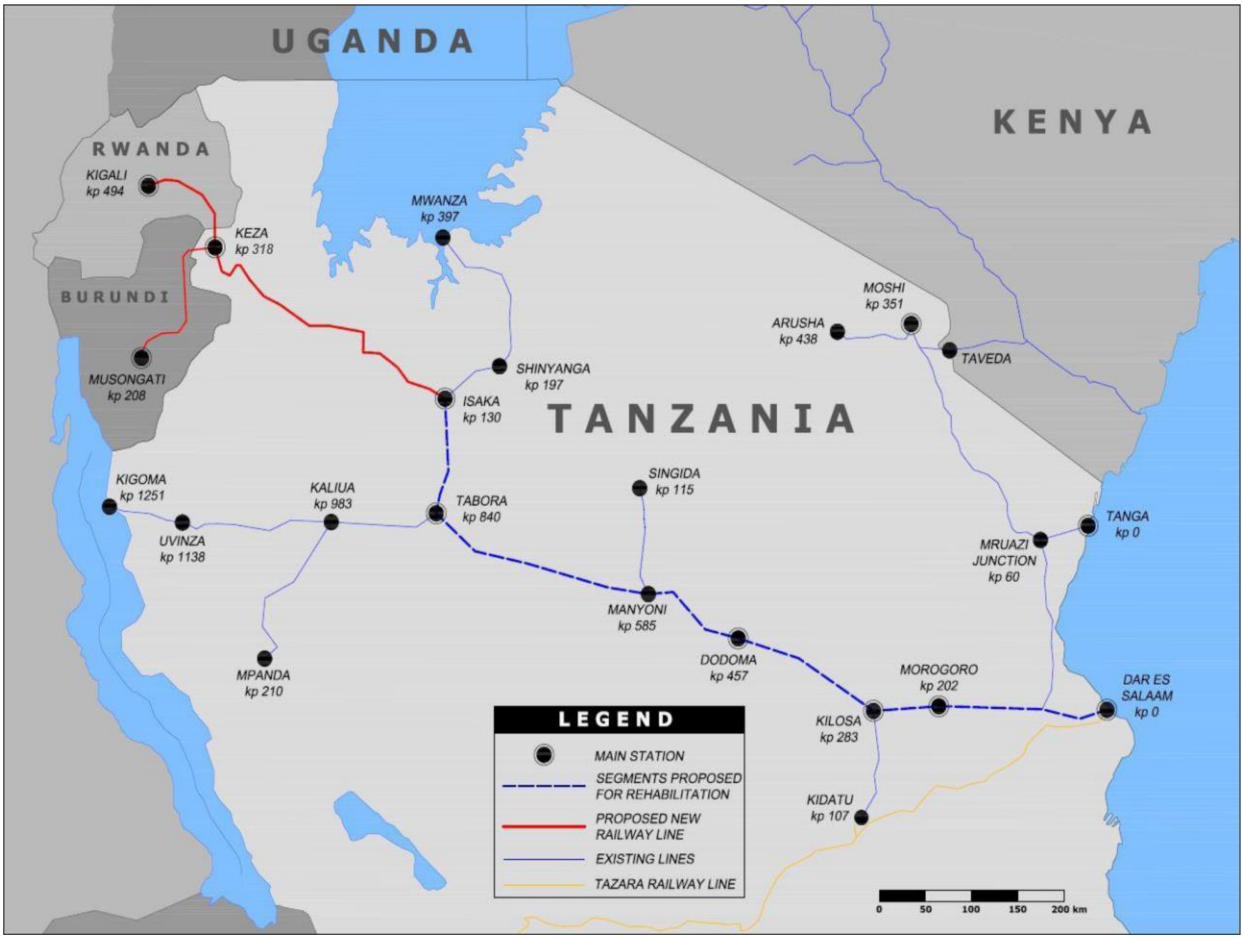

Figure 3: DIKKM Railway Project (Source: Canarail & Gibb, 2014)

The Central Corridor

Rwanda, Tanzania and Burundi (the "Partner States") have embarked on an investment program to reduce poverty among its population through accelerating economic growth and successfully implementing poverty reduction strategies and/or Economic Development Programs under the auspices of defined

country development visions. As such, the Dar Es Salaam-Isaka-Kigali/Keza-Musongati Railway Project (DIKKM) "Central Corridor" was initiated with a joint implementation. The objective of the project is to contribute to the implementation of an efficient and low-cost transport system, which will promote regional economic integration, development of areas of high mining, industrial and agricultural potential in the three countries, in line with national and regional transport policies and master plans. Most importantly, the Corridor will efficiently connect Rwanda with the port in Dar es Salaam. The Rwandan section is 150 Km including a proposed 27 km branch line to new Bugesera International Airport. The total 1,672 Km DIKKM rail line is represented in

The Northern Corridor

For the Northern Corridor Integration Projects, a Northern Corridor Standard Gauge Protocol between Kenya, Rwanda, South Sudan and Uganda was signed in 2014. The overall objective is to jointly develop and operate a modern, fast, reliable, efficient and high capacity railway transport system as a seamless single railway operation in East Africa as an SGR. The principles of harmonisation of the policy, legal and institutional framework and common SGR standards have been agreed. The Government of Rwanda authorised the ratification of the protocol by the law No. 07/2015 of 28/03/2015. In order to optimise the routing of the proposed Kampala-Kigali standard gauge railway and to expedite its implementation, Rwanda joined the on-going procurement process by Uganda for a preliminary engineering design consultant for the Kampala-Kasese SG railway.

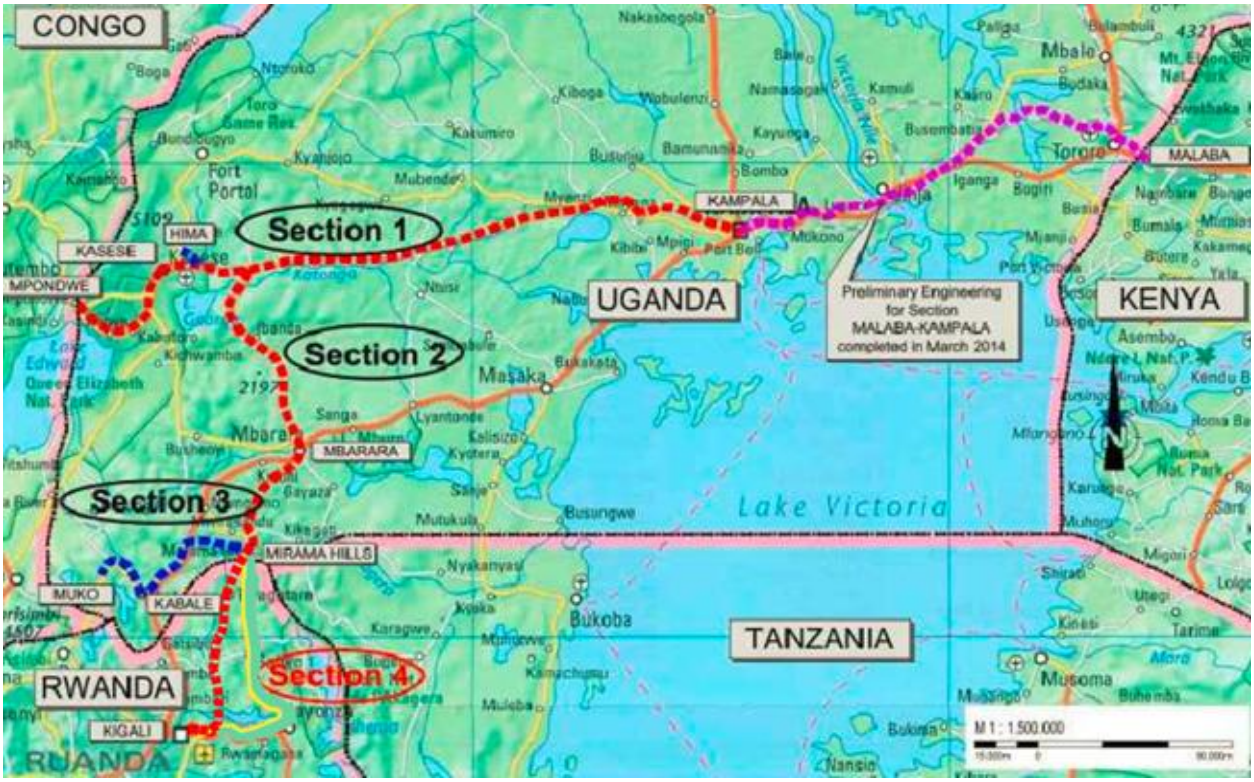

Figure 4: Mirama Hills / Kagitumba - Kigali railway project with terminal and station

In this regard, the Government of Uganda through its Ministry of Works and Transport signed a contract for the preliminary Engineering Design of the Kampala-Kigali Standard Gauge Railway line in two lots: Lot 1 from Kampala to Mirama Hills with spurs to Muko and Lot 2 being from Mirama Hills to Kigali. This preliminary engineering design was completed and Rwanda Transport Development Agency (RTDA) manages the Rwandan section. The final proposed alignment is as per illustrations in Figure 4.

Section 4 of denotes Rwanda, which are 148 Km with 139 km freight mainline linking Mirama Hills / Kagitumba with the Kigali Freight Terminal and six (6) km being Passenger Station Kigali North Line and 3 Km linking to Passenger Station Kigali South Line.

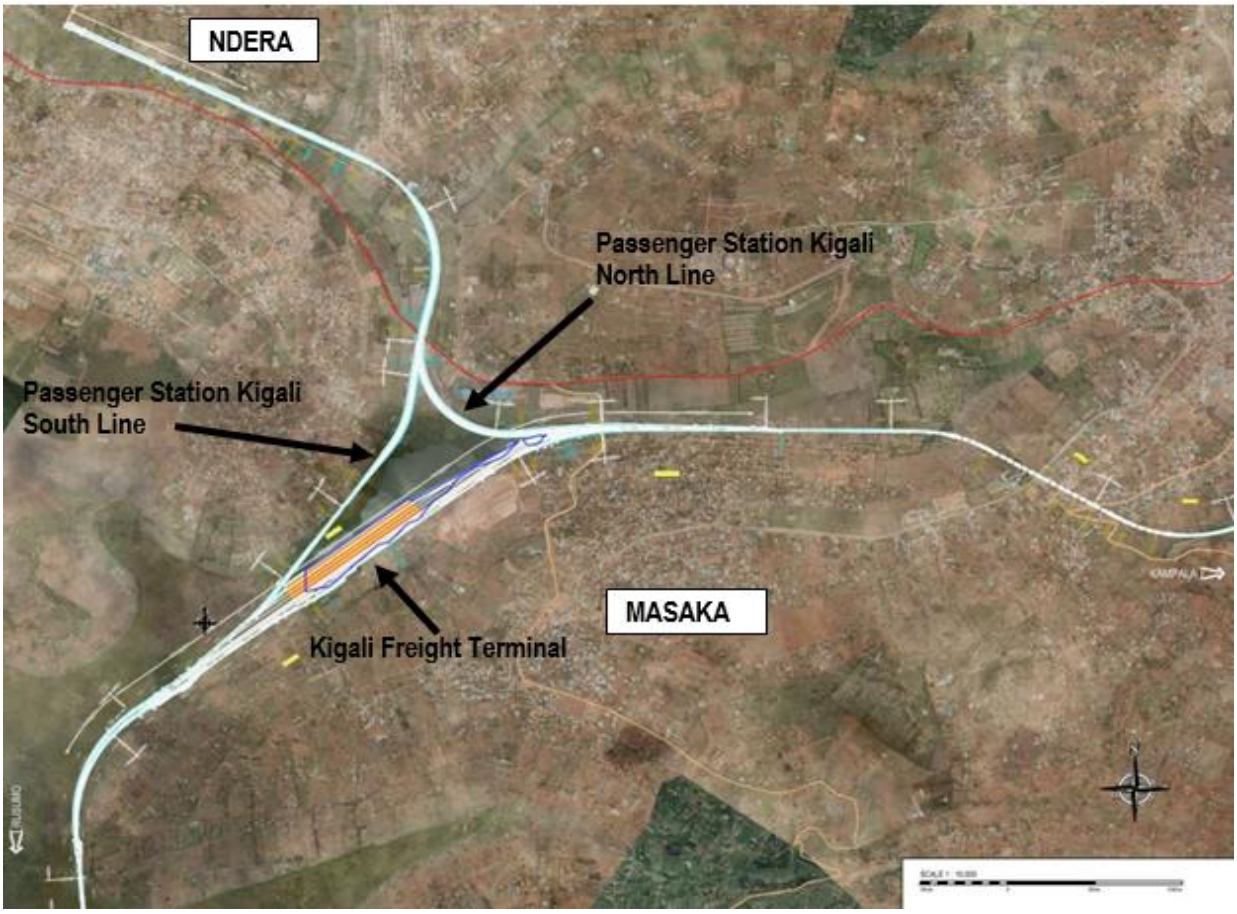

Figure 5: Passenger rail stations – Kigali South Line

2.1.2 Air Transport

Rwanda's aviation industry is slowly coming of age, and the country is positioning itself towards becoming an aviation hub for the region. The government of Rwanda has made a decision to revamp the air transport systems by massive investments in aviation infrastructure and creating the environment that attracts both public and private participation. Substantial investments have been made to improve the Kigali international airport and Kamembe airports, including among others, expansion of the terminal building, rehabilitation of the runway, apron and control towers, and modern navigations aids, etc.

These efforts have already paid off with increased traffic at Kigali International Airport. The government is also undertaking other key projects in the sector, including the impending expansion of Rubavu airport in the Western Province, and construction of the new Bugesera International Airport on green site, that are expected to turn around the aviation industry once they are completed.

The Government through the national airline (RwandAir) is expanding its network (destinations), fleet and partners to promote the airline industry. Much has been done in terms of investments in state-of-the-art aircraft, achieving international standards certification in safety and quality of operations such as the IATA Operational Safety Audit (IOSA), IATA Safety Audit for Ground Operations (ISAGO) among others. Investment in the latest technologies and innovations, capacity building of highly skilled jobs such as pilots and aircraft technicians, while putting in place accommodative regulatory environment to support the sector for efficiency and transparency. These certifications beyond safety standards, allows RwandAir to be a member of the International Air Transport Association that in turn increases passenger numbers through partnerships with other airlines and organisations globally. The Government of Rwanda has also spearheaded the airspace liberalisation agenda with implementation of SAATM (Single African Air Transport Market) that provides the airline among other benefits the access to potential markets. With this progress RwandAir is able to provide better accessibility/connectivity into and out of Rwanda to the rest of the world in line with Rwanda's economic growth imperatives to promote tourism, investment, agricultural production and employment, through transportation of people and goods (imports and exports of air cargo).

RwandAir currently operates twenty-five (25) destinations predominantly within African cities, Europe, Middle East and Asia. In the NST1 period (2018/19-2023/24), RwandAir plans to intensify its current network and expand to a wider network including Far East (China) and the United States of America. This growth will bring the total number of destinations to fifty-five (55) by end of NST1. A strategy is being implemented for this growth including creating a mini hub in West Africa. Currently Benin is being developed to serve this purpose. The hub is currently serving 4 destinations and is expected to serve 7 destinations by end of FY 2018/2019. Discussions are ongoing for operationalizing a Joint Venture company that will see more growth in the region.

This network expansion will have to be supported by a growing fleet, RwandAir currently operates a fleet of 12 aircraft in a combination of aircraft types that include; Airbus, Boeing and Bombardier. RwandAir expects to acquire more aircraft, in particular three (3) Airbus and two (2) Boeing. RwandAir targets to grow its fleet to 30 aircraft by end of the planning period (NST1). The combination of growth in the route network and fleet plus other factor are expected increase the number of passengers carried. During the FY 2016/17, RwandAir carried a total of 771,454 passengers. By the end of NST1, RwandAir targets to have carried a total of 2,174,744 passengers.

Rwanda Airport Company (RAC)

Countrywide there are five airports (Kigali International Airport (KIA), Kamembe, Rubavu, Nemba, Huye and the co-owned New Bugesera International Airport (NBIA), which is under construction. Of the five airports, only Kigali International Airport and Kamembe airports are operational. In order to maintain operational efficiency at KIA, some upgrades have been undertaken. The upgrade at KIA includes expansion of the transit lounge, acquisition of two vehicle-scanning machines to boost efficiency of airport security and upgrading Airfield ground Lighting System from Category 1 to Category 2.

At Kamembe Airport, there has been considerable investment in the airport's infrastructure over the past years; mainly resurfacing of the runway and taxiway, and construction of a new terminal building. Currently, feasibility studies and design for upgrading Navigational Aids, communication system,

automated weather observing system and airfield lighting is underway. The overall construction progress for NBIA is estimated at 20% for the multimillion-dollar project. Lastly, government through MININFRA and MYICT are currently exploring development of drone operations. Rwanda Airport Company (RAC) is brokering partnership with Redline for development of Drone Ports. The remotely piloted aircraft system (RPAS) Strategy and Policy is being elaborated by the Ministry of Infrastructure and ICT and the anticipated completion date is June 2018.

Expansion of the national carrier

The Government through the national airline RwandAir has the strategy to expand its network (destinations), fleet and partners to promote the airline industry and much has been done in terms of investment in state-of-the-art aircraft, achieving international standards certification in safety and quality of operations such as the IATA Operational Safety Audit (IOSA), IATA Safety Audit for Ground Operations (ISAGO) among others, investment in the latest technologies and innovations, capacity building of highly skilled jobs such as pilots and aircraft technicians, while putting in place accommodative regulatory environment to support the sector for efficiency, transparency and fifth (5th) freedom traffic rights for airlines to operate. These certifications beyond safety standards, allows RwandAir to be a member of the International Air Transport Association that in turn increases passenger numbers through partnerships with other airlines and organisations globally. The government also supports the national carrier, RwandAir, to make it more competitive on the continent. The company is providing better accessibility/connectivity into and out of Rwanda to the world in line with Rwanda's economic growth imperatives to promote tourism, agricultural production and employment, through access to markets for people and goods (imports and exports of air cargo).

Safety and security oversight

To ensure viability and sustainability, growth in the aviation industry requires a corresponding growth in the safety oversight capacity. To match the growth trajectory, RCAA has digitalized its civil aviation safety oversight and reporting mechanism. Highly competent personnel have been recruited and existing inspectors trained to ensure acceptable levels of safety are maintained.

The new Rwanda Civil Aviation Regulations were promulgated in April 2017 and the tertiary regulatory material has been aligned with the new regulations. Effective safety oversight does not only promote safe and secure air operations, but it also enhances acceptability of locally certificated air operators by other states. In this regard, EASA accepted RwandAir to commence its operations into Europe. Currently, Rwanda CAA is working closely with FAA to secure USA Category 1 status to allow RwandAir commence operations into USA. In that regard, Rwanda has invited FAA to conduct a Technical Review ahead of the IASA activity. Rwanda invited ICAO to conduct an ICVM during the month of August 2017 in order to raise its effective implementation of ICAO SARPs to above the AU target of 60%. To this effect Rwanda achieved 74% after the August 2017 ICVM.

As a result of improved safety oversight systems, incident rates over the past years have significantly decreased despite increased level of activities. The reported incident for 2017 is 0.0012 compared to 0.001 in 2016 referring to the bird strike reports. The incidence rate is at 1 per 10,000-flight hours way

below the world average of 0.005 per thousand flight hours. Bird strike rate has reduced by 20% at Kigali International Airport, saving significant amount of money for operators. More effort is still required to further reduce the rate to acceptable levels. The cabinet has approved Rwanda Aviation Accident Investigation Department structure. AAID is working towards increasing effective implementation of ICAO SARPs from 1% to 50% during an off-site validation process.

2.1.3 Inland Water Transport

Currently there is no significant inland water transport infrastructure and services in Rwanda. There is effort for development of Lake Kivu transport in Western Province and the Akagera River Transport between Kagitumba in the Northern Province and Lake Victoria. The key challenges are; lack of legal and comprehensive regulations for the development of water transport in Rwanda and lack of professional expertise in water transport sub sector.

To operationalize inland water transport on Lake Kivu, the following are the ongoing activities:

- Nkombo Boat II development is under procurement at a total cost 1.5 Billion Frw and expected to be completed by June 2019.
- 4 ports (Rusizi, Karongi, Nkora and Rubavu) to be developed by Dec. 2019
- Out of the required USD 27.3 Million for this activity, currently USD 12 Million (44%) was secured, thus a gap USD15.3 Million (56%) is to be secured.
- 2 Ferries to be supplied by Private Sector by June 2020. It is intended to secure Private Public Partnership for port management and ferries operation, where GoR contribution would be the infrastructure and Private Sector would invest in the acquisition of Ferries (USD 7 Million); the full operation on Lake Kivu is planned to start by June 2020.

Demand Analysis and Forecast for IWT

Development of Inland Water Transport (IWT) is envisioned mainly on Akagera River and Lake Kivu. The demand for lake transportation at Lake Kivu covers passenger and cargo flows between major towns of Rwanda's Western Province as well as cross-border trade activities between Rwanda and Eastern DRC. The focus is on the districts of Rubavu, Rutsiro, Karongi, Nyamasheke, and Rusizi as well as the cities of Goma, Bukavu, and the Island of Idjwi (DRC side). These locations directly border Lake Kivu and have been identified as catchment area for the planned lake transportation service. In 2015, Rwanda recorded about 165,000 tons of cargo in trade with RDC at the key cross-border points as illustrated in Figure 6.

Lake Kivu water transport project

Lake Kivu is approximately 90 km long and 50 km at its widest part. It is estimated to cover a total surface area of about 2,700 km^2. The lake has a maximum depth of 475 m and a mean depth of 220 m, making it the world's eighteenth deepest lake by maximum depth, and the ninth deepest by mean depth. The Rwandan side of the lake has nascent professional water transportation service with only one ferry between the major centres bordering the lake and carries only passengers. Additionally, there are occasional boat services for passengers and cargo between some centres, which, however do not run on a regular basis. On the DRC side, a lake transportation system exists for intra-DRC flows of passengers and cargo including e.g. regular services between the cities of Goma and Bukavu, there is no

transportation service embedded in a formal transport licensing regime which carries passengers and cargo across borders.

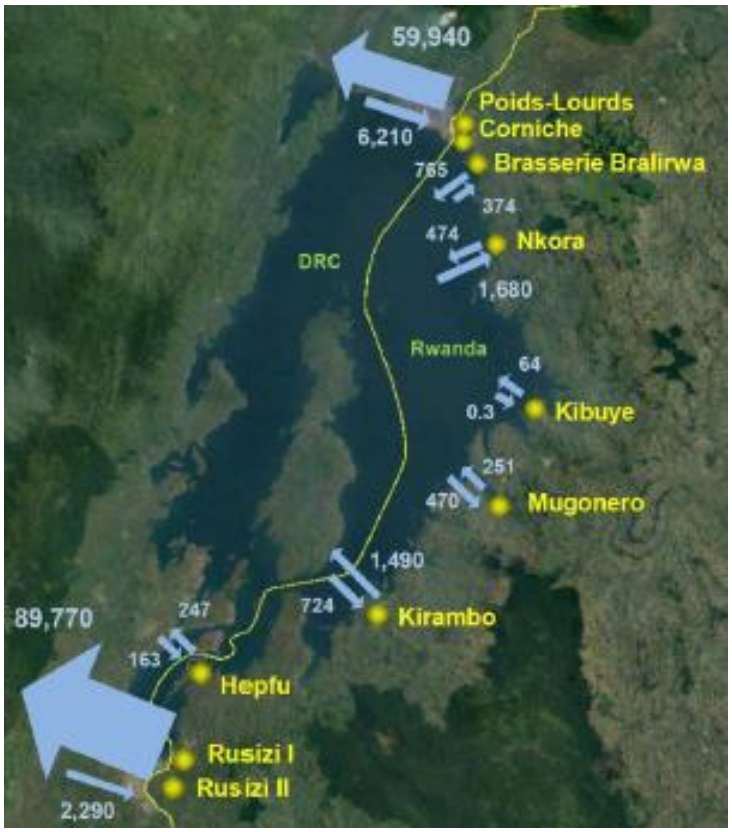

Figure 6: Cross-border trade volumes for project area in 2015 (Source: HPC, 2017)

Demographics and Transport Network in Rwanda's Western Province

In 2012, the Western Province population was about 2.5 million people[3]. This corresponds to about 23.5% of total Rwandan population. Out of the 2.5 million people, 73.2% is actively engaged in agricultural, fishing and forestry activities (Figure 7).

As regards to road transport alongside Lake Kivu, the main road from the Northern side of the lake (Rubavu) to the Southern side of Rusizi is basically in good condition. The road distance from Rubavu to Rusizi is 107Km while the distance using the lake is 25 Km, highlights that a fast ferry system along the Lake could reduce transport time and associated costs considerably

[3] Rwanda Population and Housing Census (2012)

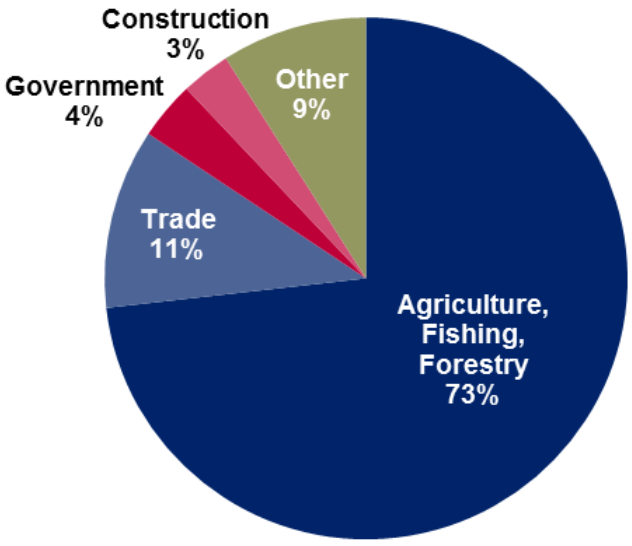

Figure 7: Western Province Main jobs in percentage (Source: NISR, 2010/2011)

Rwanda-DRC Cross-border Trade Lake Kivu Region

Analysis of Existing Demand for Lake Transportation at Lake Kivu

On the side of Rwanda, currently there operates one ferry two times per week between the major ports of Rusizi, Karongi and Rubavu. In addition, there are occasional boat services between the major ports, which, however, do not run on a regular timetable and often have to be chartered. There are also boats used to ferry people to some of the islands in the lake, but these do not run regularly. Local fishermen operate along the entirety of the lakeshore, usually in dugout canoes or other handcrafted boats.

On the DRC side of Lake Kivu there exist an established ferry system with several regular services between Goma and Bukavu. The Island of Idjwi is only served on an irregular basis. Similar to the Rwandan side, there are also boats used to transport passengers to some of the islands in the lake on an irregular basis as well as boats operated by local fishermen along the entirety of the lakeshore.

The study to enhance transport and trade connectivity on Lake Kivu identified the main port locations to be developed initially at Rubavu, Nkora, Karongi and Rusizi to provide increased water-based transport connectivity for Rwanda initially, and subsequently to develop new access of cross-border trade directly across Lake Kivu to the Democratic Republic of the Congo (DRC). Figure 8 illustrates the planned locations and the ferry operation line on Lake Kivu.

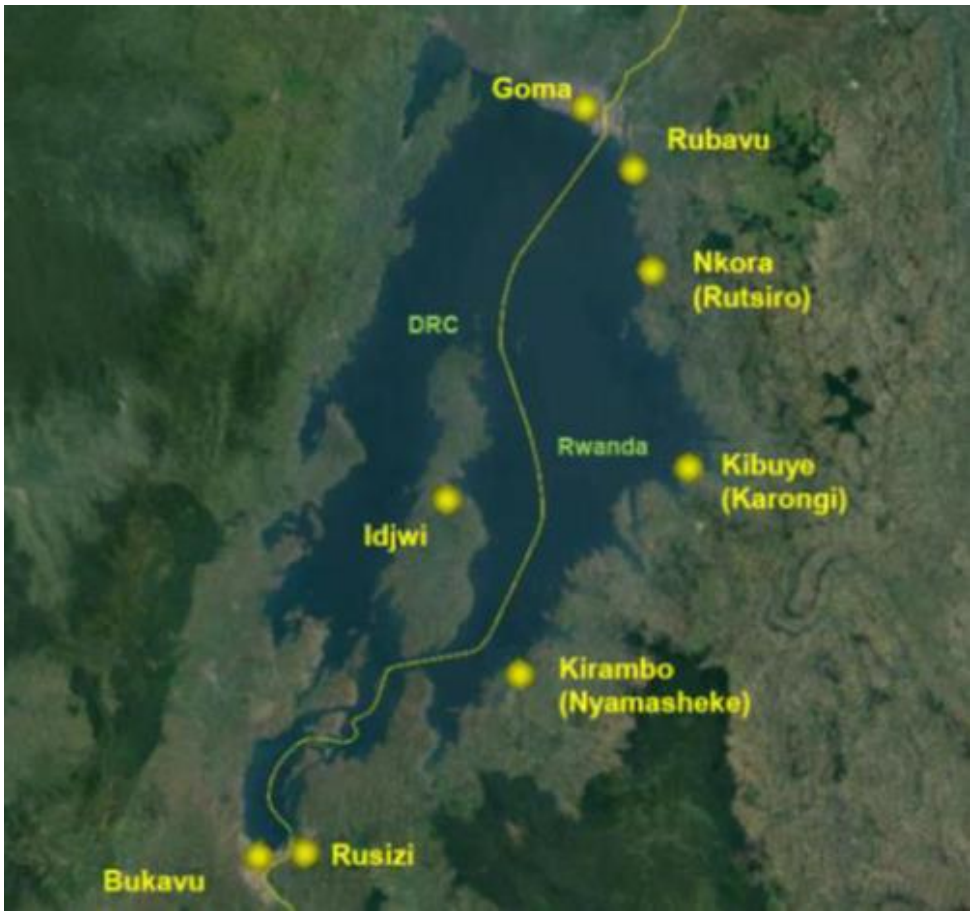

Figure 8: Planned Ports Locations and Ferry Operation Line on Lake Kivu

Once these ports are constructed and ferry operational, this will facilitate National connectivity as well as regional integration.

Akagera River

Initial assessment on using Akagera River for transport services has provisionally proven to be technically feasible[4]; however, commencement of commercial operations requires more thorough technical, economic and financial viability inland water transport service in Akagera River. The entire project covers 260 km of river, from Lake Victoria to Kagitumba. River Akagera provides transport alternative that is crucial in facilitating regional trade between Rwanda, Uganda and Tanzania, which will in turn enhance regional integration. Depending on the nature of the project, there is need for collaboration between the countries in terms of resource mobilisation and implementation.

2.1.4 Road transport services

Public transport

In 2012, the Government of Rwanda approved the Public Transport Policy and Strategy, which lead to reforms within the public transport domain. The reforms inspired various investors to make capital investments into passenger transport business. In 2014, the Government of Rwanda further introduced the

[4] Interim report - Feasibility study for the navigability of Akagera River by iTECO Engineering Ltd 2009

tax waiver policy on imported passenger transport vehicles with the aim of increasing the purchasing power of bus operators and reducing transport costs. This was done in the line with the policy to control air pollution and traffic congestion and accidents within the City of Kigali; particularly by regulating ageing and unsafe 18-seater minibus taxis. Figure 9 illustrates the remarkable increase in number of buses as result of the aforementioned policy.

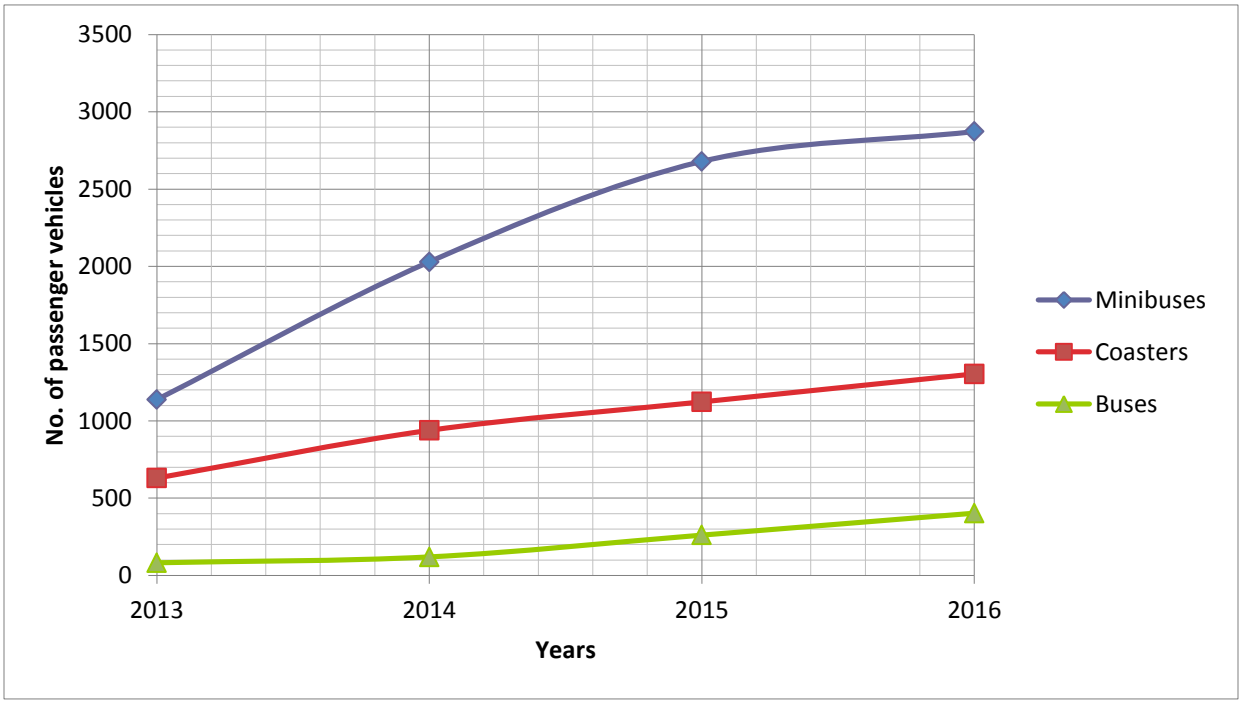

Figure 9: Trend of passenger transport vehicles 2013-2016 (Source: RURA, 2016)

The increase in number of vehicles and vehicles seat capacity have led to many benefits such as increased mobility of persons; reduced traffic congestion; reduced air pollution; and increased passenger safety and comfort. In the same spirit, the Government of Rwanda restructured the former public owned passenger transporter (i.e. Office National de Transport en Commun, ONATRACOM) into a public-private company (i.e. Rwanda Interlink Transport Cooperative, RITCO) because the latter failed to fulfil its socio and economic mission. ONATRACOM depended on the government financial support but its core mission of removing social and economic isolation was compromised as a result of poor management and high institutional operation costs.

Currently RITCO is financially self-supporting. This is already a big step as compared to an average loss estimated at 35,000,000 Rwf per month experienced by the former ONATRACOM. RITCO plans to acquire 163 standard buses in two batches. The company ordered 50 buses, which are in operation. The newly passenger buses purchased are safe, comfortable, and environmental friendly. They have built-in cabins with an approximate carrying capacity of 52. These buses will operate on intercity routes. It is anticipated that RITCO as well as other bus operators will continue to increase their fleet size as per passenger demand. This will eventually contribute to reduction of waiting time from the current 25minutes to 15 minutes by the year 2014. To improve professionalism in drivers, driver's management system powered by a driver's vocational card (DVC) has been introduced to monitor driver behavior.

The government has also put in place other initiatives to improve public transport. These include; Electronic Ticketing Systems for inter–city buses, Mobile phone-based Booking Systems for some inter–city bus companies, Automated Fare Collection used in buses in the CoK, Taximeters in taxi cabs, Free Wi-Fi internet in Kigali City Buses, Motorcycle Taxis and taxi cabs booking systems. Bus shelters were constructed in the City of Kigali and outside on paved roads, including Kivu belt lot 4&5, Karongi urban roads and City of Kigali roads whereby 82 bus shelters were constructed. The plan is to have at least bus shelters on 300 bus stops planned on the road network.

A total number of 20 bus parks were constructed countrywide and these include: Nyanza-Kicukiro, Giporoso, Nyabugogo, Kimironko, Kabuga, Muhanga, Nyanza, Huye, Nyamagabe, Ruhango, Gicumbi, Rusizi, Rubavu, Mukamira, Ngororero, Musanze, Kayonza, Nyagatare, Ngoma, Nyakarambi and Nyamata.
Besides these achievements, there are ongoing Public Transport Projects which entailing the feasibility and preliminary design of Bus Rapid Transit (BRT) system of the city of Kigali (CoK) whose progress is at 30% and the scheduled completion is 2018, development of restructured improved public transport services in the City of Kigali, intercity and rural areas due 2018 as well as scaling up of ICT usage in public transport.

Road safety

Twenty-three years ago, Rwanda had one of the worst road-safety records in the world. Using the World Bank situation report, commissioned in 1996, The Government of Rwanda started a new road-safety programme, financed by the World Bank that embarked on a complete revision of the country's laws on road conduct. New regulations, after 2002 were strictly enforced, including mandatory wearing of seatbelts, speed limits, vehicle inspections to ensure standards of roadworthiness and limits on blood-alcohol concentrations.

These legislative changes were followed up in 2003 by a public awareness campaign and a law introducing further penalties for lack of seatbelt use or failure to wear helmets on motorcycles. Last year, all passengers and goods transport vehicles were requested to install speed governors and this has resulted in positive impact in reducing road accidents. In addition, road safety features are being implemented, through on going multiyear maintenance contracts on national paved roads such as Kigali-Muhanga-Huye-Akanyaru-NR1, Kigali-Kayonza-NR4, Kicukiro-Nemba-NR5, Kigali-Musanze-Rubavu-NR2, Kigali-Gatuna-NR3, Kitabi-Crete Congo/Nil-Buhinga-NR10, Musanze-Rubavu-NR2 and Muhanga-Ngororero-Mukamira-NR16. These works include but not limited to road markings, vertical signage, sealing of all potholes, repair of shoulders and drainage and the aforementioned works shall be completed by 2018. Government is also investing in "*Made in Rwanda*" crash barriers; which will be installed for 24km starting 2017 through 2018 on Kigali-Kayonza, Kicukiro-Nemba, Kigali-Musanze-Rubavu, Musanze-Cyanika-Kinigi road, Kigali-Gatuna, Kigali-Muhanga-Kanyaru, Muhanga-Karongi, Muhanga-Ngororero-Mukamira, Ruhwa-Rusizi-Mwityazo-Karongi-Kitabi-Crete-Congo Nile-Buhinga.

Other initiatives include the covering of side ditch drains on newly built roads in urban areas, 647km will be covered along existing paved roads in FY 2018/19, 137km to be covered through ongoing projects. In a related development, Government of Rwanda with support from the African Development Bank has embarked on implementing a scientific approach for evidence-based planning, decision support and

management of the road network; the Road Asset Management System (RAMS). To this far end, the Master Plan and Architecture System Design are under elaboration.

All measures taken by the Government of Rwanda have contributed to the reduction of road accidents in Rwanda. The annual road fatalities are estimated at 420 deaths making Rwanda the safest in the region and Africa in general. On the other hand, safety records must be maintained and improved through constant update of codes and regulation. The sector will continue in its effort to reduce the fatality rate as traffic volumes are set to increase as a result of the betterment of the economy and of the improved accessibility.

2.1.5 Challenges in transport sector

The key challenges of the transport sector are as follows:

- **Lack of all-season roads in rural areas:** A significant proportion of the Rwandan rural population, whose livelihoods depend on agriculture lack access to rural transport facilities, including feeder roads. This strongly hampers the agricultural development and prevents them from increasing access to markets, enhancing their competitiveness and improving their incomes and livelihoods. To overcome the above, the Government of Rwanda and its development stakeholders started the Feeder Roads Development Program in 2011. The lack of all-season roads in rural areas is manifested in the increasing post-harvest losses that are estimated to be more than 25% for the grain5. The government through the National Feeder Road Policy (NFRPS) will increase farmers' accessibility to markets as well as buyers' accessibility to farm gates as well as collection centres by developing 3000 km of feeder roaders by the year 2024.

- **Imbalance between road traffic and available road infrastructure:** The Government of Rwanda is spending about 10 billion Rwandan Francs on an annual basis to keep the road infrastructure in a usable state. This is exuberated by the absence of relevant regulations such as axle load control and weighbridges in place to monitor overloading. This results into excessive use of the road infrastructure accelerating dilapidation as well as increased budget expenditure. This in turn, limits mobility, connectivity, and cross-border trade. In this line, the Government of the Republic of Rwanda will be focusing on rehabilitating about 450 Km thereby realizing a transit time of about 5 days from Mombasa to Kigali as well as 3 days from Dar es Salaam to Kigali.

- **Public Transport characterized by delays, inaccessibility and unpredictability:** the lack of streamlined bus schedules, delays at stops and terminals, fares and passenger information prevent passengers to cut down on their transit time and costs and hence lower operational revenues. The Sector will promote the route franchising approach to stimulate private sector to provide public transport services in remote areas and will perform public transport accessibility studies to identify underserved area. Also, the Sector will promote a route profitability study to cater for public transport affordability and predictability, as they are the key focus of the Government of Rwanda.

5 Nsengumuremyi, E. (2016). Harvest Losses High in Rwanda: How to turn post-harvest loss into income generation and food security

- **Lack of integrated public transport:** public transportation runs efficiently when it operates as a seamless, integrated system. Fragmented public transport system in Rwanda has long been a major complaint in passenger satisfaction surveys. It creates overlapping transport services and discourages ridership. To reach a destination, for example, a passenger is often forced to take multiple routes, each with different schedules and transfer stations but without coordination on passenger information. As a result, the passenger may have to take a long walk to make transfers and pay multiple fares. In order to save both passengers' transfer time and costs, the Government will develop a uniform fare design agreement to provide a more coordinated transport system in a multi-agency environment. The GoR will ensure the management of public transport facilitates ease of integration of modes as one ticketing system and fare collection strategy would exist for all public transport modes. It is at the same recognized that efficient transit operation cannot be achieved without a hub and spoke system that entails interchanges between routes. The sector will accordingly perform a transit interchange quality study to review the facilities under this very important aspect of the trip chain in order to identify and deliberate the necessary improvements. It is also recognized that transit hubs are nodes that facilitate trade and retailing and may generate employment.

- **Occurrence of accidents and incidents in the transport sector:** As access to transportation facilities and services increases, there will be need to improve mechanisms preventing and reducing the severity and frequency of traffic accidents. Transport safety is particularly critical in road transport because motorized and non-motorized traffic often share the same space while having differing operating speeds, knowledge of traffic regulations and levels of protection. According to RNP, 71 per cent of the total road traffic accidents registered since January 2017 involves motorcycles, pedestrians and bicycles. Most of these road accidents are avoidable if all road users strictly adhere to traffic rules. Taxi-motor operators take lead in causing road traffic accidents and this is attributed to recklessness driving, drunkenness, violation of traffic lights, abuse of Zebra Crossings and dangerous maneuvers such as over-taking in hotspots6. The GoR is committed to lay all possible strategies to enhance road safety measures, which will further curb road carnage. It will continue to promote modern technology to support efforts of keeping our roads safe and security intact. This will include a review of the road design standards for urban and extra-urban roads as well as best practices in road safety management such as merit cards to incentivize correct behavior or a score system on drivers' licenses that can ultimate result in the loss of the license even as a result of an accumulation of several minor infractions.

- **Air transport subsector has limitations in infrastructure, investment and human capital:** Zajac (2016)[7] underscores the role of air transportation in boosting international tourism as well as promotion of regional, continental and global trade. His Excellence, the President of the Republic of Rwanda, during the Aviation Africa Summit is quoted "As we work to expand regional transportation and digital networks, we must do the same with air transport if we want to increase tourism, trade and investment within Africa and with the rest of the world"[8].

[6] Munyuza, Dani. (2017). Rwanda National Police campaign to curb road carnage, Kigali, 23rd May, 2017
[7] Zajac, G. (2016). The role of air transport in the development of international tourism: Journal of International Trade, Logistics and Law, Vol 2(1) p.1-8.
[8] H.E Paul Kagame, "Key note address at the Aviation Africa Summit", February 2017, www.newsofrwanda.com (15 November 2017)

Rwanda's total trade amounted to US$ 570.11 million, lower by 7.40 per cent over the fourth quarter of 2015 was made up Exports worth of US$ $ 109.50 million, imports of US$ 400.31 million and re-exports valued at US$ 60.30 million.[9]. The Government will construct the New Bugesera International Airport and upgrade Kamembe and Rubavu airports so as to increase passenger and freight volumes. It will further invest in human and institutional capacity to bridge existing air transport infrastructure gaps.

- **Over-dependence on road transport and high transport cost:**
  The national transport sector system is centered primarily on roads with paved roads between Kigali and other major towns. The transportation of persons and goods in Rwanda is mainly based on the road and aviation modes, with rail linkages, inland waterways, and pipeline modes being planned for the future. Under developed waterways, railway, and pipeline transportation have resulted into high transport cost and increased road maintenance costs in Rwanda. It is the sector's primary goal to expedite the design and implementation processes of the alternative means of transport.

- **Under developed freight transport industry:**
  Transportation is a reflection of economic activity, in as much as products must be moved to markets. The national freight service providers are all from the private sector. It is reported that they are faced with many challenges (i.e. operation of small fleets that do not allow economies of scale in matters of logistics and pricing, and poor mechanical condition of the fleets that raise vehicle operating costs which are in turn passed on to the consumers of their services) that make competition among themselves and with the locally-based international firms ineffective.
  The government of Rwanda is developing the National Freight Transport and Logistics Policy which will improve logistics services offering, institute an efficient transit and trade facilitation, develop logistics facilities, and improve trade finance and trade system, and a set up logistics governance.

2.2 Institutional overview of the transport sector

2.2.1 Ministries

At the National level there are six Ministries that have responsibilities in the transport sector. The Ministry of Finance and Economic Planning (MINECOFIN) is responsible for mobilising finances from various sources for the provision of transport infrastructure and some services. The Ministry of Infrastructure (MININFRA) through its affiliated agencies responsible for the road and water, air and rail subsectors development oversee development of the transport sector.

The Ministry of Natural Resources (MINIRENA) reviews and approves Environmental and Social Impact Assessments (ESIA), and monitors implementation of ESIA mitigation measures in transport infrastructure projects. Ministry of Local Government (MINALOC), through the City Council of Kigali, is responsible for the planning, development and maintenance of transport infrastructure and services within its jurisdiction. The Government policy of decentralisation gives the responsibility for planning,

[9] NISR, "Formal External Trade in Goods Statistics report (Q4, 2016)", www.statistics.gov.rw/publication/formal-external-trade-goods-statistics-report-q4-2016, (15 November 2017)

programming and implementing road maintenance of both classified district road network and the un-classified network of District Roads Class 2 and tracks to District administrations. The District Administrations are under MINALOC, which works closely with other Ministries such as the Ministry of Agriculture and Animal Resources (MINAGRI) in prioritising interventions for feeder roads. Each District has an Infrastructure Unit responsible for overseeing maintenance works of roads in its jurisdiction, with technical support from the Roads Transport Development Agency (RTDA). The Ministry of Foreign Affairs, Cooperation, East African Community, in collaboration with MININFRA, coordinates the planning and development of regional policies and transport infrastructure.

2.2.2 Transport sector agencies

Under the reform process, the Government has separated functions and allocated policy, implementation, and regulatory responsibilities to a number of agencies under the overall supervision of the MININFRA. Rwanda has strong institutional framework for the management of the transport sector. In addition to the successful set up of RTDA in 2010, the Government realized several other institutional reforms including the establishment of semi and autonomous agencies including Rwanda Civil Aviation Authority (RCAA), Rwanda Utility Regulatory Authority (RURA), RwandAir (public) and Rwanda maintenance Fund (RMF). The RMF a second-generation road fund established in 2006 to finance the maintenance of the road network, has demonstrated positive impacts as road maintenance has been improving from year to year. The Rwanda Transport Development Agency (RTDA) is a government institution affiliated to the Ministry responsible for the road, rail and water subsectors development. The main functions of RTDA include managing and controlling national road network with a view to achieving road safety and maintenance, manage and control waterways transport infrastructure with a view of ensuring their value added and to develop railway infrastructure in Rwanda among others. Within the decentralized administration framework, District Infrastructure Departments or local authorities are accountable for the development and maintenance of local unpaved and feeder roads, thus making them responsible for the execution of the road maintenance procedures as well as assisting the Ministry in reviewing the Road Maintenance System.

Regulation of transport sector services is the responsibility of the Rwanda Utilities Regulatory Agency (RURA), which was established by Law No. 39/2001 of 2001. Its mandate is to regulate public utilities including transportation of goods and persons by all modes of transport. RURA is therefore responsible for licensing of transport service operations, collection of the license fees, planning of routes and terminals, monitoring of service levels and enforcement of transport service regulations. In summary, RURA has the responsibility to ensure that there is fair competition in the market, quality service provided to the consumers, and that operators comply with national transport service laws and regulations. Rwanda Civil Aviation Authority (RCAA) is responsible for regulation of air transport infrastructure and services in conformity with the International Civil Aviation Organization (ICAO) and other international standards. The air transport sub-sector is also composed of the Rwanda Airports Company responsible for provision of Air Navigation Service and Airports Management. Other Service providers in the sub-sector include RwandAir (the National Carrier), Akagera Aviation (providing trainings and general aviation services).

2.2.3 Transport sector funding institutions

The current transport funding, which is mainly available from Government sources and assistance from the development partners, is not sufficient to meet growing demands in the transport sub-sector. The Ministry of Infrastructure is the organ with overall responsibility for transport infrastructure policy, strategy, planning, monitoring and evaluation. Ministry of Finance and Economic Planning (MINECOFIN) is responsible for the overall economic planning, allocation of financial resources, national public investment programs including in transport and also mobilizing financial resources. MINECOFIN also ensures that sector investment programs are consistent with the national development frameworks.

From a development partner/donor funding perspective, it is evident that there is a plethora of development and funding organizations active in Africa, creating a very complex environment within which African States have to shape their policies and transport strategies. Rwanda is not excluded from this situation, which presents a challenge in determining the significance of association with these development partners, and the benefits that could be derived for the country from participating in the initiatives and opportunities presented by such partners. The development and funding organizations coordinate efforts through the establishment of different organizations, or the implementation of specific initiatives to address the transport infrastructure needs in African States. In order to ensure that funding can be applied in an effective, sustainable and structured manner, States have engaged in the development of master plans, joint initiatives, task forces and groups covering country specific and regional transport needs.

From a Rwandan perspective it is important to understand the association with and participation in the activities of Development Partners and the extent to which it will help to shape the country's transport policies and strategy. At present Rwanda has relations with various international aid and development agencies which include World Bank (WB), European Union (EU), African Development Bank (AfDB), International Development Association (IDA) (WB Fund for the Poorest), Japan International Cooperation Agency (JICA), Arab Bank for Economic Development in Africa (BADEA) (funded by League of Arab States), Fund for International Development (OFID) (OPEC Fund) and more.

The Development Partners have been engaged in the creation and development of various initiatives or vehicles with the view of addressing the challenges, including the MDGs on the African Continent. In order to ensure effective management of the myriad of development partners, international development initiatives and donor funding, the need for intelligent, coordinated and appropriate development programmes has been realized by Rwanda with the introduction of new funding mechanisms. As far government financing institutions are concerned, Road Maintenance Fund (RMF) is responsible for financing road maintenance work of National roads and District and City of Kigali Roads.

Road Maintenance Fund (RMF)

While transport sector financing is generally allocated through the national budget, the road sector has a specific Road Maintenance Fund (RMF) under MININFRA, which is responsible for the actual management and distribution of funds for maintenance of public roads. The RMF is still in its formative years, but it appears to have the right building blocks for a successful "second-generation" road fund. The Fund derives revenue mainly from fuel levy (about 70%), transit road tolls (about 30%), and fines for

contravention of traffic laws and regulations. The Rwanda Revenue Authority (RRA) collects these funds. The Government of Rwanda has adopted a new law Nº55/2011 of 14/12/2011. According to the law, maintenance works for National roads, Districts and City of Kigali roads shall be funded by the Road Maintenance Fund.

3 THE STRATEGIC FRAMEWORK

Transport infrastructure just as other infrastructure plays a key role in economic growth and poverty reduction. Conversely, the lack of infrastructure affects productivity and raises production and transaction costs, which hinders growth by reducing the competitiveness of businesses and the ability of governments to pursue economic and social development policies. The lack of infrastructure in Africa is widely recognized. Deficits of infrastructure have a clear impact on African competitiveness.

African countries, particularly those that are landlocked like Rwanda, are among the least competitive in the world, and infrastructure appears to be one of the most important factors derailing the nation's growth. Deficient infrastructure in today's Africa has been found to sap growth by as much as 2% a year10. This is a continental problem that requires a continental solution. Many of Africa's 54 countries are small, with populations of fewer than 20 million and economies of less than $10 billion. Their infrastructure systems, like their borders, are reflections of the continent's colonial past, with roads, ports, and railroads built for resource extraction and political control, rather than to bind territories together economically or socially. Because Africa's economic geography is particularly challenging, regional integration is the best, perhaps the only, way for Africa to realize its growth potential, participate effectively in the global economy, and share the benefits of globalization.

For developing and modernizing its integrated transport network, is necessary to achieve economic growth and regional integration as described in the country's national development plans such as Vision 2050. This requires a clear vision goals and objectives for the transport sector and the definition of a strategic framework that supports these macroeconomic development objectives as the transport sector is a key motor for economic development.

3.1 Vision for the transport sector

The nation's vision for the transport sector is to gain a modern transport infrastructure that promotes free movement of goods and passengers by being cost effective, efficient, safe, secure, reliable and seamless integrated at both national and regional levels. The nation's vision is further elaborated below and it is anchored into one national development pillar of economic transformation.

3.2 Transport sector priorities and outcomes

In order to deliver on the above vision, four priority areas are predetermined in the transport sector as enumerated below:

a) Improve riding quality and level of service for road network;
b) Improve public transport services and reduce traffic congestions in urban areas;
c) Promote integrated multimodal transport system;
d) Support an efficient and sustainable air transport system;

The priority areas are described below together with the expected outcome:

3.2.1 Priority area 1: Improve riding quality and level of service for road network

Improved riding quality enhances mobility and accessibility ensuring that road users reach their desired

[10] AUC-Africa Transport Sector Phase III Report (n.d)

destinations with relative ease within a reasonable time, at a reasonable cost and with reasonable choices. The level of service is a typical measure used to describe the ability of traffic to move freely.

Priority outcome 1: Improved and sustained quality of road network

To achieve this outcome, the following priority actions are predetermined; 453km of unpaved national roads will be rehabilitated to maintain the national paved roads in good condition, 572km of paved national roads will be maintained contributing to improving and sustaining the quality of the road network, 440km of unpaved national roads will be upgraded to paved contributing to improving and sustaining the quality of the road network. Additionally, 1091km of unpaved national roads will be maintained, 350km of urban roads will be constructed in CoK, secondary cities and other cities as well as rehabilitating and maintaining 3085km of feeder roads with engagement and capacitating of LCAs in maintenance activities. Annex 1 details the list of projects that will contribute to the realization of the aforementioned targets.

Priority Outcome 2: National response to transport safety, environmental protection and HIV/AIDS mainstreamed and implemented

Road safety features such as crash barriers, road markings and signage with Made in Rwanda branding will be constructed and installed on national roads, environmental protection and HIV/AIDs will be mainstreamed (See also 3.4) and educational campaigns conducted to avert risky behaviour. Post-crash trauma centres will be established to rehabilitate accident victims and relevant regulations and legislations will be developed to enforce their implementation. Reducing IWT accidents will require developing and enforcing IWT safety features such as navigation charts, establish IWT navigation aids, awareness campaigns and instituting in place IWT safety legal and regulatory frameworks. The latter shall apply to air transport with progressive implementation of the corrective action plan.

3.2.2 Priority area 2: Improve public transport services and reduce traffic congestions in urban areas

Improving public transport services and reduce traffic congestions will entail as predetermined by the Ministry of Infrastructure; implementation of Dedicated Bus Lanes (DBLs), bus priorities at designated intersections, demand and supply management approaches, application of route franchising approach, as well as consolidation, formalization and integration of infrastructure, schedules, fares and systems. Increasing mobility and access in rural space will strive to upgrade existing national and district unpaved roads into paved roads as well as ensuring availability of bus services in rural areas under a route franchising approach.

Priority outcome 3: Improved public transport services, and traffic management

Improving public transport services, effective and traffic management will involve developing and implementing legislation, policies, strategies and regulations. The definitive drive of these solutions is to ensure reliable, cost-effective and sustainable public transport services. The Government through the Ministry plans to schedule at least 14,100 Km of bus routes and approximately 174.5Km of the scheduled bus routes will be dedicated to Public Transport buses. In bid to increase the number of population

conveying with public transport other than scheduling routes, reliable and affordable mass transit systems with Internet connectivity will be introduced. The following priority actions are as predetermined by the Ministry:

- Increasing public transport access and reliability in both rural and urban areas, a quality bus service will be extended on more corridors linking important cities and nodes within Rwanda providing a faster and more convenient service that would successfully compete with the private vehicles. A scheduled bus service will continue to be employed to provide feeder services in low profitability areas. Ultimately, development and implementation of integrated public transport networks in identified rural and urban areas will be facilitated and it will translate into an inclusive economy, poverty alleviation, rural economic development, and elimination of inequality. The means to the end will be to promote provision of sustainable public transport, through use of safe and compliant vehicles and developing empowerment systems for the sector.

- Enhancement of Information Communication and Technologies (ICTS) integration in public transport will involve providing accessibility to real public transport information that will involve collaborations between academia, private sector as well as government to venture into mobile computing technologies research, introduction of dynamic messaging signs as well as on-board annunciators in public service vehicles within urban transportation. The objective will be to provide real time information on services availability, the flow of traffic and the occurrence of accidents and incidents. In addition, a smart transport strategy will be developed and implemented including capacity building. Implementation of vehicle detection systems in conjunction with probe data to calculate travel time, traffic flows and densities are some of the quick wins envisaged for the period up to 2024. Appropriate evaluations will be carried out to identify the most suitable, effective and economically viable way to deliver such information to the end-user, whether it is through ground hard installation or through the reliance on mobile phones and smartphones. Cashless payments will be up and out scaled including introduction of Internet in all public service vehicles.

- Improvement in the traffic management especially in urban areas will be achieved by upgrading 288 Km of unpaved roads to paved roads. In addition, seven intersections will be upgraded in the City of Kigali and priority shall be given to public transport vehicles. A road asset management system to support traffic and pavement management, road location referencing as well as road safety management and network integration is currently under elaboration. Furthermore, the creation of a traffic control center will be pursued and consideration will be given to the implementation of real time monitoring equipment. Accordingly, consistent provision for CCTV cameras will be considered all along the major links in order to monitor traffic and inform travellers.

  This priority area will seek to develop and implement interventions aimed at enhancing transport safety and security. Transport safety regulations, policies and strategies will be developed and implemented so as to reduce accidents and incidents in all transport modes. The Ministry envisages establishing standards for modern, safe and efficient transport systems develop and implement transport safety legislation, strategies and regulations as well as acquiring road safety and security equipment such as cameras, alcohol testers as means of administering transport

safety legislation and regulations. This will include a review of the road design standards for urban and extra-urban roads as well as best practices in road safety management such as merit cards to incentivize correct behaviour or a score system on drivers' licenses that can ultimate result in the loss of the license even as a result of an accumulation of several minor infractions.

3.2.3 Priority area 3: Promote integrated multimodal transport system

The lack of access to maritime trade and logistics systems presents serious challenges for many landlocked developing countries, Rwanda inclusive. Connectivity and supply-chain readiness are important to today's trade environment. Having inefficient or inadequate systems of transportation, logistics and trade-related infrastructure can severely impede a country's ability to compete on a global scale. This increasing complexity has serious implications for the world's poor, who often are disproportionately disconnected from global, regional-or even local-markets. Poverty is often concentrated in geographic areas that are poorly connected to active economic centres, within and between countries. These pockets of poverty may be close to dynamic, urban markets, for example, but economically isolated from them.

This priority area intervenes at improving regional transport and facilitating cross-border trade through developing an integrated multimodal transport system. A holistic action plan will be developed to facilitate integrated multimodal transportation system planning to guide investment in the transport sector. Policies and strategies will be developed and implemented and relevant Acts promulgated that are set to drive investment for the maintenance and strategic expansion of the transport infrastructure network. The essence of the intervention is to improve efficiency, capacity and competitiveness for transport operations in all modes.

Priority outcome 4: Improved regional transport and trade facilitation

The 2030 Agenda for Sustainable Development and the Addis Ababa Action Agenda recognize the special needs and challenges faced by landlocked developing countries and stress the need to have effective cooperation between landlocked developing countries and transit developing countries to ensure effective participation in international and regional trade as well as coordinated development of transit transport infrastructure. To improve regional transport and trade facilitation, the Ministry of Infrastructure under its implementing agencies shall constructed and operationalize One Stop Border Posts to reduce border post crossing time.

Priority Action: Develop railway transportation system

The development of railway system will ensure the connectivity and integration with existing transport modes. As such, a branch line to Bugesera International Airport will contribute to the reduction of travel time for passenger travelling from the airport to Kigali. Moreover, the passenger terminal station at Kigali will ensure connectivity with bus stop and light rail transit. Railway stations will be developed for ease of interchange for passengers with provisions of parking facilities for private cars as well as closer to the public transport stops. Kigali being the main origin & destination site (O/D), freight terminal station will be built in such a way that it will easily communicate with the logistic platforms, special economic zone as well as Internal Containerized Depots. The freight terminal station should play the function of an

Inland Intermodal Terminal (IIT). The Inland Intermodal Terminal is where consolidation, deconsolidation, modal transfer (rail to road and vice versa) and other value adding activities are concentrated. Containers will be received from various origins by Unit or block trains to central hub such as the Kigali Logistic Platform and distributed to the destinations, usually by road. The value adding services include:

- Container repair & refurbishment, container cleaning & maintenance, empty container storage;
- Specialised warehousing like refrigerated, high security, bulk handling & storage;
- Export packing, insurance, freight forwarding, etc.

The development of such IIT will ensure coherent and integrated development that will support and enable efficient supply chain. This will play a bigger role in the utilisation of existing trucks as well as facilitating the railway in door-to-door operations. To greater extend, the railway timetable should strive to be integrated with the connecting transport modes (air flights and buses/trucks). Thus, after a throughout investigations, there shall be strategies to strive to achieve benefits of physical, fare and information integration.

Priority Action: Develop inland waterways transport

Key strategies to development of IWT under an integrated multimodal transport system includes: development and promotion of ports and vessels services, promotion of safety and security of IWT, increase participation of private sector, implementation of advanced ferry system for both passengers and cargo vessels on lakes and rivers serving the major communities along the shores. Reduction in land and inland water accidents and incidents remains one of the Government's top priorities. To safe guard its citizens and minimise loss of lives in both road and inland waterways, the following interventions are predetermined: Seven (7) road side stations will be constructed at Kirehe, Nyagatare, Nkamira, Huye, Rusizi, Rugende. Road safety features such as crash barriers, road markings and signage with Made in Rwanda branding will be constructed and installed, the population will be sensitised on usage of safety features to avert risky behaviour that might result into loss of lives. To ensure compliance relevant regulations and legislations will be developed to inform and enforce implementation. In the same spirit, IWT safety measures will be instituted by establishment of IWT navigation charts/aids, IWT safety features, awareness campaigns and put in place IWT safety legal and regulatory frameworks.

Priority Action: Construct One Stop Border Posts (OSBPs)

Border post crossing time is the time difference in hours between truck arrival time and departure time at the borders measured based on Road / GPS Surveys data. The reduction in border post crossing time shall promote regional transport and cross-border trade facilitation by improving transit time as well as the overall efficiency of the corridors. The key strategies to reduce border post crossing time and remove Non-Tariff Barriers along Central and Northern Corridors as part of regional integration commitments, the GoR commits to construct two OSBPs at Rusizi and Gatuna in the next six years to facilitate both large and small-scale cross border trades.

3.2.4 Priority area 4: Support an efficient and sustainable air transport system

This priority area aims at improving and sustaining air transport infrastructure and services. Four intervention areas are proposed to promote an efficient and sustainable air transport system to mention; increasing the handling capacity of Rwanda airports, increasing the efficiency of the national carrier, increasing the national carrier destinations and capacity, upgrading existing and constructing new airport infrastructure.

Sustainability of the air transport services and of the National Carrier shall be evaluated against the development of the ground accessibility of the airports in the short and medium term when other competitors will enter the market. These include other airlines but also railway services that, in a country as small as Rwanda, can be in competition with air travel as well as being a strategic complementary asset. The Sector will address the development of the air and railway systems jointly to seek the optimal solutions for an economically sustainable operation framework.

Priority outcome 5: Improved and sustained air transport system

To ensure sustainability and operational efficiency of the national carrier the load factor shall be maintained at a reasonable level. This will entail opening up thirty-two new (32) new routes to increase market share, undertaking market and sales promotions as well as brokering partnerships with other carriers to increase network reach. The existing passenger handling capacity of 1,800,000 million will be increased by 1.7million passengers after completion of NBIA at the end of 2019. To remain competitive in the industry, punctuality of the national carrier will be given utmost priority targeting to keep the on-time performance at 90%.

The Government will also intervene by providing local aircraft maintenance and training facilities to train aviation professionals thereby reducing National Carrier's operational and maintenance costs, continue investing in Airports Infrastructure development in order to match the increasing traffic at Rwanda's Airports. In the interim Kigali International Airport and Kamembe Airports will be upgraded along the ongoing construction of new Bugesera International Airport. Other interventions will include lobbying and advocacy to fully liberalise African air transport, maintaining high operating standard so as to meet the requirements of highly safe-guarded EU/USA markets and subtle management of RwandAir extension policy.

3.3 Linkage with thematic priorities for the next 5 years and cross cutting areas

3.3.1 Linkage with thematic priorities for National Strategy for Transformation (NST-1)

The National Strategy for Transformation (NST1) under elaboration is built on three strategic pillars: economic transformation, social transformation and transformational governance. The transport sector majorly contributes to Strategic Pillar 1; Economic Transformation under priority areas 2 that targets to accelerate Sustainable Urbanization from 17.3% (2013/14) to 35% by 2024 as well as priority area 4 that sets out to promote industrialisation and attain a structural shift in the export base to high-value goods and services with the aim of growing exports by 17% annually. This TSSP contributes to the aforementioned NST1 priority areas as described below.

NST 1 Priority Area 1

To contribute to the accelerated sustainable urbanisation from 17.3% (2013/14) to 35% by 2024, the NST envisages developing and integrating urban and rural settlements as well as increasing economic opportunities in urban areas. These outcome areas are aligned to Outcome 2 of the transport sector strategic plan; improved public transport services, effective and safe traffic management. The predetermined transport strategic interventions are the following:

- Transport ST: Improve Rural and Urban transport services through Establishment of Scheduled Bus Routes, Construction of Urban Roads and rural roads rehabilitated, route franchising, as well as Operationalization of Smart Ticketing System
- Transport ST: Reduce Traffic Congestion through improvement of junctions, avail dedicated bus lanes, introduction of traffic control system (ITS)
- Transport ST: Avail passenger information system (real time public transport information)
- Transport ST: Install public lighting on newly constructed roads

NST 1 Priority area 4:

Towards promotion of industrialisation and attaining a structural shift in the export base to high value goods and services with the aim of growing exports by 17% annually: delivering on this annual target will require developing hard infrastructure for trade competitiveness. The transport sector intervenes at two outcome levels. That is Outcome 1: Improved and sustained quality of road network as well as Outcome 3: Improved Regional Transport and Trade Facilitation. To deliver on the two outcome areas, the following interventions are predetermined:

- Transport ST: Upgrade 440 Km National Roads, rehabilitate (pave) 453 Km national roads, and ensure the riding quality is kept to 97% for paved roads and 4 weighbridges operational.
- Transport ST: Maintain 1091 Km unpaved National roads and the keep riding quality at 50%
- Transport ST: 57 % of DR1 in good condition and 3085 Km of feeder roads
- Transport ST: Develop 30 Km Railway transport
- Transport ST: Develop 4 ports on Lake Kivu
- Transport ST: Construct 2 OSBP
- Transport ST: Develop 7 road side stations

Table 1 summarises the TSSP alignment with the National Strategy for Transformation (NST1).

Table 1: NST 1 alignment with Transport Sector Strategic Plan: Economic transformation

NST-1 Priority Area	NST-1 Outcome	Transport SSP Outcome	Transport SSP Strategic Interventions
1.2: Accelerate Sustainable Urbanization from 17.3% (2013/14) to 35% by 2024	**1.2.1** Developed and integrated urban and rural settlements **or** **1.2.2:** Increased economic opportunities in urban areas	**Transport Outcome 2**: Improved public transport services, effective and safe traffic management	**Transport ST:** Improve Rural and Urban transport services through Establishment of Scheduled Bus Routes, Construction of Urban Roads and rural roads rehabilitated, route franchising, as well as Operationalization of Smart Ticketing System
			Transport ST: Reduce Traffic Congestion through improvement of junctions, avail dedicated bus lanes, introduction of traffic control system

NST-1 Priority Area	NST-1 Outcome	Transport SSP Outcome	Transport SSP Strategic Interventions
			(ITS)
			Transport ST: Avail passenger information system (real time public transport information)
			Transport ST: Install public lighting on newly constructed roads
1.4: Promote industrialization and attain a structural shift in the export base to high-value goods and services with the aim of growing exports by 17% annually.	1.4.4: Hard infrastructure developed for trade competitiveness	**Transport Outcome 1:** Improved and sustained quality of road network	**Transport ST:** Upgrade 440 Km National Roads, rehabilitate (pave) 453 Km national roads, and ensure the riding quality is kept to 97% for paved roads and 4 weighbridges operational
			Transport ST: Maintain 1091Km unpaved National roads and the keep riding quality at 50%
			Transport ST: 57 % of DR1 in good condition and 3085 Km of feeder roads
		Transport Outcome 3: Improved Regional Transport and Trade Facilitation	**Transport ST:** Develop 30 Km Railway transport
			Transport ST: Develop 4 ports on Lake Kivu
			Transport ST: Construct 2 OSBP
			Transport ST: Develop 7 road side stations

3.4 Mainstreaming of crosscutting areas in TSSP

3.4.1. HIV/AIDS and Non-communicable diseases

Transport sector workers experience long hours and difficult working conditions, mobility with extended periods away from home, lack of social cohesion, frequent alcohol and drug use and often limited access to health and social services and comprehensive workplace programmes, which result in high levels of HIV-related morbidity and mortality. Potential mainstreaming actions include but not limited to the following; awareness and prevention activities as well as support access to health services and counselling. For limited access to information and to health care for workers' sexual partners result in inadequate health seeking behaviour and high levels of untreated STIs. Potential mainstreaming actions include:

- Use transport infrastructure (e.g. bus terminals, taxi/train stations) for public awareness sessions;
- Introduce community outreach interventions, in particular for sex workers;
- Promote, in collaboration with the communities, access to health care services (e.g. roadside wellness centres, drop-in centres) at key points and link these to public health clinics;
- Form coalitions between sector stakeholders and local service providers/NGOs.

Construction workers often experience dangerous working conditions, subcontracting and a limited access to awareness/health services, which increase vulnerability to HIV and other non-communicable diseases. Potential mainstreaming points shall include;

- Supporting national harmonization of labour laws/policies as well as
- Supporting access to health services and counselling

Infrastructure projects create conditions of relative wealth in areas of poverty, which can increase vulnerability to HIV. Potential mainstreaming areas include:

- Conduct risk assessment/environment profile of beneficiaries/communities' vulnerability (at projects inception and periodically thereafter)
- Include Social Impact Analysis in construction projects
- Support development/implementation of regional policies on HIV and AIDS in the construction sector

Lack of harmonization of migration and customs protocol in EAC region resulting in delays/slow progress at border posts; potential mainstreaming actions shall entail:

- Supporting the development/ /implementation of an East African Community HIV and AIDS & Transport sector policy

3.4.2. Gender and social inclusion

Over the past decade, research support by the Sub-Saharan Africa Transport Policy Program (SSATP) point to pertinent findings on gender and transport, showing not only that rural women in Africa carry the largest transport burdens in terms of transport costs and time spent waiting for transportation, but that the typical mode of transport they can hope for is head loading. Case studies have also demonstrated that they face greater transport constraints than men in undertaking marketing activities who often monopolize ownership of intermediate transport modes, although critical for women to engage in domestic and income earning activities. There is now a need to expand knowledge leading to policies on labour-based opportunities for women in the transport sector; on accessibility and safety aspects of transport for both men and women in rural and urban environments; and to integrate gender concerns and needs into the design and implementation of transport projects.

3.4.3. Environment, sustainable management of natural resources and Climate Change

Transport is a key sector, both in terms of economic development and climate change impacts. Road construction and traffic operations, if undertaken without a proper understanding of the relationships inherent in environmental function, can be accompanied by serious disruptions to the environment and hence to individual lives, from which it may take a long time to regain equilibrium. Since environmental impacts from road development are quite common, such projects usually need comprehensive environmental impact assessment studies, to identify potential impacts and options for minimizing them, and implement mitigation plans.

The transport sector will ensure that ESIA (Environmental and Social Impact Assessment) document is completed by the feasibility stage of the engineering work and the implementation of the mitigation plan should be tied in closely with the design, construction, and operation phases, as required by the environmental law. This ESIA will include HIV component, poverty reduction strategies and education schemes for environmental issues. To ensure that transport policies are implemented in an environmentally, economically and socially sustainable manner, the sector will conduct a Strategic Environmental Assessment on its policies by 2024. Urban transportation systems significantly affect

cities' quality of life and, through associated air pollution and greenhouse gases, the wider regional and global environments. These impacts can be mitigated by sustainable transport policies.

To reduce traffic congestion, the transport sector will prioritize the improvement of public transport services in urban areas, hence reducing GHG emissions and local air pollutants and improving public health. This will be done by dedicating 288 Km of the scheduled bus routes to Public Transport buses, implementing dedicated bus lanes (DBLs) and implementation of bus priorities at designated intersections. To reduce carbon emissions and lower barriers to access for transport, the sector will promote a multi-modal transport system by developing a railway system and an inland waterways transport, which will ensure the connectivity and integration with existing transport modes.

3.4.4. Road safety

Globally, road traffic injuries and deaths have a widespread and devastating effect on public health, poverty, and the global economy. The World Bank estimates 1.3 million people to have been killed and another 50 million were injured in road crashes across the world in the year 2013. 90% of these deaths occurred in low and middle-income countries (LMICs). Road Traffic injuries are the eighth leading cause of death globally, and the leading cause of death among young adults between the ages of 15 and 24. This makes road injuries a greater killer of young people than malaria, HIV/AIDS, or tuberculosis. Road traffic injuries also are estimated to cost between 2-2.5% of global GDP per annum, translating into a $1.85 trillion burden on the global economy each year.

The lack of road safety awareness and the lack of capacity to promote road safety as well as limited investments in road safety are among the key factors contributing to road traffic related accidents. According to Rwanda National Police in the year 2016 alone the country registered 593 fatal accidents, 629 serious injuries, 1794 minor injuries with 3347 incidents resulting into property damages. Police further asserts that these incidents and accidents claimed lives of 679 Rwandans and 3750 lives in a spell of only six years. The African Development Bank in its report on Road Safety in Africa (2013) also observes that in most African countries, there are significant shortcomings in awareness and capacity to promote road safety. Consequently, road safety investment is limited and road crashes continue to rapidly increase in Africa. This SSP proposes the following as potential mainstreaming actions to avert road related Carnegies for road safety in the transport sector:

- Advocate for increased road safety budget in the annual budget of the Ministry of Infrastructure;
- Construction and installation of road safety features, as well as post-crash trauma centers
- Undertake systematic road infrastructure safety and awareness creation activities such as safety education campaigns;
- Update vehicle import standards and ensure strict and mandatory vehicle inspection;
- All road infrastructure development projects to have a provision of financing 1.5% of total budget for road safety;
- Institute a standardized driver-training curriculum, theoretical and practical testing for licenses categorized by vehicle types.
- Institute a merit/debit score on driver licenses for all so to encourage a consistent respect of the rules to avoid the ultimate loss of the driver license and the necessity for reckless drivers to undertake examinations.

- Utilize ICT devises to monitor average speed on selected itineraries nationwide.
- Develop and enforce relevant road safety legislations and regulations

4 TRANSPORT SECTOR STRATEGIC PLAN IMPLEMENTATION FRAMEWORK

4.1 Sequencing of Interventions

The interventions for the adopted strategies are sequenced in an orderly manner for the next seven-year period of NST1. The implementation plan for the TSSP is presented in the Results Monitoring Framework in Table 2. The roles of the different actors in the implementation process are detailed in the following sections below:

4.2 Role of Government

The Government will play an oversight role including lobbing for fund mobilization to facilitate the implementation of the articulated public-sector infrastructure capital development projects. The implementing arm of the TSSP will be the Ministry of Infrastructure together with its implementing agencies such as Rwanda Transport Development Agency, Road Maintenance Fund, Rwanda Civil Aviation Authority, Akagera Aviation, RwandAir, among others. In addition, the Ministry of Infrastructure will spearhead development of transport related policies, regulations, strategies and guidelines to streamline the transport sector in Rwanda thereby facilitating cross-border mobility, regional trade and integration. The aforementioned initiatives will require joint stakeholders' involvement within the transport sector including development partners.

4.3 Road infrastructure and service responsibilities

The RTDA will assist the Ministry with the management and administration of the transport sector. In addition to maintenance and development management of transport infrastructure excluding air transport, RTDA will be responsible for undertaking tactical functions for transport services. The RMF will continue to do tactical planning for road and bridges maintenance in conjunction with RTDA and the Rwanda Defence Force Engineering Brigade. RMF will also endeavour to collect and manage resources to undertake periodic and routine maintenance works, emergencies, studies, control and supervision works as well as bridge rehabilitation.

The RURA will be responsible for regulation of land public transport system. Under a restructuring plan, RITCO will continue to provide public transport services in bid to increase accessibility to public transport within urban and rural areas. The RNP under its regulatory portfolio will continue to enforce road traffic and safety, airport security and water transport security, and other modes of transport. In addition, RNP will continue to enforce laws related to transport services and standards.

4.4 Airports infrastructure

The Rwanda Airports Company will develop, manage, operate, and maintain all the services (except services handled in terms of a concession) associated with airports infrastructure. The Aviation Travel and Logistics Holding Limited (ATL) will oversee and manage air transport, logistics, tourism services as well as products. ATL is a consortium of RwandAir, Rwanda Airports Company Limited (RAC), Akagera Aviation Limited, Rwanda Tours and Events Limited (RTE) as well as Rwanda Links Logistics Limited (RLL); the latter is a new cargo and freight handling company.

4.5 District level

The District Council will be in charge of developing and monitoring transportation of persons and goods as well as maintenance of classified roads and bridges as well as management of non-classified roads and related road furniture. There will be concerted effort from RTDA, the Ministry of Infrastructure and related stakeholders in capacitating the Districts as well as engaging in elaborations of District Development Strategies (DDSs) related to infrastructure development.

4.6 City of Kigali

City of Kigali is an administrative entity of the Republic of Rwanda responsible for preparation of Master Plans, maintenance of classified roads, repair and rehabilitation, as well as managing non-classified roads, bridges and drainage systems.

4.7 Private sector and civil society involvement

The Government through the Ministry of Infrastructure will embark on elaborating private sector participation framework in public sector capital development projects so as to increase the funding base for infrastructure development in Rwanda. For example, one of the strategies government can attract private sector participation in improving public transport is a tax waiver policy on importation of standard large buses.

The Private Sector through Public Private Partnerships (PPP) arrangement will be responsible for attaining diversity in public transport services; providing a stopping taxi service, as well as an express service for longer distances, similar to a bus service. In addition, the private sector will be responsible for road freight transport including road freighters (trucks) that can, inter alia handle larger containers.

The active participation of the civil society organizations, development partners, academia and other public-private organisations is essential to spur research for development, employment creation thereby improving the livelihood of the people of Rwanda. It would be highly desirable to involve them in policy formulation, monitoring, planning as well as reporting through SWG.

5 MONITORING AND EVALUATION SCHEME

The different modalities for monitoring and evaluation to ensure learning of the results monitoring framework during the implementation of the Strategy and its implementation plan during the period 2018/19-2023/24 are elaborated in following sections.

5.1 Transport sector monitoring and coordination

Monitoring and evaluation is embedded into the Overarching infrastructure sector M&E system and aligned to the 2012 Guidance Note on Monitoring & Evaluation developed by MINECOFIN. A three-axis based approach will be adopted: (i) observing how defined set of indicators are changing over time; (ii) analysing and drawing lessons from those observations, and (iii) feeding those lessons back into the policy process to ensure learning take place. To achieve this, it is prudent that appropriate actions in in terms of: (i) enhancing institutional arrangements for M&E; (ii) systematically implementing results-based management at all sub-sector levels; as well as (iii) instituting a robust data management system and associated routine data quality assurance mechanisms.

The conceptual framework for the Routine Data Quality Assurance (RDQA) is illustrated in the Figure 10 below. Generally, the quality of reported data will be dependent on the underlying data management and reporting systems. In other words, for good quality data to be produced by and flow through a data-management system, key functional components need to be in place at all levels of the system, the points of service delivery, the intermediate level(s) where the data are aggregated (e.g. districts, agencies) and the M&E unit at the Ministry level to which data are reported. The data quality assurance (DQA) and Routine Data Quality Assurance (RDQA) tools will be designed to (1) verify the quality of the data, (2) assess the system that produces that data, and (3) develop action plans to improve both.

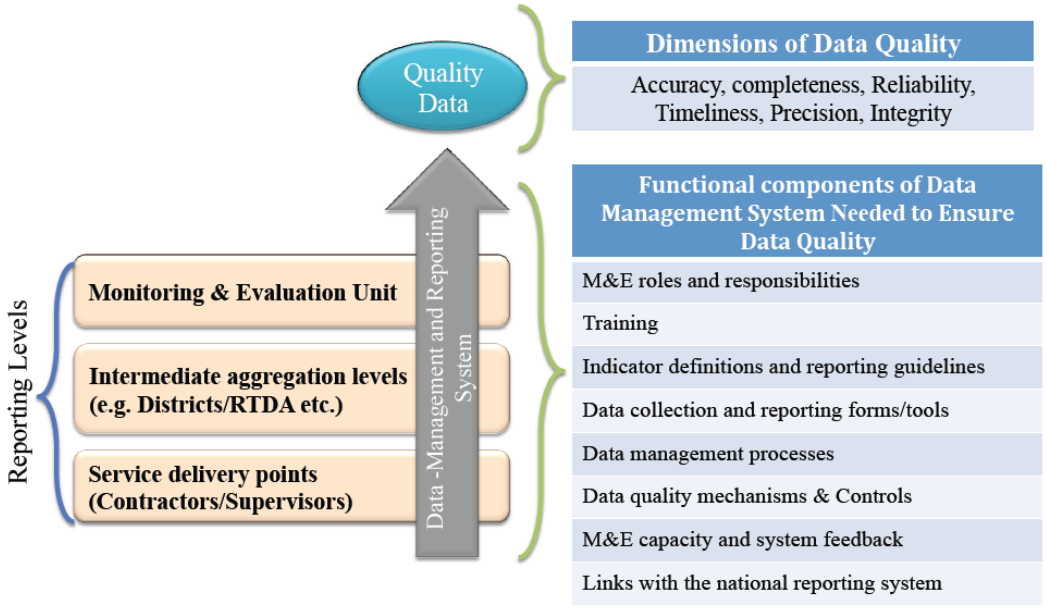

Figure 10: Conceptual framework for Routine Data Quality Assurance

5.2 Mechanisms for coordination and information sharing

In order to develop mechanisms for coordination and information sharing for the implementation of the TSSP for NST1, it is essential to establish appropriate mechanisms for the coordination of implementation programmes under the umbrella TSWG. It is imperative to ensure common representation in TSWG of members from:

- The government sector, including ministries or agencies responsible for policy formulation, execution and regulation; and
- The business sector, including transporters (importers and exporters), trade service providers and transport operators.

In addition, there will be mechanisms of coordination and information sharing between the Ministry of Infrastructure and its agencies.

The TSWG and the relevant coordinating unit of the Ministry of Infrastructure, i.e. the Planning & Policy Coordination predetermines the following activities:

- Develop solutions to remove impediments for the implementation of the Strategic Transport Plan;
- Identify issues affecting the cost and efficiency of their programme delivery;
- Assist in the implementation of the recommended measures;
- Provide a national focal point for the collection and dissemination of information on best practices in the implementation process;
- Monitoring progress of all programs with respect to objectively verifiable criteria as established in the Strategic Plan;
- Encouraging the adoption of modern management practices and innovative approach to project implementation;
- Collecting and distributing the updated information about the status of different programmes
- Providing information to the transport sector on the minimum technical standards required to implement each specific project;
- Coordinating the delivery of training workshops on standard measures and the application of multi-modal transport initiatives to senior transport administrators, policy makers, and transport operators;
- Providing advice to implementing agencies and transport operators on the introduction of Electronic Data Interchange (EDI) and
- Continuously reviewing the transport project procurement and implementation procedures and system, with a view to their further simplification and harmonization.

5.3 Transport sector evaluation

In order to execute the monitoring, evaluation and reporting plan for NST1, a monitoring framework has been developed. The framework for three matrices is designed to ensure that information will continuously be available. This information will be the basis of the reports that will be generated on NST1. Additionally, the information will be available for the mid- and end-term evaluations of NST1. The TSSP has a result-monitoring framework (Table 2) upon which a results-based M&E system will be developed to track implementation.

5.4 Institutional arrangement for monitoring

The transport sector benefited from an institutional-wide planning, monitoring and evaluation assessment that was commissioned in 2007 in MININFRA. A guide was developed for the entire infrastructure sector so as to improve Planning and M&E mechanisms within EDPRS-2 period.
The proposed approach and tools are still relevant for NST 1 and this sector strategic plan for the period 2018-2024:

i. a set of performance indicators have been proposed to monitor sub-sector progress against both financial and key technical performance indicators;
ii. baseline for infrastructure sector and associated targets are set using road condition data of 2016-17, which will enable regular comparison of actual achievements during the period (2018/19-2023/24); and
iii. individual project information sheets have been developed and are being used under projects database management system.

In addition to those arrangements at sector level, the sub-sector will build a more detailed M&E system specifically for Transport under the support of on-going Transport Sector Development Project (TSDP). Data collection to support monitoring and results assessment of the project would be conducted regularly on annual basis for general road maintenance programmes and at the beginning of the project; and in the last year of the project.

All those surveys will be organized in a harmonized and complementary manner to those planned under a similar calendar for the whole infrastructure sector. The continuous annual data collection process will enable MININFRA establishing an effective M&E system. The support to MININFRA has been envisaged in three areas, i.e. (i) Technical Assistance to Planning, Policies and Capacity building in support to establishment of transport database and M&E systems dealing with projects performance, transport costs, transport industry standards and other transport performance indicators. (ii) Transport data collection for planning and monitoring systems; (iii) Acquisition of Strategic Transport Plan for NST1.

Given the limited capacity of MININFRA, RCAA and RTDA, it might be appropriate that external consultants would administrate data collection but involving local human resources from MININFRA, RTDA, RCAA, Universities (currently the University of Rwanda) and Districts, making in such manner capacity building happened. It is foreseen that data collected particularly in the area of roads maintenance will be organized in database under an appropriate database management system within RTDA. Similarly, appropriate data should be collected to monitor development initiatives of RCAA. Table 8 summarises indicators (SDGs) that lack baseline data. It is important that baseline surveys are prioritised in FY 2018/19 so as to set targets for the next six years. To be able to achieve targets prescribed for the 2018-24 period, developing human resources for air transport continued financing for long-term-in-country training to professional staff, local entrepreneurs and unemployed graduates, leading to Masters' degrees including Transport Planning and Economics, and Monitoring & Evaluation.

Financing of local consultant to provide management support to the in-country program has also been envisaged. M&E institutional arrangements are envisaged in a manner they fit national framework, which is as follow. The top level of national M&E system, in charge to ensure cross sector coordination and regularly assess the progress, includes: Implementation Working Groups (IWGs), Forum for Secretaries General, Development Partner's Coordination Group (DPCG) and Cabinet. NST-1 Central M&E and

Evaluation Secretariat is in place in MINECOFIN has to ensure regular collection of information on NST-1 and subsequent progress of strategic initiatives and to recommend speedy resolutions to implementation bottleneck. The same institutional set up could be utilized to monitor the progress during the 2018 - 2024 periods.

In addition, close monitoring of progress towards achieving the targets set for the 2018-2024 period, will require collaborating with other stakeholders for example the National Institute of Statistics which will be responsible for maintaining the database of indicators to monitor the NST1 results and policy action matrix (See Table 7) and other strategic targets" particularly under DEVINFO system. It will provide technical support to strengthen data collection.

A mechanism of infrastructure focal point at District level (Infrastructure Department) is under development. It will serve as a channel to cooperate with Districts in collecting data and monitor progress in the area of decentralized activities in Transport sub-sector. Collaboration with other ministries, public institutions and Private is envisaged to exchange and share information about strategic plan indicators for Transport subsector.

5.5 Scaling up results-based management within the transport sector

First of all, the criteria and targets for 2018-24 strategic planning periods for the Transport sector should be systematically adopted to facilitate results-based management at all levels. Multi Annual Plans (MAP) has been developed for 2018-2024 period to serve as roadmap for monitoring progress for key performance indicators in Transport sector. Integrated MAP including Transport indicators both for infrastructure and service at National as well as District levels have also been developed.

However, reporting format needs to be agreed between MININFRA and its agencies and should be put in practice as soon as possible. In general, monthly and quarterly reports on the progress of projects implementation shall be prepared. The projects have to align their reporting system to the key performance indicators of the Transport Strategic plan for 2018-24. Regular sector reviews will be regularly organized internally (weekly and monthly meetings) between MININFRA and its agencies, and with other partners (at least quarterly) particularly through Transport Sector Working Group.

5.6 Instituting a data management information system

Transport sector envisages building a more detailed web driven database related to both transport infrastructure and services with a backbone linked to central M&E / Management Information System (MIS) infrastructure at MININFRA to support decision making. In addition to this, specific project information databases will be designed and linked to the entire infrastructure sector Project Information Database envisaged for the whole infrastructure sector in order to capture and regularly update all the desired information on on-going projects in the sector, a "Transport Sector Development-Programme Information System" will be designed and put in place. This MIS will take in account the following sub-sector needs:

- Statistics for Transport /Strategy policy making and updating;
- Pre and post transport infrastructure development assessment studies (Socio-economic) updated for Strategic Plan M&E system;
- Statistics data for projects and sector management (including financial data); and
- Various information for different users of transport

5.7 Key performance indicators

At present the performance of the transport sector against its objectives is assessed annually with respect to Common Performance Assessment Framework (CPAF) indicators. However, the present performance indicators do not assign due importance to different mode of transport including transport services except riding quality for National and District roads. In this SSP a number of indicators have been proposed to monitor performance of different outcomes (See Table 7) with respect to different outputs. Although these indicators will be helpful to monitor the performance of different outcomes at program or project level, it is not practical to use so many indicators at strategic level. The subprograms and projects having a particular influence on evolution of the adopted 6 key Performance Indicators are the one to be monitored regularly on annual basis, in the Mid Term Review and at the End of Strategic planning period.

5.8 Stakeholders and citizenry engagement

The Ministry and its implementing Agencies commit to strengthen their information and communication technology infrastructure, the public relations so as maintain and increase visibility for public support. In addition, the ministry will organize and participate in different stakeholder fore to educate, sensitize and create awareness within the mass especially on improved road usage and safety.
In addition, joint sector review and working meetings will be convened to ensure joint planning, review implementation progress, share and document lessons learned, challenges as well as success stories.

Implementation Working Group meetings will be held once in a quarter and one Joint Sector Review (JSR) will be held every year to update stakeholders on different transport infrastructure and services undertakings as well as seeking guidance. Joint publications will be authored, press conferences and press releases and other mass education strategies will be explored for increased visibility of the Ministry and its agencies operations. Existing partnerships with development partners will be maintained to benchmark of existing best practices in information collection, co-management of projects for improved service delivery.

5.9 Monitoring multi annual plans & public policy actions

The key indicators set for the Strategic Plan will serve as basis for PM&E Key actions in the Transport sector. Internally, an assessment on achievements related to key policy actions will be organized on a weekly, monthly and quarterly basis and a summarized report on different undertakings on the Strategic Transport Plan for NST1 will be produced and shared with key stakeholders during Sector Working Groups (SWG) and through Joint Sector Reviews (JSR).

Table 2: TSSP Results Monitoring Framework

Outcomes	Performance Indicators	Baseline FY16/17	18/19	19/20	20/21	21/22	22/23	23/24	Means of Verification	Assumptions
Outcome 1: Improved and Sustained quality of the road network	% of National paved roads in Good condition	96	96%	96%	96%	96%	97%	97%	IRI Survey Reports	RTDA regularly carries out the annual road condition survey
	% of National unpaved roads in Good condition	48	48%	48%	49%	49%	50%	50%	IRI Survey Reports	
	% of Urban roads in Good condition	96	96%	96%	96%	96%	97%	97%	IRI Survey Reports	
	% of Feeder roads in Good condition	52	53%	54%	55%	56%	57%	57%	RTDA annual periodic reports	
Output 1.1: 440km of unpaved national roads upgraded to paved	Length (KM) of unpaved national roads upgraded to paved	1305	1351	1431	1531	1632	1715	1745	RTDA periodic maintenance reports	Prioritization of candidate roads made by traffic/ economic analysis
Output 1.2: 453km of paved national roads rehabilitated	Length (KM) of paved national roads rehabilitated	240.8	249	311	321	353	398	453	RTDA periodic reports	Prioritization of candidate roads Timely interventions to address emergencies
Output 1.3: 572km of paved national roads maintained	Length (KM) of paved national roads maintained	777	894	964	1015	1068	1276	1349	RTDA periodic reports	Prioritization of candidate roads made by traffic/ economic analysis
Output 1.4: 1091km of unpaved national roads maintained	Length (KM) of unpaved national roads maintained	463	716	908	1063	1225	1355	1554	RTDA periodic reports	Prioritization of candidate roads made by traffic/ economic analysis

Outcomes	Performance Indicators	Baseline FY16/17	18/19	19/20	20/21	21/22	22/23	23/24	Means of Verification	Assumptions
Output 1.5: 350km of urban roads constructed in (CoK & Secondary Cities)	Length (KM) of urban roads constructed in CoK	425.35	450.35	475.35	500.35	525.35	550.35	575.35	CoK/RTDA periodic reports	Prioritization of candidate roads made by traffic/ economic analysis
	Length (KM) of urban roads constructed in Secondary cities	131.92	165.25	198.58	231.91	265.24	298.57	331.9		
Output 1.6: 3085km Feeder roads rehabilitated and Maintained	Length (KM) of feeder roads rehabilitated	2060	2995	3425	3855	4285	4715	5145	Consultant monthly progress report	Prioritization of candidate roads made by traffic/ economic analysis and Fund availability
	Length (KM) of feeder roads maintained	700	2060	2995	3425	3855	4285	4715	Consultant monthly progress report	
Outcome 2: National response to transport safety, environmental protection and HIV/AIDs mainstreamed and implemented	Death rate due to road traffic injuries (Percentage)	32.1	28	24	20	16	12	7	RNP Monthly report	Timely ratification of legislation & regulation with enforcement
	Death rate due to Lake Kivu transport injuries (Percentage)	2.05	1.8	1.55	1.3	1.05	0.80	0.55	Handover reports Awareness campaign reports Final approved transport policy and safety laws	Stakeholder participation, compliance and responsiveness to road safety campaigns
	Percentage implementation of the ICAO 8 critical elements	72	74	77	80	82	84	85		IWT on Lake Kivu is developed and prospering. Assured stakeholder

Outcomes	Performance Indicators	Baseline FY16/17	18/19	19/20	20/21	21/22	22/23	23/24	Means of Verification	Assumptions
										participation
Output 2.1: Two (2) Trauma centers constructed at Rusizi & Rubavu	Trauma centers constructed	2 at Kacyiru & CARAES			3			4	RNP Annual report	Appropriate framework for operation of trauma centers in place
Output 2.5: 90% corrective action plan activities implemented	Percentage implementation of the Corrective action plan activities.	Draft Corrective Action Plan	20	45	65	80	90	100	RCAA Corrective Action Plan and Quarterly report on the implementation of the Action Plan	Timely implementation of the corrective action plan
Outcome 3: Improve public transport services and reduce traffic congestion in urban areas	Reduced waiting time from 30 to 15 minutes in the CoK in peak hours	30	25	23	20	18	17	15	RTDA/RURA periodic reports	Public transport restructured
	(% of population conveying with public transportation (national, urban and rural)	17	17.25	18	19	19.5	20	20.5	RTDA/RURA periodic reports	Public transport restructured
Output 3.1: 174.5km new routes of existing network scheduled for buses	Length (KM) of Scheduled Bus Routes increased	13932.5	13982	14007	14032	14057	14082	14107	Progress reports (Annually)	Governing laws and regulations in place
Output 3.2: 22.2km of DBL introduced and 7 intersections upgraded	Length (KM) of DBL Introduced	0.6	8.1	9.6	12	15.2	18.4	22.2	Progress reports (Annually)	
	Number of	5	7	8	9	10	11	12	Progress	Prioritization of

Outcomes	Performance Indicators	Baseline FY16/17	18/19	19/20	20/21	21/22	22/23	23/24	Means of Verification	Assumptions
	intersections upgraded								reports	candidate roads made by traffic/ economic analysis
Output 3.3: ICT integration in public transport enhanced	Percentage of implementation of cashless payment in public transport	27	29.5	34.7	38.0	45.6	53.3	60.9	RTDA annual reports RURA annual reports	Private sector is willing to invest in the ICT system integration in PSV Synergise existing interventions to avoid duplicity amongst all relevant stakeholders e.g. MININFRA, RTDA, RDB, RNP, RURA, MiTEC, RISA, Private sector and CoK
	Percentage of public transport vehicles with internet connectivity	0	29.5	34.7	38.0	45.6	53.3	60.9		
Outcome 4: Improved Regional Transport and Trade Facilitation	Border posts crossing time in hours for trucks	3	2:35Min	2:10Min	1:45Min	1:20Min	55Min	30Min	RTDA periodic Reports	Fund availability to complete the OSBPs
Output 4.6: 30km of Railway Transport Developed	Length (Km) of railway constructed	0	Fund Mobilization	Fund Mobilization	Corridor Demarcation & Land Acqui	Contractor mobilization	20	30	RTDA annual periodic reports	Prioritization by partner countries

Outcomes	Performance Indicators	Baseline FY16/17	18/19	19/20	20/21	21/22	22/23	23/24	Means of Verification	Assumptions
					sition					
Output 4.7: Four (4) Ports developed on Lake Kivu	Number of Ports developed	0	1	0	2	0	0	1	RTDA approved periodic reports	Prioritization of identified ports
Output 4.8: 2 Trans border infrastructures (OSBPs) constructed	Number of OSBP constructed	5	6	0	0	0	0	7	RTDA approved periodic reports	Prioritization of identified location
Output 4.9: 4 Weighbridges constructed	Number of operational weighbridges	0	0	0	2	0	0	4	RTDA approved periodic reports	Prioritization of identified location
Outcome 5: Efficiency of National carrier Increased	Average passenger load factor (percentage)	54	52	54	54	58	58	60	ATL quarterly periodic reports	The indicated load factor can be achieved based on the number of destinations and aircraft capacity operated.
	Valid national carrier safety certifications maintained	2	2	2	2	2	2	2	RwandAir Quarterly report	The airline must stay compliant with industry safety regulations by passing safety audits.
	On time Performance of the national carrier enhanced (Percentage)	82	90	90	90	90	90	90	RwandAir Quarterly report	The 15minutes rule for on time performance is applied.
	Passenger handling capacity by all airports	1,500,000	1,800,000	1,800,000	3,500,000	3,500,000	3,500,000	3,500,000	RAC Handover reports	Availability of funds on time
Output 5.1: Thirty-one (32) new	Number of	23	31	35	40	45	50	55	Number of	As countries

Outcomes	Performance Indicators	Baseline FY16/17	18/19	19/20	20/21	21/22	22/23	23/24	Means of Verification	Assumptions
potential routes opened	potential routes (destinations)								new routes opened	liberalize their air spaces and the increase in fleet, the carrier gets an opportunity to open new destinations
Output 5.2: 10,100 metric tons of freight transported by air	Freight volume (metric tons) by air transport	8,482	9,000	9,214	9,426	9,644	9,868	10,100	RwandAir Quarterly report	As Kigali becomes a regional aviation hub, with access to new markets and introduction of wide-body aircraft will stimulate cargo volumes.
Output 5.3: 2 air safety audits (IOSA & ISAGO) passed biennially	Valid Certificates issued	2	2	2	2	2	2	2	Biennially	Safety audits are carried out every after two years.
Output 5:4: Implementation of standard operating procedures adhered to	Percentage of delayed flights reduced to 10%	28	10	10	10	10	10	10	Weekly OTP reports	Keeping track of standard operating procedures
Output 5.5: Eighteen (18) new Aircraft acquired	Number of new aircraft acquired	12	5	1	4	3	3	2	1. Aircraft entry into service reports & Aircraft registration certificate	fleet acquisition is driven by market demands
Output 5.6: 2,174,744 Passenger transported by the national carrier per year	Number of passengers transported per year by the national carrier	771,454	1,338,840	1,607,642	1,767,670	1,927,216	2,071,181	2,174,744	System Generated reports	these numbers can be achieved with the growth of network and fleet
Output 5.7: 1 Airport constructed (NBIA)	% of construction works completed	15%	50%	100%					Airport commissioning report	Availability of funds on time

6 COSTING & FINANCING OF SECTOR STRATEGIC PLAN

Investments in transport as envisaged in the NST 1 aim to improve access to economic opportunities and social spaces and support economic development by efficiently moving goods. The TSSP 3 elaborates on activities for developing and maintaining an efficient, competitive and responsive transport infrastructure network by the Ministry of Infrastructure and her implementing agencies over the medium term. These activities include maintaining road infrastructure, upgrading and rehabilitating road infrastructure, developing the rail infrastructure and services, developing inland water transport as well as enhancing public transport.

6.1. Linkage to budget programmes

The overall Transport Sector cost and financing are depicted in 6 below. The Transport Sector programmes budget alignment to the National Strategy for Transformation (NST 1) Thematic Priorities is shown in Table 4. The summary of the budget linking with Thematic Priority Areas is given in Table 5: It is worth noting that the Transport Sector is contributing to one pillar (Economic Transformation) out of the three NST 1 pillars. Table 3 depicts budget allocation and the sources of funding are segregated in Table 7. The outlook from table 3 indicates that the intervention on road upgrading and rehabilitation takes precedence with a 35.56% share of the total budget, followed by rehabilitation of feeder roads as well as maintenance of District road class 1 with a 19.06% budget share. The share of other strategic interventions is relatively small of the total budget RWF 2, 41 trillion.

Table 3: Strategic interventions and budget allocation

Pillar	Key Strategic Interventions / Activities	TOTAL	% of Total Cost
Pillar 1: Economic Transformation	Transport ST: Improve Rural and Urban transport services through Establishment of Scheduled Bus Routes, Construction of Urban Roads and rural roads rehabilitated, route franchising, as well as Operationalization of Smart Ticketing System	396,774,000,000	16.47%
	Transport ST: Reduce Traffic Congestion through improvement of junctions, avail dedicated bus lanes, introduction of traffic control system (ITS)	213,540,644,031	8.87%
	Transport ST: Install public lighting on newly constructed roads	17,500,000,000	0.73%
	Transport ST: Upgrade 440 Km National Roads, rehabilitate (pave) 453 Km national roads, and ensure the riding quality is kept to 97% for paved roads and 4 weighbridges operational	856,400,000,000	35.56%
	Transport ST: Maintain 1110Km unpaved National roads and the keep riding quality at 50%	96,008,000,000	3.99%
	Transport ST: 57 % of DR1 in good condition and 3000 Km of feeder roads	459,064,498,655	19.06%
	Transport ST: Construct 2 OSBP	13,000,000,000	0.54%
	Transport ST: Develop 30 Km Railway transport	330,000,000,000	13.70%
	Transport ST: Develop 4 ports on Lake Kivu	20,800,000,000	0.86%
	Transport ST: Develop 5 road side stations	5,500,000,000	0.23%
Grand Total		**2,408,587,142,686 100%**	

6.2. Financing the Transport Sector Programmes in NST-1

Financing the transport sector programmes in NST-1 requires pluralism in future funding mechanisms; and not necessarily relying solely on public sector. Each infrastructure type be road, rail, public transport facilities, etc. as well as public transport services should be analyzed and classified into sub-categories according to their suitability for cost recovery. Mechanisms such as user charging and/or investments by the private sector need further exploration embracing technical suitability and economic viability of available options. The following are envisaged means through which transport sector programmes in NST-1 would be financed for the period 2018/19-2023/24:

- Social access, requiring government funding or "subsidy";
- Infrastructure suitable for indirect user charging, e.g. fuel levies, license fees, tax on fares; and
- Infrastructure suitable for private sector investment, e.g. toll roads.

In Rwanda, Government through its Road Maintenance Fund (RMF) utilizes this fund, as a main source of public sector funding for road maintenance management. From the Road Maintenance Fund (RMF) standpoint, future-funding mechanisms and more should be established by:

- Incrementally increasing Road User Charges (RUC);
- Investigating the introduction of other Road User Charges (RUC);
- Promoting industry capacity building thus promoting increased and more effective road maintenance;
- Priority to be given to the on-going projects; and
- Setting up a clear strategy for road maintenance, defining emergency in relation to the fund and procedure manual for spending techniques which does not contradict the existing laws

In a related development, since the Government's adoption of the Transport Sector Wide Approach in 2009, there has been cohesion and coherence in financing the sector interventions for both internal and externally funded projects and programmes. The approach remains cardinal in ensuring proper coordination, utilisation and accountability of available resources.

As for public transport infrastructure and services, finances should be marshalled through user charges and/or investments by the private sector. The latter will require establishing an enabling environment for PPP brokerage. The value of indirect infrastructure/service related returns should also be considered. Subject to market discipline, the necessary funding for the establishment and maintenance of transport infrastructure or management of public transport service should be arranged through a variety of institutional models for example:

- Public ownership and operation by state departments;
- Public ownership and operation by a state enterprise or department (e.g. Airports Company or Roads Agency);
- Public ownership with private operation;
- Private ownership and private operation;
- Joint ventures between the public and private sectors; and
- Innovative ways of raising funds should be considered.

A climate that encourages private participation in the ownership, planning, financing, construction, maintenance and management of transportation infrastructure is underscored in this strategy.
Consideration should be given to the creation of a new forum between the private sector and the Ministry of Infrastructure and other sister transport agencies, which will allow proactive participation of the private sector. This should promote truly shared profit opportunities and risk-taking between the government and the private sector, whenever this is possible and appropriate. However, there should be a balance to ensure there is a win-win situation.

Table 4: Funding Sources for the TSSP

Funding Source	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	TOTAL
Domestic	**165,892,521,938**	**109,560,403,460**	**210,869,701,909**	**212,205,441,408**	**209,675,441,408**	**230,983,633,909**	**1,139,187,144,031**
Taxes	165,892,521,938	109,560,403,460	210,869,701,909	212,205,441,408	209,675,441,408	230,983,633,909	1,139,187,144,031
External	**377,531,766,205**	**193,353,646,490**	**178,753,646,490**	**192,453,646,490**	**183,053,646,490**	**144,253,646,490**	**1,269,399,998,655**
Loans	256,300,000,000	137,600,000,000	123,000,000,000	136,700,000,000	127,300,000,000	88,500,000,000	869,400,000,000
Grants	121,231,766,205	55,753,646,490	55,753,646,490	55,753,646,490	55,753,646,490	55,753,646,490	399,999,998,655
TOTAL	**543,424,288,143**	**302,914,049,950**	**389,623,348,399**	**404,659,087,898**	**392,729,087,898**	**375,237,280,399**	**2,408,587,142,686**

Table 5: Budget Linkage with Priority Areas

Pillars	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	TOTAL
Pillar 1: Economic Transformation	**543,424,288,143**	**302,914,049,950**	**389,623,348,399**	**404,659,087,898**	**392,729,087,898**	**375,237,280,399**	**2,408,587,142,686**
1.2 Accelerate Sustainable Urbanization from 17.3% (2013/14) to 35% by 2024	125,968,021,938	77,910,903,460	100,152,201,909	100,679,441,408	100,679,441,408	122,424,633,909	627,814,644,031
1.4 Promote Industrialization and attain a Structural Shift in the export base to High-value goods and services with the aim of growing exports by 17% annually	417,456,266,205	225,003,146,490	289,471,146,490	303,979,646,490	292,049,646,490	252,812,646,490	1,780,772,498,655
TOTAL	**543,424,288,143**	**302,914,049,950**	**389,623,348,399**	**404,659,087,898**	**392,729,087,898**	**375,237,280,399**	**2,408,587,142,686**

Table 6: Transport Sector Cost and Financing

Pillar	Interventions/Activities	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	TOTAL
Pillar 1: Economic Transformation	Transport ST: Improve Rural and Urban transport services through Establishment of Scheduled Bus Routes, Construction of Urban Roads and rural roads rehabilitated, route franchising, as well as Operationalization of Smart Ticketing System	92,051,568,000	56,682,000,000	56,682,000,000	56,682,000,000	56,682,000,000	77,994,432,000	396,774,000,000
	Transport ST: Reduce Traffic Congestion through improvement of junctions, avail dedicated bus lanes, introduction of traffic control system (ITS)	29,856,453,938	18,728,903,460	40,970,201,909	41,497,441,408	41,497,441,408	40,990,201,909	213,540,644,031
	Transport ST: Install public lighting on newly constructed roads	4,060,000,000	2,500,000,000	2,500,000,000	2,500,000,000	2,500,000,000	3,440,000,000	17,500,000,000
	Transport ST: Upgrade 440 Km National Roads, rehabilitate (pave) 453 Km national roads, and ensure the riding quality is kept to 97% for paved roads and 4 weighbridges operational	249,800,000,000	137,600,000,000	123,000,000,000	136,700,000,000	127,300,000,000	82,000,000,000	856,400,000,000
	Transport ST: Maintain 1110Km unpaved National roads and the keep riding quality at 50%	22,264,000,000	16,896,000,000	13,640,000,000	14,256,000,000	11,440,000,000	17,512,000,000	96,008,000,000
	Transport ST: 57 % of DR1 in good condition and 3000 Km of feeder roads	137,792,266,205	64,207,146,490	64,031,146,490	64,223,646,490	64,509,646,490	64,300,646,490	459,064,498,655
	Transport ST: Construct 2 OSBP	6,500,000,000	0	0	0	0	6,500,000,000	13,000,000,000
	Transport ST: Develop 30 Km Railway transport	0	0	82,500,000,000	82,500,000,000	82,500,000,000	82,500,000,000	330,000,000,000
	Transport ST: Develop 4 ports on Lake Kivu	0	5,200,000,000	5,200,000,000	5,200,000,000	5,200,000,000	0	20,800,000,000
	Transport ST: Develop 5 road side stations	1,100,000,000	1,100,000,000	1,100,000,000	1,100,000,000	1,100,000,000	0	5,500,000,000
Grand Total		**543,424,288,143**	**302,914,049,950**	**389,623,348,399**	**404,659,087,898**	**392,729,087,898**	**375,237,280,399**	**2,408,587,142,686**

6.3. Risk Analysis, and Management

In pursuit of its vision, the Ministry of Infrastructure faces risks to its business strategy, operations, and protection of personnel, property and reputation. The Ministry thus commits to a risk management process that ensures that all such risks are identified and assessed. Response plans will be developed for each risk and implementation of these plans will be monitored on a quarterly basis together with implementing agencies.

6.3.1. Risk planning and analysis

Risk planning and analysis is critical for successful implementation of transport infrastructure development and service provision. The budget related risk assessment for this TSSP is premised on three probabilistic values as follows:

1) *Most likely value*: This is the anticipated cost value to be;
2) *Most optimistic value*: In terms of cost this is the minimum expected cost; and in terms of outputs this represents the maximum expected outputs given a good economy and minimum competition, and
3) *Most pessimistic value*: Cost will be based on the highest expected cost. Output will be based on a poor economy and maximum competition.

The difference in cost between the most pessimistic and most likely should be greater than the difference between the most optimistic and most likely since it is easier that things go wrong than go right. The other potential risk is the delay in procurement, project design, implementation and management, which are currently prevalent in transport sector projects.

6.3.2. Risk Management

Although the budgetary implications for implementing these TSSP poses a significant risk strategy, it is worth noting that in addition to the legitimate expenditure on transport infrastructure, the plan also proposes additional expenditure lines for providing better public transport services.

The Government enacted and approved the Public Transport Policy and Strategy with an estimated cost of 254 billion RwF to support development of public transport infrastructure and services. It is therefore imperative to balance fund mobilization with promotion of strategic and targeted investment in infrastructure development including improving fiduciary management. Further, the potential of pluralism in financing avenues for transport infrastructure development, maintenance, and development management is a prospective measure in mitigating the risks associated with availability of funds.

Table 7: Transport Sector Priority Action Matrix 2018/19-2023/24

SSP Priority Outcome indicator	Priority action Description	TARGET (Annual Priority Action)					
		2018/19	2019/20	2020/21	2021/22	2022/23	2023/24
% of National paved roads in Good condition	453km of unpaved national roads will be rehabilitated to maintain the national paved roads in good condition	249km of paved national roads will be rehabilitated	62 km of paved national roads will be rehabilitated	10 km of paved national roads will be rehabilitated	32 km of paved national roads will be rehabilitated	45 km of paved national roads will be rehabilitated	55 km of paved national roads will be rehabilitated
	572km of paved national roads will be maintained contributing to improving and sustaining the quality of the road network	117 Km of paved national roads maintained	70 Km of paved national roads maintained	51 Km of paved national roads maintained	53 Km of paved national roads maintained	208 Km of paved national roads maintained	73 Km of paved national roads maintained
	440km of unpaved national roads will be upgraded to paved contributing to improving and sustaining the quality of the road network	46km of unpaved national roads will be upgraded	80 km of paved national roads will be upgraded	100 km of paved national roads will be upgraded	101 km of paved national roads will be upgraded	83 km of paved national roads will be upgraded	30 km of paved national roads will be upgraded
% of National unpaved roads in Good condition	1091km of unpaved national roads maintained.	253km of unpaved national roads maintained	192km of unpaved national roads maintained	155km of unpaved national roads maintained	162km of unpaved national roads maintained	130km of unpaved national roads maintained	199km of unpaved national roads maintained
% of Urban roads in Good condition	150km of urban roads will be constructed in City of Kigali	25km of urban roads will be constructed	25km of urban roads will be constructed	25km of urban roads will be constructed	25km of urban roads will be constructed	25km of urban roads will be constructed	25km of urban roads will be constructed
	200km of urban roads will be constructed in secondary Cities and other cities	33.33km of urban roads will be constructed	33.33km of urban roads will be constructed	33.33km of urban roads will be constructed	33.33km of urban roads will be constructed	33.33km of urban roads will be constructed	33.33km of urban roads will be constructed
% of Feeder roads in Good condition	3085km of feeder roads will be rehabilitated and maintained with engagement and capacitating of LCAs in maintenance activities	935km of feeder roads to be rehabilitated	430km of feeder roads to be rehabilitated	430km of feeder roads to be rehabilitated	430km of feeder roads to be rehabilitated	430km of feeder roads to be rehabilitated	430km of feeder roads to be rehabilitated
		1360km of feeder roads to be maintained	935km of feeder roads to be maintained	430km of feeder roads to be maintained	430km of feeder roads to be maintained	430 of feeder roads to be maintained	430km of feeder roads to be maintained
Death rate due to road traffic injuries per 100,000 population (Baseline	Road safety features such as crash barriers, road markings and signage with Made in Rwanda branding will be	Road safety features constructed and installed,	Road safety features constructed and installed,	Road safety features constructed and installed,	Road safety features constructed and installed,	Road safety features constructed and installed,	Road safety features constructed and installed,

SSP Priority Outcome indicator	Priority action Description	TARGET (Annual Priority Action)					
		2018/19	2019/20	2020/21	2021/22	2022/23	2023/24
32.1 according to WHO, 2015)	constructed and installed on national roads, environmental protection and HIV/AIDs educational campaigns will be conducted, post-crash trauma centres will be established and relevant regulations and legislations will be developed to enforce the implementation.	environmental protection and HIV/AIDs educational campaigns conducted, post-crash trauma centres established and relevant regulations and legislations developed	environmental protection and HIV/AIDs educational campaigns conducted, post-crash trauma centres established and relevant regulations and legislations developed	environmental protection and HIV/AIDs educational campaigns conducted, post-crash trauma centres established and relevant regulations and legislations developed	environmental protection and HIV/AIDs educational campaigns conducted, post-crash trauma centres established and relevant regulations and legislations developed	environmental protection and HIV/AIDs educational campaigns conducted, post-crash trauma centres established and relevant regulations and legislations developed	environmental protection and HIV/AIDs educational campaigns conducted, post-crash trauma centres established and relevant regulations and legislations developed
% Reduction of inland water accidents	Reducing IWT accidents will require developing and enforcing IWT safety features such as navigation charts, establish IWT navigation aids, , awareness campaigns and instituting in place IWT safety legal and regulatory frameworks	IWT navigation charts, navigation aids, legal and regulatory frameworks developed and enforced	IWT navigation charts, navigation aids, legal and regulatory frameworks developed and enforced	IWT navigation charts, navigation aids, legal and regulatory frameworks developed and enforced	IWT navigation charts, navigation aids, legal and regulatory frameworks developed and enforced	IWT navigation charts, navigation aids, legal and regulatory frameworks developed and enforced	IWT navigation charts, navigation aids, legal and regulatory frameworks developed and enforced
Percentage implementation of the ICAO 8 critical elements	Develop a corrective action plan addressing identified deficiencies. Progressively implement the corrective action plan.	Implementation of the corrective action plan at 30% to enhance air transport safety standards to 74%	Implementation of the corrective action plan at 45% to enhance air transport safety standards to 77%	Implementation of the corrective action plan at 60% to enhance air transport safety standards to 80%	Implementation of the corrective action plan at 75% to enhance air transport safety standards to 82%	Implementation of the corrective action plan at 85% to enhance air transport safety standards to 84%	Implementation of the corrective action plan at 100% to enhance air transport safety standards to 85%
Waiting time reduced from 30 to 15Mins in CoK (On-time performance numbers for mass transit)	Public transport restructuring and prioritization of mass transport/transit by introducing 22.2km of Dedicated Bus Lanes	7.5km of DBL introduced	1.5km of DBL introduced	2.4km of DBL introduced	3.2km of DBL introduced	3.2km of DBL introduced	3.8km of DBL introduced
	Seven (7) intersections will	2 intersections	1 intersection to	1 intersection to	1 intersection to	1 intersection to	1intersection to

SSP Priority Outcome indicator	Priority action Description	TARGET (Annual Priority Action)					
		2018/19	2019/20	2020/21	2021/22	2022/23	2023/24
	be upgraded at Kimironko, Chez Lando, Kicukiro, Gishushu, Kinamba and Giporoso	to be upgraded	be upgraded	be upgraded	be upgraded	be upgraded	be upgraded
% of population conveying with public transportation (national, urban and rural	174.5km new routes of existing network scheduled for buses	49.5km of new routes scheduled	25km of new routes scheduled	25km of new routes scheduled	25km of new routes scheduled	25km of new routes scheduled	25km of new routes scheduled
	Provision of real time public transport information to PT commuters, regulators and operators in CoK	Real-time passenger information accessed via mobile applications, 3 pilot Bus shelters constructed/upgraded with real-time passenger information display boards	25 Bus shelters constructed/upgraded with real-time passenger information display boards (systems)	26 Bus shelters constructed/upgraded with real-time passenger information display boards (systems)	18 Bus shelters constructed/upgraded with real-time passenger information display boards (systems)	18 Bus shelters constructed/upgraded with real-time passenger information display boards (systems)	18 Bus shelters constructed/upgraded with real-time passenger information display boards (systems)
	Installing internet connections on Public transport vehicles	Internet availed in Public Transport Vehicles at 100% in CoK	Internet availed in Public Transport Vehicles at 100% in inter-city buses	Internet availed in rural Public Transport Vehicles at 50%	Internet availed in rural Public Transport Vehicles at 100%	Internet availed in all Public Transport Vehicles at 100%	Internet availed in all Public Transport Vehicles at 100%
Border posts crossing time in hours	Reducing border posts crossing time in hours will require upgrading trans-border infrastructure	1 OSBP constructed					1 OSBP constructed
Average passenger load factor (percentage)	Opening 32 new routes to increase market share. Undertake market and sales promotions. Create Partnerships with other carriers to increase	8 new routes will be opened	4 new routes will be opened	5 new routes will be opened	5 new routes will be opened	5 new routes will be opened	5 new routes will be opened

SSP Priority Outcome indicator	Priority action Description	TARGET (Annual Priority Action)					
		2018/19	2019/20	2020/21	2021/22	2022/23	2023/24
	network reach.						
Valid national carrier safety certifications maintained	Safety takes high priority; safety procedures have to be maintained at an industry recommended level.	Implement safety procedures to maintain 2 (IOSA and ISAGO) certifications valid.	Implement safety procedures to maintain 2 (IOSA and ISAGO) certifications valid.	Implement safety procedures to maintain 2 (IOSA and ISAGO) certifications valid.	Implement safety procedures to maintain 2 (IOSA and ISAGO) certifications valid.	Implement safety procedures to maintain 2 (IOSA and ISAGO) certifications valid.	Implement safety procedures to maintain 2 (IOSA and ISAGO) certifications valid.
On-time performance of the national carrier enhanced	Punctuality of an airline is a measure of its performance level; an airline performs well when the on-time performance reaches 90%	Implement Standard Operating Procedures (SOPs)	Implement Standard Operating Procedures (SOPs)	Implement Standard Operating Procedures (SOPs)	Implement Standard Operating Procedures (SOPs)	Implement Standard Operating Procedures (SOPs)	Implement Standard Operating Procedures (SOPs)
Passenger handling capacity by all airports	The existing passenger handling capacity of 1,200,000 million will increase by 300,000 passengers by completion of the expansion of KIA passenger terminal. The passenger handling capacity will become 3.2 million after completion of NBIA at the end of 2019	Expansion of Kigali International Airport passenger terminal	Completion and operationalization of Bugesera International Airport Phase 1	Operationalization of Bugesera International Airport Phase 1	Operationalization of Bugesera International Airport	Operationalization of Bugesera International Airport	Operationalization of Bugesera International Airport

Table 8: Secondary Indicators without baselines and targets

	INDICATORS	Baseline 2016/2017	18/19	19/20	20/21	21/22	22/23	23/24
Road safety featured provided on paved national roads	% of road safety features provided on national paved roads	TBD	TBD	TBD	TBD	TBD	TBD	TBD
Road safety, Environmental protection and HIV/AIDs awareness campaigns conducted	Number of population (Male & female) sensitized on road safety, environmental protection and HIV/AIDs	TBD	TBD	TBD	TBD	TBD	TBD	TBD
Road/IWT transport safety regulation and legislation developed	Number of road safety regulation and legislation ratified by Cabinet	TBD	TBD	TBD	TBD	TBD	TBD	TBD
Output 3.3: Public Transport users accessing real time information in CoK	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
Output 4.1: Metric tons of freight transported by road	Freight volumes by road transport	TBD	TBD	TBD	TBD	TBD	TBD	TBD
Output 4.2: Passengers number carried by road	Passenger number carried by road transport	TBD	TBD	TBD	TBD	TBD	TBD	TBD
Output 4.3: Metric tons of freight transported by rail	Freight volumes by Rail transport in metric tons	TBD	TBD	TBD	TBD	TBD	TBD	TBD
Output 4.4: Metric tons of freight transported by IWT	Freight volumes in metric tons	TBD	TBD	TBD	TBD	TBD	TBD	TBD
Output 4.5: Passengers transported by IWT	Passenger volume by Inland water transport	TBD	TBD	TBD	TBD	TBD	TBD	TBD
Proportion of rural population who live within 2km of an all-season road	TBD	TBD	TBD	TBD	TBD	TBD	TBD	
Proportion of population that has convenient access to public transport by sex, age, and persons with disabilities	TBD	TBD	TBD	TBD	TBD	TBD	TBD	

Annex 1: Projects to be implemented during 2018/19-2023/24

SN	Intervention	Projects	
	Upgrading	440km of unpaved national roads to paved	1. 123km Ngoma-Bugesera-Nyanza road 2. 66km Huye-Kibeho-Munini road 3. 68km Base-Butaro-Kidaho road 4. 124km Base–Gicumbi-Rukomo-Nyagatare road 5. 80km Kigali-Ring Road
	Rehabilitation	453 km of paved national roads	6. 209km Kagitumba-Kayonza-Rusumo road 7. 32km Musanze-Cyanika road 8. 60Km Muhanga-Karongi road 9. 53km Huye-Kitabi road 10. 157km Kigali-Muhanga-Akanyaru Haut road
	Construction of 350km of urban roads in CoK and Secondary Cities	○ 150km City of Kigali ○ 200km Secondary Cities & Other Cities (RUDP: Rusizi (9.57km), Rubavu (3.91km), Nyagatare (3.91km), Musanze (4.58km), Muhanga (4.89km), Huye (4.34km) 70km (10km per district) for the Eastern Province)	
	Maintenance	**Maintaining 572km of paved national roads:**	**Maintaining 1091km of unpaved national roads**
		1. 65km Kicukiro-Nemba; 157km Kigali-Huye-Akanyaru 2. 62km Kigali-Kayonza; 68km Musanze-Rubavu 3. 78km Muhanga-Karongi; 50km Rusizi-Bugarama-Ruhwa 4. 30km Crete-Congo-Ntendezi; 78km Kigali-Gatuna 5. 111km Kigali-Muhanga-Ngororero-Mukamira 6. 82km Kigali-Musanze; 117km Ntendezi-Karongi; 7. 70km Rubengera-Pfunda; 51km Base-Rukomo 8. 53km Huye-Kitabi; 208km Kagitumba-Kayonza-Rusumo 9. 73km Gicumbi-Nyagatare	10. 36km Ruhango-Kinazi-Mukunguri; 17.5km Nyakinama-Vunga-Rubagabaga 11. 49km Kirengeri-Buhanda-Kaduha; 49km Nyamugali-Nasho 12. 49km Kinigi-Volcano Park-Kabuhanga; 51.2km Cyamutara-Nkoto-Kiramuruzi 13. 85.6km Cyakabiri-Nyabikenke-Ndusu; 58.5km Mudasomwa-Gisovu 14. 50km Kaduha-Musebya-Kitabi; 38km Maya-Rushaki-Muhambo 15. 67km Bwishura-Karongi-Gasenyi-Gahunduguru-Masizi 16. 84km Nyamiyaga-Mugombwa-Nyaruteja-Akanyaru bas 17. 78km Nyanza-Gitwe-Karongi; 58km Gicumbi-Kavuze-Butaro 18. 72km Kizinga-Rwenpasha-Karama-Rushashi
	Install and operationalize 4 weighbridge stations	• 1 weighbridge at Nyacyonga • 1 weighbridge at Kayumbu • 1 Weighbridge at Kirehe • 1 Weighbridge at Nyagatare	

	Feeder Roads	Rehabilitate 3085km of Feeder roads o 300km District Road Class I o 585km District Road Class II o 1100km of P4 unclassified o 1100km of P5 unclassified	**Maintain 1073.9km of Feeder roads** o 68.7Km Giticyinyoni-Ruli-Rushashi-Gankenke o 37.4Km Kimodoka-Buhabwa; 28km Bakokwe-Kiyumba-Nyabarongo o 21.2Km Rukali-Kabuga; 31.2km Pindura-Bweyeye; o 22.5Km Nyakarenzo-Mibilizi-Mashesha; 38km Rambura-Rugabano-Gasenyi-Kayenzi o 54.7Km Rutsiro-Kavumu-Gashyushya-Kazabe o 36.4Km Rugogwe-Kiruhura-Gikonko-Mamba o 43Km Kibeho-Muse-Gaserenda o 40.3Km Gisagara-Huye-Nyakibanda-Nyagisozi o 34 Km Mugombwa-Rango-Nyabikenke o 29.7Km Kayonza-Video-Kawangire o 59.3Km Masaka-Kabuga-Nyamata o 33km Gatagara-Byimana-Karambo o 28.5Km Karambo-Gako-Mwurire o 94.1Km Ndatemwa-Muhura-Mulindi-Rwaranda o 60km Rwamagana-Cyaruhogo-Kanazi-Karenge o 25.7Km Nyarupfubire-Kirebe-Karangazi o 58.4Km Ruliba-Nyarufunzo-Magaeragere-Mugendo-Kagarama-Nyanza-Nyarurama-Miduha o 75.1Km Kitabi-Shaba-Remera-Kiyovu-Nyagatovu-Munini